Development Co-operation Report 2021

SHAPING A JUST DIGITAL TRANSFORMATION



OECD

DEVELOPMENT CO-OPERATION REPORT 2021: SHAPING A JUST DIGITAL TRANSFORMATION

OECD
BETTER POLICIES FOR BETTER LIVES

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Members of the OECD.

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Note by Turkey
The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union
The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Please cite this publication as:
OECD (2021), *Development Co-operation Report 2021: Shaping a Just Digital Transformation*, OECD Publishing, Paris, *https://doi.org/10.1787/ce08832f-en*.

ISBN 978-92-64-87667-5 (print)
ISBN 978-92-64-85686-8 (pdf)

Development Co-operation Report
ISSN 2074-773X (print)
ISSN 2074-7721 (online)

Photo credits: Cover © Liu Zishan/Shutterstock.com;
Executive summary © Sonia Dhankhar/Shutterstock.com;
Part I © Anjo Kan/Shutterstock.com;
Part II © CECIL BO DZWOWA/Shutterstock.com;
Chapter 16 © GSMA, Mobile for Development Programme/UK Government's DFID Digital Development Strategy 2018-2020;
Part III © aldomurillo/Gettyimages;
Part IV © ABIR ROY BARMAN/Shutterstock.com;
Chapter 40 © GSMA, Mobile for Development Programme;
Part V © zeljkosantrac/Gettyimages;
Private philanthropic providers reporting to the OECD © PradeepGaurs/Shutterstock.com.

Corrigenda to publications may be found on line at: *www.oecd.org/about/publishing/corrigenda.htm*.

© OECD 2021

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at *http://www.oecd.org/termsandconditions*.

Preface

THE OECD PROVIDES AN INCLUSIVE FORUM TO SHAPE A GLOBAL DIGITAL FUTURE

Digital transformation presents policy makers everywhere with challenges that transcend borders. While the transformation was underway before COVID-19, the pandemic significantly accelerated it around the world. Seizing the opportunities of the accelerating digital transformation, while better managing the associated and growing risks, challenges and disruptions requires a strong evidence base, leadership by public administrations, and extensive international co-operation and global engagement. Countries are increasingly looking to international institutions as sources of advice and forums to debate and design policy frameworks for the digital age. These must draw on the best practices of countries furthest ahead in their digital transformation journeys, while considering the divergent realities in countries less prepared to benefit from digital technology.

For decades, the OECD has supplied evidence-based policy advice to members about the evolving impacts of digital technologies on economies and societies, and has contributed – including through engagement with the G20 – to expanding the reach and relevance of its policy advice beyond its membership. From the foundational Privacy Guidelines agreed in 1980 to the 2019 OECD Council Recommendations on Artificial Intelligence (AI) that provided the basis for the G20 principles for AI, broadband development, digital security, children in the digital economy, and enhancing access to and sharing of data, the OECD has been a frontrunner in this space. OECD leadership through the Going Digital project helps countries within and outside the OECD's membership to keep pace with changing technology and work with the private sector, trade unions, and community and technical stakeholders to harness digital transformation. The OECD was instrumental in designing and delivering the landmark tax deal agreed between 136 countries and jurisdictions based on the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS) to address the tax challenges arising from the digitalisation of the economy. More than 60 developing countries played a key role in negotiations shaping the outcome.

To continue to meet the evolving demands of the digital age, we must build on recent successes to work with all countries, private-sector and trade union partners, and technical and civil society organisations to address stark digital divides. In 2021, 90% of people in developed countries used the Internet, but just 57% of people in developing countries enjoyed the same privilege (ITU Statistics Database). OECD countries have an average of 118.3 mobile broadband subscriptions per 100 people, while in non-OECD countries the average is 56 per 100 people (OECD Broadband Portal and ITU Statistics Database). This highlights the importance of bridging infrastructure

investment gaps and making infrastructure governance a priority. And while connectivity infrastructure is crucial, other barriers keep groups locked out of digital prosperity, forfeiting potential productivity and revenue gains. In 2019, only 15% of women in least-developed countries used the Internet, compared to 86% in developed countries (ITU Bridging the Gender Divide, 2019). Over the last decade, gaps in Internet usage by gender, age and education level threaten the ability of digital transformation to deliver broad-based and sustainable improvements to growth, well-being and development across countries.

The OECD is well-placed to support countries to overcome these digital divides in two ways. First, we gather and share lessons from member countries and produce new research and evidence to inform best-practice policy advice that countries around the world can leverage to accelerate their digital transformation. Second, the OECD is a forum for inclusive debate and the formation of new policy, governance and co-operation frameworks that take all countries' digital realities into account. Our work on issues like enhancing digital security, data protection, cross-border data sharing, online safety, countering mis- and dis-information, and the rise of autocracy, identifying and agreeing on solutions that lead to progress in all countries, including those that are furthest behind, will strengthen resilience and prosperity for all in our interdependent world.

The breadth of evidence in this report highlights that digital transformation is not merely a technological process. Resolving the complex issues this process raises will require values-based decisions about the kind of digital future we want to create. The shared values of the OECD – democracy, rule of law, gender equality, human rights – and our commitment to open and transparent market-economy principles and high standards in the digital economy, can help stakeholders navigate this rapid transformation, keeping global goals for sustainable development squarely in view and within reach.



Mathias Cormann,
OECD Secretary-General

Foreword

The annual Development Co-operation Report brings new evidence, analysis and ideas on sustainable development to members of the OECD Development Assistance Committee (DAC) and the international community more broadly. The objectives are to promote best practices and innovation in development co-operation, and to inform and shape policy and behaviour to realise the Sustainable Development Goals and better lives for all. Each year, the report analyses a policy issue that is timely, relevant or challenging for development co-operation and finance. It also includes annual data covering at-a-glance over 90 providers of development co-operation, including members of the OECD DAC, other countries and philanthropic foundations.

This 59th edition focuses on strategic decisions that the global community must make to shape and support digital transformations that deliver sustainable development and climate goals. Set against a rapidly evolving digital landscape and building on existing United Nations and OECD commitments and processes, the report provides the latest evidence on the global state of digital transformation and maps the challenges ahead. It discusses the policy, regulatory, legal and operational complexities inherent in digital transformation, focussing on solutions that can build greater trust, putting people at the centre of their aims. Drawing on the latest research and insights from policy, academia, business and civil society experts, it identifies priorities for a new generation of development strategies to maximise, and share more equally, the benefits of digital transformation. Its overarching message is that development co-operation must support countries' digital transformations more strategically and comprehensively to ensure they deliver inclusion, trust, safety and respect for human rights.

This report contains an overview and five main parts. The overview sets out the choices the global community needs to make now to shape a just digital transformation and it offers a checklist of complementary actions for development co-operation. The parts contain "In My View" contributions, analytical chapters written by external experts and specialised OECD teams, and case studies that provide insights on themes or geographical regions.

Part I presents evidence on the current digital realities in low- and middle-income countries, covering recent progress and gaps in digital systems, especially highlighted by the COVID-19 crisis. Part II outlines policy and governance approaches that maximise the potential rewards from digital transformation for low- and middle-income countries and reduce the serious risks it can entail. Part III explores how inclusiveness can be hardwired into the technical components of digital transformation, including through deployment of digital public goods and by addressing the drivers of digital divides. Part IV provides a summary of recent development co-operation strategies and financing approaches to digital transformation, offers preliminary estimates of concessional financing for digital transformation and discusses the need for improved

measurement of development financing in this field. Part V opens with an infographic that gives an overview of emerging trends and insights regarding official development finance. Individual profiles provide data and policy priorities for more than 90 official and philanthropic providers of development finance.

The full report is published in English and French. An electronic version, together with other supporting material, is available online at https://www.oecd.org/dac/development-cooperation-report.

Acknowledgements

The 2021 edition of the OECD *Development Co-operation Report* was prepared under the overall leadership of Jorge Moreira da Silva, Director of the OECD Development Co-operation Directorate (DCD). Rahul Malhotra, Head of DCD's Reviews, Results, Evaluation and Development Innovation Division, provided strategic guidance. Ida Mc Donnell is the team lead and managing editor of the report.

The report and at-a-glance profiles were managed and produced by a core team comprising: Eleanor Carey, Jonas Thyregod Wilcks, Katharina Satzinger, Marc Cortadellas Mancini, Kristina Mazurenko, Sara Casadevall Bellés, Natalie Corry, Stephanie Coic and Jessica Voorhees.

Special thanks go to the contributing authors named throughout the report.

Members of the Development Assistance Committee (DAC) and DAC Chair Susanna Moorehead provided direction and guidance, notably through feedback on the concept note in March 2021, participation in bilateral and collective consultations over April and May 2021 and multi-stakeholder workshops in June 2021, and feedback on a progress report presented to the DAC in October 2021. Special thanks to digital leads and experts from OECD membership from Belgium, Estonia, European Union, Finland, France, Germany, Ireland, Israel, Italy, Latvia, Lithuania, the Netherlands, Norway, Spain, Sweden, Switzerland, the United Kingdom, the United States, and to partners at DIAL, UNCTAD and UNDP. Consulting firm Impact Basis provided support for multi-stakeholder workshops in June and September.

DAC members and other providers of development co-operation fact-checked the development co-operation provider profiles, which are synthesised in the *At a Glance* infographics compiled by Sara Casadevall Bellés and Jonas Thyregod Wilcks in collaboration with the Directorate's teams for financing, peer reviews and outreach. Development co-operation and ICT ministries and agencies in Colombia, Estonia, Germany, Korea, the Netherlands, Norway, the United Kingdom, and the United States provided case studies for the report, also featured on the Development Co-operation Tools, Insights, and Practices (TIPs) platform (https://www.oecd.org/development-cooperation-learning).

Susan Sachs edited the report with Misha Pinkhasov. Jennifer Allain and Misha Pinkhasov did the proofreading. Stephanie Coic created the cover design and graphics. The French version of the report was translated by the OECD Translation Division, under the supervision of Florence Burloux-Mader, and proofread by Sophie Alibert. Thanks to Janine Treves, Audrey Garrigoux, Florence Guérinot, Claudia Tromboni and Jonathan Dayot at the OECD Public Affairs and Communication Directorate for editorial advice and publishing. Thanks also to Erin Renner Cordell, Kerri Elgar, Henri-Bernard Solignac-Lecomte, Joelle Bassoul, and Paul Gallagher for editorial and communication support, and to Sylvie Walter and Rebecca Hart for administrative and management support.

Editorial

DIGITALISATION: A DOUBLE-EDGED SWORD

Digitalisation is a lifeline for those lucky enough to have the Internet during the COVID-19 pandemic. It improved access to social protection payments, health care, jobs and education. At the same time, the COVID-19 crisis highlighted our dependence on the digital world. It exposed the vulnerability of countries falling behind in digital infrastructure, affordability, use, skills and innovation. As many as 2.9 billion people around the world – especially women and girls – are missing out on the benefits of digital transformation.

We've seen that digitalisation helps more than just during a crisis. It has the power to fast-track development and leapfrog solutions. Mobile banking for those who never had access to a bank account is a great example. Without policies and investments to promote access and affordability, we squander the power of digitalisation and allow the digital divide to make achieving the Sustainable Development Goals (SDGs) even harder.

This digital divide makes inequality worse. The vast majority of the world's unconnected people live in low- and middle-income countries. 87% of people in Europe use the Internet. In Africa it is 33%. Women in developing countries are 15% less likely than men to use mobile Internet. And access is not the only issue. We know that the transformative power of digital technology is sometimes misused, too often in ways that reinforce inequality and exclusion. It is no surprise that women and children bear the brunt of online harassment and abuse. And while digital transformation is shaking up labour markets, the media and politics, giving new voice and agency to many, it is also being used to compromise democracy, freedom of speech and human rights. Digitalisation is a double-edged sword: used for both good and ill.

Digitalisation is a determinant of progress towards the SDGs. Private initiatives and multinationals from a handful of countries drive its evolution, but the value of universal connectivity and digital public goods is widely understood. Everyone has a stake in the digital transformation that connectivity makes possible. Everyone must do more to unlock the opportunities afforded by digital technologies and tackle the challenges they pose. For low- and middle-income countries, maximising the development benefits of digitalisation and minimising the risks requires whole-of-government efforts domestically, and co-operation and collaboration globally. All governments must strive for better alignment between national, regional, and global standards and regulations for the safe and sustainable use of globalised technology. Public and private stakeholders must work together to ensure that investment, infrastructure and technology align to help achieve the SDGs, with safeguards and checks on power.

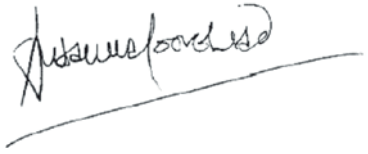
The United Nations Secretary-General's Roadmap for Digital Cooperation provides an overarching framework for the international community to do better. The OECD Going

Digital initiative supports convergence between advanced and developing countries on digital transformation, expanding access and use of technologies and data. The initiative helps understand and manage the complexity of digital transformation by providing frameworks, principles, norms and standards. It focusses on international knowledge sharing and lesson learning, consistent with SDG 17 on the global partnership for sustainable development.

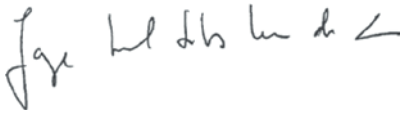
Demand for co-operation is rising. Action is intensifying. Working with developing-country partners, the OECD Development Assistance Committee (DAC) plays a unique role in bridging the digital divide with official development assistance and other support. As this report shows, DAC members must work together if they are to help harness the positive power of digital transformation.

Development effectiveness principles – country ownership, partnership, a focus on results, transparency and accountability – must guide us through the complexities as we support digital transformation. This means aligning efforts with national digital strategies, avoiding standalone technology transfer projects, encouraging innovative partnerships with the private sector and supporting effective regulatory mechanisms. At home, DAC members can shape digital policies that help low- and middle-income countries by promoting inclusive policies and robust norms and standards. DAC members can also help developing country partners participate in global standard setting so that their needs and challenges are heard and understood.

We won't narrow the development divide without narrowing the digital divide. We have the tools to hardwire inclusiveness into the digital transformation of our world. We need to power up and get to work.



Susanna Moorehead
Chair,
Development Assistance Committee



Jorge Moreira da Silva
Director,
Development Co-operation Directorate

Table of contents

Preface 3

Foreword 5

Acknowledgements 7

Editorial 8

Reader's guide 18

Abbreviations and acronyms 22

Executive summary 25

Overview: Powering an inclusive digital future 28

PART I DIGITAL REALITIES IN LOW- AND MIDDLE-INCOME COUNTRIES 45

In my view: The promises, pitfalls and potential of global technology governance 46

Nanjira Sambuli

1. Digital drivers of inclusive growth in Africa and Latin America and the Caribbean 48
2. Case study: Regional integration can accelerate Africa's digital transformation 64
3. Cultivating new capacities, the case of e-commerce 68
4. Tackling digital disadvantage with people-centred policies 77
5. Case study: Digital platforms can boost earnings of women entrepreneurs 85

6. Managing inclusive digital transformation, lessons from 100 countries 89
7. Determining national priorities in the 4th industrial revolution 98
8. Case study: Digital Citizenship or Digital Authoritarianism? 107

PART II POLICIES TO MAXIMISE GAINS AND REDUCE RISKS 117

In my view: To tackle disinformation, we must uphold freedom of opinion and expression 118
Irene Khan

9. Agile, comprehensive and principles-based: Policy making for a digital age 121
10. Case study: Combatting cyber threats, disinformation, and Internet shutdowns 132
11. Making the leap from e-government to digital government 138
12. Case study: Benin and Estonia's e-government partnership 147
13. Case study: Knowledge sharing on user-centred digital citizen services: Colombia's experience 151
14. Taxing digital economies 155
15. Seizing opportunities for digital trade 164
16. Case study: Planning for the future of work 176
17. Case study: Is gig work decent work? 181
18. Case study: Fostering formal work with digital tools 189
19. Bridging energy gaps with digital solutions 197
20. Case study: The digital device life cycle: From mining to e-waste 204
21. Case study: Optimising tools and partnerships for resilience 211

PART III HARDWIRING INCLUSION INTO DIGITAL TRANSFORMATION 219

In My View: Artificial intelligence and data analytics can unlock new economic opportunities 220

Timothy Kotin

22. Practical solutions to connect the last mile 222
23. Beyond the basics: Quality, speed, affordability, relevance 230
24. Case study: Connecting every school in the world to the Internet 239
25. Digital ecosystems components every country needs 243
26. Digital public goods: Enablers of digital sovereignty 256
27. Overcoming exclusion in digital economies 265
28. Case study: Digital payments enabling financial inclusion 274
29. Creating a level playing field for data protection 280
30. Reusing data responsibly to achieve development goals 289
31. Case study: Digital transformation of public health systems 298
32. Reshaping social media: From persuasive technology to collective intelligence 305

PART IV DEVELOPMENT CO-OPERATION STRATEGIES AND FINANCING APPROACHES 317

33. A snapshot of bilateral digital development strategies 318
34. Case study: USAID promotes co-ordinated investments in digital systems for better health outcomes 334
35. Case study: The Netherlands' inclusive and human rights-based approach with civil society 339
36. Case study: KOICA's dual approach to digitalisation 343
37. Case study: Norway's strategic process to capitalise on the potential of new technology 347
38. Case study: Leaving no one behind in a digital world: the United Kingdom's Digital Access Programme 350

39. Case study: Digital-by-default: A new concept in Germany's development co-operation 355
40. Measuring official development finance for digitalisation 358
41. Financing options for the future of digital 371
42. Case study: Insights from CDC on catalysing commercial investment 378

PART V DEVELOPMENT CO-OPERATION PROVIDERS AT A GLANCE 385
Development co-operation financing trends 386
Official providers reporting at the activity level to the OECD 391
Australia 392
Austria 393
Azerbaijan 394
Belgium 395
Canada 396
Colombia 397
Costa Rica 398
Croatia 399
Cyprus 400
Czech Republic 401
Denmark 402
Estonia 403
European Union institutions 404
Finland 405
France 406
Germany 407
Greece 408
Hungary 409

Iceland 410
Ireland 411
Israel 412
Italy 413
Japan 414
Kazakhstan 415
Korea 416
Kuwait 417
Latvia 418
Lithuania 419
Luxembourg 420
Mexico 421
Netherlands 422
New Zealand 423
Norway 424
Poland 425
Portugal 426
Qatar 427
Romania 428
Saudi Arabia 429
Slovak Republic 430
Slovenia 431
Spain 432
Sweden 433
Switzerland 434
Turkey 435
United Arab Emirates 436

United Kingdom 437
United States 438
Other Official Providers Reporting at the Aggregate Level to the OECD 439
Other Official Providers not Reporting to the OECD 446
Private philanthropic providers reporting to the OECD 459
Arcadia Fund 460
Arcus Foundation 461
BBVA Microfinance Foundation 462
Bernard van Leer Foundation 463
Bill and Melinda Gates Foundation 464
Carnegie Corporation of New York 465
Charity Projects Ltd (Comic Relief) 466
Childrens Investment Fund Foundation 467
Citi Foundation 468
Conrad N. Hilton Foundation 469
Ford Foundation 470
Gatsby Charitable Foundation 471
Gordon and Betty Moore Foundation 472
Grameen Crédit Agricole Foundation 473
H&M Foundation 474
Ikea Foundation 475
Jacobs Foundation 476
John D. and Catherine T. MacArthur Foundation 477
La Caixa Banking Foundation 478
Laudes Foundation 479
Lego Foundation 480
Margaret A. Cargill Foundation 481

MasterCard Foundation 482
MAVA Foundation 483
McKnight Foundation 484
MetLife Foundation 485
Michael and Susan Dell Foundation 486
Oak Foundation 487
Omidyar Network Fund, Inc. 488
Rockefeller Foundation 489
United Postcode Lotteries 490
Wellcome Trust 491
William and Flora Hewlett Foundation 492
World Diabetes Foundation 493

ANNEX A
Methodological notes development co-operation at a glance 2021 494

Follow OECD Publications on:




http://twitter.com/OECD_Pubs


http://www.facebook.com/OECDPublications


http://www.linkedin.com/groups/OECD-Publications-4645871


http://www.youtube.com/oecdilibrary



http://www.oecd.org/oecddirect/

This book has...

StatLinks

A service that delivers Excel® files from the printed page!

Look for the *StatLinks* at the bottom of the tables or graphs in this book. To download the matching Excel® spreadsheet, just type the link into your Internet browser, starting with the *https://doi.org* prefix, or click on the link from the e-book edition.

Reader's guide

This reader's guide presents a glossary of key terms related to digital transformation. This glossary is not exhaustive but is intended to provide definitions for the terms that appear commonly throughout this report.

GLOSSARY OF KEY TERMS IN DIGITAL TRANSFORMATION

- **1G, 2G, 3G, 4G and 5G** refer to the five generations of wireless networks. 5G represents the latest and fastest generation of wireless technology, including download speeds of 20 gigabits per second (Gbps), 10 Gbps upload speeds, and latency of one millisecond (ms). This represents download speeds 200 times faster, upload speeds 100 times faster and one-tenth the latency of 4G Long Term Evolution (LTE) networks (OECD, 2019[1]).
- **Agile governance regulation** refers to holistic, open, inclusive, adaptive and co-ordinated governance models to enhance systemic resilience by enabling nimble, technology-neutral and adaptive regulation that upholds fundamental rights, democratic values and the rule of law (OECD, 2021[2]).
- **Application programming interface (API)** refers to tools that enable a program to communicate with another program or operating system, and that help software developers create their own applications (Oxford Dictionary, 2019[3]).
- **Artificial intelligence (AI)** is the ability of machines and systems to acquire and apply knowledge, including by performing a broad variety of cognitive tasks (OECD, 2019[4]).
- **Big data** refers to data characterised by high volume, velocity and variety (OECD, 2019[4]).
- **Blockchain** technology enables applications to authenticate ownership and carry out secure transactions for a variety of asset types (OECD, 2019[4]).
- **Broadband** refers to internet connection with capabilities higher than 256 kbit/s (OECD, 2021[5])
- **Connectivity** refers to connection to the Internet or other communication networks (ITU, 2001[6]).
- **Cross-border data flow** refers to the movement or transfer of information between servers across country borders (BSA, 2017[7]).
- **Data portability** is the ability (sometimes described as a right) of a natural or legal person to request that a data holder transfer data concerning that person to the person or a specific third party in a structured, commonly used and machine-readable format on an ad-hoc or continuous basis (OECD, 2021[8]).
- **Digital economy** incorporates all economic activity reliant on or significantly enhanced by using digital means including technologies, infrastructure, services and data (OECD, 2020[9]).
- **Digitalisation** is the use of digital technologies and data that results in new or changes to existing activities (OECD, 2019[4]).

- **Digital public goods** refer to open-source software, data, artificial intelligence models, standards and content that adhere to privacy and other applicable international and domestic laws, standards and best practices, and do no harm (UNSG, 2020[10]).
- **Digital public infrastructure** refers to digital solutions that enable basic functions essential for public and private service delivery, i.e. collaboration, commerce and governance. (Shivkumar and Nordhaug, 2021[11]).
- **Digital stack** refers to interoperable platforms or layers that work together and across government ministries to enable joint digital responses, initiatives and services (Gates, 2021[12]).
- **Digital transformation** refers to the economic and societal effects of digitisation and digitalisation (OECD, 2019[4]).
- **Digitisation** is the conversion of analogue data and processes into a machine-readable format (OECD, 2019[4]).
- **Disinformation** is verifiably false or misleading information created, presented and disseminated for economic gain or to intentionally deceive the public (European Commission, n.d.[13]).
- **Fourth Industrial Revolution** refers to the use of digital technologies that enable new and more efficient processes in industrial production, and which in some cases yield new goods and services. The associated technologies are many, from developments in machine learning and data science, which permit increasingly autonomous and intelligent systems, to low-cost sensors that underpin the Internet of Things, to new control devices that make second-generation industrial robotics possible (OECD, 2017[14]).
- **Frequency spectrum assignment** refers to the process of determining the use of a given block of frequencies (ITU, n.d.[15]).
- **Gig economy or gig work** describes when two-sided digital platforms match workers on one side of the market to customers (final consumers or businesses) on the other side on a per-service ("gig") basis (OECD, n.d.[16]).
- **Hard infrastructure** is physical infrastructure to support businesses such as mobile and fixed connectivity, power, water, roads, physical plants, equipment and other elements (ITU, 2018[17]).
- **ICT4D** refers to the use of information and communications technologies for economic and social development, humanitarian response or promotion of human rights (ITU, 2018[17]).
- **Internet of Things** enables new business models, applications and services based on data collected from devices and objects, including those that sense and interface with the physical world (OECD, 2019[4]).
- **Interoperability** refers to the ability of different digital services to work together and communicate with one another (OECD, 2021[8]).
- **Machine learning** refers to when machines make decisions based on probability functions derived from past experiences (OECD, 2019[4]).
- **Misinformation** is verifiably false information that is spread without the intention to mislead, and often shared because the user believes it to be true (European Commission, n.d.[13]).
- **Mobile apps** are add-on software for handheld devices, such as smartphones and personal digital assistants (PDAs) (ITU, 2009[18]).
- **Mobile wireless access** refers to wireless access applications in which the location of the end-user termination is mobile (ITU, 2001[6]).
- **Open source** provides access to knowledge without the need to pay for the knowledge itself, although there may be marginal fees for access (OECD, n.d.[19]).

- **Personal data** is any information that relates to an identified or identifiable living individual (European Commission, n.d.[20]).
- **Platform economies** use digital technologies to broker labour on a per-task basis (OECD, n.d.[16]).
- **Radio spectrum** is the part of the electromagnetic spectrum with frequencies from 30 Hz to 300 GHz. Electromagnetic waves in this frequency range, called radio waves, are used in modern technology, particularly in telecommunication. Commonly known technologies that use radio spectrum are wireless broadband cellular phones (e.g. based on the 4th or 5th generation technology standard) and WiFi systems (European Commission, n.d.[21]).
- **Regulatory sandbox** refers to a regulatory approach that allows live, time-bound testing of innovations under a regulator's oversight, typically summarized in writing and published. Regulatory sandboxes let novel financial products, technologies and business models be tested under a set of rules, supervision requirements and appropriate safeguards (UNSGSA, 2020[22]).
- **Soft infrastructure** describes programs and resources in an innovation ecosystem that provide mentorship, skills, experience and other knowledge resources to support innovative businesses (ITU, 2018[17]).
- **Universal access** refers to reasonable telecommunication access for all. It includes universal service for those who can afford individual telephone service and widespread provision of public telephones within a reasonable distance of others (ITU, 2007[23]).
- **Wired (fixed line)** refers to a physical line connecting the subscriber to the telephone exchange. Typically, fixed-line networks refer to telephone networks, distinct from mobile networks (ITU, n.d.[24]).

REFERENCES

BSA (2017), *Cross-border data flows*, https://www.bsa.org/files/policy-filings/BSA_2017CrossBorderDataFlows.pdf. [7]

European Commission (n.d.), *Radio spectrum: the basis of wireless communications*, https://digital-strategy.ec.europa.eu/en/policies/radio-spectrum. [21]

European Commission (n.d.), *Tackling online disinformation*, https://digital-strategy.ec.europa.eu/en/policies/online-disinformation. [13]

European Commission (n.d.), *What is personal data?*, https://ec.europa.eu/info/law/law-topic/data-protection/reform/what-personal-data_en. [20]

Gates, N. (2021), *Building the GovStack approach to government*, https://digitalimpactalliance.org/building-the-govstack-approach-to-government/. [12]

I. (ed.) (2018), *Bridging the Digital Innovation Divide: A Toolkit for Strengthening ICT Centric Ecosystems*, International Telecommunication Union, Geneva, https://dx.doi.org/11.1002/pub/810fe584-en. [17]

ITU (2009), *Mobile applications reach new milestone: TechWatch Alert*, https://www.itu.int/net/itunews/issues/2009/06/04.aspx. [18]

ITU (2007), *Rethinking universal access*, https://www.itu.int/itunews/manager/display.asp?lang=en&year=2007&issue=07&ipage=universal-access&ext=html. [23]

ITU (2001), *Vocabulary of terms for wireless access*, https://www.itu.int/dms_pubrec/itu-r/rec/f/R-REC-F.1399-1-200105-I!!PDF-E.pdf. [6]

ITU (n.d.), *Glossary*, https://www.itu.int/osg/spu/publications/digitalife/docs/digital.life-glossary.pdf. [24]

ITU (n.d.), *Questions of general nature*, https://www.itu.int/net/ITU-R/terrestrial/faq/index.html#i001. [15]

OECD (2021), *Broadband Methodology*, https://www.oecd.org/sti/broadband/broadband-methodology.htm (accessed on 1 December 2021). [5]

OECD (2021), *Data portability, interoperability and digital platform competition*, http://oe.cd/dpic. [8]

OECD (2021), *Recommendation of the Council for Agile Regulatory Governance to Harness Innovation*, https://www.oecd.org/mcm/Recommendation-for-Agile-Regulatory-Governance-to-Harness-Innovation.pdf. [2]

OECD (2020), *A Roadmap Toward a Common Framework for Measuring the Digital Economy*, OECD, Paris, http://www.oecd.org/termsandconditions. (accessed on 22 February 2021). [9]

OECD (2019), *Going Digital: Shaping Policies, Improving Lives*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264312012-en. [4]

OECD (2019), "The road to 5G networks: Experience to date and future developments", *OECD Digital Economy Papers*, No. 284, OECD Publishing, Paris, https://dx.doi.org/10.1787/2f880843-en. [1]

OECD (2017), *The Next Production Revolution: Implications for Governments and Business*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264271036-en. [14]

OECD (n.d.), *Glossary of Statistical Terms*, https://stats.oecd.org/glossary/detail.asp?ID=6876. [19]

OECD (n.d.), *OECD Economics Department Working Papers*, OECD Publishing, Paris, https://dx.doi.org/10.1787/18151973. [16]

Oxford Dictionary (2019), *Oxford Learner's Dictionaries*, https://www.oxfordlearnersdictionaries.com/definition/english/api. [3]

Shivkumar, O. and K. Nordhaug (2021), *How to bring digital inclusion to the people who need it most*, https://www.weforum.org/agenda/2021/08/4-reasons-you-should-care-about-digital-public-infrastructure. [11]

UNSG (2020), *United Nations Secretary-General's Roadmap for Digitial Cooperation*, https://www.un.org/en/content/digital-cooperation-roadmap/assets/pdf/Roadmap_for_Digital_Cooperation_EN.pdf. [10]

UNSGSA (2020), *Briefing on Regulatory Sandboxes*, https://www.unsgsa.org/sites/default/files/resources-files/2020-09/Fintech_Briefing_Paper_Regulatory_Sandboxes.pdf. [22]

Abbreviations and acronyms

AFD	French Development Agency *Agence française de développement*
AI	Artificial intelligence
API	Application programming interface
AUC	African Union Commission
A4AI	Alliance for Affordable Internet
BEPS	Inclusive Framework on Base Erosion and Profit Shifting
BMZ	Federal Ministry of Economic Co-operation and Development (Germany) *Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung*
COVID-19	Coronavirus disease 2019
CRS	OECD Creditor Reporting System
CSO	Civil society organization
DAC	OECD Development Assistance Committee
DFI	Development finance institution
DGI	OECD Digital Government Index
DPG	Digital public good
DIAL	Digital Impact Alliance
DPD	EU Data Protection Directive
DPI	Digital public infrastructure
D4D	Digital for Development
EC	European Commission
EU	European Union
FCDO	Foreign, Commonwealth & Development Office (United Kingdom)
G7	Group of Seven
G20	Group of Twenty
GDP	Gross domestic product
GNI	Gross national income
GDPR	EU General Data Protection Regulation
ICT	Information and communication technology
ID4D	World Bank Identification for Development initiative
IEA	International Energy Agency
IFC	International Finance Corporation

ILO	International Labor Organization
INTERPOL	International Criminal Police Organization
ITU	International Telecommunication Union
JICA	Japan International Cooperation Agency
KOICA	Korea International Cooperation Agency
LAC	Latin America and Caribbean
LDC	Least developed country
LIC	Low-income country
MNE	Multinational enterprises
MIC	Middle-income country
MSME	Micro, small and medium-sized enterprise
NGO	Non-governmental organisation
ODA	Official development assistance
OECD	Organisation for Economic Co-operation and Development
PAYG	Pay-as-you-go
PPP	Public-private partnership
SDG	Sustainable Development Goal
SME	Small and medium-sized enterprise
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USD	United States dollar
VAT	Value-added tax
WHO	World Health Organization
WTO	World Trade Organization



EXECUTIVE SUMMARY

GLOBAL DIGITAL TRANSFORMATION IS AT A TIPPING POINT

Fast-paced digital transformation is a strategic opportunity to accelerate progress towards development goals. Between 2019 and 2021, 800 million people came online for the first time – a historical jump driven by the need to work, learn and communicate during the COVID-19 pandemic lockdowns. Universal Internet coverage is a standalone target in the Sustainable Development Goals (SDGs), but the transformative power of digital technology is that it offers a gateway to job opportunities, improved government services and enhanced citizen engagement, and widens the global digital economy to include more people.

But developing countries are being left behind. Of the 2.9 billion people who are still offline, most live in developing countries. These populations either do not have Internet coverage or face barriers to use. Some 30% of Africa's isolated rural population may never be reachable with terrestrial fibre-optic networks in a cost-effective way and 19% of the population of sub-Saharan Africa still do not have access to mobile broadband. Closing the coverage gap is essential, but not sufficient: 43% of people with access to mobile broadband do not use it. Closing the usage gap must now be the focus.

Barriers to usage include a lack of access to basic enablers. In sub-Saharan Africa, 600 million people do not have electricity to power digital devices. The high costs of data and digital devices mean that the 10 least-affordable countries for 1GB of mobile data are all developing countries. Lack of digital literacy is the most frequently cited reason in developing countries for not using the internet. Women and girls in particular have lower access to technology and lower digital literacy than men and boys, and are concerned about safety online.

Alongside the coverage and usage gaps, managing digital transformation throws new policy challenges at governments. Most developing countries have limited social protection and struggle to transition the largely informal workforce to digital sectors. Economic policies are failing to capture the benefits of e-commerce or even encourage the take up of digital tools such as email or websites in the wider economy. Developing countries' limited resources also struggle to meet new regulatory demands and address highly specialised technical issues.

INCLUSIVE GLOBAL CO-OPERATION IS NEEDED TO MANAGE SHARED PROCESSES AND RISKS

Supranational rules must respect digital sovereignty – the power and authority of a

national government to make unfettered decisions affecting citizens and businesses within the digital domain. However, new risks arising from increasingly complex issues such as taxation of global digital companies, inter-dependent cybersecurity, privacy, and protection of cross-border data flows require harmonisation of governance frameworks across countries. Furthermore, only aligned national, regional and global efforts can counter the risks of digital tools being used to perpetrate human rights abuses, data leaks, cyber-attacks and the spread of disinformation within and across borders. And a common indirect risk among countries is the compounding of offline inequalities, which must be met with people-centred approaches.

To be successful, international standard-setting must recognise the varying digital and regulatory capacity levels of low- and middle-income countries. About 70% of the countries that adopted data protection laws since 2010 are low- and middle-income, but implementation proves difficult with few resources. Lack of implementation can lead to higher trading barriers and regimes that are unsuitable to the context. Developing countries must participate in digital trade discussions and help shape the rules that will underpin a growing part of their economies, but African countries account for only 6 of the 75 countries in negotiations on global rules on e-commerce at the World Trade Organisation.

DEVELOPMENT CO-OPERATION CAN TIP THE BALANCE TOWARDS A JUST DIGITAL TRANSFORMATION

As with the imperative to go green, the choices countries make now in terms of digital investment, infrastructure, regulations, policy and capacity will either lock in digital divides for decades to come or lay the foundations for a future of shared prosperity and well-being.

The global digital transition thus challenges development co-operation providers to adapt and ensure their actions contribute to digital transformations that are inclusive, advance sustainable and green development, and manage the risks and rewards of digital technologies. As stakeholders in these choices, they can also raise questions of rights, power, ownership, protection, fairness and equality that must be addressed to tip the balance towards a just digital transformation.

Leveraging their resources and relationships, official development actors can create partnerships to maximise the returns on limited financing for digital investment, and help low- and middle-income countries shape the global standards they are expected to meet. Development actors must also recognise that digital interventions can have negative consequences and evaluate whether their decisions and interventions use digital tools to maximum advantage.

Overall, development co-operation can tip the balance towards a just digital transformation by:

- Ensuring policies and partnerships power an inclusive digital future
- Supporting national and regional building blocks for sustainable digital ecosystems
- Making digital financing fit for purpose with greater scale, innovation and flexibility

Just nine years remain to regain ground lost in the COVID-19 crisis and achieve the Sustainable Development Goals (SDGs). Development actors have a role to ensure that digital transformation serves those aims.

Infographic 1. Development co-operation is key to shaping a just digital transformation

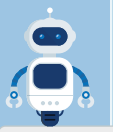
GLOBAL DIGITAL TRANSFORMATION: A DEVELOPMENT CHALLENGE



OPPORTUNITIES

Digital technology can help to:

- Open new economic opportunities
- Improve access to education, healthcare and other services
- Promote transparency and offer platforms for discussion and dissent



Over **90%** covered by mobile broadband, but close to **40%** of people are offline

USD 1 trillion in gross domestic product has been lost in **32** developing countries due to the gender gap in internet use

RISKS

Digital transformation can increase risks of:

- Human rights violations
- Cyber-attacks and data misuse
- Online disinformation
- Exacerbating gender inequality



The ten least affordable countries for **1GB** of data were developing countries in **2020**



In least developed countries, only **27%** of people used the internet in **2021.** In Africa, that figure was **33%** compared to **87%** in Europe

Some graphics adapted from ©Freepik

DEVELOPMENT CO-OPERATION CAN HELP ACHIEVE **A JUST DIGITAL TRANSFORMATION FOR ALL** BY:

- → Ensuring policies and partnerships power an inclusive digital future
- → Supporting national and regional building blocks for sustainable digital ecosystems
- → Making digital financing fit for purpose with greater scale, innovation and flexibility



OVERVIEW: POWERING AN INCLUSIVE DIGITAL FUTURE

Eleanor Carey, Development Co-operation Directorate, OECD
Ida Mc Donnell, Development Co-operation Directorate, OECD

ABSTRACT

Digital transformation is taking place around the world at different speeds, in countries with vastly different levels of resources, regulation and public engagement. This overview, enriched by evidence and insights from across the report, highlights that digital realities in developing countries require bespoke responses. Gathering evidence from countries at different stages of digital transformation, this chapter presents success factors for building inclusive digital ecosystems. It calls for global co-operation to tackle universal risks and lays out a development co-operation framework to power an inclusive digital future.

The value of digital transformation is that it enables well-being and progress. Digital technology brings governments and citizens closer together, opens new economic opportunities, improves access to education, healthcare and other services, promotes transparency, and offers platforms for discussion and dissent. Internet connectivity is now a necessity and development goal. But technological advances rippling across all aspects of human activity often affect societies before they can determine how to manage the benefits and risks. Every technological revolution gives humanity new tools – farming, mechanisation, electricity and now computers – and each time humanity has to decide for what and whose benefit those tools should be used, and how to manage the changes they bring.

In many ways, digital transformation is at a tipping point, with stark differences between wealthy and developing nations. Digital technologies can help achieve development goals, but persistent digital divides hamper development for many and leave already marginalised populations further behind. Digitalisation is proceeding at different speeds, and is unevenly resourced and regulated. Just as with the other great transition – the imperative to Go Green – that all countries are challenged to make, choices made now will either lock in digital divides for decades or enable a future of shared prosperity and well-being.

A confluence of factors makes this a strategic moment for development actors to step in. The COVID-19 crisis accelerated adoption of digital solutions worldwide, especially in developing countries, prompting a spike in demand for international support, knowledge sharing and collaboration. Digital technology is on the cusp of a new phase, with evolutions in 5G, artificial intelligence (AI), robotics and the Internet of Things. International standard setting and digital safeguarding is picking up pace, though largely without the participation of the world's least developed countries. Only by thinking and working beyond silos, designing holistic digital strategies for sustainable impact, and applying a people-centred approach to their policies and investments will international development actors be able to deliver on the mission of an inclusive and just digital future.

Therefore, the *2021 Development Co-operation Report* focuses on the fundamental question: How can development co-operation actors help tip the balance towards a just digital transformation for greener, safer and more sustainable development? Many dub the digital transformation the "fourth industrial revolution" and, like its predecessors, it presents the global community with decisions to make. The development co-operation community must seize this moment, look forward and ask how it can best play its role to build an inclusive digital future.

Digital realities in developing countries require bespoke responses

Going digital raises common and complex challenges for all countries. The OECD's Going Digital Integrated Policy Framework recognises that digital transformation impacts and is impacted by interrelated policy domains and that trade-offs must be carefully managed (see Chapter 9). Both OECD and non-member countries assessed against this framework score low in innovation, public spending on active labour market policies, and information and communication technology (ICT) goods and services trade (OECD, 2021[1]). The 2019 OECD Digital Government Index also found that governments in most OECD countries did not yet have user-driven policies and inclusive mechanisms in place to design and deliver services for citizens (see Chapter 11).

While every country faces many of the same complex challenges, there is a stark digital divide between advanced economies and low- and middle-income countries. Sambuli (see In My View in Part I) highlights the complexity of digital divides to be tackled: "Digital divides go beyond the divide between the connected and unconnected; they also manifest among the connected in both developed and developing nations. Digital divides take on access, skills, language and gendered dimensions, to name a few. Digital transformation agendas must consider this diversity to ensure that advances in digitalisation do not widen existing inequalities and inadvertently create new ones."

"Digital divides go beyond the divide between the connected and unconnected; they also manifest among the connected in both developed and developing nations. Digital divides take on access, skills, language and gendered dimensions, to name a few. Digital transformation agendas must consider this diversity to ensure that advances in digitalisation do not widen existing inequalities and inadvertently create new ones."

Nanjira Sambuli, Fellow, Carnegie Endowment for International Peace

Figure 1 provides evidence on low- and middle-income countries in relation to the policy dimensions of the Going Digital Integrated Policy Framework. The evidence suggests that developing countries face higher hurdles from the start in terms of their regulatory and policy-making environments, making their digital transformation more daunting to manage. Developing countries have lower levels of access to digital technologies and their populations face

Figure 1. Developing countries face challenges across the OECD's Integrated Framework for Digital Transformation

INTEGRATED FRAMEWORK POLICY DIMENSIONS	KEY FACTS FROM LOW- AND MIDDLE-INCOME COUNTRIES
ACCESS	• Africa's fibre optic network was **1.02 million kilometres (km)** in **2019**. Terrestrial fibre optic networks may never be able to reach about **30%** of Africa's isolated rural population. • In LDCs, **35%** of secondary schools have Internet access. • Investment of at least **USD 20 billion** a year is needed to bring electricity to the **600 million** people in sub-Saharan Africa currently with none by **2030**. • Mechanisms to extend access such as Universal Service Funds have a mixed track record.
USE	• In LDCs, only **27%** of people use the Internet. • The ten least affordable countries for **1 Gigabyte** (GB) of data were developing countries in **2020**. In the Central African Republic, **1 GB** of data costs **24.4%** of the gross national income per capita, equivalent to about **USD 10.** • In LDCs, a smartphone costs more than half the average monthly income. • Lack of digital literacy is the most frequently cited reason in developing countries for not using the Internet. • In low-income economies, more than a third of people aged **15** and above do not have an official ID; **44%** of women and **28%** of men do not have an ID.
INNOVATION	• In **2020**, just **14** countries in Africa achieved a high score on the E-Government Development Index. Digital transformation in most countries is concentrated instead in the FinTech sector. • Sub-Saharan African countries rank at the bottom for nearly every measure on the Artificial Intelligence Index. • Of the **20** economies with the lowest values on the 2020 Business-to-Consumer E-commerce Index, **18** are LDCs.
JOBS	• In some countries in the Latin America and Caribbean (LAC) region, the gap between small and large companies that own their own website is more than **30** percentage points. • **Two** out of **ten** jobs are at high risk of automation in LAC, and automation may substantially change another **four** in **ten**. Jobs in manual labour-intensive sectors in Africa, such as mining, are also at risk. • Telecom companies in **43** African countries accounted for just **270 000** full-time workers in **2019**, yet every year between now and **2030**, **29 million** young people will reach working age on the continent. The **20** leading start-ups had fewer than **20 000** employees. • In low-income countries, **92.1%** of employed women and **87.5%** of men are in informal employment. Digital technology can exacerbate informality and lead to greater precariousness for workers.
SOCIETY	• Social protection systems in developing countries struggle to adequately support upskilling or transition of workers into digital sectors. • In **2019**, **53.6 million** metric tonnes of e-waste were generated, and an estimated **7-20%** was shipped illegally to low-income countries for processing.
TRUST	• Though **28 countries** in Africa have personal data protection legislation, regulatory authorities generally have limited resources: The median budget for data protection authorities in non-OECD countries in **2018** was **USD 500 000** while in OECD countries it was **USD 6 million**. • While cybercrime cost Africa **USD 3.5 billion** in **2017**, just one in five African countries has a legal framework for cybersecurity. Only **11** have adopted laws on cybercrime. • The longest Internet shutdown by a government on record is in Ethiopia's Tigray region.
MARKET OPENNESS	• Only **33** of the **54** countries in Africa have formal e-transaction legislation. • Only **6** of the **75** countries in negotiations on global rules on e-commerce at the World Trade Organization are African countries. • Though value added tax provides nearly **30%** of government revenue in developing regions, most African countries are losing out by not updating rules to take account of e-commerce.

Icons © The Noun Project

Source: Authors' compilation from chapters and case studies in the report.

significant barriers to use. They are further behind in their capacity to harness digital technology to offer public services online, take advantage of AI, put strong cybersecurity measures in place, open new economic opportunities through e-commerce, or reform their tax systems to capture revenue created by digital trade. They also grapple with the implications of digital transformation on both formal and informal labour markets, and on economic models that rely on natural resources.

Countries take the lead on their digital journeys, with common factors for success

Each country must chart its own digital transformation journey to ensure it meets needs and matches the national digital reality and readiness. The COVID-19 crisis helped fast-track digital transformation in low- and middle-income countries, albeit to different degrees (see Chapters 1, 6 and 22). Success factors for determining policy priorities, managing national digital processes, and becoming a digital government are emerging.

Success factors for setting priorities and managing the digital transformation process

- Leadership from a central body such as a president's or prime minister's office helps identify needs and strengths, build support and manage trade-offs. Thanks to high-level leadership in South Africa, the president's plan to accelerate economic development incorporated recommendations for the digital economy (see Chapter 7).
- Political backing helps turn strategies into reality, generating the required underpinning finance, skills, and long-term and integrated approach to building digital systems. Based on its strategy process, Ethiopia is establishing a venture capital fund for tech start-ups (see Chapter 7).
- A clear vision of how digital tools advance the country's wider ambitions can guide strategic decisions. Bangladesh uses digital technology as a pro-poor tool and a driver to achieve middle-income status ahead of its target date (see Chapter 7).
- Prioritising voices of those most likely to be disadvantaged by digital transformation strengthens the strategy process. The government of Dominica pledged that its digital plan will reflect the views of all Dominicans (see Chapter 6).
- Quick gains relevant to local context can indicate the opportunities. A national strategy for digitalisation in Bolivia, where only 5% of jobs are at high risk of automation, would differ from that of Uruguay, where 29% of jobs are at high risk (see Chapter 1). For many developing countries, quick gains commonly relate to how digital technology might improve efficiency in agricultural value chains or benefit informal workers.
- A whole-of-government approach can manage sectoral interdependencies in policy areas such as trade, taxation, social protection, energy and environment, and support for new business models. The government of Moldova, for example, initially focused its digital strategy on the ICT sector but is now making digital transformation a national priority across sectors (see Chapter 6).
- Partnering with the private sector helps manage network quality; pricing of digital infrastructure, data and digital devices; and how and where digital technologies are deployed. Tanzania's Micro Mobile Network Operator license encourages cellular service for small populations in rural areas (see Chapter 22).

Success factors for becoming a digital government

- Build capacity to regulate specialised technical areas. The advent of 5G is raising issues regarding spectrum allocation that governments are being called to address. Mexico's Federal Telecommunications and Broadcasting Law of 2014 introduced a "social use" concession for spectrum

assignments[1] reserved for community, educational, cultural or scientific purposes (see Chapter 22).

- Align government processes, such as procurement, to remove barriers to putting digital solutions in place. The Ministry of Health of Sri Lanka implemented a digital COVID-19 surveillance system based on DHIS2, a free and open-source health management information system, because the system was compatible with procurement procedures, among other government processes (see Chapter 26).
- Support e-government capacity to expand access to services such as social protection payments. E-formalisation processes can facilitate increased protection and better conditions for workers (see Chapter 18). Digitalisation of tax and trade processes can improve revenue generation (see Chapters 14 and 15). Simply digitalising a service, however, does not necessarily mean more people are reached or outcomes improved. The redesign of Colombia's digital citizen portal shows how designing digital services with a user-centred approach can improve user experience and engagement (see Chapter 13).
- Keep pace with the changing technology landscape using context-specific approaches to agile policy making (Jeník and Duff, 2020[2]). Working towards agreed principles can guide regulation and technical standards.

Global co-operation should tackle universal risks

The proliferation of digital technologies relies on global connectedness and brings benefits and risks that transcend national borders. The physical infrastructure underpinning digital transformation (e.g. cables, data storage) often spans multiple countries. Cross-border data flows and increasingly complex issues such as taxation, cybersecurity, and privacy and personal data protection require harmonisation of governance frameworks. While each country must chart its own digital path, shared norms and rules for governing digital technologies are needed. These must remove barriers to market-driven investment while leaving space to correct for market failures that lead to digital disadvantage. They also must set a high bar for the safety of data and of the individuals and groups such data represent. Without meaningful representation and voice in setting standards, many low- and middle-income countries are relegated to the position of standard-takers, pushed to adopt frameworks inappropriate for their circumstances and implementation capacity. But in many global forums related to digital governance, developing countries either do not have the capacity to engage or do not see the content as relevant.

Because digital transformation must reconcile competing demands and stakeholders, it could spearhead inclusive approaches to global governance. Global technology governance could pioneer multi-stakeholder models that involve the

Cross-border data flows and increasingly complex issues such as taxation, cybersecurity, and privacy and personal data protection require harmonisation of governance frameworks. While each country must chart its own digital path, shared norms and rules for governing digital technologies are needed.

private sector and civil society, offering an alternative to traditional and typically inter-governmental multilateralism (see In My View by Sambuli in Part I). Demand is building for digital sovereignty – the power and authority of a national government to make unfettered decisions affecting citizens and businesses within the digital domain. Global processes will need to balance this pressure against misinterpretations of sovereignty, for example in data localism that could impede the development of a global digital economy (Cory, 2017[3]).

Upholding human rights and democratic values

New legal and regulatory approaches are required to uphold human rights and limit digital authoritarianism. The same technologies that offer the promise of more connected and prosperous societies also carry the potential to harm individual rights and collective freedoms. The UN Human Rights Council has noted with deep concern that in many countries, groups that uphold human rights face threats and harassment, and pointed to the use of technological tools developed by the private surveillance industry to hack into devices or otherwise violate individuals' right to privacy (UN, 2021[4]).

Digital tools are used to repress through mass surveillance, citizen profiling and targeted disinformation. Evidence is also mounting that social media platforms push users towards extremist content and exacerbate political and social polarisation. Digital technology can provide civic space, particularly when other outlets for civic engagement and expression in the offline world are closed. These spaces can be fragile. A recent study across 10 African countries found 115 examples of governments closing online civic space but only 65 examples of citizens opening democratic spaces online over the same period (see Chapter 8). In the first five months of 2021, at least 50 Internet shutdowns were recorded in 21 countries (see Chapter 10). Internet shutdowns not only curtail freedom of speech, but can disrupt economic activity, the delivery of public services and access to the digital tools on which societies are increasingly reliant.

Protecting data, strengthening cybersecurity and limiting disinformation

Digital technologies, both in private hands and deployed by governments, pose significant and far-reaching security challenges. The business models of social media platforms gather and leverage personal data to predict and shape online behaviour. Labour market platforms allow businesses to monetise workers' data. Many governments increasingly deliver services based on digital identification systems that amass sensitive personal data. Data leaks and revelations about the sale of data without consent, and the use of data to monitor and manipulate societal groups fuel public pressure for more sophisticated data protection, privacy and security.

High-income countries' long-established data protection regimes are racing to catch up with the evolving risks. With fewer resources, many low- and middle-income countries struggle to find an appropriate regulatory model and establish a functioning regime. Fewer than half of least-developed countries (LDCs) have data- or consumer-protection laws that cover online activities (see Chapter 3). This contributes to low levels of public trust in digital technologies and limits data sharing, needed to advance sustainable development. Moreover, for many low- and middle-income countries, strengthening cybersecurity became an area of focus only recently. Their adoption of standards and regulations is lower than for data protection, and resources dedicated are minimal.

Digital technology can enable new pathways for disinformation, that is, harmful, false or manipulated information created, disseminated and amplified for political, ideological or commercial motives (see In My View by Khan in Part II). In 2020,

130 countries and official observers to the UN called for action to counter the spread of disinformation, and international organisations were called on to increase technical assistance for regulatory frameworks and policies to support appropriate disinformation responses (Broadband Commission for Sustainable Development, 2020[5]). The deleterious effects of misinformation and disinformation online, particularly related to health issues, became clear during the COVID-19 pandemic (Linden et al., 2021[6]; WHO, 2021[7]).

Tackling inequalities, and making digital work for women

Digital inequalities mirror and magnify offline inequalities, particularly for women and girls. For example, there is a growing body of evidence that biases in algorithmic decision making can exacerbate racial and gender inequalities (UNESCO, 2020[8]; Turner Lee, Resnick and Barton, 2019[9]; Buolamwini and Gebru, 2018[10]). The need for locally relevant training data and analytical approaches that reflect the lives of all social groups is only beginning to be addressed (Open for Good, n.d.[11]). Better understanding of the intricacies of the gender digital divide can shed light on how digital transformation may worsen other inequalities and inform strategies to make digital work for all.

Women across the world face similar barriers to inclusion offline and online. Recommendations for OECD countries could equally apply to developing countries, including leveraging digital technologies, recognising women's heightened safety and security concerns, and adopting policies that build trust in digital systems, which can increase women's labour market participation and entrepreneurship (2018[12]). However, while barriers may be similar, the magnitude of the gender digital divide in developing countries is much greater.

Since the beginning of the COVID-19 pandemic, digital technology enabled millions of women to open their first bank accounts online, improving their financing inclusion (see Chapter 28). And yet women and girls in many parts of the world lack access to the digital world or find that digital products and services do not meet their needs. The cost of the gender gap is staggering. Over the last decade, it is estimated that USD 1 trillion in gross domestic product has been lost in 32 developing countries due to the gender gap in Internet use (Alliance for Affordable Internet, 2021[13]). Nearly USD 300 billion could be added to the value of e-commerce markets in Africa and Southeast Asia by 2030 if gender gaps were closed (see Chapter 5). Development actors are increasingly focusing on mechanisms to identify gender gaps and ensure that digital transformations are deliberately inclusive of women (Box 1).

Narrowing the gender digital divide can open opportunities for women and girls across a range of development outcomes. It is therefore an urgent task, calling for targeted action. The UN Secretary-General's Roadmap for Digital Cooperation includes commitments and calls to action to ensure women and girls are full participants in and beneficiaries of digital transformation (UN, 2020[14]). The new UN Principles for Responsible Digital Payments specifically call for prioritising women.

A development co-operation framework to power an inclusive digital future

Just nine years remain to regain ground lost in the COVID-19 crisis and achieve the Sustainable Development Goals (SDGs). Development actors have a crucial role to ensure that digital transformation serves those goals. Beyond the need to support and invest in universal Internet connectivity, digital public infrastructure and public goods, demand is growing for peer-to-peer exchange of knowledge and expertise between specialised bodies relating to digital transformation (see Chapters 7, 12 and 13). Development actors must also confront the fact that digitalisation risks reinforcing vulnerabilities rather than being a game

BOX 1. BETTER EVIDENCE CAN TARGET ACTIONS FOR DIGITAL INCLUSION OF WOMEN AND GIRLS

To address digital gender gaps, it is essential to research the market barriers and other obstacles to women's inclusion in digital economies.

Gender-sensitive diagnostics help design policies to achieve tangible change for women and girls. Measuring the inclusion of women in digital economies can pinpoint gender gaps in access to finance, business ownership, and skills and financial literacy. The United Nations Capital Development Fund's Inclusive Digital Economy Scorecard and a separate tool focus on women's inclusion across various dimensions. In the 23 developing countries that used the two measures to date, countries with high aggregate scores in innovation tended to score low for women's inclusiveness in innovation. Use of the tool in Papua New Guinea informed targeted interventions to increase the number of women-led firms and women's access to finance and to financial products that meet their needs (see Chapter 27).

Similarly, by focusing on the granular measure of "meaningful connectivity", the Alliance for Affordable Internet diagnosed wider gender gaps than those shown in traditional measures of the Internet. In Colombia, for instance, the gender gap is 0.9% according to the traditional measure but 16.9% under the meaningful connectivity measure; the more targeted measure shows the gender gap is 14.9% in Ghana rather than 5.8% and to 2.6% in Indonesia rather than -0.1%, respectively (see Chapter 23).

Data should reflect the lives of women and girls. All diagnostics and tools lack data that accurately reflect the realities lived by women and girls. More sex-disaggregated and gender-sensitive data would improve the quality of insights for decision making (see Chapters 4, 23 and 27).

changer for development unless power imbalances and other systemic drivers of exclusion, inequalities and poverty are addressed.

Development policy makers need to acknowledge that not all digital interventions lead to positive outcomes. Strategies, safeguards and risk assessments should anticipate and manage for unintended negative consequences. For example, concerns that the biometric ID system in Afghanistan might be used to track and target citizens have prompted calls for international development to be much more cautious about future-proofing the digital solutions it supports (Chandran, 2021[15]). Development agencies' own data-sharing practices have drawn criticism for putting persecuted groups at risk (Human Rights Watch, 2021[16]). Given the sensitivity of data contained in digital systems and vulnerabilities of the populations they serve, development co-operation agencies will need to incorporate data protection and other safeguards into all decisions going forward.

Beyond the need to support and invest in universal Internet connectivity, digital public infrastructure and public goods, demand is growing for peer-to-peer exchange of knowledge and expertise between specialised bodies relating to digital transformation.

Internal processes of development co-operation actors must also evolve to be fit

for a digital age. Feasibility assessments and approaches to measuring impact, and project and programme delivery that worked in the analogue age may not be sufficiently flexible in a digital environment. Financing, procurement and legal norms based on proprietary ownership, for instance, can be unsuited to supporting digital public goods, which are in common ownership. Development co-operation actors must also find new ways to work together. Lack of interoperability is a major pitfall of uncoordinated development co-operation, resulting in missed opportunities for greater impact such as not being able to use health data locked in digital silos for better health outcomes (see Chapters 25, 31 and 34), which also wastes resources due to duplication and can create digital stranded assets.

The recommendations for ways forward for development co-operation by contributors in Parts 1 to 4 of this report focus on three interconnected priorities. They are for development co-operation actors to: (1) ensure that policies and partnerships power an inclusive digital future; (2) focus on national and regional building blocks for sustainable digital ecosystems; and (3) make digital financing fit for purpose with greater scale, innovation and flexibility.

Ensure that policies and partnerships power an inclusive digital future

Leaders of international development agencies recognise the need for a new generation of strategies for digital transformation and the need to support partner countries to manage this transition responsibly and sustainably. Twelve DAC members have digital-for-development strategies and a further six mention digitalisation as a priority in their overarching development co-operation policies (see Chapter 33). A striking feature in recent strategies is a shift in focus towards inclusion, rights, gender and place-based divides, online civic space, policy and regulatory capacity building, and increasing access and affordability.

Some development agencies pursue digital-by-default[2] across their portfolios, focusing on digital infrastructure and integrating digitalisation across sectors. A few larger development agencies and finance institutes invest in hard digital infrastructure, often through public private partnerships (e.g. IADB, WBG, and bilateral development finance institutes) (see Chapter 40). Meanwhile, the transfer and adoption of technology (e.g. FinTech and education technology) continues to be important, but with greater awareness of good practices in interoperability, scale, and the added value of harmonising tools – even if fragmentation and siloed digital solutions remain problematic.

Impact is greater when official development assistance is co-ordinated, harmonised (with a focus on comparative advantage), aligned with partner country strategies, and tailored to country context and needs (see Chapter 7). A constraint on the sustainability and effectiveness of development projects is that they tend to be short-term, fragmented and duplicative, while partner countries need predictable, long-term engagement to build strong digital systems that are sustainable and interoperable (see also Chapter 25). Many development co-operation providers adhere to the Principles for Digital Development, which offer a framework to be applied in development programming. International principles for effective development co-operation (OECD, 2008[17]) are particularly relevant but have yet to be applied explicitly in digital strategies. International digital alliances, hubs and partnerships seem to be gaining ground, however, showing increased commitment to join forces for greater impact and effectiveness.[3] These alliances also encourage peer exchange and knowledge sharing, which can increase digital literacy among less experienced providers and improve the quality of programmes.

At the same time development co-operation providers can work with diverse and new stakeholders to encourage and uphold do-no-harm principles and human-centred digital transformation focused on driving development outcomes. While private technology companies lead digital technology development, development actors can work with governments, civil society organisations and other stakeholders to influence the design of user-centred digital technologies thus shaping their relevance and use beyond commercial gain (see Chapter 32).

Internationally, DAC members and other development actors are well placed to advocate for the inclusion of low- and middle-income countries in global negotiations and normative processes that design the rules and values underpinning the digital future. Capacity development that prepares countries to participate effectively in these processes make a real difference as shown by the e-Trade for All Initiative (see Chapter 3). OECD countries are at the frontier of specialised regulatory networks and forums that shape the global digital economy. For example, the OECD was instrumental in designing and delivering an agreement between 136 countries to address the tax challenges of the digital economy (OECD, n.d.[18]). In these arenas, development co-operation policy makers can actively promote policy coherence for development that considers decisions' negative and positive spill-overs on developing countries and those being left behind.

A checklist of critical actions for development co-operation providers to ensure policies and partnerships power an inclusive digital future can be found in Figure 2.

Support national and regional building blocks for sustainable digital ecosystems

Each country is at a different stage on its digital journey and the level and nature of use of digital technologies vary. But there are some basic building blocks that all country digital systems need. Partnership and dialogue with partner governments

Figure 2. Ensure that policies and partnerships build an inclusive digital future

Checklist for digital policies and partnerships

- ✓ Commit to holistic digitalisation strategies for sustainable impact, considering opportunities to support enabling policy environments, digital infrastructure and cross-sector digital solutions.
- ✓ Build awareness, high-level buy-in, digital literacy and skills within the development co-operation system to deliver on the strategy.
- ✓ Participate in synergistic alliances for greater efficiency and effectiveness, with shared principles, good practices and knowledge sharing, with each partner playing to their comparative advantage.
- ✓ Promote safeguards in digital systems including data protection, and checks and balances for open civic space and democratic freedoms.
- ✓ Champion inclusive international dialogue on digital norms and governance; and systematically include digital development in the policy coherence for development agenda.

Source: Authors' illustration.

should support nationally led priorities for digital transformation, use the outcomes of country-driven analytical processes to align in-country programmes and funding, and help to elaborate context-specific regulatory environments.

Key enablers are connectivity, access to energy, and capacity among governments and citizens to access, use and manage digital tools (see Chapter 25). Some platforms – national ID, data and payment exchange systems, for instance – form the digital public infrastructure (DPI) that countries require to function in the digital world. These can be provided through proprietary solutions or digital public goods (DPGs). DPGs offer a high degree of interoperability and can underpin digital sovereignty, but they require local capacity for ongoing management and maintenance, and financing and technical support over time are a challenge (see Chapter 26). With appropriate data protection mechanisms in place, these foundations can enable a local digital ecosystem to flourish. New innovations that could emerge include business models not based on advertising; platforms that enhance workers' collective rights rather than data-capture used by many gig work applications; and digitally enabled business models to overcome constraints such as lack of energy access.

Connectivity continues to be a challenge and requires focus in developing countries. Almost 3 billion people have never used the Internet, and 96% of those live in developing countries (see Chapter 22). In 2020, all but 6% of the world's population had mobile broadband coverage. Yet, as much as 19% of the population in sub-Saharan Africa, still does not have access to mobile broadband (see Chapter 4). Last mile connectivity is achievable when public and private actors work together, for example through authorising or discounting licenses for rural areas, allocating spectrum frequencies for social use, pursuing public-private partnerships to extend physical infrastructure, and tax incentives that reduce risk for new service providers to enter the market. Where wireless, wired and emerging solutions exist, they must be assessed against affordability, usage, financial viability, structure and sustainability criteria to address these barriers to digital inclusion (see Chapter 22).

In addition to closing the connectivity gap, closing the usage gap is now a pressing issue. In 2020, 43% of people covered by mobile broadband did not use it (see Chapter 4). While the cost of data has come down in many areas, LDCs are the most expensive places in the world to use the Internet; affordability of data and devices remains a significant barrier. Within countries, rural communities are triply disadvantaged. Not only are they more likely to have poor connectivity, but higher poverty levels also mean that people are less able to pay for data services and digital devices. They also are less likely to have access to enablers such as energy supply. Lack of relevant content and concerns about safety and security add additional barriers.

Investing in more complete data and evidence on how digitalisation influences development would inform strategic targeting of where greatest impact can be achieved. There are data gaps, for example, on connectivity indicators such as network coverage and infrastructure assets to locate underserved populations. Data that looks below the level of country averages and focuses on disadvantaged groups (e.g. rural-urban and sex-disaggregated data), and subnational tracking of affordability would also be helpful in the effort to provide last-mile connectivity and overcome usage barriers (see Chapter 22).

Regional organisations can add value to national efforts and help their members navigate digital transformation. Regional harmonisation can facilitate e-commerce and cross-border data sharing and help increase economic returns from digitalisation. When combined with a regional trade agreement, a 10% increase in digital connectivity boosts

growth in goods exports by 2.3% (see Chapter 15). The LAC and Africa regions each focus on creating digital single markets, which could make it more attractive to provide digital infrastructure, products, services and investments to countries that, as individual markets, would otherwise be considered too small or risky. However, regional standards must be in harmonisation with global standards to avoid entrenching barriers to data sharing or trade at the regional level.

A checklist of critical actions for international co-operation to support national and regional building blocks for sustainable digital ecosystems can be found in Figure 3.

Make digital financing fit for purpose with greater scale, innovation and flexibility

Countries are now challenged to undertake digital and green transitions, both of which depend on large, capital-intensive projects. For example, access to energy for all is both an SDG and a fundamental enabler of digital transformation. There is a global funding gap of USD 350 billion to "Ensure access to affordable, reliable, sustainable and modern energy for all" (SDG 7.1), with almost two-thirds of that investment required in sub-Saharan Africa (see Chapter 19). At the same time, it was calculated in 2020 that USD 428 billion is needed to connect the unconnected to the Internet by 2030 (ITU, 2020[19]), with USD 5 billion of this amount needed to connect schools (see Chapter 24). The cost to roll out 5G networks will be much higher (see Chapter 41). Total financing needed to implement DPI systems across low- and middle-income countries is estimated to be in the range of USD 30 billion (see Chapter 25).

The estimates in this report indicate that official development finance for digital

Figure 3. Support national and regional building blocks for sustainable digital ecosystems

Checklist to support digital building blocks

- ✓ Partner and align with national and regional bodies, paying attention to key enablers.
- ✓ Support the development and diffusion of digital public goods at the global, regional and national levels, including through more predictable and long-term financing.
- ✓ Focus technical assistance on country capabilities to design sustainable digital public infrastructure and policy-making and regulatory capacities, and partner with the private sector to overcome connectivity and usage barriers.
- ✓ Help close the usage gap with solutions that reduce the cost of data and digital devices, increase locally relevant content, and digital literacy and safety online.
- ✓ Incentivise the design and use of socially responsible, alternative digital technologies that help achieve development goals.
- ✓ Improve the evidence base and data on digital divides, and the relationship between digital transformation and the achievement of development goals.

Source: Authors' illustration.

activities more than tripled between 2015 and 2019, with providers investing a total of USD 18.6 billion and mobilising another USD 4.2 billion in private finance over the period. Yet even with this trend, resources will need to be scaled up to help countries meet mounting financing needs at a time when fiscal space is shrinking and debt burdens are growing in low- and middle-income countries, making mobilisation of domestic resources difficult (World Bank, 2021[20]).

The private sector is expected to bear most of the cost for energy access and increased connectivity, even if private investors see developing countries as risky (see Chapters 2, 41 and 42). There is also scope for greater transparency of private investment for digital in developing countries, which is not tracked and is thus difficult to estimate.

Domestic public finance, international grants and concessional lending also play a role in managing for market failures. They can catalyse commercial investment with early-stage investments for social impact. Innovative financing and procurement approaches can also de-risk markets to incentivise new entrants to supply digital technology products and accelerate digital transformation (see Chapter 25). Other examples include better management of operator fees to raise and spend resources more efficiently, and regulations that bring down costs, including through network sharing (see Chapter 22). In Algeria, Ghana, Kenya and Nigeria, for example, the public sector partnered with mobile telecom companies and telecommunications equipment providers to bring mobile broadband to rural populations (see Chapter 1).

Joint funding mechanisms with a mix of actors have potential to maximise the value of limited budgets with actors playing to their strengths. In 2021, the World Bank Digital Development Partnership's lending leverage reached USD 9 billion, or USD 950 loaned for every USD 1 of donor funding (see Chapter 41). The EU's Digital for Development hub seeks, among other things, to increase co-ordination and effectiveness, leveraging different financing and knowledge capacities (see Chapter 33).

An agreed method to measure finance for digital transformation will need to take into account different approaches to budgeting and allocation of digital activities across sectors. As a community, development co-operation providers will also need to work together to meet the growing demand from partner countries, and efficiently allocate resources where they are needed most, leveraging each other's' strengths and areas of expertise.

A checklist of critical actions for development co-operation to make digital finance fit for purpose with greater scale, innovation and flexibility can be found in Figure 4.

The contributions to this report provide further analysis and evidence underpinning and unpacking each of the actions for development co-operation detailed in the above checklists.

There is a narrow window to shape a just digital transformation

Since the onset of the COVID-19 crisis, reliance on digital tools gave the world a crash course in the importance of digital capacity for individuals and countries. The near 40% of the world not connected is missing out on these benefits. Until coverage and usage gaps are closed, the many digital divides that emerged will persist. As the fourth industrial revolution continues and technology advances, developing countries may be relegated to marginal roles at the extremes of the digital value chain, such as providing raw materials or acting as dumping grounds for digital waste.

Many contributions in this report emphasise the borderless nature of risks and threats that digital transformation brings. Containing them requires global co-operation to create new norms and standards that put

Figure 4. Make digital financing fit for purpose with greater scale, innovation and flexibility

Checklist for digital financing

- ✓ Support domestic resource mobilisation and policies to lower costs of access and use.
- ✓ Increase risk appetite, budgeting flexibility and predictability for innovative and mixed financing instruments that are fit for co-created and co-owned digital public goods.
- ✓ Broaden and diversify partners to increase scale and back innovation, including civil technology companies and local start-ups.
- ✓ Catalyse and complement private investment through public-private partnerships, blended finance, guarantees and complementary use of grants for capacity building.
- ✓ Support and align with harmonised procurement processes and standards that are fit for the acquisition of digital technology.
- ✓ Increase scale, efficiency and impact by pooling finance and expertise among providers to reduce fragmentation.
- ✓ Increase transparency of finance-for-digital with an agreed statistical method.

Source: Authors' illustration.

minimum safeguards in place and create a level playing field for all. The process of standard-setting is picking up pace, but the digital realities of developing countries and their capabilities to manage the impact of digital transformation are rarely considered. Their voices must be amplified to ensure that digital transformation delivers for those that have the most to gain.

The benefits that digital technology has brought to economies and societies are immense. Working towards an inclusive digital future could therefore be the multiplier needed to close persistent development divides, and create a better future for all.

NOTES

1. Frequency spectrum allocation refers to the process of determining the use of a given block of frequencies. Frequency spectrum assignment refers to the determination of who is allowed to utilise that block.
2. The Case Study from Germany presents the digital-by-default concept as systematically looking for opportunities for digital technologies in all projects and with all partners.
3. See for example DIAL (see Chapter 25), UNCTAD eTrade for all initiative (see Chapter 3), EU D4D Hub (see Chapter 33) and World Bank Digital Development Partnership (see Chapter 41).

REFERENCES

Alliance for Affordable Internet (2021), *The Costs of Exclusion: Economic Consequences of the Digital Gender Gap*, https://webfoundation.org/docs/2021/10/CoE-Report-English.pdf (accessed on 23 October 2021). [13]

Broadband Commission for Sustainable Development (2020), *Balancing Act: Countering Digital Disinformation While Respecting Freedom of Expression*, https://www.broadbandcommission.org/wp-content/uploads/2021/02/WGFoEDisinfo_Report2020.pdf (accessed on 23 October 2021). [5]

Chandran, R. (2021), *Afghan panic over digital footprints spurs call for data collection rethink*, https://www.reuters.com/article/afghanistan-conflict-tech-idUSL5N2OI06Y (accessed on 26 November 2021). [15]

Cory, N. (2017), *Cross-Border Data Flows: Where Are the Barriers, and What Do They Cost?*, Information Technology and Innovation Foundation, Washington, DC, https://www2.itif.org/2017-cross-border-data-flows.pdf (accessed on 26 October 2021). [3]

Friedler, S. and C. Wilson (eds.) (2018), "Gender shades: Intersectional accuracy disparities in commercial gender classification", *Proceedings of Machine Learning Research*, Vol. 81, pp. 1-15, https://proceedings.mlr.press/v81/buolamwini18a/buolamwini18a.pdf. [10]

Human Rights Watch (2021), *UN Shared Rohingya Data Without Informed Consent*, https://www.hrw.org/news/2021/06/15/un-shared-rohingya-data-without-informed-consent (accessed on 26 November 2021). [16]

ITU (2020), *Connecting Humanity: Assessing Investment Needs of Connecting Humanity to the Internet by 2030*, International Telecommunication Union (ITU), Geneva, https://www.itu.int/en/myitu/Publications/2020/08/31/08/38/Connecting-Humanity (accessed on 13 October 2021). [19]

Jeník, I. and S. Duff (2020), *How to Build a Regulatory Sandbox: A Practical Guide for Policy Makers*, Consultative Group to Assist the Poor, Washington, DC, https://www.cgap.org/sites/default/files/publications/2020_09_Technical_Guide_How_To_Build_Regulatory_Sandbox.pdf (accessed on 23 October 2021). [2]

Linden, S. et al. (2021), "Inoculating against COVID-19 vaccine misinformation", *The Lancet*, Vol. 33, p. 100772, http://dx.doi.org/10.1016/J.ECLINM.2021.100772. [6]

OECD (2021), *OECD Going Digital Toolkit*, https://goingdigital.oecd.org/en/ (accessed on 1 March 2021). [1]

OECD (2018), *Bridging the Digital Gender Divide: Include, Upskill, Innovate*, OECD Publishing, Paris, http://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf (accessed on 1 March 2021). [12]

OECD (2008), *Paris Declaration and Accra Agenda for Action*, https://www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm (accessed on 8 December 2021). [17]

OECD (n.d.), *Base erosion and profit shifting - OECD BEPS*, https://www.oecd.org/tax/beps/ (accessed on 9 March 2021). [18]

Open for Good (n.d.), *What if artificial intelligence could be trained on localized data that is accessible by everyone? (webpage)*, https://www.openforgood.info/. [11]

Turner Lee, N., P. Resnick and G. Barton (2019), *Algorithmic Bias Detection and Mitigation: Best Practices and Policies to Reduce Consumer Harms*, The Brookings Institution, Washington, DC, https://www.brookings.edu/research/algorithmic-bias-detection-and-mitigation-best-practices-and-policies-to-reduce-consumer-harms. [9]

UN (2021), *Right to privacy in the digital age*, A/HRC/RES/48/4, United Nations (UN) Human Rights Council, New York, https://undocs.org/A/HRC/RES/48/4 (accessed on 23 October 2021). [4]

UN (2020), *United Nations Secretary-General's Roadmap for Digital Cooperation*, https://www.un.org/en/content/digital-cooperation-roadmap/ (accessed on 30 March 2021). [14]

UNESCO (2020), *Artificial Intelligence and Gender Equality*, United Nations Educational, Scientific and Cultural Organization (UNESCO), Paris, https://en.unesco.org/system/files/artificial_intelligence_and_gender_equality.pdf. [8]

WHO (2021), *Fighting misinformation in the time of COVID-19, one click at a time*, https://www.who.int/news-room/feature-stories/detail/fighting-misinformation-in-the-time-of-covid-19-one-click-at-a-time (accessed on 23 October 2021). [7]

World Bank (2021), *International Debt Statistics 2022*, https://doi.org/10.1596/978-1-4648-1800-4. [20]


ALL AIR TIME CARDS
SOLD HERE &
ALL AIR TIME CARDS
SOLD HERE & PAY PHONE
PAY PHONE
MTN
MANGO
300
CELTEL
400
INTER.
250
MTN
TOP UP Here
celtel

Part I
Digital realities in low- and middle-income countries

IN MY VIEW: THE PROMISES, PITFALLS AND POTENTIAL OF GLOBAL TECHNOLOGY GOVERNANCE

Nanjira Sambuli, Fellow, Carnegie Endowment for International Peace

Digital technologies, given their rapid rate of diffusion through globalisation, have become "glocal" in nature. They are becoming a mainstay of society, with their adoption further accelerated by the COVID-19 pandemic. The policies and governance approaches shaping them make the forward march to (more) digitalisation a concern for developed and developing countries alike.

This so-called glocal aspect complicates the question of what comprises digital transformation as well as the role of the international community in delivering on the governance of these technologies. Digital divides, for instance, are a major concern. They go beyond the divide between the connected and unconnected, they also manifest among the connected in both developed and developing nations. Digital divides take on access, skills, language, and gendered dimensions, to name a few. Digital transformation agendas must consider this diversity to ensure that advances in digitalisation do not widen existing inequalities and inadvertently create new ones.

Similarly, tech governance is not only about establishing guardrails for emerging technologies such as artificial intelligence; it also addresses socio-economic, cultural and political complexities that predate, and are exacerbated by, digitalisation. Market solutions alone, however promising and exciting, will not solve these intractable and interconnected challenges. For instance, driving down costs of Internet access – from infrastructure to connecting devices – will not per se directly result in more people contributing to and benefiting from digitalisation. The demand-side drivers for adoption are laden with inequalities. To illustrate, adverse socio-cultural norms like gendered disparities in access to education and income opportunities are mirrored in who gains access and who can meaningfully use and even create digital technologies. Digital governance at the global and local levels must therefore advance coherent, sustainable policies and requisite investments in eliminating systemic barriers – not merely fixate on the technologies of the day.

The discourse around global governance must better accommodate the real digital transformation challenges of developing countries – they are, after all, home to the majority of the digitally unconnected and thus offer the greatest potential for growth and even untapped innovation for our digital futures. The policy and governance options put forth by the international community require a wider cross-sectoral and interdisciplinary frame to ensure simultaneous contextual, progressive

The discourse around global governance must better accommodate the real digital transformation challenges of developing countries – they are, after all, home to the majority of the digitally unconnected and thus offer the greatest potential for growth and even untapped innovation for our digital futures.

and sustainable digitalisation. All too often, digital development efforts are informed by a limited range of views, making it more difficult to realise the desired outcomes. At the same time, fascination with digital innovation frequently relegates governance considerations and undermines their critical role in driving appropriate digitalisation trajectories. This "innovation captivation" has given rise to technology solutionism – the assumption that development challenges can be solved through (more) technology – and leapfrogging, leading to enormous mistakes that risk widening inequalities. A sound example is investing in digital infrastructure without factoring in whether a developing country has the reliable and sustainable energy sources needed for the resulting connectivity. Similarly, digital education is not just a matter of flashy gadgets to power learning, but of sustained investment in well-trained teachers and a vast range of other context-specific enabling factors to ensure that the deployed digital tools can deliver on the desired outcomes. Leapfrogging may work in the context of bypassing legacy telecommunications infrastructure. But it can be an inappropriate and acontextual approach to investing in social dimensions such as health and access to education, and even in technical dimensions such as access to reliable and sustainable energy sources to power connectivity. The international community must rid itself of this myopia.

There have been growing calls within the international community for global technology governance and co-operation to embody inclusive multilateralism and multistakeholderism. This rhetoric reflects the significant role of all stakeholders – whether from governments, inter-governmental organisations, civil society, the private sector, academia or technical communities – in shaping legitimate governance outcomes. In practice, however, the mechanisms and underlying assumptions about how to effectively implement the twin governance approaches do not get sufficient attention. Before taking a decision, the international community must urgently consult developing nations, starting with the governments, as there are (unaddressed) concerns about their readiness to adopt the multistakeholder model, which may be unfamiliar (compared to the more established multilateralism) and frequently seen as both resource- and capacity-intensive and falling short in terms of producing enforceable actions. Additionally, the multistakeholder approach to global tech governance typically features, by default, well-resourced stakeholders across sectors. This unintentionally raises the costs of engagement for small and developing nations, local civil society, and smaller private sector players. If these issues are not addressed, they could undermine the principal of inclusion sought in international digital co-operation.

Much work lies ahead to advance digital development. Priority should be given to the intricacies of governance as the international community frames and shapes its tasks. Avoiding short-term, siloed and insufficiently informed action agendas is critical to ensuring that "glocal" technologies are governed in a way that maximises the benefits and minimises the harms of digitalisation.

01 DIGITAL DRIVERS OF INCLUSIVE GROWTH IN AFRICA AND LATIN AMERICA AND THE CARIBBEAN

Bakary Traoré, OECD Development Centre
Jose René Orozco, OECD Development Centre
Juan Velandia, OECD Development Centre

ABSTRACT

This chapter outlines the potential of digital transformation to remedy long-standing productivity gaps, structural development traps, and deliver inclusive growth. It highlights that new investments promise to expand connectivity in Africa, while digitalisation can help firms in Latin America and the Caribbean access new markets, create new goods and services, and produce more efficiently. The chapter points to the need to address the disparities in digital skills, Internet access and adoption of digital technologies that the COVID-19 pandemic exposed in both regions. It also details the economic benefits that could be realised from greater regional co-ordination of data regulatory frameworks and policies.

The authors would like to thank Federico Bonaglia, Sebastian Nieto Parra, Arthur Minsat and Juan Vazquez Zamora for their guidance and feedback, and Mariana Lopes for her help on the revision.

Key messages

- In 2019, about 58% of the population of Africa lived in an area covered by 4G networks, compared to just 23% in 2015. The number of African tech start-ups receiving backing grew six times faster than the global average between 2015 and 2019.
- In Latin America and the Caribbean, digital transformation can help countries overcome long-term challenges such as low productivity growth. 70% of the population uses the Internet regularly – almost twice the share as in 2010.
- In both regions, the real potential for large-scale job creation lies in the diffusion of digital innovations from large, digitally focused firms to the rest of the economy.
- Development co-operation on the digital agenda should help close spatial, social and productivity gaps. Stronger regional co-ordination in digital services, data regulation, security and trade remains key for boosting economic growth.

Digital transformation offers many opportunities to overcome structural challenges to development and support a more inclusive and productive society. It can help improve governance, enhance access to key public services, expand the way individuals collaborate, and enable people to benefit from both access to global markets and a greater diversity and choice of products. However, there are disparities within and across countries in terms of progress, access to and uptake in Africa and the Latin America and Caribbean (LAC) region.

While Africa's digital economy is expanding, technology needs to be diffused more widely to tackle the jobs crisis and translate into inclusive growth. Core digital sectors, while growing, will not be enough to provide job opportunities for the several million graduates entering the job market each year. The spillover effects of digital transformation into other sectors of the economy can help grow market opportunities, businesses and employment. But African countries will have to overcome gaps in access, notably for rural communities, the poor, women and other vulnerable populations.

In the LAC region, the rapid economic development that countries enjoyed at the beginning of this century has dissipated amid pernicious structural challenges. This setback to the region's middle-class ambitions dealt a blow both to economic progress and to trust in public authorities. To regain the lost momentum, LAC countries will have to address access as well as skills gaps so that technology gains translate into productivity gains; allow national economies to participate at higher levels of global value chains; and let more communities and sectors partake in the progress and benefits of digitalisation.

In both regions, the COVID-19 pandemic was the impetus to expand digital innovation through new ways of doing business and delivering public services. This highlighted what can be achieved in a relatively short time. It also exposed the risks of doing so inequitably and thus magnifying rather than solving existing problems. As digitalisation creates both opportunities and challenges that transcend borders, international co-operation and co-ordination and new partnerships are key to making the most of digital transformation at local, national and international levels.

Drawing on *Africa's Development Dynamics 2021* (AUC/OECD, 2021[1]), published by the African Union Commission (AUC) and the OECD, and the *Latin American Economic Outlook 2020: Digital Transformation for Building Back Better* (OECD et al., 2020[2]), this chapter outlines policy and operational gaps, traps and priorities to ensure digitalisation delivers inclusive growth in both regions.

Africa's digital economy is expanding, but more regional integration is needed

Prior to the COVID-19 crisis, digitalisation was well underway in Africa, with several headline successes and dynamic ecosystems.

To date, over 640 tech hubs are active across the continent, and 4 African cities rank among the top 100 cities worldwide for technology-enabled innovation in financial services (FinTech) ecosystems: Johannesburg and Cape Town in South Africa, Nairobi in Kenya, and Lagos in Nigeria (Findexable, 2019[3]). To trigger large-scale job creation and boost inclusive growth, however, policies need to bring digital solutions to the non-digital economy. This section outlines four policy areas at national, regional and continental levels to ensure digitalisation delivers inclusive growth in Africa.

Increased investments in infrastructure promise higher quality Internet connectivity

The quality of communication infrastructure networks has improved markedly over the past decade, and the outlook remains positive:

- In 2018, total financing for communication infrastructure networks in Africa was USD 7 billion, 80% of which came from private investors (Infrastructure Consortium for Africa, 2018[4]).

In 2019, about 58% of the population lived in an area covered by 4G networks, compared to just 23% in 2015 (Figure 1.1, Panel A). Capital expenditure by local telecom companies doubled between 2009 and 2019, and the returns on investments are solid (Figure 1.1, Panel B).

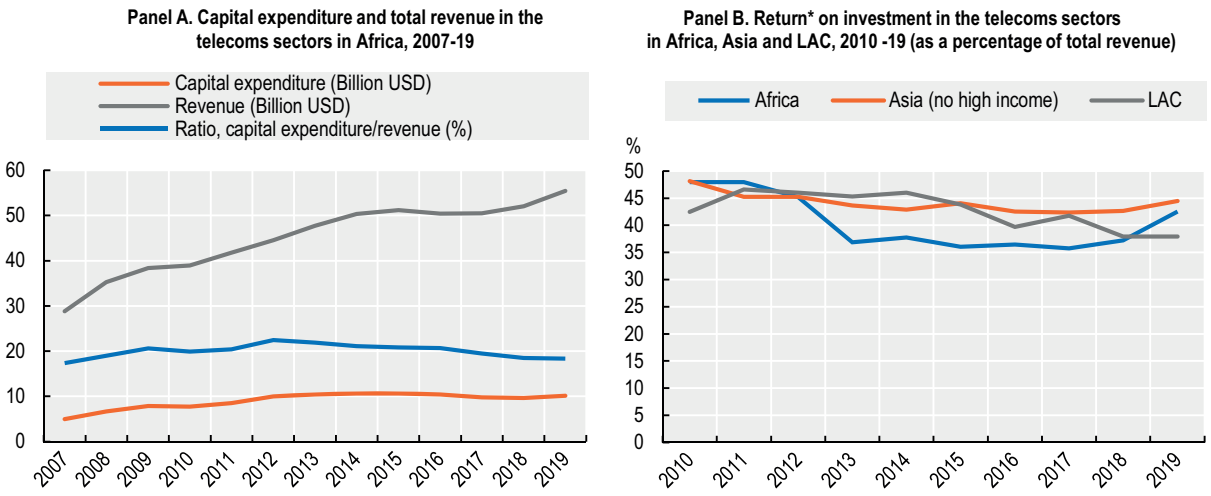
- Africa's fibre optic network extended from 278 056 km in 2009 to 1.02 million km in June 2019. The continent's total inbound international Internet bandwidth capacity increased by more than 50 times to reach 15.1 terabytes per second (Tbps) in December 2019, up from only 0.3 Tbps in 2009 (Hamilton Research, 2020[5]).
- New projects are expanding Africa's broadband capacity. In May 2020, for example, Facebook and a group of telecom companies – including China Mobile International, MTN GlobalConnect, Orange and Vodafone – began deploying 37 000 km of new subsea cables in the 2Africa project (AUC/OECD, 2021[1]). By 2024, this new broadband network alone should deliver more than the total combined Internet traffic capacity of all 26 subsea cables serving Africa today. In another project, Google announced in October 2021 that it will invest USD 1 billion in Africa over the next five years to ensure access to fast and cheaper Internet and support the continent's digital transformation, with a new subsea cable along Africa's Atlantic Ocean coastline, Equiano, to be completed by 2025.

These developments reflect growing demand for telecom and Internet services in almost all African countries. Annual revenues of Africa's telecom companies increased from USD 29 billion in 2007 to USD 55 billion in 2019. The introduction of competition in the mobile telecom services and other major regulatory reforms during the 2000s made this sub-sector attractive to new operators and improved the quality of service supplied (AUC/OECD, 2021[1]).

Digitalisation is driving FinTech and business expansion, but not yet driving jobs growth

Increased connectivity and use of digital technology have started to transform Africa's job markets, modernise banking, expand financial services to underserved populations, and unlock innovative business models for local small and medium-sized enterprises (SMEs). In 2019, 643 innovation hubs and incubators were active across the continent (AfriLabs and Briter Bridges, 2019[7]), driving a new generation of African entrepreneurs who are applying digital technologies to fast-growing business models. An example is Kobo360, a Nigerian start-up founded in 2017 that aims to revolutionise the country's domestic transport and logistics sector and link Nigeria's farmers with buyers all over the world. In August 2019, the company raised USD 30 million. Several other tech-enabled start-ups are improving the transport of goods in Africa, among them Lori Systems in Kenya, an all-in-one logistics platform, and

Figure 1.1. Evolution of communication infrastructure networks and return on investment in Africa, Asia, and Latin America and Caribbean region, 2007-19



Notes: Return on investment refers to earnings before interest, taxes, depreciation and amortisation. LAC: Latin American and Caribbean.
Source: AUC/OECD (2021[1]), Africa's Development Dynamics 2021: Digital Transformation for Quality Jobs; GSMA (2021[6]), GSMA Intelligence (database).

AgroCenta in Ghana, which provides a supply chain platform facilitating small-scale farmers' access to large markets as well as a financial inclusion platform.

Nevertheless, the core digital sectors should not be expected to provide enough direct jobs for all young Africans in the near future. Telecom companies in 43 African countries, for example, accounted for just 270 000 full-time workers in 2019, and 20 leading start-ups had fewer than 20 000 employees in total (AUC/OECD, 2021[1]). Given that 29 million youth will reach working age every year between now and 2030, the real potential for large-scale job creation in Africa lies in the diffusion of digital innovations from the lead firms to the rest of the economy.

Data on more than 30 000 firms from 38 developing countries, including 9 countries in Africa, show that a 10% increase in email use by firms in a given geographic area raises their total annual sales by 37-38%, their sales per worker by 22-23% and the number of full-time workers by 12-14% (Cariolle, Le Goff and Santoni, 2018[8]). In 2007, Safaricom Company introduced the first mobile banking technology in Africa, M-PESA, using mobile phones to supplement Kenya's insufficient banking infrastructure, especially

Given that 29 million youth will reach working age every year between now and 2030, the real potential for large-scale job creation in Africa lies in the diffusion of digital innovations from the lead firms to the rest of the economy.

in underserved areas and at significantly reduced transaction fees. This innovation enabled 185 000 women to switch their main occupation from subsistence agriculture to small businesses or retail between 2008 and 2014 and diffusion of this innovation through other sectors helped Kenya raise at least 194 000 households out of extreme poverty over the same period (Suri and Jack, 2016[9]).

In 2020, nearly half of the 1.2 billion mobile money account users worldwide – 562 million – were in Africa. More than 500

companies now provide technology-enabled innovation in financial services. These FinTech companies provide a wide range of digital financial products to customers (e.g. deposits, savings accounts, domestic and international transfers, and mobile payment systems). Some of them are now among the big providers of financial services in Africa. For example, in November 2019, Interswitch, which that year had more than 1 000 employees and estimated annual revenue of more than USD 76 million, became Africa's first start-up company valued at more than USD 1 billion (AUC/OECD, 2021[1]). In February 2020, the South African FinTech start-up JUMO raised USD 55 million to expand to Bangladesh, Côte d'Ivoire, India and Nigeria.

The pandemic spurred digital innovation and tech entrepreneurship

From the onset of the pandemic, policy makers, mobile money providers and start-ups acted to mitigate the damage to citizens and businesses in sectors such as finance, education and health. Most African central banks encouraged people to use digital payments. The value of mobile money transactions across Africa increased by 23% to USD 495 billion in 2020 (GSMA, 2021[10]). Acting swiftly, Ministries of Education in 27 African countries had provided e-learning platforms by May 2020 (UNESCO, 2020[11]). The Africa Centres for Disease Control and Prevention, in collaboration with 20 international partners and foundations, also launched an e-platform to help governments procure diagnostic tests and medical equipment from certified suppliers on the global market (AUC/OECD, 2021[1]). To reduce the burden on fragile health systems, start-ups and entrepreneurs developed more than 120 e-health technology innovations based on information and communications technology (ICT), 3D printing, or robotics (WHO Africa, 2020[12]; Zeufack et al., 2021[13]).

The number of technology start-ups in Africa also grew in 2020, with the number of start-ups securing funding increasing by 44% between 2019 and 2020; over the five-year period of 2015-19, the number of African tech start-ups receiving backing grew six times faster than the global average (Maher et al., 2021[14]). By August 2021, funding for African tech start-ups had increased 69% from the previous year's inflows (Jackson, 2021[15]).

Policies to improve digital integration and skills can reduce inequalities in Africa

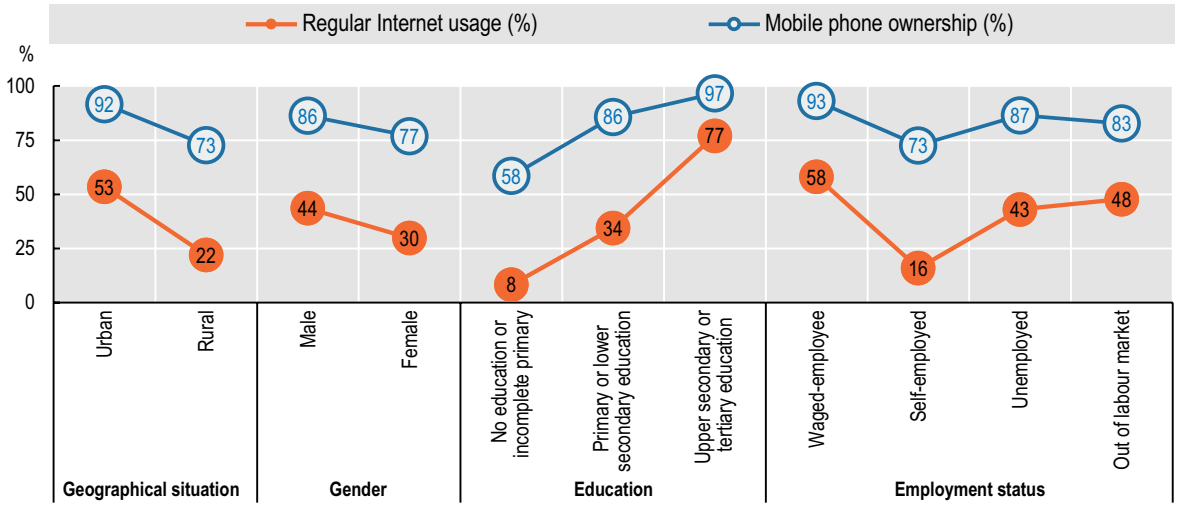
Despite the expansion of Africa's digital economy and the promising new investments to further increase connectivity, digital access, uptake and affordability vary widely. The use of Internet services remains highly unequal across employment status, location, gender and education (Figure 1.2). Data services on the African continent are the most expensive in the world, and only 17% of Africa's population can afford 1 gigabyte of data. The AUC and the OECD, in a recent study, calculate that in 38 African countries (out of 44 for which data are available), the prices of data services would have to be halved from their current levels to be affordable for 75% of their populations (AUC/OECD, 2021[1]).

As outlined in the AUC and OECD report, *Africa's Development Dynamics 2021* (AUC/OECD, 2021[1]), inclusive digital transformation in Africa requires policies that target these inequalities. The report identifies four pillars to guide policy makers. These address the main constraints on Africa's digital transformation by bridging spatial, social and productivity gaps, and improving digital integration.

Pillar 1: Connecting intermediary cities and using digital innovation for rural development

About 73% of Africans will live in intermediary cities and rural areas by 2040. Yet only 35% of intermediary cities are

Figure 1.2. Mobile phone and Internet usage among African youth, by geographical situation, gender, level of education and employment status, 2015-18



Notes: Youth are defined as those aged 15-29. The results are based on survey data from 34 African countries. Primary education: completed elementary education or less (up to eight years of basic education). Secondary: completed some secondary education and up to three years of tertiary education (9-15 years of education). Tertiary: completed four years of education beyond high school and/or received a four-year college degree.

Source: AUC/OECD (2021[1]), *Africa's Development Dynamics 2021: Digital Transformation for Quality Jobs*; Afrobarometer (2019[16]), (accessed on 21 July 2021).

connected to fibre optic networks, despite significant progress on infrastructure development. The European Satellite operator S.E.S. (Société Européenne des Satellites) estimates that, from a technical point of view, terrestrial fibre optic networks may never be able to reach about 30% of Africa's rural population in a cost-effective way (AU-EU Digital Economy Task Force, 2019[17]). Spectrum allocation policies thus should facilitate licensing procedures for telecom service providers aiming to cover such underserved geographic areas. For example, allowing small operators to use virtual or mobile network facilities can improve product diversity and market competition.

Public-private alliances also offer cost-effective solutions to connect rural areas. In Algeria, Ghana, Kenya and Nigeria, the public sector partnered with mobile telecom companies and telecommunications equipment providers to bring mobile broadband to rural populations. Benin, Ghana and Rwanda focus their universal service and access funds on skills acquisition programmes for women entrepreneurs. However, these funds appear to be underutilised. While 37 African countries have created universal service and access funds, 46% of the funds collected, or USD 408 million, were still unspent at the end of 2016 (Thakur, 2018[18]).

Pillar 2: Addressing skills gaps to help workers adapt to the digital economy

For the vast majority of Africa's working-age population, including young graduates with secondary or tertiary education, the main gateway to job markets remains own-account work, most often in the informal sector. By 2040, if current trends are maintained, own-account and family workers will represent 65% of employment. If they are to take advantage of evolving work opportunities in the digital economy, they will need to develop relevant skills.

New public-private alliances (including tech hubs, incubators and tech companies) can help informal workers transition to more formal work. Google's Africa Investment

Fund has announced plans to invest USD 50 million in African start-ups and to give them access to Google employees and its network and technologies (Reuters, 2021[19]). While new forms of own-account work via e-platforms and digital applications may widen opportunities, it is important to develop regulatory frameworks and social protections to prevent precarious working conditions. Setting international standards and promoting certification for responsible business conduct for lead platform companies could also help eliminate unfair practices and hold platforms accountable without putting the livelihood of local workers at risk (AUC/OECD, 2021[1]). Moreover, authorities should ensure competition among telecommunication providers to foster diversity and affordability of last-mile services.

Pillar 3: Empowering SMEs to innovate and compete in the digital era

SMEs need support to adopt appropriate digital tools for innovation and trade and take advantage of the growing use of digital technologies. A website can boost a firm's exports, for example: It is associated with a 5.5% increase in the share of direct exports in firms' sales (AUC/OECD, 2021[1]). But only 31% of firms in Africa's formal sector have a website, compared to 39% in Asia and 48% in the LAC region. Enticing African firms to scale up is critical if they are to survive and create jobs. Digital tools and skills, alongside financing, can enable entrepreneurs to avoid weak transport and logistics infrastructure.

Policy makers can support SMEs with agile regulation for digital trade, facilitating intellectual property protection, and services and public goods to SME clusters. For example, paperless procedures and smart clearance technologies increase the transparency, predictability and efficiency of customs procedures at borders and facilitate trade (see Chapter 15). The East African Community is introducing the Regional Electronic Cargo and Driver Tracking System, which will facilitate the issuance of COVID-19 certificates that are recognised by the partner states and reduce delays at border points (UNECA, 2021[20]). Such procedures can also match buyers and suppliers and reduce the risk of petty corruption.

Pillar 4: Accelerating regional and continental co-ordination on regulatory and legal frameworks to manage digital risks

Only one in five African countries has a legal framework for cybersecurity and just 11 have adopted substantive laws on cybercrime. And yet, the cost of cybercrime in Africa is increasing and Africa's online ecosystem is one of the most vulnerable in the world. Serianu Limited has estimated the cost of cybercrime in Africa to be about USD 3.5 billion in 2017, with Kenya and Nigeria alone suffering losses of USD 210 million and USD 649 million, respectively (Serianu Limited, 2017[21]). Given the international nature of cybercrime, it also crucial to accelerate co-operation on digital security.

In 2014, African Union heads of state and governments adopted a Convention on Cybersecurity and Personal Data Protection as a first step towards continental co-operation. As of June 2020, only 14 African Union member states had signed it and only 5 had ratified it (Ghana, Guinea, Mauritius, Namibia and Senegal). Fifteen ratifications are required for the Convention to enter into force.

In Latin America and the Caribbean, digitalisation can address structural development traps

Broadly speaking, the LAC region faces many of the same digital transformation challenges as Africa. Regional policy makers in Latin America and the Caribbean need to be more proactive in designing policies that harness the benefits of digital transformation, mitigate risks and ensure that national

strategies for post-COVID recovery integrate the digital agenda, as noted in the *Latin American Economic Outlook 2020: Digital Transformation for Building Back Better* (OECD et al., 2020[2]).

The pandemic hit the region at a time of economic stagnation. Economic growth and socio-economic advancements had slowed since 2011, halting the progress the region experienced earlier in the century. The pandemic also affected digital transformation across countries, accentuating existing structural development traps (OECD et al., 2019[22]). Low labour productivity, growing middle-class aspirations, and the social and economic impact of the COVID-19 pandemic signal an evolving situation in the region.

Nonetheless, the COVID-19 crisis has spurred the development and adoption of digital technologies, particularly in the business and education sectors where telework and online learning became mainstays during lockdowns. There is great scope to expand the benefits of digital transformation, especially for the micro, small and medium-sized enterprises (MSMEs) that represent nearly two-thirds of all employment across the LAC region. But to maintain that momentum and fully seize opportunities to address long-standing productivity and other gaps, LAC countries need to scale up investment in infrastructure and skills; strengthen co-operation and collaboration domestically and internationally; and rethink how policy is developed and implemented (OECD et al., 2020[2]).

Internet usage is growing overall, but gaps persist in firms' uptake of digital tools

Digital transformation in LAC closely tracks the degree of adoption of ICTs, access to broadband and Internet use. In 2019, approximately 70% of the population used the Internet regularly – almost twice the share in 2010 but behind the 2019 OECD average of nearly 85%. Ensuring all people

There is great scope to expand the benefits of digital transformation, especially for the micro, small and medium-sized enterprises (MSMEs) that represent nearly two-thirds of all employment across the LAC

can access, use and benefit from new technologies requires a comprehensive, innovative and co-ordinated policy effort. Public policy co-ordination demands strategic planning: comprehensive frameworks provided in national development plans aligned with specific digital agendas (OECD et al., 2020[2]).

Uptake of digital technologies varies by the size of firms in the region, with larger firms using digital tools far more frequently like websites and email. In some LAC countries, the gap between small and large companies that own their own website is more than 30 percentage points. Gaps are evident as well in how firms use digital tools in some countries: among companies that use email, small firms are half as likely to use it to interact with customers or suppliers than medium-sized and large firms.

Nonetheless, the potential of the digital revolution should not be underestimated, especially for MSMEs, given their important role in the region's formal economy. MSMEs represent 99.5% of all firms and 61.2% of employment in the LAC region, though only 24.6% of production in the region (Dini and Stumpo, 2018[23]). In Chile, for instance, the Digitalise Your SME programme provides a diagnostic test to determine a firm's level of digital maturity and makes recommendations based on the firm's digitalisation needs. For instance, retail companies are

encouraged to take part in e-commerce as this can have an impact on sales (Chilean Ministry of Economy, Development and Tourism, 2021[24]).

There is potential as well to promote research and development, new business models, and productive chain adjustments. An analysis of 11 categories of initiatives promoted by governments – on a scale of increasing complexity from creating an ecosystem for the adoption of digital technologies to transforming technological and strategic capabilities of firms – finds that most of these have not been implemented. Despite efforts to encourage MSME adoption of digital technologies, further work must be done to link these efforts with national strategies for productive transformation and not simply focus on enablers and policies to develop capabilities (OECD et al., 2019[22]). Thus, the challenge for the LAC region is to transition from policies that promote the adoption of digital technologies for the industrial sector to a complete transformation of the production process supported by new technologies (Heredia, 2020[25]).

Digital transformation in the labour market brings both challenges and opportunities. Two of ten jobs are at risk of automation in the LAC region and four in ten jobs might substantially change in terms of tasks, with variation in the region (OECD et al., 2020[2]). In the Plurinational State of Bolivia, only 5% of jobs are at high risk of automation, while in Uruguay this figure rises to 29% (ECLAC, 2019[26]). The proportion of jobs in low productivity sectors, which ranges from 30% in Chile to more than 70% in other countries, is a primary factor in the risk of automation (Weller, Gontero and Campbell, 2019[27]). As digital technologies also create new job opportunities, policies to support the transition of workers in declining industries are crucial (OECD et al., 2020[2]). Colombia's 2018-22 ICT Plan noted the importance of encouraging workers to build digital skills, proposing that at least 10 000 facilitators be deployed to strengthen the business environment of firms and provide training for employees (Colombian Ministry of Information and Communication Technologies, 2018[28]).

[Thus] the challenge for the LAC region is to transition from policies that promote the adoption of digital technologies for the industrial sector to a complete transformation of the production process supported by new technologies (Heredia, 2020[25]).

As in Africa, the pandemic revealed persistent digital divides across the region

The socio-economic impacts of COVID-19 in the LAC region were dramatic. The region ended 2020 in the worst economic downturn of the last 200 years, with annualised gross domestic product (GDP) growth slightly below -7.0% (OECD et al., 2021[29]). After strong performance in the early 2000s, economic growth and socio-economic advancement in the LAC region began to slow in 2011. Between 2014 and 2019, the region had its weakest growth since the 1950s. The protests that erupted in 2019 confirmed that poverty, inequality and social vulnerability remain concerns (OECD, 2020[30]).

Against the backdrop of this stagnation across the region, the COVID-19 crisis increased momentum to undertake reforms necessary to ensure the benefits of the digital transformation for all (OECD et al., 2020[2]). More people and businesses

adopted telework and online study during confinement, and digital technologies and greater use of the Internet were critical to keep businesses and education running. In countries with a strong communication infrastructure, the government was able to provide real-time updates regarding the pandemic and track ongoing cases to inform policy decisions. The challenge now is to ensure that digitalisation realises its potential to be an engine for renewed economic growth and help address the region's development gaps and traps.

Digital transformation to escape development traps

Digital transformation can help LAC economies address development traps that emerge when countries with long-standing weaknesses confront new problems. Digital technologies can increase productivity by helping firms access new markets, create new goods and services, and produce in a more efficient and productive manner. They can create new jobs and make public services more accessible, mitigating social vulnerability. Digitalisation can help governments become more reliable, effective, open and innovative. This can help to rebuild the trust between governments and citizens. Finally, it can help create green and sustainable growth (see Chapter 19). Alongside these opportunities, there are risks that need to be managed.

The productivity trap: Economy-wide digital transformation

Aggregate labour productivity in the LAC region has declined or shown little persistent growth since 1950 (Figure 1.3). The region's productivity has decreased compared with the rest of the world since the 1960s, and GDP growth in the region can be attributed more to labour force expansion than to productivity increases (OECD et al., 2020, p. 52[2]). The low participation of LAC in global value chains exacerbates its concentration of exports in primary and extractive sectors. This, in turn, is associated with low levels of technology adoption and few incentives to invest in productive capacity. In all, competitiveness remains low, making it difficult to move towards higher added value segments of global value chains. This fuels a vicious circle that negatively affects productivity (OECD et al., 2019[22]).

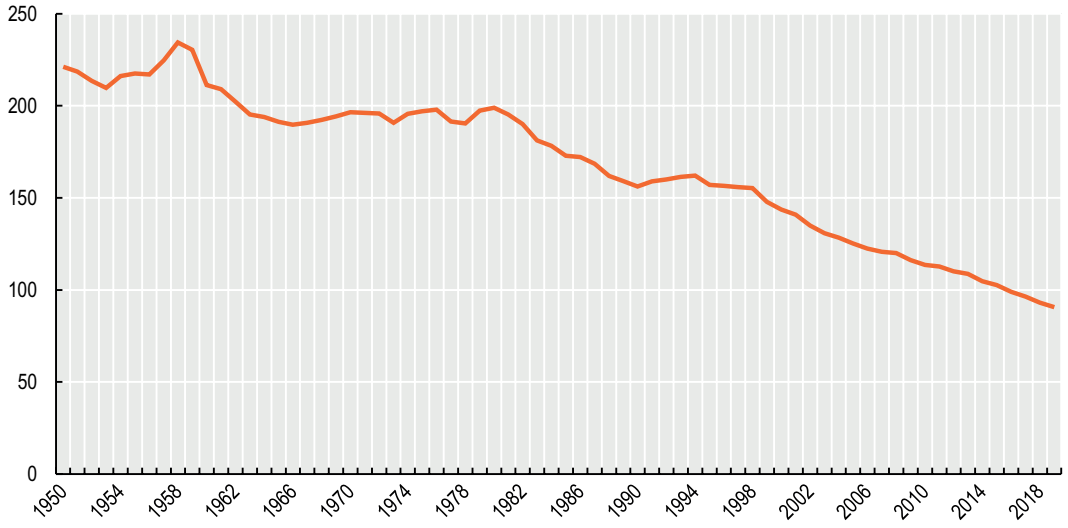
Widely varying levels of adoption of digital technologies across industries and firms can explain the productivity paradox, where higher availability of technology does not reflect higher productivity at a national level. The rate of adoption among different industries varies significantly in low digital-intensity industries such as agriculture, mining and real estate versus high digital-intensity sectors such as telecom and information technology services. Similarly, not all sectors are involved in all aspects of the digital transformation; some only use a part of different technologies, creating another layer of heterogeneity across sectors (OECD, 2019[32]). Even among firms in ICT-intensive sectors, there is a strong heterogeneity of digital adoption.

While the LAC region is still in a transition phase, already the digital transformation allows for development of new goods and services and access to new markets for producers and individuals. In addition, it can help redefine production processes and relationships between industries and increase overall efficiency in businesses (Katz, 2015[33]). If the region were to close the productivity gap with the OECD in 2030, this would provide 0.48 additional percentage points to the region's multifactor productivity growth (Katz, Jung and Callorda, 2020[34]). To achieve this, major investment by the private and public sectors is needed to close infrastructure gaps, especially in rural areas, and to satisfy growing demand for connectivity (OECD, 2019[32]).

The social vulnerability trap: Increasing access and skills to overcome digital divides

The social progress that the region experienced earlier in the decade slowed and, in some countries, reversed due to

Figure 1.3. Labour productivity of Latin American and Caribbean countries relative to the rest of the world, 1950-2019



Notes: Figure shows the simple average of the 17 Latin American and Caribbean countries covered by the Conference Board. Labour productivity is measured as the labour productivity per person employed in 2018 in USD.

Source: Author's calculations based on The Conference Board (2020[31]), *Total Economy Database*, https://www.conference-board.org/data/economydatabase/total-economy-database-productivity.

the economic slowdown and impact of the pandemic, particularly on the most vulnerable. Protecting vulnerable informal workers with no social safety net and avoiding widespread poverty are now particular challenges (OECD, 2020[30]). It is estimated that in 2020, the poverty rate in LAC climbed to 37.3% of the population (OECD et al., 2021[29]; ECLAC, 2020[35]), a level not seen for the past 12 years (OECD et al., 2021[29]).

Despite progress in recent years, there remain wide gaps between socio-economic groups in digital skills and access to and use of digital technologies. During the pandemic, these disparities widened, creating winners and losers. For instance, fewer than half of the LAC population had enough experience using digital tools to carry out basic professional tasks, meaning they were effectively excluded from remote activities (OECD et al., 2020[2]).

Providing both access to and ICT learning are important to promote the digital transformation. Schools in LAC countries promote equity in access to and use of ICT in countries where household connectivity is not universal. In 2018, fewer than 14% of poor students in primary education had a computer connected to the Internet at home, compared to more than 80% of affluent students with the same education level. Moreover, more than 5% of students had Internet and other digital technology access only through school. Before the pandemic, few schools in the LAC region were sufficiently prepared for digital learning. Among 15-year-olds, 58% attend schools whose principals considered that teachers had the necessary technical and pedagogical skills to integrate digital devices into the curricula (OECD et al., 2020[2]). These figures highlight the vast training needs of education systems in the region and the significant discrepancy in digital teaching capacity between socio-economically advantaged and disadvantaged schools (OECD et al., 2020[2]).

The institutional trap: Addressing regulatory and equity issues

Governments face new regulatory challenges to both manage issues that arise from the digital transformation and ensure that it benefits all (OECD, 2019[36]). They also must grapple with their own digitalisation.

LAC country governments are at different stages of digital transformation. They fall into two groups in the United Nations E-Government Development Index. Argentina, Brazil, Chile and Uruguay are among the top 50 performers of the 193 countries surveyed in the 2018 edition. Belize, Cuba, Haiti and Nicaragua are among the worst performers (UN, 2019[37]). The greatest challenges for LAC countries are in communications infrastructure and human capital.

Digital transformation can help governments be more innovative in policy design, delivery and evaluation, improving the policy-making process. Technology and the digitalisation of societies and governments are generating massive amounts of data, which can be assets to spur innovation and develop better-informed and targeted public policies and services. Many countries used smartphone-generated geolocated and proximity data to map the geographical distribution and evolution of COVID-19 or to monitor compliance with lockdown measures. Making the most of the digital transformation requires a change within public administration from an information-centred to a data-driven approach that includes digital technologies and data in public policy design from the outset.

The environmental trap: Transforming materials-dependent sectors

The environmental trap is linked to the productive structure of most LAC economies, which are built around activities that are highly material-intensive and natural resource-intensive. This concentration may lead these countries towards an environmentally and economically unsustainable dynamic. There are two reasons for this. First, concentration on a high-carbon growth path is difficult, and costly, to abandon. Second, the natural resources upon which the model relies are becoming depleted. These two challenges have also gained importance in recent years with stronger commitment to global efforts to fight climate change (OECD et al., 2019[22]). Digital technologies offer opportunities to mitigate the risks of the environmental trap. Technologies can help countries decarbonise their economies by creating services or products that are less demanding on the environment, increasing production efficiency and reducing waste across industries and production processes. New technologies can also increase efficiency in the production and consumption of energy and improve transport efficiency.

In both regions, stronger international co-operation can put digitalisation to work for inclusive growth

In both Africa and the LAC region, many of the opportunities and challenges of digital transformation transcend country boundaries, whether they relate to taxation and trade, cross-border flows of data, digital security and data protection, or investment to build digital infrastructure and skills that benefit everyone. Greater supranational co-operation and harmonised action on data regulatory frameworks are crucial. Harmonised action can stimulate sustainable economic growth.

Greater regional co-operation can help Africa develop a single digital market

Regional and continent-wide co-operation would support the ambition of African leaders to create a single digital market across Africa (see Chapter 15). A continental data regulatory framework, for instance, could establish a set of principles and guidelines for companies doing business in any African country, much as the European Union has done with its General Data Protection Regulation (see Chapter 29). Digital data value chains are international in scope, and there is evidence that most African countries are already paying a high price for weak intra-African co-operation in terms of associated

potential threats and losses (AUC/OECD, 2021, p. 60[1]).

Strong and agile data regulatory frameworks, harmonised across countries, also are crucial to enable digital content creation. However, only 28 countries in Africa have comprehensive personal data protection legislation in place. Likewise, interoperability and regional co-operation for affordable roaming services would support Africa's regional integration. However, evidence from 64 countries over 2006-16 shows that the isolated attempts to restrict the cross-border movement of data or to require local storage of data had the effect of inhibiting trade services and reducing the productivity of local firms. To help African countries navigate these issues, the African Union is leading 15 initiatives in various areas of digitalisation. The AUC's Digital Transformation Strategy for Africa and other projects developed in conjunction with international partners aim to achieve a digital single market by 2030 and strengthen Africa's role in the global digital economy. Among these are the Policy and Regulatory Initiative for Digital Africa, the 2020-30 Digital Economy for Africa initiative, and the establishment of a Pan-African Payment and Settlement System.

A regional digital market can boost growth in the LAC region

Similarly, regional integration could help realise the digital potential of Latin American and the Caribbean. The region's digital regulatory frameworks and regional and sub-regional co-operation efforts are not harmonised in many cases. A regional digital market could advance development by helping countries enhance communications infrastructure and expand trade, which was severely affected by the COVID-19 crisis. Regional co-operation initiatives, such as the Economic Commission for Latin America and the Caribbean's Digital Agenda for Latin America and the Caribbean 2020 could also prove useful for multiple stakeholders and countries to articulate frameworks and levels of digital development, exchange experiences, and set up policy dialogues (ECLAC, 2018[38]).

COVID-19 accentuated the importance of international co-operation and digital tools. It is also essential to co-ordinate policies at the international level to promote inclusive digitalisation, such as policies to create a digital single market. Triangular co-operation initiatives, such as the Environmental Technology Centre in Peru, can co-ordinate environmental policies with new tools to help build capacities against development challenges (OECD et al., 2020[2]).

Given the highly transversal impact of digital tools, renewed co-operation could support countries in the LAC region to overcome development traps and to build domestic capacities through an extended network of partners including the private sector and civil society. International co-operation can help them navigate the global context by contributing to productivity, social cohesion, better institutions and green economies, thus adopting a human-centred approach – as exemplified in the European Union's Digital Strategy – to the design and implementation of technology that prioritises citizens' needs and rights (OECD et al., 2020[2]).

REFERENCES

AfriLabs and Briter Bridges (2019), *Building a Conducive Setting for Innovators to Thrive: A Qualitative and Quantitative Study of a Hundred Hubs across Africa*, https://www.afrilabs.com/wp-content/uploads/2019/11/AfriLabs-Innovation-Ecosystem-Report.pdf. [7]

Afrobarometer (2019), *Afrobarometer website*, https://afrobarometer.org (accessed on 21 July 2021). [16]

AUC/OECD (2021), *Africa's Development Dynamics 2021: Digital Transformation for Quality Jobs*, OECD Publishing and African Union Commission, Paris and Addis Ababa, https://dx.doi.org/10.1787/0a5c9314-en. [1]

AU-EU Digital Economy Task Force (2019), *New Africa-Europe Digital Economy Partnership: Accelerating the Achievement of the Sustainable Development Goals*, European Commission, Brussels, https://www.tralac.org/documents/resources/external-relations/eu/2865-new-africa-europe-digital-economy-partnership-report-of-the-eu-au-digital-economy-task-force-june-2019/file.html (accessed on 4 November 2021). [17]

Cariolle, J., M. Le Goff and O. Santoni (2018), "Digital vulnerability and performance of firms in developing countries", *Working Paper No. 709*, Banque de France, Paris, https://www.banque-france.fr/sites/default/files/medias/documents/wp_709.pdf. [8]

Chilean Ministry of Economy, Development and Tourism (2021), *Digitaliza tu Pyme [Digitise Your SME]*, https://www.digitalizatupyme.cl (accessed on 4 November 2021). [24]

Colombian Ministry of Information and Communication Technologies (2018), *Plan TIC 2018-2022: El futuro digital es de todos [ICT Plan 2018-2022: The Digital Future Belongs to All of Us]*, Colombian Ministry of Information and Communication Technologies, https://siteal.iiep.unesco.org/bdnp/3034/plan-tic-2018-2022-futuro-digital-es-todos (accessed on 4 November 2021). [28]

Dini, M. and G. Stumpo (2018), *Mipymes en América Latina: Un frágil desempeño y nuevos desafíos para las políticas de fomento [MSMEs in Latin America: Fragile Performance and New Challenges for Development Policies]*, United Nations Economic Commission for Latin America and the Caribbean, Santiago, https://repositorio.cepal.org/bitstream/handle/11362/44148/1/S1900361_es.pdf. [23]

ECLAC (2020), *Addressing the Growing Impact of COVID-19 with a View to Reactivation with Equality: New Projections*, Economic Commision for Latin America and the Caribbean, Santiago, https://repositorio.cepal.org/handle/11362/45784. [35]

ECLAC (2019), *Regional Broadband Observatory (database)*, https://www.cepal.org/es/observatorio-regional-de-banda-ancha (accessed on 4 November 2021). [26]

ECLAC (2018), *Digital Agenda for Latin America and the Caribbean (eLAC2020)*, Economic Commission for Latin America and the Caribbean, Santiago, https://conferenciaelac.cepal.org/6/sites/elac2020/files/cmsi.6_digital_agenda-en-23_april.pdf (accessed on 11 March 2021). [38]

Findexable (2019), *The Global Fintech Index 2020: The Gloal Fintech Index City Rankings Report*, Findexable, https://findexable.com/wp-content/uploads/2019/12/Findexable_Global-Fintech-Rankings-2020exSFA.pdf. [3]

GSMA (2021), *GSMA Intelligence (database)*, https://www.gsmaintelligence.com/data. [6]

GSMA (2021), *State of the Industry Report on Mobile Money 2021*, GSMA, London, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/03/GSMA_State-of-the-Industry-Report-on-Mobile-Money-2021_Full-report.pdf. [10]

Hamilton Research (2020), "Africa's operational fibre optic network reaches 1 million route kilometres", Hamilton Research, Bath, http://www.africabandwidthmaps.com/?p=6158 (accessed on 23 October 2021). [5]

Heredia, A. (2020), *Políticas de fomento para la incorporación de las tecnologías digitales en las micro, pequeñas y medianas empresas de América Latina: Revisión de experiencias y oportunidades [Promotion Policies for the Incorporation of Digital Technologies in Micro, Small and Medium-sized Enterprises in Latin America: Review of Experiences and Opportunities]*, Economic Commission for Latin America and the Caribbean, Santiago, https://repositorio.cepal.org/bitstream/handle/11362/45096/1/S1900987_es.pdf. [25]

Infrastructure Consortium for Africa (2018), *Infrastructure Financing Trends in Africa: 2018*, African Development Bank, Abidjan, https://www.icafrica.org/fileadmin/documents/IFT_2018/ICA_Infrastructure_Financing_Trends_in_Africa_-_2018_Final_En.pdf. [4]

Jackson, T. (2021), "More than 300 African tech startups have raised over $1.1bn so far in 2021", Disrupt Africa, https://disrupt-africa.com/2021/08/12/more-than-300-african-tech-startups-have-raised-over-1-1bn-so-far-in-2021 (accessed on 2 November 2021). [15]

Katz, R. (2015), *El ecosistema y la economía digital en América Latina [The Ecosystem and the Digital Economy in Latin America]*, Fundación Telefónica, Madrid, https://scioteca.caf.com/handle/123456789/768 (accessed on 4 November 2021). [33]

Katz, R., J. Jung and F. Callorda (2020), "Can digitization mitigate the economic damage of a pandemic? Evidence from SARS", *Telecommunications Policy*, Vol. 44/10, p. 102044, http://dx.doi.org/10.1016/j.telpol.2020.102044. [34]

Maher, H. et al. (2021), *Overcoming Africa's Tech Startup Obstacles*, Boston Consulting Group, Boston, MA, https://www.bcg.com/publications/2021/new-strategies-needed-to-help-tech-startups-in-africa (accessed on 2 November 2021). [14]

OECD (2020), "COVID-19 in Latin America and the Caribbean: Regional socio-economic implications and policy priorities", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://www.oecd.org/coronavirus/policy-responses/covid-19-in-latin-america-and-the-caribbean-regional-socio-economic-implications-and-policy-priorities-93a64fde/#abstract-d1e25 (accessed on 4 November 2021). [30]

OECD (2019), *Going Digital: Shaping Policies, Improving Lives*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264312012-en. [32]

OECD (2019), *Shaping the Digital Transformation in Latin America: Strengthening Productivity, Improving Lives*, OECD Publishing, Paris, https://dx.doi.org/10.1787/8bb3c9f1-en. [36]

OECD et al. (2021), *Latin American Economic Outlook 2021: Working Together for a Better Recovery*, OECD Publishing, Paris, https://doi.org/10.1787/5fedabe5-en. [29]

OECD et al. (2020), *Latin American Economic Outlook 2020: Digital Transformation for Building Back Better*, OECD Publishing, Paris, https://dx.doi.org/10.1787/e6e864fb-en. [2]

OECD et al. (2019), *Latin American Economic Outlook 2019: Development in Transition*, OECD Publishing, Paris, https://dx.doi.org/10.1787/g2g9ff18-en. [22]

Reuters (2021), "Google to invest $1 billion in Africa over five years", Reuters, https://www.reuters.com/technology/google-invest-1-billion-africa-over-five-years-2021-10-06 (accessed on 2 November 2021). [19]

Serianu Limited (2017), *Africa Cyber Security Report 2017: Demystifying Africa's Cyber Security Poverty Line*, Serianu Limited, http://www.serianu.com/downloads/AfricaCyberSecurityReport2017.pdf. [21]

Suri, T. and W. Jack (2016), "The long-run poverty and gender impacts of mobile money", *Science*, Vol. 354/6317, pp. 1288-1292, http://dx.doi.org/10.1126/SCIENCE.AAH5309. [9]

Thakur, D. (2018), *Universal Service and Access Funds: An Untapped Resource to Close the Gender Digital Divide*, Web Foundation, Washington, DC, https://webfoundation.org/docs/2018/03/Using-USAFs-to-Close-the-Gender-Digital-Divide-in-Africa.pdf. [18]

The Conference Board (2020), *Total Economy Database*, https://www.conference-board.org/data/economydatabase/total-economy-database-productivity (accessed on 17 November 2021). [31]

UN (2019), *e-Government Knowledgebase (database)*, https://publicadministration.un.org/egovkb/en-us (accessed on 4 November 2021). [37]

UNECA (2021), *Waving or Drowning? The Impact of Covid-19 Pandemic on East African Trade*, United Nations Economic Commission for Africa, , TradeMark East Africa and African Economic Research Consortium, Kigali, https://repository.uneca.org/bitstream/handle/10855/43923/b11990168.pdf?sequence=1&isAllowed=y (accessed on 2 November 2021). [20]

UNESCO (2020), "COVID-19 resources: National learning platforms and tools", web page, https://en.unesco.org/covid19/educationresponse/nationalresponses (accessed on 2 November 2021). [11]

Weller, J., S. Gontero and S. Campbell (2019), *Cambio tecnológico y empleo: Na perspectiva latinoamericana – Riesgos de la sustitución tecnológica del trabajo humano y desafíos de la generación de nuevos puestos de trabajo [Technological Change and Employment: A Latin American Perspective]*, United Nations Economic

Commission for Latin America and the Caribbean, Santiago, https://www.cepal.org/sites/default/files/publication/files/44637/S1900367_es.pdf. [27]

WHO Africa (2020), "COVID-19 spurs health innovation in Africa", https://www.afro.who.int/news/covid-19-spurs-health-innovation-africa (accessed on 2 November 2021). [12]

Zeufack, A. et al. (2021), *Africa's Pulse*, No. 23, World Bank, Washington, DC, http://dx.doi.org/10.1596/978-1-4648-1714-4. [13]

02 CASE STUDY: REGIONAL INTEGRATION CAN ACCELERATE AFRICA'S DIGITAL TRANSFORMATION

Secretariat, Smart Africa

ABSTRACT

This case study outlines the importance of regional integration to help countries rise above the limitations of small markets to benefit from economies of scale and access to trade. It draws from the experience of Smart Africa, a regional body, to highlight how the creation of a single continental digital market can lower the risks and other barriers to investment and unlock business opportunities.

Key messages

- African countries can realise socio-economic development through digital transformation by unifying their national markets into a single market that could be a major player in global trade, financial and technology flows.
- National governments should work through regional bodies to harmonise policy, regulatory, financial and technological environments to increase the benefits and lower the cost and risk of investment in digital transformation.

Global monetary, financial and trading systems have not favoured Africa and other regions of the developing world. Contributing to the problem is the fragmentation of regional markets into small countries, whereas larger unified markets would offer economies of scale and diversification of risk, among other advantages. In Africa, regional co-operation and integration enhancing countries' capacity to trade and reap the benefits of global exchange and financial flows are core to this effort.

Smart Africa is a platform for co-operation that supports its 32 member countries in developing harmonised policies and strategies for digital transformation. Implementing cross-border projects allows countries in Africa to interact and share best practices, such as by ensuring interoperability, coherent financial policies and buying technological capacity in bulk.

Unlocking business opportunities across sectors

Africa is one of the fastest growing consumer markets in the world. Household expenditure has grown at a compound annual rate of 3.9% since 2010, expected to reach USD 2.1 trillion by 2025 (African Development Bank Group, 2019[1]). Coupled with business spending, projections estimate USD 5.6 trillion in business opportunities on the continent by 2025, if structural adjustments can be achieved (Coleman, 2020[2]).

A single, continental, digital market can incentivise investment by reducing tariffs; harmonising legal, regulatory and tax regimes; rationalising payments systems; and reforming the financial sector and labour markets. The shared external tariff implemented by members of the East African Community (Burundi, Kenya, Rwanda, South Sudan, the United Republic of Tanzania and Uganda) – resulting in an increase of 0.45% in real gross domestic product (GDP) growth – demonstrates the gains that come from closer regional integration (Oxford Business Group, 2017[3]).

A single, continental, digital market can incentivise investment by reducing tariffs; harmonising legal, regulatory and tax regimes; rationalising payments systems; and reforming the financial sector and labour markets.

Technological advances can also enable regionally integrated supply chains, increase market access and reduce bureaucracy to increase cross-border trade, creating economies of scale. For example, the Council of African Regulators harmonised policy under the One Africa Network initiative to eliminate roaming fees across Africa. Pilot projects in East Africa demonstrate growth of approximately 800% in phone traffic (Nsengimana, 2018[4]).

Encouraging digital investment

A single digital market can also aggregate demand, and regional actors can encourage

investment by the private sector. Individually, African countries have small economies. In 2010, the population of 24 African countries was less than 10 million people, of which 17 had fewer than 5 million inhabitants (Kanos and Heitzig, 2020[5]). The GDP of 29 countries was less than USD 10 billion, of which 18 countries had less than USD 5 billion.[1] What's more, the numerous national borders act as barriers to intra-African trade. Aggregating these markets can create economies of scale, reduce risk and make them more attractive to private capital (Figure 2.1).

Strengthening external trade

Finally, regional integration can strengthen the position of African countries *vis-à-vis* external trading partners. If the continent is to participate in the global trading environment and reach its full economic potential, it will require investment in infrastructure beyond the current capacity of governments. The private sector will need to be involved and will need instruments such as public-private partnerships to reduce risk and increase returns. As an example, combined negotiating power recently helped ensure that Africa's data remain in Africa as opposed to being channelled through data centres in Europe or the United States, which helps improve service and reduce the costs of communication (Nhongo, 2020[6]).

Conclusion: Regional co-operation is key

Without concerted effort, African countries risk being unprepared for the digital revolution. Regional integration is critical to making technology and innovation central to the continent's socio-economic development. While Africa's scale can attract the necessary investment, expertise and digital services, fragmented national markets are less attractive than a unified market of 1.3 billion people. The continent thus needs a clear, inclusive and co-ordinated agenda to unlock digital investments.

Regional players can harmonise policy and interoperability for digital systems to put in place the building blocks for successful digital transformation. Regional bodies can bring together governments to demonstrate united political will to external stakeholders. On the ground, policies such as data protection and cybersecurity can be harmonised to create cross-border systems that transform Africa into a single digital market. Finally, regional bodies can be effective in bringing together governments and the private sector to raise financing to turn these intentions into reality.

Figure 2.1. Benefits of regional integration for Africa's digital transformation



REFERENCES

African Development Bank Group (2019), *Integrate Africa*, African Development Bank Group, https://www.afdb.org/sites/default/files/2019/07/05/high_5_integrate_africa.pdf. [1]

Coleman, C. (2020), "This region will be worth $5.6 trillion within 5 years – but only if it accelerates its policy reforms", World Economic Forum, Geneva, https://www.weforum.org/agenda/2020/02/africa-global-growth-economics-worldwide-gdp (accessed on 17 November 2021). [2]

Kanos, D. and C. Heitzig (2020), "Figures of the week: Africa's urbanization dynamics", *Africa in Focus*, Brookings, https://www.brookings.edu/blog/africa-in-focus/2020/07/16/figures-of-the-week-africas-urbanization-dynamics (accessed on 17 November 2021). [5]

Nhongo, G. (2020), "Orange collaborates with Smart Africa and announces new investments in Africa", press release, Smart Africa, https://smartafrica.org/press-release-communique-de-presse (accessed on 17 November 2021). [6]

Nsengimana, J. (2018), *One Africa Network (OAN): Ending Africa's Digital Exploitation*, Smart Africa, https://smartafrica.org/how-westerners-benefit-by-ensuring-african-phone-calls-remain-expensive (accessed on 17 November 2021). [4]

Oxford Business Group (2017), "The EAC helps maintain growth in the region", in *The Report: Kenya 2017: Country Profile*, Oxford Business Group, https://oxfordbusinessgroup.com/node/920441/reader (accessed on 17 November 2021). [3]

NOTE

1. For more information, see World Bank Data at: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.

03 CULTIVATING NEW CAPACITIES, THE CASE OF E-COMMERCE

Torbjörn Fredriksson, United Nations Conference on Trade and Development

ABSTRACT

This chapter highlights that many developing countries lack the capacity and resources to participate in the booming global digital economy and develop e-commerce ecosystems. Drawing on the experience of the "eTrade for all" initiative it presents an approach to identifying and overcoming capacity and resource gaps through technical and other support. The chapter further highlights the importance of development co-operation actors overcoming silos to leverage the limited resources available and better target their investments to avoid duplication of effort and ensure maximum impact.

Key messages

- Least developed countries lag behind in digital readiness and lack sufficient financial, technical and other resources to capture value from digitalisation.
- The eTrade for all initiative is helping to identify opportunities for synergies, minimise duplication of effort and ensure more impactful support for e-commerce ecosystems.
- Development actors need to prioritise limited digital for development funds by engaging in partnerships, providing more catalytic investments and supporting efforts to build digital capacity.

Digitalisation is reshaping economic and social activities globally. More than half the people in the world now use the Internet; 1.5 billion people shop on line (UNCTAD, 2021[1]) and it is expected that Internet traffic in 2022 alone will exceed all Internet traffic up to 2016 (Globe Newswire, 2018[2]). In 2020, thanks to greater use of digital solutions during the COVID-19 pandemic, global Internet bandwidth increased by 35%, exceeding the 26% growth of the previous year (TeleGeography, 2021[3]). The rollout of 5G technology, the expanded use of artificial intelligence and the Internet of Things will further accelerate the shift to a truly data-driven digital economy (UNCTAD, 2021[4]). Yet, gaps in digital readiness and insufficient international financial support for national digital transformations could leave many developing countries on the sidelines of the world's burgeoning digital economy.

Developing countries are missing out on digital trade and economy opportunities

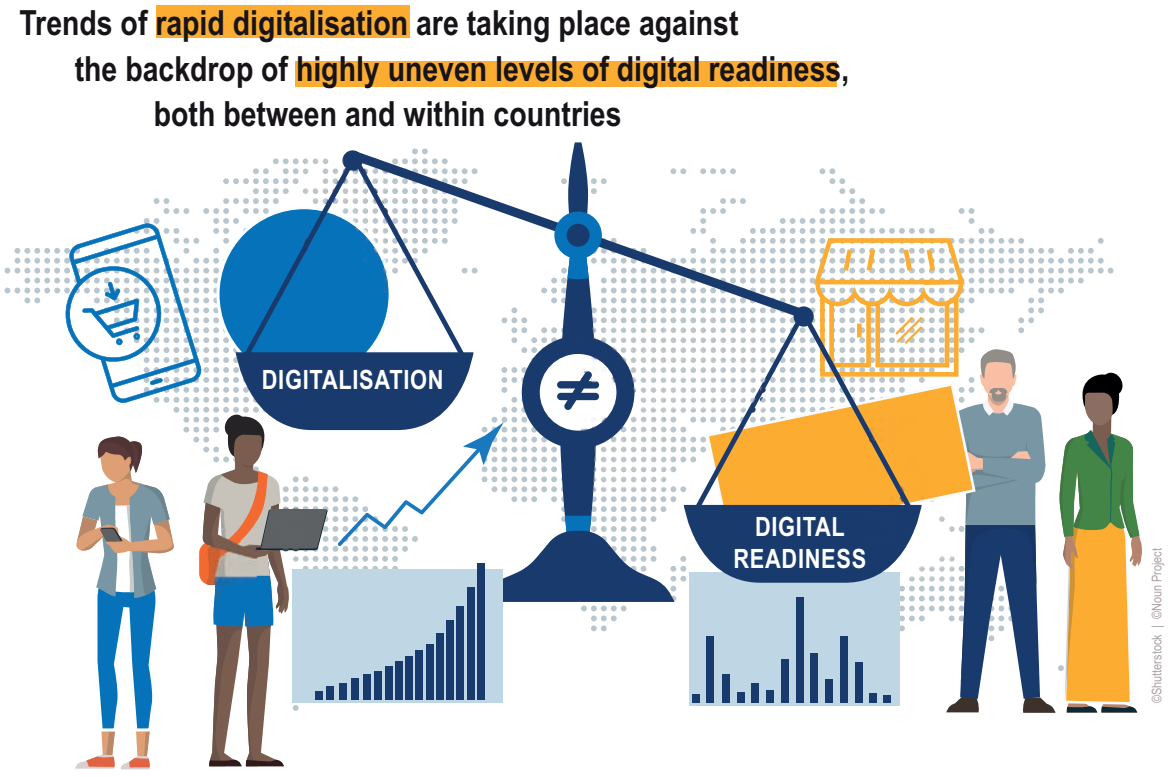
These trends of rapid digitalisation are taking place against the backdrop of highly uneven levels of digital readiness, both between and within countries. In the area of commerce, for example, more than 80% of Internet users in Europe shop on line, while in many least developed countries (LDCs), fewer than 10% do so (UNCTAD, 2021[5]). Indeed, the LDCs are trailing furthest behind in terms of e-commerce readiness: Of the 20 economies with the lowest values on the 2020 Business-to-Consumer E-commerce Index, 18 (all but the Republic of Congo and the Syrian Arab Republic) are LDCs (UNCTAD, 2021[5]). Moreover, the LDCs especially lack sufficient financial, technical and other resources to capture value from digitalisation. The pandemic's negative impact on economic growth has also strained public funds that might be available for developing these capacities.

Digital transformations of global value chains and consumer behaviour have implications for countries at all levels of digital readiness. If digital transformation is not managed well, businesses in developing countries will miss opportunities to engage in global value chains and digital trade, and digital divides will widen further.

Coping with digitalisation is particularly difficult. The issues involved are cross-cutting in nature and often relatively new to the government departments concerned. Technologies are evolving at such a high speed that policy makers find it difficult to respond effectively. Digitalisation is no longer a matter of concern only for the information and communications technology (ICT) minister. It requires the attention of the government as a whole.

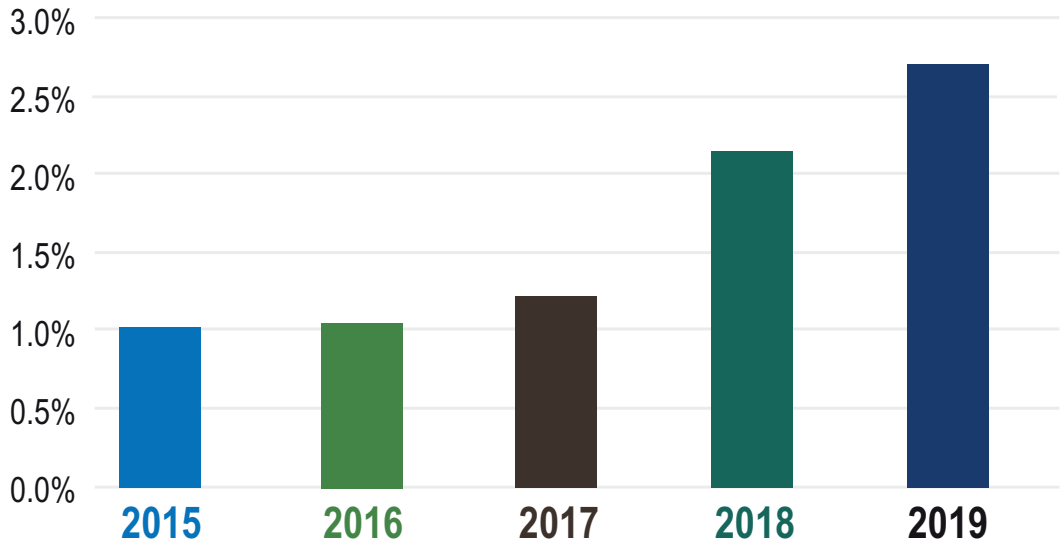
These challenges underscore the importance of international support for digital transformation. The amount of development assistance allocated to ICTs and related development areas remains insufficient. For example, while the share of aid-for-trade resources allocated to the ICT sector is increasing, from 1.2% in 2017 to 2.7% in 2019 (Figure 3.2) it is still below the 3% level observed over 2002-05, during

Figure 3.1. Mismatch of rapid digitalisation and uneven levels of digital readiness



Source: Author's illustration

Figure 3.2. Share of aid-for-trade resources for the ICT sector, 2015-19



Source: UNCTAD analysis based on OECD data on aid-for-trade expenditures.

which time the two parts of the World Summit on the Information Society were convened (UNCTAD, 2021[6]).

Building the capacity of low- and middle-income countries to participate in and shape the digital economy will require breaking down silos within governments as well as in the development community. Innovative approaches to delivering development assistance are also needed. In particular,

smart solutions based on partnerships and transparency are key to avoid duplication of efforts and keep costs low. The "eTrade for all" initiative led by the UNCTAD is a concrete example of such a solution.

The eTrade for all initiative identifies and helps to overcome gaps

Given the urgency to bridge the gaps in digital readiness and the currently insufficient levels of development assistance in this area, members of the international community, including bilateral development agencies, need to work together in innovative ways. Developing and implementing solutions in many of the areas that must be addressed – such as improving legal and regulatory frameworks to enhance trust on line, building skills for the digital economy, strengthening digital entrepreneurship, and facilitating digital financial inclusion – take time.

Yet, many development co-operation actors only recently started to pay adequate attention to digitalisation through dedicated strategies and resource allocations, according to the 2019 survey conducted by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (UNCTAD, 2019[7]). While some donors had developed strategies emphasising the potential of digitalisation for promoting inclusive and sustainable economic growth, only a few offered a vision or approach for mitigating potential downside risks such as harmful concentration of market power by global digital platforms; greater digital and income inequality; and state and corporate use of digital technologies to control rather than empower citizens. The survey also found many donor organisations were pondering how best to organise themselves internally to design and implement overarching digital for development strategies in view of the cross-cutting nature of associated issues (see also case studies in Part 4 of this report).

The model of eTrade for all might inspire similar efforts to tailor development assistance to digital transformations in other areas such as health, public services, education, agriculture, urban development and climate change. The collaborative efforts of eTrade for all can provide useful information to international development partners as they consider how to prioritise limited funds in the area of digital for development. Its online platform provides a wealth of information about 34 partner organisations and their strengths that can be leveraged for greater impact (Box 3.1). Its listing of available technical assistance and existing products and programmes can help pinpoint areas that are currently not well covered and in which catalytic investment and initiatives could be particularly useful. For example, in joining eTrade for all in 2021, the British Standards Institution saw an opportunity to strengthen international support related to standards that are of relevance in the digital economy. In that context, the British Standards Institution published a white paper on how to support digital transformation in developing economies,[1] and has joined forces with UNCTAD to pilot questions related to standards in an eTrade Readiness Assessment for Kenya.

Country assessments produce evidence to catalyse action

The relative novelty of digitalisation and the cross-cutting nature of the issues involved make development assistance in the digital area both urgently needed and particularly difficult to organise. While awareness of the importance of digitalisation is growing among most governments, there is often less clarity about what measures to take first to strengthen a country's digital readiness. For instance, to help translate improved Internet connectivity into development gains, a broad spectrum of policy areas must be dealt with simultaneously. Without a clear understanding of which areas and potential measures to focus on, it is difficult for a government to indicate the type of international support it might seek

BOX 3.1. THE eTRADE FOR ALL INITIATIVE

The aim of the eTrade for all initiative is to facilitate more inclusive development outcomes from e-commerce by reaching beyond sector-by-sector silos and taking a comprehensive approach to policy challenges facing countries that are developing e-commerce ecosystems. Its online platform (etradeforall.org) also serves as a single gateway to organisations offering technical assistance and capacity building related to e-commerce. It lists more than 30 different technical assistance offerings (called development solutions) in English, French and Spanish and allows potential beneficiaries to connect directly with any offering partner. In 2020, 60% of the more than 80 000 new visitors to the platform were from developing countries.

Since its inception in 2016, the initiative has more than doubled its membership, from 14 to 34 partner organisations that each offer support in at least one of the targeted policy areas. Among its members are beneficiary countries; international, non-governmental and private sector organisations; and bilateral international development agencies. The initiative also provides a dedicated space for multistakeholder dialogue (especially through the eCommerce Week) and collaboration on topical issues. For example, in 2020, it released an online COVID-19 repository and produced a Global Review focused on of COVID-19 and e-commerce.

Source: UNCTAD (2021[8]), *COVID-19 and E-Commerce: A Global Review*, https://unctad.org/system/files/official-document/dtlstict2020d13_en.pdf

from development partners. This lack of understanding has sometimes been mistakenly interpreted as a lack of demand for development assistance in the digital area.

The eTrade readiness assessments, a key tool for accelerating countries' digital journeys, are one spinoff of the eTrade for all initiative.[2] They analyse a country's current state of digital readiness, focusing on seven key policy areas[3] plus gender and measuring e-commerce and the digital economy. For each of the 27 countries covered to date, most of them LDCs, an action matrix is available with specific recommendations and steps to be taken to strengthen the country's readiness to engage in and benefit from e-commerce. For each measure proposed, the matrix further identifies regional or global partners that can be approached if additional support is deemed necessary. In effect, these recommendations aim to help countries develop their digital economy (Box 3.2). They also provide a better basis for countries to engage in regional and international policy processes, such as those related to the African Continental Free Trade Area, the World Trade Organization and the Ministerial Conference of the United Nations.

A second spinoff of the eTrade for all initiative, eTrade for Women, contributes to advancing inclusive and sustainable economic growth by empowering women in the digital economy in line with Sustainable Development Goals 5 and 8. Its "advocates" participate in policy dialogues at national, regional and global levels. "By bringing all the concerned actors around the table, it will be easier to implement new measures because they have been previously discussed and agreed upon", noted the Advocate for West Africa, Patricia Zoundi Yao, founder and chief executive officer of QuickCash in Côte d'Ivoire. "In the past, when new laws were adopted, they were difficult to comply with because those affected hadn't been involved in their formulation." Another focus of the initiative is to build communities of women digital entrepreneurs. This has made a real difference to Armelle Koffi, founder and project engineer of ORA Technologies et Multimedia in Côte d'Ivoire. "The community is already helping me by providing trainings that are answers to my current needs", she said. "I have access to a network with women from different countries [and] to partnerships, and I can now offer my services to a bigger audience".

BOX 3.2. USING eTRADE READINESS ASSESSMENTS TO FAST-TRACK PROGRESS IN THE DIGITAL ECONOMY

UNCTAD eTrade readiness assessments identify weaknesses in a country's e-commerce ecosystem that need to be addressed to strengthen its capacity to fully benefit from digitalisation. In many developing countries, for example, policy, legal and regulatory frameworks are either lacking or need to be modernised. Fewer than half of LDCs have data protection or consumer protection laws in place that cover online activities (UNCTAD, n.d.[9]). Other frequently observed bottlenecks include the absence of national strategies to facilitate e-commerce and the digital economy; inadequate ICT infrastructure, especially in rural areas; the absence of a reliable addressing system; and a lack of skills and financing to support digital entrepreneurship.

According to an initial analysis, the implementation rate of eTrade readiness recommendations was about 50% (UNCTAD, 2020[10]). Some countries have established new mechanisms to enable better inter-ministerial co-ordination and multistakeholder dialogue. A growing (but still small) number of developing countries also have decided to develop national e-commerce strategies. Senegal, for example, has set up a National Council for Digitalization and in Samoa, an e-commerce committee has been formed. In several LDCs, eTrade readiness assessments have also catalysed evidence-based policy dialogue and constructive multistakeholder interactions.

In Cambodia, the E-Commerce Law was enacted in November 2019 and complemented by an implementation decree passed in 2020 to ease the registration of e-commerce businesses, as well as the Consumer Protection Law to better safeguard the rights of online shoppers and businesses. A national e-commerce strategy was endorsed in 2020, supported by the Enhanced Integrated Framework, an eTrade for all partner.

More broadly, "the utility of eTrade readiness goes much beyond the analytical domain", said Ratnakar Adhikari, Executive Director of the Enhanced Integrated Framework Executive Secretariat at the World Trade Organization. "It provides avenues for countries to take concrete measures to address constraints so as to bring their enterprises closer to the rapidly expanding global e-commerce market".

Note: The UNCTAD Cyberlaw Tracker, https://unctad.org/topic/ecommerce-and-digital-economy/ecommerce-law-reform/summary-adoption-e-commerce-legislation-worldwide, provides a summary of adoption of e-commerce legislation worldwide.

Source: UNCTAD (2020[10]), Fast-tracking Implementation of eTrade Readiness Assessments, https://unctad.org/system/files/official-document/dtlstict2020d9_en.pdf.

"[eTrade] provides avenues for countries to take concrete measures to address constraints so as to bring their enterprises closer to the rapidly expanding global e-commerce market". Ratnakar Adhikari, Executive Director of the Enhanced Integrated Framework Executive Secretariat at the World Trade Organization.

Partner organisations' assessments inform new e-commerce policies and programmes

Members of eTrade for all also conduct assessments, singly and in collaboration, to deliver more impactful and coherent support. Several partners are providing diagnostic assessments of aspects of countries' digital readiness. For example, the Universal Postal Union assesses the operational readiness of the postal system for e-commerce; the International Trade Centre looks at how to boost e-commerce by small and medium-sized enterprises; and the World Bank Group undertakes digital economy country assessments. Strengthening such information sharing about each organisation's products, and exploring synergies when relevant, will reduce the risk of duplication of work (e.g. undertaking similar assessments in the same countries) and increase opportunities for joint work. Already, eTrade readiness assessments are carried out in co-operation with several eTrade for all partners, among them Consumers International, the International Trade Centre, the United Nations Commission on International Trade Law and the Universal Postal Union.

Recommendations contained in these assessments serve as a menu of policy actions that can be supported by eTrade for all partners or other organisations, including bilateral development co-operation providers. They can also support efforts at the regional level. In 2021, for example, UNCTAD, the United Nations Capital Development Fund and the United Nations Development Programme came together to form the Pacific Digital Economy Programme with the support of the government of Australia.[4] Similarly, the assessments undertaken for African countries are now feeding into efforts to promote e-commerce strategies for the East African Community and the Economic Community of West African States. Ideally, any African country that so wishes should be able to benefit from these assessments, given that they would add much needed evidence for discussions related to the African Continental Free Trade Area. As of 2021, eTrade readiness assessments had been completed for only 14 African countries.

> "By bringing all the concerned actors around the table, it will be easier to implement new measures because they have been previously discussed and agreed upon", noted the Advocate for West Africa, Patricia Zoundi Yao, founder and chief executive officer of QuickCash in Côte d'Ivoire. "In the past, when new laws were adopted, they were difficult to comply with because those affected hadn't been involved in their formulation."
>
> **Armelle Koffi, founder and project engineer of ORA Technologies et Multimedia in Côte d'Ivoire.**

Partnerships and synergies among development actors should be prioritised

Going forward, much more and better co-ordination and collaboration are possible in the area of digital for development. It still happens that multiple development organisations approach the same country and offer similar assistance. This is hardly an efficient use of taxpayers' money and

is a burden on the beneficiary country government that must manage relations with so many partners. The eTrade for all initiative, with its focus on information sharing to leverage the strengths of different actors, has enhanced mutual understanding of what each partner is doing and where there are opportunities for synergies. For example, the Pacific Digital Economy Programme is unlikely to have emerged without eTrade for all. Nevertheless, the process is still at an early stage. Among the key priorities for the future are to further enhance transparency and explore possibilities for implementing projects involving multiple partners. The new United Nations resident coordinator offices could also help facilitate better co-ordination in countries. Achieving effective collaboration requires trust, resources and an openness to do things differently. When done well, it is likely to deliver better impacts.

REFERENCES

Globe Newswire (2018), "Cisco predicts more IP traffic in the next five years than in the history of the Internet", Globe Newswire, https://www.bloomberg.com/press-releases/2018-11-27/cisco-cisco-predicts-more-ip-traffic-in-the-next-five-years-than-in-the-history-of-the-internet. [2]

TeleGeography (2021), *The State of the Network: 2021 Edition*, TeleGeography, https://www2.telegeography.com/hubfs/assets/Ebooks/state-of-the-network-2021.pdf. [3]

UNCTAD (2021), *COVID-19 and E-Commerce: A Global Review*, United Nations Conference on Trade and Development, Geneva, https://unctad.org/system/files/official-document/dtlstict2020d13_en.pdf. [8]

UNCTAD (2021), *Digital Economy Report 2021 – Cross-border Data Flows and Development: For Whom the Data Flow*, United Nations Conference on Trade and Development, Geneva, https://unctad.org/system/files/official-document/der2021_en.pdf. [4]

UNCTAD (2021), *E-Commerce and Digital Economy Programme Year in Review 2020: Facilitating Inclusive Digital Economies in Challenging Times*, United Nations Conference on Trade and Development, Geneva, https://unctad.org/system/files/official-document/dtlstictinf2021d2_en.pdf. [6]

UNCTAD (2021), "Estimates of global e-commerce 2019 and preliminary assessment of COVID-19 impact on online retail 2020", *UNCTAD Technical Notes on ICT for Development*, No. 18, United Nations Conference on Trade and Development, Geneva, https://unctad.org/system/files/official-document/tn_unctad_ict4d18_en.pdf. [1]

UNCTAD (2021), "The UNCTAD B2C E-commerce Index 2020: Spotlight on Latin America and the Caribbean", *UNCTAD Technical Notes on ICT for Development*, No. 17, United Nations Conference on Trade and Development, Geneva, https://unctad.org/system/files/official-document/tn_unctad_ict4d17_en.pdf. [5]

UNCTAD (2020), *Fast-tracking Implementation of eTrade Readiness Assessments*, United Nations Conference on Trade and Development, Geneva, https://unctad.org/system/files/official-document/dtlstict2020d9_en.pdf. [10]

UNCTAD (2019), *Digital Economy Report 2019 – Value Creation and Capture: Implications for Developing Countries*, United Nations Conference on Trade and Development, Geneva, https://unctad.org/system/files/official-document/der2019_en.pdf. [7]

UNCTAD (n.d.), *The UNCTAD Cyberlaw Tracker*, https://unctad.org/topic/ecommerce-and-digital-economy/ecommerce-law-reform/summary-adoption-e-commerce-legislation-worldwide. [9]

NOTES

1. See: https://www.bsigroup.com/en-GB/our-services/international-projects/transition-to-a-digital-economy-whitepaper.
2. All eTrade readiness assessments completed to date are available at: https://unctad.org/topic/ecommerce-and-digital-economy/etrade-readiness-assessments-of-LDCs.
3. The seven policy areas identified in the eTrade for all initiative are presented at: https://etradeforall.org/about/policy-areas.
4. For more information, see: https://unctad.org/news/un-agencies-join-forces-support-inclusive-digital-economies-pacific.

TACKLING DIGITAL DISADVANTAGE WITH PEOPLE-CENTRED POLICIES

04

Genaro Cruz, GSMA
Melle Tiel Groenestege, GSMA

ABSTRACT

This chapter presents evidence showing that mobile broadband coverage in low- and middle-income countries has expanded rapidly but adoption has not kept pace and a persistent gender gap remains in both smartphone ownership and use of mobile Internet. It highlights the importance of tackling barriers to adoption of digital technologies including affordability, lack of skills, security concerns, irrelevant content and lack of access to enablers. To fully address these barriers and advance sustainable development, the chapter calls for the focus of policy to shift from infrastructure to enabling people to share in the benefits of digital transformation.

Key messages

- Of the 3.8 billion people around the world who remain unconnected to mobile Internet, 88% live in an area already covered by mobile broadband but do not use mobile Internet services.
- While it has narrowed, a significant gender gap persists: women in low- and middle-income countries are 15% less likely than men to use mobile Internet and to own a smartphone.
- The main barriers to mobile Internet adoption are affordability, knowledge and digital skills, lack of relevant content and services, safety and security concerns, and access to enablers.
- Development co-operation can help fix divides in three ways: support the collection of data and insights on the unconnected, provide capacity building and technical assistance for an enabling policy environment, and finance projects that help address the barriers to Internet adoption.

Mobile phones are driving unprecedented growth in global connectivity. By the end of 2020, over 4 billion people were using mobile Internet, an increase of 220 million in just one year (GSMA, 2021[1]). Mobile continues to be the primary and, in some cases only, way most people access the Internet, particularly in low- and middle-income countries. For example, 85% of all Internet users in Bangladesh and 69% of those in Kenya are mobile-only users (GSMA, 2021[1]).

These figures are a testament to the rapid expansion of mobile broadband coverage in recent years. However, more than 3.8 billion people were not using mobile Internet in 2020, and if no additional action is taken it will be difficult to achieve the universal connectivity goal of the SDGs (GSMA, 2020[2]). Connectivity played a crucial role during the COVID-19 pandemic as many activities moved on line. Yet, preliminary GSMA research shows that while people substantially increased their data consumption, the rate of new users adopting mobile Internet did not significantly accelerate. Unsurprisingly, the overwhelming majority of people unconnected to mobile Internet are living in low- and middle-income countries (93%), and are more likely to be poorer, less educated, female and rural. The gender gap in mobile Internet use has continued to narrow but remains significant: women, across low- and middle-income countries, are 15% less likely to use mobile Internet than men, which means that there are 234 million fewer women than men using mobile Internet (GSMA, 2021[3]).

The main challenge to closing the persistent digital divide today is no longer as straightforward as a lack of digital infrastructure. Other demand-related barriers prevent people from adopting and using the Internet. Most (88%) of those 3.8 billion people who were unconnected to mobile Internet in 2020 worldwide live in areas that are already covered by mobile broadband but face other barriers. They may be unable to afford a smartphone or lack literacy or digital skills, for instance, or are held back by restrictive social norms.

Bridging the digital divide will advance inclusive, sustainable development

Improving connectivity has substantial long-term benefits. Research shows that a 10% increase in mobile broadband penetration leads to growth of 1.5% in gross domestic product (GDP) (ITU, 2020[4]). While the digital divide risks exacerbating existing societal inequities, closing the gender gap in mobile Internet use across low- and middle-income countries could add USD 700 billion in GDP growth over a five-year period, representing an additional 0.7% of GDP growth (GSMA, 2019[5]).

Increased connectivity also transforms people's lives. A recent study in the United Republic of Tanzania finds mobile broadband coverage increases household consumption

by 7% and decreases poverty by 5 percentage points, effects driven mainly by positive impacts on labour market outcomes (Bahia et al., 2021[6]). Mobile Internet improves people's well-being, providing access to important information that they could not otherwise access and that assists them in their daily lives (GSMA, 2020[7]). Depending on the country, 58-90% of female mobile owners report that it helps them in their day-to-day work, studies or household chores (GSMA, 2020[7]), with many reporting they use mobile Internet to post photos of their products on social media to attract new customers, search for recipes for nutritious household meals, consult with doctors on line and check prices of products on line before making a purchase.[1]

Addressing barriers with holistic, people-centred policies

A narrow focus on infrastructure policies alone will be insufficient to close the digital divide. Internet adoption has not kept pace with the rapid expansion of mobile broadband coverage (Figure 4.1). Policies that enable the expansion of mobile networks remain important, especially in sub-Saharan Africa, where as much as 19% of the population still do not have access to mobile broadband. But the focus of policy making needs to shift to people and end users to tackle the barriers to mobile Internet adoption and use. Such an approach should also strengthen efforts to address the specific needs of underserved groups such as women and persons with disabilities, who are disproportionally excluded from the benefits of an increasingly connected society (GSMA, 2020[7]).

GSMA research in low- and middle-income countries has identified five specific barriers to people's adoption and use of available mobile Internet: affordability, knowledge and skills, safety and security, relevance, and access to enablers such as electricity and formal IDs. Though all five of these are present in some way, the salience of each varies depending on the region and the country's level of digital development.

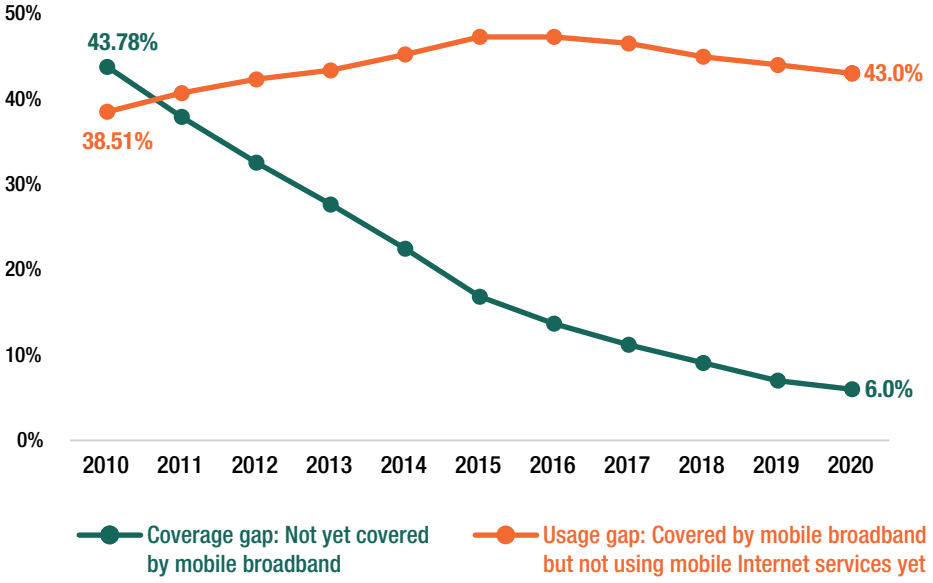
In South Asia and sub-Saharan Africa, for example, the two most frequently reported barriers are affordability, particularly handset affordability, and lack of literacy and digital skills. People in Latin America, on the other hand, cite concern about safety and security as the main barrier to their use of mobile Internet.

In South Asia and sub-Saharan Africa, for example, the two most frequently reported barriers are affordability, particularly handset affordability, and lack of literacy and digital skills. People in Latin America, on the other hand, cite concern about safety and security as the main barrier to their use of mobile Internet. Governments that aim to close the digital divide thus need a comprehensive policy framework that addresses all these barriers in a holistic manner (GSMA, 2021[8]).

Improve the affordability of handsets and data services

The purchasing cost of an Internet-enabled handset is a significant barrier to mobile ownership. Though prices for data bundles have dropped by 40% since 2016, half of low- and middle-income countries do not yet meet the United Nation's 2% affordability target (Broadband Commission for Sustainable Development, 2021[9]).[2] Moreover, the affordability barrier disproportionately

Figure 4.1. Evolution of gaps in global coverage and usage



Source: GSMA (2021[8]), *Accelerating Mobile Internet Adoption: Policy Considerations to Bridge the Digital Divide in Low- and Middle-Income Countries*, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/05/Accelerating-Mobile-Internet-Adoption-Policy Considerations.pdf.

affects women, who often have less financial independence and lower incomes than men and lack the same access to external sources of finance. Women in low- and middle-income countries are 15% less likely than men to own a smartphone (GSMA, 2021[3]).

Policies to improve affordability should focus on increasing people's purchasing power, for example through the use of targeted subsidies, and on lowering unnecessary costs for the provision of mobile services, for example by removing sector-specific taxes and setting appropriate spectrum prices (GSMA, 2021[8]). Other policies include those that enable innovative pricing and handset financing strategies and ensure pricing flexibility of data bundles in competitive markets. An example is the Safaricom Lipa Mdogo Mdogo initiative in Kenya, which enables customers to purchase a smartphone and pay for it in small instalments; together with its Maisha Ni Digital ("Life is Digital") campaign, it is increasing smartphone adoption among women (GSMA, 2021[10]). Pricing flexibility is important to improve affordability while also maintaining healthy levels of investments in infrastructure (GSMA, 2018[11]).

Design digital skills-building programmes that meet user needs

GSMA research in eight low- and middle-income countries finds that nearly a quarter of people surveyed, and particularly rural and female populations, are unaware of mobile Internet and how it can benefit them[3] (GSMA, 2020[2]).[4] For example, in India, only 53% of women are aware of mobile Internet (GSMA, 2021[3]). Even among mobile users who are aware, a lack of literacy and digital skills – for instance, how to set up an account or use popular mobile applications – is often reported as the number one barrier to mobile Internet adoption. Women and persons with disabilities, who have lower literacy rates and levels of education, particularly face this barrier (GSMA, 2021[3]; 2020[12]).

Initiatives aimed at improving digital skills should be aligned with the needs of users and understand what motivates them to learn, which can vary depending on a range of factors, including their life needs and skill levels. GSMA research shows

that communication, social networking and entertainment are often the primary entry points to mobile Internet use (GSMA, 2021[1]). Any programme to improve digital skills should reflect the fact that most people access the Internet through a mobile device. Where appropriate, digital tools can help support independent learning and train the trainer programmes can facilitate community learning. The Digital Ambassadors Programme in Rwanda, led by the government in partnership with a non-governmental organisation, is an example of a train the trainer initiative. Following a successful trial, it will train 5 000 young men and women to go out into communities and teach basic digital skills and how to use e-commerce and e-government services to 5 million Rwandans who have little or no experience using the Internet.[5]

Support digital ecosystems that create relevant content and services

The local ecosystem of digital services and resources in many low- and middle-income countries is underdeveloped and content, products and services do not correspond to users' capabilities and needs. For example, while the COVID-19 crisis spurred an increase in online shopping, just 8% of people in South Africa and 24% of people in Brazil used e-commerce (UNCTAD, 2021[13]). To enable the expansion of a local offering of digital services and content that motivate people go on line and maximise the benefits for local businesses of having an online presence requires appropriate policies to be in place. Such policies should help to create an enabling environment for digital businesses to thrive, for start-ups to grow, and for priority sectors and small and medium-sized enterprises to deliver on their digital transformation strategies. Governments can also stimulate the local ecosystem by accelerating the digitalisation of public services. This not only increases the value of mobile Internet adoption, but can also contribute to creating a digital industry – jobs, skills and infrastructure – to fuel the local digital transformation.

Address safety and security concerns to build user trust

Concerns about safety and security, including around risks such as online harassment or bullying, disinformation, scams, and even theft are increasingly keeping people from going on line and having a positive Internet experience. Women, in particular, can face safety and harassment concerns that deter them from owning a handset or using the Internet. In South Africa, for example, 22% of female mobile users who are aware of mobile Internet but are not using it reported that the main reason is safety and security-related issues; only 5% of males with the same profile cited these as the main reason (GSMA, 2020[7]). However, it is important to note that many women feel that mobile ownership and access to mobile services can also enhance their personal security (GSMA, 2018[14]).

Policy makers should ensure that appropriate policy and legal frameworks are in place that recognise safety and security risks. They also should provide users with relevant capabilities and tools to address risks, including awareness campaigns, training or helplines. To build confidence and trust, a co-regulatory model should be adopted to tackle disinformation. Promising initiatives include the European Union and Australian Codes of Practice on Disinformation. Research shows that mobile users are concerned about the privacy of their personal data and want simple, clear choices to control how their information is used and to know that they can trust companies with their data (GSMA, 2014[15]). Data privacy laws that protect the fundamental right of individuals to privacy, but are flexible enough to encourage innovation should be put in place.[6]

Tackle other barriers by expanding access to enablers

Using the Internet depends on enablers such as electricity, formal proof of identification, agents[7] and accessibility features, which makes them an important area for action to increase

adoption. One billion people still lack formal proof of identification, for example, while regulations in over 150 countries require such proof to sign up for a SIM card (GSMA, 2021[16]). Lack of electricity (e.g. to charge a device) is a barrier, as are accessibility challenges (e.g. for persons with low literacy or disabilities). Women may find agents, electricity or a quality connection particularly difficult to access when these are only available outside the home, either in locations that are unsafe or where social norms constrain women's freedom of movement. Women are also less likely to have the official identification documents required to register for a SIM card.[8]

Policies could address these barriers by, for example, expanding access to electricity, including by leveraging mobile technology for off-grid energy solutions (GSMA, 2020[17]; 2017[18]). Registration processes for mobile and other digital services should be inclusive and transparent, which requires balanced SIM registration requirements and consistent application of consumer protection rules across the digital ecosystem. A recent study in 31 countries by the GSMA (2021[16]) found that when governments in 11 countries relaxed regulatory requirements for on-boarding new users (e.g. allowing a wider range of proof of identity and limited services with less customer information), more people were able to access mobile Internet services. Making services, sales channels and training facilities accessible to underserved groups such as women and persons with disabilities should also be considered alongside developing and improving accessibility features. This is particularly important for women in places where social norms limit their mobility and, for instance, prevent them from talking to male agents to buy airtime or visiting a cybercafé or library where men who are not members of their family are present.

A policy shift is needed to increase digital inclusion

Much emphasis and substantial resources have been devoted to expanding mobile broadband infrastructure. More than 160 countries have a national broadband strategy (Broadband Commission for Sustainable Development, 2020[19]). These efforts have paid off in steadily expanded coverage, with 94% of the world's population covered by broadband in 2020 compared to 56% in 2010.

However, increasing adoption and use is a more complex challenge, as it requires people-focused policies that consider the needs of end users and address barriers of affordability, digital literacy, trust, relevance and accessibility. Not only are these inextricably tied to broader socio-economic challenges, but responsibility to address these barriers is distributed across a wide array of ministries, regulators, agencies and stakeholders. This problem is compounded by the lack of reliable data on the unconnected, especially gender-disaggregated data, to target policy action.

Successful policy strategies therefore need to recognise the structural challenges and cross-cutting nature of improving digital inclusion, prioritise data collection and aim to address all barriers in a holistic manner through a whole-of-government approach. Development co-operation can help ensure the process also advances sustainable, inclusive development by:

- increasing local capacity to collect and analyse granular, reliable and gender-disaggregated data to better understand the context, characteristics and needs of the unconnected
- providing capacity-building and technical assistance to support governments in designing and implementing policies and regulations that tackle the five key barriers to mobile Internet adoption and use
- financing projects that address the barriers to mobile Internet use, with an emphasis on digital skills initiatives in partnership with local stakeholders and the private sector.

REFERENCES

Bahia, K. et al. (2021), "Mobile broadband internet, poverty and labor outcomes in Tanzania", *Policy Research Working Paper*, No. 9749, World Bank, Washington, DC, https://openknowledge.worldbank.org/handle/10986/36172 (accessed on 5 October 2021). [6]

Broadband Commission for Sustainable Development (2021), "2025 targets: Connecting the other half", web page, https://broadbandcommission.org/broadband-targets (accessed on 5 October 2021). [9]

Broadband Commission for Sustainable Development (2020), *The State of Broadband 2020: Tackling Digital Inequalities*, International Telecommunication Union and United Nations Educational, Scientific and Cultural Organization, Geneva and New York, NY, https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-BROADBAND.21-2020-PDF-E.pdf. [19]

GSMA (2021), *Accelerating Mobile Internet Adoption: Policy Considerations to Bridge the Digital Divide in Low- and Middle-Income Countries*, GSMA, London, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/05/Accelerating-Mobile-Internet-Adoption-Policy-Considerations.pdf. [8]

GSMA (2021), *Access to Mobile Services and Proof of Identity 2021: Revisiting SIM Registration and Know Your Customer (KYC) Contexts During COVID-19*, GSMA, London, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/04/Digital-Identity-Access-to-Mobile-Services-and-Proof-of-Identity-2021_SPREADs.pdf. [16]

GSMA (2021), *Safaricom's Maisha Ni Digital Campaign: A Holistic Approach to Address the Barriers Preventing Kenyan Women from Using Mobile Internet*, GSMA, London, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/03/Safaricom-Maisha-Ni-Digital-Case-Study.pdf. [10]

GSMA (2021), *The Mobile Gender Gap Report 2021*, GSMA, London, https://www.gsma.com/r/wp-content/uploads/2021/07/The-Mobile-Gender-Gap-Report-2021.pdf. [3]

GSMA (2021), *The State of Mobile Internet Connectivity Report 2021*, GSMA, London, https://www.gsma.com/r/wp-content/uploads/2021/09/The-State-of-Mobile-Internet-Connectivity-Report-2021.pdf. [1]

GSMA (2020), *The Mobile Disability Gap Report 2020*, GSMA, London, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/12/GSMA_Mobile-Disability-Gap-Report-2020_32pg_WEB.pdf. [12]

GSMA (2020), *The Mobile Gender Gap Report 2020*, GSMA, London, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/GSMA-The-Mobile-Gender-Gap-Report-2020.pdf. [7]

GSMA (2020), *The State of Mobile Internet Connectivity Report 2020*, GSMA, London, https://www.gsma.com/r/wp-content/uploads/2020/09/GSMA-State-of-Mobile-Internet-Connectivity-Report-2020.pdf. [2]

GSMA (2020), *The Value of Pay-As-You-Go Solar for Mobile Operators*, GSMA, London, https://www.gsma.com/mobilefordevelopment/resources/the-value-of-pay-as-you-go-solar-for-mobile-operators. [17]

GSMA (2019), *The Mobile Gender Gap Report 2019*, GSMA, London, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/03/GSMA-Connected-Women-The-Mobile-Gender-Gap-Report-2019.pdf. [5]

GSMA (2018), *A Framework to Understand Women's Mobile-related Safety Concerns*, GSMA, London, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/07/A-framework-to-understand-womens-mobile-report_Mar_v12_MI080618.pdf. [14]

GSMA (2018), *Assessing the Impact of Market Structure on Innovation and Quality*, GSMA, London, https://www.gsma.com/publicpolicy/wp-content/uploads/2018/05/Assessing_impact-market-structure.pdf. [11]

GSMA (2017), *Mobile for Development Utilities: Lessons from the Use of Mobile in Utility Pay-as-you-go Models*, GSMA, London, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2017/01/Lessons-from-the-use-of-mobile-in-utility-pay-as-you-go-models.pdf. [18]

GSMA (2014), *Mobile Privacy: Consumer Research Insights and Considerations for Policymakers*, GSMA, London, https://www.gsma.com/publicpolicy/wp-content/uploads/2014/02/GSMA2014_Research_MobilePrivacyConsumerResearchInsightsForPolicymakers.pdf. [15]

ITU (2020), "Economic impact of broadband, digitization and ICT regulation", web page, https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/Economic-Contribution.aspx (accessed on 5 October 2021). [4]

UNCTAD (2021), "COVID-19 has changed online shopping forever, survey shows", news, United Nations Conference on Trade and Development, Geneva, https://unctad.org/news/covid-19-has-changed-online-shopping-forever-survey-shows (accessed on 5 October 2021). [13]

NOTES

1. The GSMA conducts field research to understand the way women use mobile Internet and how it benefits them. Some of these use cases are brought to life in a series of videos available at: https://www.gsma.com/mobilefordevelopment/resources/connected-women-life-stories.
2. The target is for entry-level broadband services in developing countries to be affordable by 2025. The UN Broadband Commission considers an entry-level data bundle (e.g. 1 gigabyte) affordable to the average consumer when it costs less than 2% of the country's monthly gross national income per capita. See: https://www.broadbandcommission.org/broadband-targets.
3. The GSMA conducts a nationally representative field survey of about 1 000 male and female adults aged 18 and older. Face-to-face interviews took place in 8 low- and middle-income countries in 2020, 15 in 2019, 18 in 2018 and 24 in 2017. The eight surveyed in 2020 were Algeria, Bangladesh, Guatemala, India, Kenya, Mozambique, Nigeria and Pakistan. The countries included for all years in the survey account for about 78% of the population in low- and middle-income countries.
4. Survey respondents are aware of mobile Internet if they have ever used the Internet on a mobile phone or are aware it is possible to access the Internet on a mobile phone.
5. For more information, see the Rwanda Ministry of Information Communication Technology and Innovation website at: https://www.minict.gov.rw/news-detail/digital-ambassador-programme-to-connect-5-million-rwandans.
6. The GSMA Data Privacy Principles address protection of consumers' data when they use mobile applications and services that access, collect and use personal information. See: https://www.gsma.com/publicpolicy/resources/mobile-privacy-principles.
7. In many low- and middle-income countries, most people use prepaid mobile services to buy airtime and data from a network of retail agents.
8. See: https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/04/Digital-Identity-Access-to-Mobile-Services-and-Proof-of-Identity-2021_SPREADs.pdf.

CASE STUDY: DIGITAL PLATFORMS CAN BOOST EARNINGS OF WOMEN ENTREPRENEURS

05

Alexa Roscoe, International Finance Corporation
Charlotte Benedicta Ntim, International Finance Corporation

ABSTRACT

This case study spotlights the experience of women on digital trading platforms during the COVID-19 pandemic. Building on the findings of IFC research in Africa and Southeast Asia, it outlines that while COVID-19 lockdowns were a boost to e-commerce overall, women-owned businesses often failed to reap the benefits. It points out that platforms can do more to reverse the negative impacts of the pandemic on women to harness their potential and strengthen e-commerce markets.

Key messages

- Nearly USD 300 billion could be added to the value of e-commerce markets – and the wallets of women entrepreneurs – in Africa and Southeast Asia by 2030 if gender gaps were closed.
- The public and private sectors can work together to strengthen e-commerce markets by closing gender gaps in access to digital assets and finance, and by offering entrepreneurship training for women.

E-commerce is thriving in emerging markets. In Africa, the number of online shoppers grew by an average of 18% every year from 2014 to 2019 (Davarpanah, 15 April 2020[1]). Similarly, Southeast Asia's e-commerce market tripled from 2015 to 2020 and is expected to triple again by 2025 (Google et al., 2020[2]). New research by the International Finance Corporation (IFC), based on data from two leading e-commerce platforms – Jumia in Africa and Lazada in Southeast Asia – suggests that investment in the women entrepreneurs on e-commerce platforms could push this growth rate even higher. The projected return on such investment for women in these two markets is estimated to be nearly USD 300 billion by 2030.

Women are already active in e-commerce in Africa and Southeast Asia, with notable variation across countries (IFC, 2021[3]; 2021[4]). The IFC research found that between one-third and one-half of online vendors on the Jumia platform were women – higher than the rate of women's ownership of formally registered businesses according to national figures in the countries studied. Similarly, in Southeast Asia, women represent between a third and two-thirds of vendors on the Lazada platform. However, women-owned businesses on both platforms tended to be micro-enterprises and concentrated in lower margin, high-competition categories such as fashion and beauty. Women-owned businesses were also more likely than men-owned businesses to be self-financed and less likely to leverage platform financing.

Gender gaps in digital and financial inclusion existed before the pandemic, but the COVID-19 crisis disproportionately affected women entrepreneurs on e-commerce platforms. In terms of sales, for instance, prior to the pandemic, women-owned businesses in the Philippines outperformed those owned by men; during the pandemic, their sales fell to 79% of those of men-owned businesses (IFC, 2021[4]). Similarly, sales by women-owned businesses on Jumia dropped by 7% during the pandemic, while those of men-owned businesses rose by 7% (IFC, 2021[3]).

By recruiting, training and financing women entrepreneurs, these platforms can reverse this trend and help ensure that women-owned businesses and women vendors benefit equally from the exponential growth in e-commerce.

- **Recruit women:** While women are active participants on e-commerce platforms, they do not participate at the same rate as men in countries such as Côte d'Ivoire and Indonesia. As the experience of Jumia demonstrates, platforms can better understand the barriers women sellers face by identifying and tracking women-owned businesses and helping them succeed by offering enhanced features and services. Platforms can also cultivate the best approaches to increase women entrepreneurs' representation on e-commerce platforms.
- **Train women:** Platforms can build on training success by adding content and expanding outreach specifically targeting women-owned businesses. The IFC research found that demand for training was greater among women in both Africa and Southeast Asia, and that women were more likely to report that they had benefited from existing training offerings.

- **Finance women:** Women-owned businesses in both regions were more likely to be self-financed. In Africa, 74% of women reported using their personal savings as start-up capital compared to 70% of men. In Southeast Asia, 78% of women used their personal savings as start-up finance compared to 71% of men. Moreover, women-owned businesses in Africa were less likely to apply for loans through the platforms themselves – even when they were more likely to be approved. This behaviour may reflect many women vendors' focus on lower margin categories, making shorter term and inventory-bound financing more appealing. The differences also suggest that offering targeted financing could be an opportunity for e-commerce platforms to not only close gender gaps, but also to grow their financial technology (FinTech) user base.

In sum, rapid expansion over the last two decades has made e-commerce a defining feature of the modern economy and a powerful engine for economic development. For sellers, e-commerce opens pathways to new markets. For customers, it increases value, choice and convenience. For communities, e-commerce can create employment in related sectors such as logistics.

Donors and other development actors have a role in supporting policies that expand Internet access, reduce the cost of access and ensure that everyone can participate in the digital economy on an equal footing, including by investing in digital infrastructure that boosts network capabilities. Furthermore, donors are well placed to support initiatives that enable micro-, small- and medium-sized enterprises to rebound from the COVID-19 pandemic.

Every year that gender gaps remain unaddressed, the e-commerce sector loses billions of dollars in potential value (IFC, 2021[3]; 2021[4]). The crisis disproportionately hit women-owned businesses engaged in e-commerce. But their relative success prior to the pandemic suggests that reversing that impact and returning their sales to parity with those of men-owned businesses are essential and achievable goals.

REFERENCES

Davarpanah, A. (15 April 2020), "E-commerce in Africa: Emerging markets", *Borgen Project blog*, https://borgenproject.org/e-commerce-in-africa-emerging-markets (accessed on 23 September 2021). [1]

Google et al. (2020), *e-Conomy SEA 2020 – At Full Velocity: Resilient and Racing Ahead*, Bain & Company, Boston, https://www.bain.com/globalassets/noindex/2020/e_conomy_sea_2020_report.pdf. [2]

IFC (2021), *Women and E-commerce in Africa*, International Finance Corporation, Washington, DC, https://www.ifc.org/wps/wcm/connect/47361305-6ebe-431a-8dd9-db2290919823/202105-digital2equal-women-and-e-commerce-africa.pdf?MOD=AJPERES&CVID=nCGRGTr. [3]

IFC (2021), *Women and E-commerce in Southeast Asia*, International Finance Corporation, Washington, DC, https://www.ifc.org/wps/wcm/connect/04f295ac-172b-4c74-8957-700609c293d4/202105-digital2equal-women-and-e-commerce-southeast-asia.pdf?MOD=AJPERES&CVID=nCGTdWq. [4]

MANAGING INCLUSIVE DIGITAL TRANSFORMATION, LESSONS FROM 100 COUNTRIES

06

Yolanda Jinxin Ma, United Nations Development Programme

ABSTRACT

This chapter highlights that the COVID-19 pandemic has spurred unprecedented demand from developing countries for support in undertaking a national digital transformation, mainly centred around requests for technology guidance, digital solutions, and basic digital infrastructure and capacity building. These national digital transformations require deliberately inclusive approaches and strategies. Development actors can help build the foundations of inclusive digital ecosystems by investing in their own digital capabilities, developing regulatory and policy frameworks, and generating data and common standards to measure the real impact of digitalisation. Aligning strategies, approaches and support at the country level is especially important given the significant risk of duplication, the scarcity of resources and interoperability challenges.

The authors would like to acknowledge the contributions of Carolin Frankenhauser, Digital Analyst, and Paula Lopez for visual design.

Key messages

- The COVID-19 pandemic has spurred unprecedented demand from developing countries for digital support: the United Nations Development Programme alone has received such requests from more than 100 countries.
- The pandemic has exposed and intensified inequality within and among countries. With 2.9 billion people still offline, closing the digital divides is more urgent than ever.
- Development actors need to increase investments in more holistic digital transformation with an inclusion focus and whole-of-society approach that is rooted in the country context.
- Development actors, intentionally and collectively, need to measure the impact and benefits of digital transformation, especially for marginalised groups.

The digital revolution presents an opportunity to reinvigorate efforts to achieve the Sustainable Development Goals and rethink approaches towards development. Before the COVID-19 crisis, many developing countries and development actors saw digital technologies as useful enablers that could enhance programming. The pandemic shifted their perspective. Not only is it more important than ever to systematically incorporate digital approaches into development, but national digital transformations, while necessarily tailored to each individual country context, also must be consciously inclusive and people-centred.

For the United Nations Development Programme (UNDP), inclusive digital transformation is about improving the availability, accessibility and adoption of digital technologies for all. Its country partners are eager for support. Since the outbreak of the pandemic, more than 100 countries have asked for assistance developing digital solutions, including some 30 that sought support to ensure a holistic digital transformation. Development co-operation providers, working collaboratively and investing strategically, can make meaningful contributions towards building open and inclusive digital ecosystems.

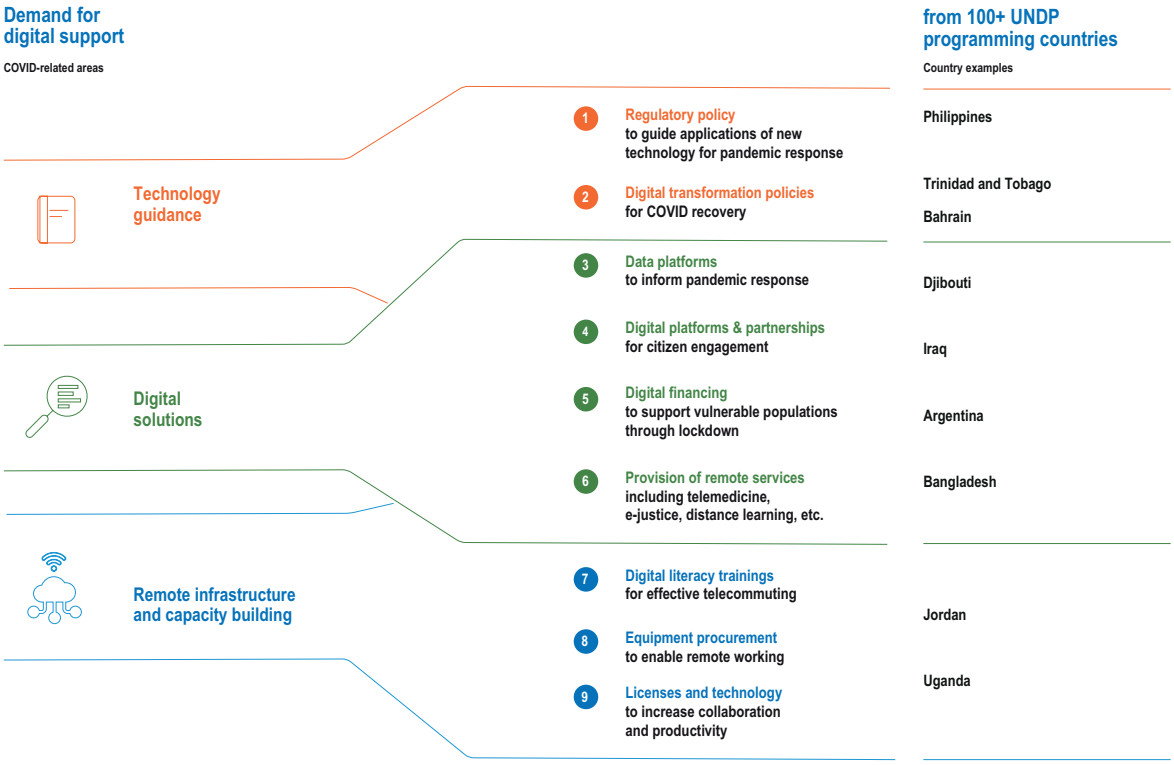
Demand for digital solutions and guidance exploded during the pandemic

The COVID-19 crisis was a wake-up call for the need to pursue whole-of-society digitalisation approaches. Billions of people around the world suddenly needed digital devices to be able to learn, work, trade, and access essential information and services. The pandemic widened inequality, set back poverty eradication efforts and made abundantly clear that digital divides, if left unaddressed, can have long-lasting negative impacts on human development. Gender-based digital divides, for instance, could mean that millions of women excluded from digital ecosystems may lose out on work opportunities as stimulus programmes increasingly are delivered through digital channels (Madgavkar et al., 2020[1]).

Demand from UNDP partner countries centres on three main areas: 1) technology guidance; 2) digital solutions; and 3) basic digital infrastructure and capacity building (Figure 6.1). The explosion of demand for support also reflects the scale of the pandemic-related challenges they had to address, including:

- providing children with Internet access for online schooling
- connecting street vendors to e-commerce platforms so they could continue operating their businesses
- educating government employees so they could provide services on line
- building secure and interoperable data platforms for COVID-19 tracking and tracing
- fighting hate speech and misinformation on social media.

Figure 6.1. What kind of digital support are developing countries demanding?



Source: Author's illustration.

These are interconnected challenges, and a siloed approach that addresses any one issue with a single set of digital solutions does not work well. For example, in one country, the UNDP received a request for an Information Systems Strategic Plan from one ministry and another request from a different ministry for support to build a data warehouse for the country to manage its COVID-19 response. These two separate requests, while stemming from different needs, have a natural linkage and are very much interconnected. Support can be more effective if it builds the foundations of digital ecosystems to help achieve the Sustainable Development Goals rather than stand-alone and sectoral digital systems or platforms. Early evidence suggests that countries with more developed digital foundations were able to respond more effectively to the COVID-19 crisis.

Thanks to its well-established national digital ID system, for instance, Pakistan was able to provide emergency cash to 7 million people within two weeks of launching its assistance programme (Nishtar, 2020[2]). In Uganda, a partnership between the UNDP and Jumia, Africa's leading e-commerce platform, helped more than 2 000 informal market vendors access new customers on line while sustaining supply chains during the pandemic (UNDP, 2021[3]) .

Support can be more effective if it builds the foundations of digital ecosystems to help achieve the Sustainable Development Goals rather than stand-alone and sectoral digital systems or platforms.

As they emerge from crisis response mode and shift towards a recovery phase, more governments are asking for technology guidance and policy advice. At the same time, global development actors are proactively seeking to align their efforts in the direction of an ecosystem approach, following in the footsteps of early pioneers such as the United States Agency for International Development (USAID), the World Bank, Digital Pathways at Oxford and the Digital Impact Alliance. Based on insights gained from its country-level support on digital solutions, the UNDP, too, advocates for an intentional, proactive and inclusive approach towards digital transformation.

How inclusive, whole-of-society digital transformations foster development

Inclusive digital transformation is ensuring that digital technologies are universally available, accessible and adopted and that they enable meaningful and safe use of the Internet and digital services for all. This entails a thoughtfully designed and implemented change process focused on maximising the benefits of digitalisation for people. Inclusive digital transformation:

- addresses the needs of the most poor and vulnerable, including those who are not connected
- mitigates the tendency of digital transformation to exacerbate existing inequalities
- empowers underrepresented groups to take part in a meaningful way
- protects people from the adverse effects of digital technologies.

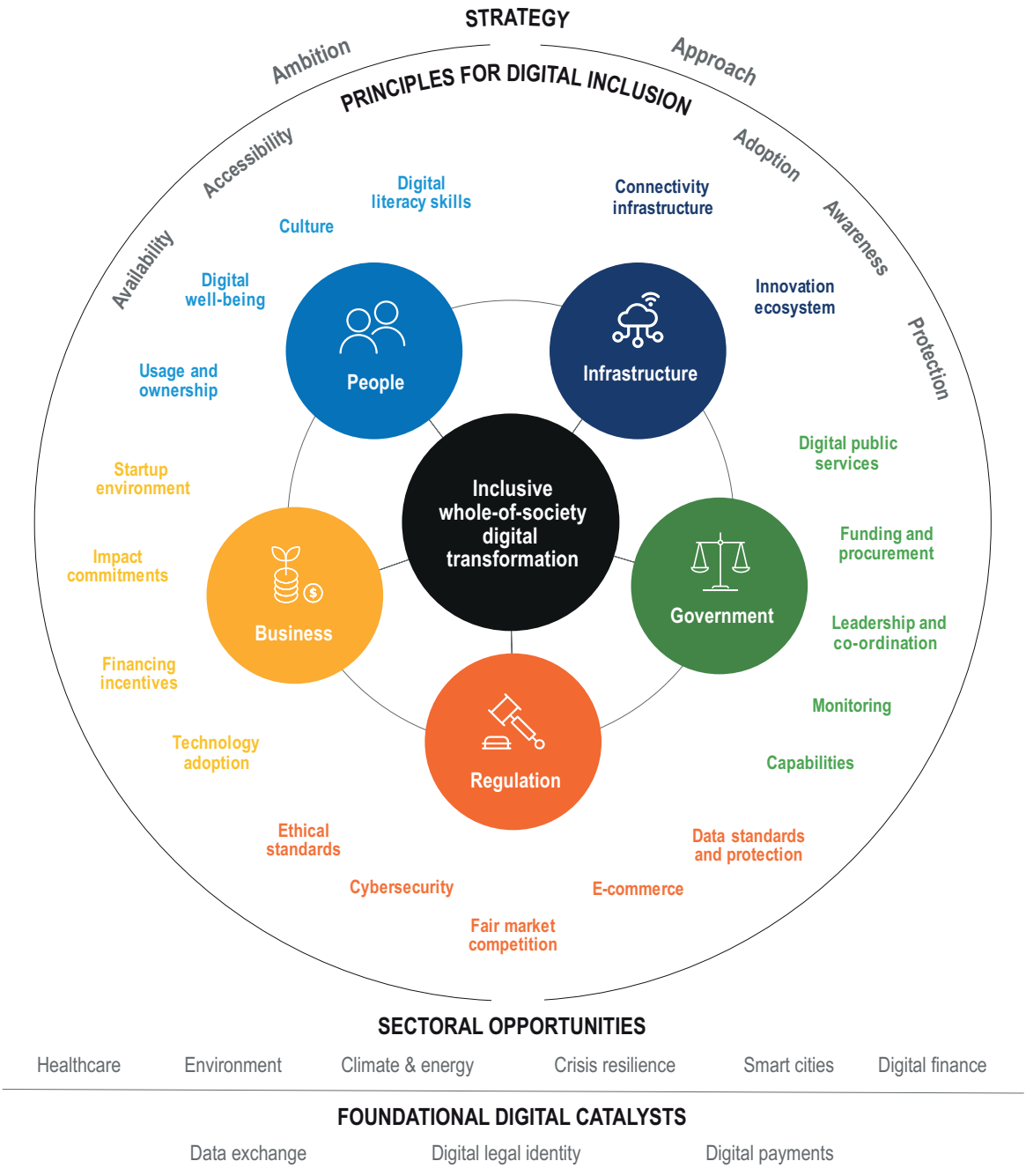
While there is no textbook example of a perfectly executed inclusive digital transformation, early evidence shows the potential benefits of investing in digital inclusion. At a macro-regional level, one recent study argues that the economic benefits of reaching universal Internet access far outweigh the investment costs – in the case of East Asia and the Pacific, by a magnitude of over 30 times (Bamford, Hutchinson and Macon-Cooney, 2021[4]).

On a microeconomic level, inclusive digital transformation can expand market opportunities and create new ones for businesses. The potential market size of smart recruiting platforms for informal workers, for instance, is estimated to be between USD 500 million and USD 2 trillion by 2022, according to a study by UNICEF, Arm and Dalberg (2019[5]). Inclusive digital ecosystems also improve the environment for businesses. Research in Serbia for the UNDP found that decent connectivity plus an inclusive and welcoming digital environment (for example, easy visa requirements, level of LGBT-friendliness, etc.) could attract skilled immigrants (Nikolić, 2020[6]).

A framework to build inclusive digital ecosystems

Some countries had started to think through their approach to digital technologies and adopted a national digital strategy even before the pandemic drove home the urgency of such an exercise. Others are looking for guidance on immediate, concrete and practical steps they can take now to implement inclusive digital transformation. While recognising that countries approach this process with their own individual development challenges, the UNDP has developed a framework to help them assess their current strengths and weaknesses and identify future priorities. The framework includes elements needed to build an inclusive digital ecosystem and a digital readiness assessment, both in beta version and still evolving to incorporate country and development community feedback. The framework revolves around people, the government, infrastructure, regulation and business for an inclusive, whole-of-society digital transformation (Figure 6.2).

Figure 6.2. The UNDP Inclusive Digital Transformation Framework (Beta)



Source: Author's illustration.

Effective support to country approaches to digital transformation

Drawing on its engagement with 12 countries that are developing digital strategies, the UNDP has identified a variety of approaches that have proven to be effective in accelerating inclusive digital transformations.

Long-term vision and commitment by national leaders backed by institutions

Strong commitment and clearly articulated objectives and a vision from a country's leadership are critical to a successful digital transformation. These help to refine the agenda and shared goals, enabling concerted

action in terms of investment, human resources and the creation of an enabling environment. Countries often set up an institutional structure to complement and implement the national strategy, either in the form of a new ministry or agency or a special unit under the president or prime minister. These can ensure co-ordination and alignment across different ministries, between the public and private sectors, and at both national and local levels.

An example is the Republic of Moldova, which eight years ago adopted its Digital Agenda for Moldova 2020 (Government of Moldova, 2013[7]). Initially focused on modernising the information and communication sector, the strategy is now being updated based on a revitalised vision of digital transformation as a key national priority. The central government, with support from the UNDP, is co-ordinating digital efforts across its various institutions by facilitating strategic conversations and strengthening alignment among United Nations agencies, regional players such as the European Bank for Reconstruction and Development, and development co-operation providers such as USAID and the European Union, among others.

In another example of this approach, the government of Mauritania is in the process of creating a national digital agency to lead the digital transformation across ministries and stakeholders in line with its strategy. After conducting a rapid digital readiness assessment based on the inclusive digital transformation framework, the UNDP helped evaluate the current distribution of responsibilities and institutional structures; introduced international best practices to benchmark; and identified the need for an agile structure with a clear mandate to implement an inclusive digital strategy. As advised by the UNDP, the newly established Ministry of Digital Transformation, Innovation and Public Sector Modernisation, the country's first, has identified as one of its main strategic priorities ensuring an integrated, coherent, inclusive and whole-of-government approach to digital transformation.

A dedicated institutional structure can ensure co-ordination and alignment across different ministries, between the public and private sectors, and at both national and local levels.

Whole-of-society approach designed through participatory processes

Many government approaches tend to be fragmented and isolated across different ministries, leading to the lack of interoperability and duplication of effort that hampers digital transformation and delays its potential benefits. By default, such approaches also may exclude non-governmental stakeholders, especially marginalised groups, from digital policy development. A successful alternative is a whole-of-society approach that allows different actors to participate in a meaningful way (Cázarez-Grageda, 2018[8]) and is transparent, inclusive and representative. While such an approach may not be a natural choice for some governments, its value is increasingly being recognised and embraced.

The UNDP has promoted such holistic approaches. In Kosovo[1] it hosted a roundtable with government and private sector representatives to discuss and align on joint priorities for an inclusive digital transformation (UNDP, 2021[9]). This generated key principles for stakeholders to consider, including the need for agility in implementing digital strategies and quick adaptation. Similarly, the UNDP conducted

1. This designation is without prejudice to positions on status, and is in line with United Nations Security Council Resolution 1244/99 and the Advisory Opinion of the International Court of Justice on Kosovo's declaration of independence.

a survey in Curaçao to ensure the digital agenda reflects and integrates public opinion. The survey received 1 180 responses over the course of just two days, a significant number in a territory with a population of 155 000 (Smith, Cooper and Gemon, 2021[10]). This also demonstrated strong interest from both individual citizens and their different communities across the country on the digital future of the country.

Another example of this approach is in Dominica, where the UNDP supported a whole-of-society process to develop the national digital strategy including through roadshows, consultations and a public engagement survey that garnered nearly 500 responses. The digital readiness assessment also solicited feedback from a range of national stakeholders, including the private sector, United Nations representatives and development workers at an initial in-person visioning workshop in July 2020 (UNDP, 2021[11]). Robert Tonge, Dominica's Co-ordinator of the Digital Economy, has pledged that the vision for Dominica's digital future will reflect the views of all Dominicans as "public ownership of the new strategy is essential" (UNDP, 2021[12]).

Build inclusion into digital services, products, policies and infrastructure

Successful approaches to an inclusive digital transformation look beyond strategy to ensure that other components also emphasise inclusion, whether they concern businesses, infrastructure, or appropriate government policies and regulations designed to protect the most vulnerable from potential risks and harm brought by digital revolutions. Some countries are pursuing the goal of universal connectivity as a starting point for their digital agenda that will lead to additional economic and development benefits. These examples can generate evidence for countries that have yet to make investments in digital services and technologies.

Botswana, for instance, plans to connect 203 villages to high-speed broadband Internet in 2021 and 2022 and ultimately provide Wi-Fi hotspots in public places across the country (Boti, 2021[13]). The country's digital strategy, called SmartBots, thus aligns with its Vision 2036, which aims to transform Botswana from an upper middle-income to a high-income country by 2036 (Government of Botswana, 2021[14]).

Another example is Bangladesh. With UNDP support through the Access to Information initiative, it has built up important digital infrastructure over the past decade. This served it in good stead when the COVID-19 pandemic hit. Thanks to existing physical digital centre networks and capabilities, Bangladesh was able to rapidly train more than 4 000 doctors to provide telemedicine services through a national hotline that has served more than 350 000 patients during the pandemic.

Ukraine is also building inclusion into service and product design. The UNDP is supporting the Ministry of Digital Transformation to foster equitable access to digital technologies, including through a project to digitalise state services (UNDP, 2021[15]). The project aims to strengthen Ukraine's capacity to design digitalised services to vulnerable populations using a human rights-based approach (Klyuchar and Haccius, 2020[16]).

Learning from what works and what doesn't in digital development

Commitments to foster inclusive digital transformations do not always translate easily into action. The EDISON Alliance, led by the World Economic Forum (2021[17]), is one of several global initiatives to foster affordable and accessible digital opportunities. One aspect of its work is a Digital Inclusion Navigator, an online tool co-developed by the UNDP and the World Economic Forum to help governments learn from examples of inclusive digital approaches and access resources such as best practices, playbooks and ongoing initiatives.

To help translate ambitions into action in developing countries, the development community should continue to collaborate and collectively step-up efforts in three main areas:

1. **Align strategies, approaches and support at the country level.** There is huge potential for strategic country-level collaboration on digitalisation. More development actors have come to realise the importance of an ecosystem approach, but this is not yet fully reflected in country-level implementation, which has led to unnecessary competition for funding and underutilised local talent. Given the scarcity of resources, interoperability challenges and the significant risks of duplication, development actors should not only increase their investment, but also align on priorities, ideally based on developing county partners' national digital strategies.
2. **Remain relevant partners and engage different players.** Development actors need to increase their own level of digital literacy and stay on top of new (technological) developments. Understanding and collecting evidence of what works and what does not in different local contexts can help identify the right partners to work with, including private sector companies and civil society organisations. Collaboration with the digital ecosystem, at both local and global levels, will ensure a more sustainable long-term engagement that respects local cultures and practices and leverages global expertise as appropriate.
3. **Measure the impact and benefits of digital transformation, particularly for vulnerable groups, more effectively.** Data and evidence about the benefits of digital transformation for countries and individuals, especially in marginalised groups, are still limited. But ongoing digital transformations will produce large volumes of data that development agencies should try to harness more effectively. An important step would be to agree common measurement standards for tracking evidence and generating insights – for instance, on how people newly connected to the Internet are using and leveraging digital platforms and how that connectivity transforms individuals, families, communities and countries. Deeper understanding will foster better decision making and prioritisation of future actions.

REFERENCES

Bamford, R., G. Hutchinson and B. Macon-Cooney (2021), *The Progressive Case for Universal Internet Access: How to Close the Digital Divide by 2030*, Tony Blair Institute for Global Change, London, https://institute.global/policy/progressive-case-universal-internet-access-how-close-digital-divide-2030. [4]

Boti, O. (2021), "Botswana: Connectivity Plans Advance", AllAfrica, https://allafrica.com/stories/202105050243.html (accessed on 21 October 2021). [13]

Cázarez-Grageda, K. (2018), *The Whole of Society Approach: Levels of Engagement and Meaningful Participation of Different Stakeholders in the Review Process of the 2030 Agenda*, discussion paper, Partners for Review, Bonn, https://www.partners-for-review.de/wp-content/uploads/2018/11/Whole-of-Society-P4R-Discussion-Paper-Oct.-2018.pdf. [8]

Government of Botswana (2021), "Botswana Vision 2036: Achieving Prosperity for All", web page, https://www.vision2036.org.bw/sites/default/files/resources/Vision2036.pdf (accessed on 21 October 2021). [14]

Government of Moldova (2013), *Digital Moldova 2020*, Government of Moldova, Chișinău, https://eufordigital.eu/library/digital-moldova-2020-strategy (accessed on 21 October 2021). [7]

Klyuchar, M. and L. Haccius (2020), "Human rights and digitalization – One byte at a time", *UNDP in Ukraine blog*, https://www.ua.undp.org/content/ukraine/en/home/blog/2020/human-rights-and-digitalization-one-byte-at-a-time.html (accessed on 21 October 2021). [16]

Madgavkar, A. et al. (2020), "COVID-19 and gender equality: Countering the regressive effects", McKinsey Global Institute, https://www.mckinsey.com/featured-insights/future-of-work/covid-19-and-gender-equality-countering-the-regressive-effects (accessed on 8 October 2021). [1]

Nikolić, K. (2020), "What digital nomads have to teach us about emigration", *UNDP blog*, https://www.rs.undp.org/content/serbia/en/home/blog/2020/what-digital-nomads-have-to-teach-us-about-emigration.html (accessed on 7 October 2021). [6]

Nishtar, S. (2020), "COVID-10: Using cash payments to protect the poor in Pakistan", *World Economic Forum Agenda blog*, https://www.weforum.org/agenda/2020/05/using-cash-payments-protect-poor-pakistan (accessed on 8 October 2021). [2]

Smith, G., A. Cooper and C. Gemon (2021), "Trinidad and Tobago – Weekly reflection", UNDP Trinidad and Tobago, Accelerator Lab, https://sway.office.com/bLWqm5dMqw6IapSy?ref=Link. [10]

UNDP (2021), "Building on successful UNDP partnership, Dominica doubles down on digital transformation", web page, https://digital.undp.org/content/digital/en/home/stories/building-on-successful-undp-partnership--dominica-doubles-down-o/ (accessed on 21 October 2021). [11]

UNDP (2021), "Digital, inclusive, accessible: Support to Digitalisation of Public Services in Ukraine (DIA Support) Project", web page, https://www.ua.undp.org/content/ukraine/en/home/projects/digital--inclusive--accessible--support-to-digitalisation-of-sta.html. [15]

UNDP (2021), "Discussing the priorities, challenges and partnership opportunities for digital transformation in Kosovo", web page, https://www.ks.undp.org/content/kosovo/en/home/stories/discussing-the-priorities--challenges-and-partnership-opportunit (accessed on 21 October 2021). [9]

UNDP (2021), "Dominicans shape their digital future with support from UNDP", press release, UNDP Barbados & the Eastern Caribbean, https://www.bb.undp.org/content/barbados/en/home/presscenter/pressreleases/20192/dominicans-shape-their-digital-future-with-support-from-undp (accessed on 21 October 2021). [12]

UNDP (2021), "UNDP teams up with e-commerce giant Jumia to bring Uganda's markets online", web page, https://digital.undp.org/content/digital/en/home/stories/undp-teams-up-with-e-commerce-giant-jumia-to-bring-ugandas-marke (accessed on 21 October 2021). [3]

UNICEF, Arm and Dalberg (2019), *Tech Bets for an Urban World: What the Tech Sector Can Do to Improve Children's Lives in a Rapidly Urbanizing World*, United Nations Children's Fund, Arm and Dahlberg, https://www.unicef.org/innovation/media/166/file/Urban%20Tech%20Bets.pdf. [5]

World Economic Forum (2021), "The EDISON Alliance for Digital Inclusion", web page, https://www.weforum.org/the-edison-alliance/home. [17]

07 DETERMINING NATIONAL PRIORITIES IN THE 4TH INDUSTRIAL REVOLUTION

Elizabeth Stuart, Digital Pathways at Oxford

ABSTRACT

Successful digital transformations require co-ordination across governments and societies and between technical systems. Drawing on the experiences of countries implementing the Digital Economy Kit, this chapter shows that an effective first step towards the co-ordination required is a country-owned participatory and analytical process to set realistic national digital priorities. To ensure the best use of resources and greatest potential benefits, development co-operation providers should align their programmes and funding to each country's priorities and help develop regulatory systems tailored to its needs.

Key messages

- Few countries have yet managed to successfully implement a comprehensive digital transformation, even those with a digital strategy and where some sectors are digitalised.
- The Digital Economy Kit shows great potential for guiding countries through their digital transformation by identifying opportunities, determining feasible actions given their capabilities, and ensuring the widest societal and stakeholder input in the process.
- Development co-operation providers can support nationally led priorities for digital transformation in three ways: 1) support country-driven analytical processes; 2) use the outcomes of analytical processes to align in-country programmes and funding; and 3) support the elaboration of context-specific regulatory environments.

Digital transformation, as the term suggests, is a whole-of-economy, whole-of-society process – one that, in its fullest expression, could be as epochal a change as the First Industrial Revolution. But such a grandiose description belies the reality of where many developing countries, their governments and societies stand right now. Reeling from the impacts of COVID-19, which heightened awareness of the urgent need to develop and master digital technologies, few countries have yet managed to successfully implement wide-scale transformation. Many do have strategies in place, and digitalisation has occurred in some sectors to a significant degree, the most notable being in the development of FinTech and the provision of mobile money.[1] But, based on anecdotal evidence, sweeping digital transformation – or the so-called the "Fourth Industrial Revolution" – is looking increasingly daunting to many developing country governments. They also have justified concerns that the downsides of digital technologies will override their enormous potential benefits if the digitalisation process is not properly managed.

It may be helpful at this stage, as countries grapple with the challenge of digitalisation, to rein in ambitions and focus on what is practical. This means adopting an approach that builds on countries' existing capacities and carefully defines a series of feasible yet still ambitious priority actions that fully consider the national context, stakeholder demands, and the political and economic status quo.

The Digital Economy Kit: An inclusive strategy process

Digital Pathways at Oxford, building on insights developed by the Pathways for Prosperity Commission on Technology and Inclusive Development, has been supporting countries to develop realistic strategies for leveraging connectivity and digital technology for inclusive growth. To date, the governments of eight developing and emerging economies have either completed or are on their way to completing a process that aims to ground digital transformation in their particular reality. The process is centred around the Digital Economy Kit and conducted through a close partnership between Digital Pathways at Oxford and the government, ideally with a domestic implementing partner. The first step is a diagnostic process and a multistakeholder dialogue series to identify a country's digital comparative advantage; that is, opportunities across its entire economy and population, including the most marginalised. An assessment then follows to determine what immediate, practicable priority steps can be taken. The outcome is a strategy primer for action that is country-owned with built-in political buy-in. The kit is based on an analytical framework with four pillars of the digital economy: (1) infrastructure; (2) human capital; (3) finance; and (4) policy and regulation (Pathways for Prosperity Commission, 2018[1]). Inclusion is a cross-

cutting theme, as the objective is to support a country in achieving the greatest possible inclusive growth by leveraging digital technologies.

As the process is ongoing in two of the eight countries (Indonesia and Lesotho), only the results in the other six countries are discussed here. However, it is evident that the drive for reality-based reform has been strikingly successful in the other six countries engaged in the process (Bangladesh, Benin, Ethiopia, Malawi, Mongolia and South Africa), even if the strategy primer has yet to be fully implemented in any of these countries.

In some cases, the process has produced national-level change within six months; in others, it is being incorporated into national planning strategies with budgets and delivery deadlines attached. In Mongolia, for example, 181 government services were digitalised in six weeks as a direct result of the kit (Access Solutions LLC, 2019[2]).[2] In South Africa, many of the recommendations developed through the Digital Economy Kit process were integrated into the president's plan to accelerate economic development;[3] some were implemented by self-organising industry groups outside of government; others were implemented through a whole-of-government master planning process (Genesis Analytics, 2020[3]). In Ethiopia, the government prioritised implementation of a new digital strategy (Ethiopian Ministry of Innovation and Technology, 2020[4]) and is now establishing a venture capital fund for tech start-ups.

Why the Digital Economy Kit works

Three key features are responsible for the success of the approach taken by the Digital Economy Kit. The kit identifies opportunities for digital transformation that are context-specific. The participatory dialogue phase engages a wide range of private and public stakeholders, with an emphasis on left-behind communities. Additionally, a high degree of political buy-in and ownership is assured by the early engagement of senior-level government figures who initiate and then shepherd the process.

It identifies opportunities for digital transformation that are context-specific

The initial diagnostic phase gathers all available and relevant supply-side and demand-side disaggregated data, including, importantly, data generated by previous diagnostics and analyses, and reviews all relevant strategies and development plans. In Benin, new primary data were also generated. The data are then used to build a hypothesis as to which sectors may provide the greatest opportunity for digital transformation in that country, and this is then used as an entry point for conversations during the dialogue phase about how to get the fundamentals of digital transformation right. These conversations may include discussion of how to build interoperable systems, how to encourage infrastructure sharing, and how to standardise and incentivise skills training and upgrading. By investing in core fundamentals, governments can achieve the sort of cohesive, scalable digital transformation that allows them to explore new areas of economic opportunity and job creation.

Where relevant, the Digital Economy Kit also considers regional strategies, especially when regional integration is a sensible priority for a country because of its economic isolation or small domestic market. In Benin, for instance, it was important to consider the role of regional policy-setting bodies such as the Central Bank of West African States[4] (BCEAO) and the Economic Community of West African States[5] (ECOWAS) in discussions around digital financial services and national identity (ID) projects. The BCEAO governs directives associated with cross-border transactions, and all national ID projects would need to be interoperable since the ECOWAS region allows for free movement of people and goods between member states.

The opportunities identified in each country recognise the specific level of (digital) development there – areas that present

opportunities for quick gains from sensible digitalisation or market facilitation. This approach is different from the seemingly homogenous "Fourth Industrial Revolution"-type analyses that focus on frontier technologies regardless of whether the country has the capability to deploy them.

In some respects, the process pointed to similar opportunities across the six countries using the Digital Economy Kit. All countries, for instance, explored ways digital platforms could make agricultural value chains more efficient and improve agricultural outputs through better extension services. Each of the countries also considered how its informal economy might benefit from connecting informal workers to digital financial services and e-commerce and sharing economy platforms (see Chapter 18). However, there were also clear differences in the identified opportunities; for instance, Ethiopia was the only one of the six countries that identified tourism as an opportunity.

The opportunities identified in each country recognise the specific level of (digital) development there – areas that present opportunities for quick gains from sensible digitalisation or market facilitation. This approach is different from the seemingly homogenous "Fourth Industrial Revolution"-type analyses that focus on frontier technologies regardless of whether the country has the capability to deploy them.

It brings to the fore the voices of left-behind communities

Once identified, the opportunity hypothesis is tested in a multistakeholder dialogue phase. In any reform process, there are trade-offs, and the dialogue provides space to understand these as fully as possible. This phase also ensures that multiple views and perspectives are built into the analysis, including those of civil society, and focusing, where possible, on representing the views of left-behind communities, such as academia, the private sector, and, specifically, tech entrepreneurs. In other words, the technology's users and potential users are the focus of the dialogues, as fully understanding their perspective is vitally important if final products and services are to be as useful and efficient as possible.

During a dialogue session in Mongolia, where inclusive policy making has not been practiced until now, a representative from a slum district described its patchy service provision. What the community was experiencing had not shown up in the official statistics and thus, government leaders heard and understood this for the first time. Such user accounts helped shape the final strategy primer. This phase also provides an opportunity to garner additional qualitative data, for instance on access to mobile and Internet, for which data gaps exist, and to gain a broader understanding of the wants and needs of marginalised communities.

The findings of diagnostic and stakeholder engagement components inform the development of a strategy primer that sets out achievable priority actions for the identified opportunities. These primers vary widely from country to country in both style and content. Priority actions identified range from reforms around telecommunications liberalisation to action plans for more effective use of universal service funds.

It is demand-driven by leadership at the top, enabling a high level of country ownership

In most of the six countries, the international community had already conducted multiple assessments, helped develop frameworks and produced diagnoses on different aspects of the digital economy. While some of these offered useful insights for the country, many were instead focused on the (albeit important) needs of international development organisations, for instance data to inform the World Bank's investment or lending strategy in that country. Such diagnoses can only ever be of limited utility if the country has not first conducted a bottom-up exercise to ascertain its own priorities and digital opportunities. Through the Digital Economy Kit, a country first conducts its own assessment in the hope that donors will use this to inform or ideally direct their programming and funding.[6]

Underscoring its emphasis on political buy-in and country ownership, the kit has only been implemented in countries that asked for it; that is, countries that had already identified digitalisation as a priority in their development plans. The governments in the six countries had signalled that they wanted to embrace the potential of digital technologies and would prioritise this politically, either in public statements or via strategies such as "Benin Révélé" (Revealing Benin) in Benin (Présidence de la République de Bénin, 2021[5]) and Lesotho's National Strategic Development Plan II (Government of Lesotho, 2018[6]).

The kit was also implemented based on demand. In each case, a senior policy maker with the political clout to spearhead transformation specifically requested collaboration with Digital Pathways at Oxford. A senior government figure from either the presidency or the prime minister's office, as well as by a steering committee comprising senior figures from the relevant ministries, also frequently sponsored the process. In Ethiopia, for example, the Office of the Prime Minister and the Ministers of Innovation and Technology and of Finance provided leadership; the prime minister's digital adviser, formerly an adviser to the Minister of Innovation and Technology, personally played a proactive role in the process. In South Africa, demand for the kit came from a multistakeholder leadership group (BusinessTech, 2020[7]) with the endorsement of the presidency's technology commission. In Mongolia, the prime minister himself launched the strategy primer (Ariunzaya, 2020[8]).

[This] leadership from the top not only expedited implementation, but also ensured that the right coalitions – both inside and outside the government – could be quickly convened, bypassing at least some of the usual political jostling for power.

This leadership from the top not only expedited implementation, but also ensured that the right coalitions – both inside and outside the government – could be quickly convened, bypassing at least some of the usual political jostling for power. The involvement from the outset of a range of line ministries also promoted full ownership and smoothed implementation, as senior policy makers participated in building the process and officials could clearly see how its outcome would benefit their mission. Table 7.1 shows the key implementing partners in the governments of the countries that have implemented or are implementing the kit approach.

In addition to government partners, in-country implementing partners such as

Table 7.1. Primary government partners for each Digital Economy Kit country

Country	Key government partners for implementation
Bangladesh	Department of Information and Communication Technology (Ministry of Posts, Telecommunication and Information Technology), Aspire to Innovate (a2i) programme of the Cabinet Division and ICT Division, Ministry of Planning
Benin	Office of the President, Ministry of Digitization
Ethiopia	Ministry of Innovation and Technology, Ministry of Finance, Office of the Prime Minister
Malawi	National Planning Commission, Reserve Bank of Malawi, Office of the President via the Cabinet Secretary
Mongolia	Communication and Information Technology Authority, Cabinet Office Information Technology Department, National Development Agency
South Africa	Public-Private Growth Initiative; Project Management Office of the president's private office; Department of Communications and Digital Technology; Department of Planning, Monitoring and Evaluation

Source: Author's compilation

a local research institute or consultancy undertake the analytical elements of the kit and the necessary network building for the process. This is important, as Oxford-based researchers will only have a partial understanding of the day-to-day political economy of the country.

Challenges: Locating digital mandates within administrations and translating a strategy into sensible reforms

Some lessons are already emerging from the experience of countries that have used the Digital Economy Kit to establish sensible, realistic priorities and areas where digitalisation will have optimal benefits. Some relate to managing relationships among government agencies; others pertain to challenges in implementing digital strategies.

Navigating mandates of government agencies

The distribution of responsibility for digitalisation efforts within governments can impact the success and sense of ownership of a country's transformation strategy. Many countries place all digital issues under a single line department, often a niche technical agency. Too often, senior political sponsors from these agencies only engage closely with issues relevant to their narrow mandate. The risk of such a structure is that ideas about the transformation with the most potential, such as automating factory production lines or creating new digital marketplaces, will be overlooked.

In some countries that used the kit, government leaders with broader mandates were brought into the process to ensure a whole-of-economy perspective. One example is Benin, where the project was co-led by the Ministry of Digitalization and the presidency. Another is Malawi, where the National Planning Commission, which already had a broad whole-of-economy mandate, was the main government sponsor. Bangladesh, meanwhile, has built on its whole-of-government adoption of digital payments to expand digitalisation throughout government services. Box 7.1 outlines Bangladesh's progress in digitalising its economy and society for inclusive growth and development.

Moving from strategy to implementation

Despite countries' success in establishing a wide range of implementing agencies, translating the strategy primer into specific reforms has been challenging. Once the primer is completed, capacity constraints require governments to determine which of their priorities are most urgent. None of the six governments have (yet) been able to simultaneously implement every component of their strategy primer, which is partly a

BOX 7.1. BANGLADESH'S DIGITAL JOURNEY SINCE 2008: A VIEW FROM THE INSIDE

BY ANIR CHOWDHURY, POLICY ADVISER, ASPIRE TO INNOVATE (A2I) PROGRAMME OF THE CABINET DIVISION AND ICT DIVISION, MINISTRY OF PLANNING, BANGLADESH

Bangladesh is pursuing its vision to become a prosperous, middle-income country that uses information and communication technologies (ICTs) as a pro-poor tool to eradicate poverty, establish good governance and ensure social equity. Since Prime Minister Sheikh Hasina announced the Digital Bangladesh priorities in late 2008, Bangladesh has become a leader in the use of ICTs to promote inclusion in all spheres of society.

Bangladesh has already achieved middle-income status ahead of its self-imposed 2021 target. The public sector played an important role by adopting a culture of citizen-centric and innovative public service; transforming how the government delivers services by adapting digital technologies to the local context; and prioritising the needs of the most marginalised people. Its strategy of inclusive digital transformation reduced the amount of time, money and visits needed to access public services, thus saving millions of previously underserved rural citizens more than USD 8 billion.

Bangladesh is also home to the fastest growing mobile financial services industry in the world: Alongside its whole-of-government adoption of digital payments, it has injected unprecedented dynamism into the economy and launched the move towards a cashless society. All 25 million beneficiaries of the government's social safety net programme, 15 million of them women, now receive their payments digitally. This digital finance infrastructure, based on the biometrically verified smart national identity card and policy reform based on e-KYC (know your customer standards) and organisational capacity, enabled the government's rapid response to the economic impacts of COVID-19 and its new social safety net programmes for the so-called "new poor". The government is also experimenting with real-time poverty ranking and pre-emptive benefits transfers using satellite and telecom data for faster and more accurate targeting.

One-stop digital centres, run by micro-entrepreneurs in over 5 000 rural and urban local government institutions, ensure access to public and financial services within five kilometres of most citizens, including in areas that are hard to reach. By 2025, these centres as well as more than 100 000 schools, more than 18 000 health clinics and other public facilities will have low-cost, high-speed connectivity.

The public service itself is embracing digitalisation through a range of initiatives to build staff technology capacity and foster innovation in service delivery, while promising tech start-ups are being groomed to support social development with technology. In another co-operative effort, 23 ministries and 40 industry associations are working on a skills data platform, called National Intelligence for Skills, Education, Employment and Entrepreneurship, to better match the labour supply with the rapidly shifting future of work.

Its innovation culture, public-private collaborations and maturing interoperable digital platforms served Bangladesh's citizens well during the pandemic. But Bangladesh is still on the move. Digital Bangladesh is now looking towards a 2041 horizon and the goal of equitable and sustainable development for every citizen.

result of financing constraints rather than implementation capacity constraints.

Gaining buy-in from junior staff

Even when the strategy primer has been enthusiastically embraced by the relevant line ministries and endorsed by the presidency or prime minister's office, more junior officials are the ones who must deliver its constituent elements. If those officials have not been briefed on the approach and do not understand the potential upside, there may be impediments to their capacity and motivation to implement it. In Ethiopia, a training session for next-level officials in the Ministry of Finance provided space for them to socialise and discuss the actions outlined in the strategy primer. Similar efforts may be needed in other countries. For instance, in Bangladesh, it would be advantageous

to tie up with a2i's new Civil Service 2041 initiative to implement the strategies from the kit.

How development co-operation can support national priority setting

The international development community can best help countries define and set their national digital priorities by supporting processes such as the Digital Economy Kit rather than undertaking their own separate, individual analysis. This support could take the form of financing kits or similar analytical processes. Funding for the kits discussed here was provided by the UK Foreign, Commonwealth and Development Office; the Dutch Ministry of Foreign Affairs; and the United Nations Economic and Social Commission for Asia and the Pacific. In each case, the country or agency allowed the process to be country-led as determined by the methodology.

Using the outcomes of kit-like processes to align their country programmes and funding would also be useful so that digital transformation efforts stay focused on those areas that countries determined to be most realistic and sensible. Providing finance for at least part of the implementation of the strategy primer would be an optimal funding modality.

Finally, experience to date with inclusive, context-specific and country-led approaches to setting national priorities for the digital transformation suggest that international development actors can play an important supporting role by supporting the design of regulatory systems, rules, behaviours and norms that are suitable for partner countries. Indeed, these may be better solutions for a country's domestic digitalisation than adopting external models such as, for example, those of the People's Republic of China, the European Union or the United States.

REFERENCES

Access Solutions LLC (2019), *National Digital Strategy Primer for Mongolia*, Access Solutions LLC, https://artnet.unescap.org/sites/default/files/file-2019-11/MDA%20Strategy%20Primer.%20FINAL.%2009.13.pdf. [2]

Ariunzaya, A. (2020), "Mongolia in the digital age project", *Mongolian Economy*, https://mongolianeconomy.mn/en/power-of-the-hiding-hand (accessed on 27 September 2021). [8]

BusinessTech (2020), "Is this a blueprint for mass job creation in South Africa?", BusinessTech, Lyttelton, https://businesstech.co.za/news/cloud-hosting/367692/is-this-a-blueprint-for-mass-job-creation-in-south-africa (accessed on 27 September 2021). [7]

Ethiopian Ministry of Innovation and Technology (2020), *Digital Ethiopia 2025: A Digital Strategy for Ethiopia Inclusive Prosperity*, Federal Democratic Republic of Ethiopia, https://mint.gov.et/wp-content/uploads/2020/12/Digital-Ethiopia-2025-Strategy-English.pdf. [4]

Genesis Analytics (2020), *Pathways to Digital Work: A Strategy Primer for South Africa's Digital Economy*, Genesis Analytics, Johannesburg, https://pathwayscommission.bsg.ox.ac.uk/sites/default/files/2020-01/South%20Africa%20Strategy%20Primer.pdf. [3]

Government of Lesotho (2018), *National Strategic Development Plan II 2018/19 to 2022/23*, Government of Lesotho, https://www.gov.ls/wp-content/uploads/2021/06/National-Strategic-Development-Plan-II-2018-19-2022-23.pdf. [6]

Pathways for Prosperity Commission (2018), *Charting Pathways for Inclusive Growth: From Paralysis to Preparation*, Pathways for Prosperity Commission, https://pathwayscommission.bsg.ox.ac.uk/sites/default/files/2019-11/charting-pathways-report.pdf. [1]

Présidence de la République de Bénin (2021), "Revealing Benin", web page, https://beninrevele.bj/en (accessed on 27 September 2021). [5]

NOTES

1. In sub-Saharan Africa, for instance, 21% of adults had a mobile money account in 2017, nearly twice the share in 2014 and easily the highest of any region in the world. See: https://globalfindex.worldbank.org/sites/globalfindex/files/2018-04/2017%20Findex%20full%20report_0.pdf.
2. For more information about Mongolia's current digitalised services, see eMongolia website: https://e--mongolia-mn.translate.goog/home?_x_tr_sl=mn&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=nui,sc
3. For more information on the South African Economic Reconstruction and Recovery Plan, see: https://www.gov.za/sites/default/files/gcis_document/202010/south-african-economic-reconstruction-and-recovery-plan.pdf.
4. For additional information on the BCEAO, see: https://www.bceao.int/index.php/en.
5. For additional information on ECOWAS, see: https://www.ecowas.int.
6. Efforts are underway to co-ordinate frameworks related to digitalisation, among them the work of the Digital Impact Alliance. The GovStack initiative also plans such an effort.

CASE STUDY: DIGITAL CITIZENSHIP OR DIGITAL AUTHORITARIANISM?

08

Tony Roberts, Institute of Development Studies
Tanja Bosch, University of Cape Town

ABSTRACT

The use of digital technology to open online civic spaces is particularly important when offline civic spaces are shrinking. But digital technology can also be used to repress civic engagement, distort debates and target specific groups. While there are positive examples of online civic engagement counterbalancing state power, protecting this space is an ongoing battle. To avoid a descent into digital authoritarianism, civil society groups should be supported in building capacity and engaging in international forums. Improved research and data collection are also key.

Key messages

- The same digital technologies that enable freedoms and opportunities also enable repression, notably through mass surveillance, disinformation and Internet shutdowns that limit digital citizenship.
- Research in 10 African countries found 65 examples of digital technology being used to open civic space, but 115 examples of digital technology being used to close it.
- Development co-operation actors, working with civil society and governments, can help keep online civic spaces open and ensure that states and corporations which deploy digital technologies respect the rights of digital citizens and the rule of law.

Digital citizenship is the use of mobile and Internet tools in online civic engagement. Around the world, individuals are adopting and adapting digital technologies to expand the boundaries of online civic space to demand change and claim rights and social justice. Countering and confronting them is a growing trend of digital authoritarianism – the deployment of digital technologies by those who hold power to restrict democratic space and curtail digital citizenship. This battle over online civic space is constant: neither side is ever completely successful, but unless digital citizenship is regularly exercised and defended, democratic civic space is likely to be lost.

Development co-operation, therefore, has an important role in supporting civil society and progressive governments to structure opportunities for digital citizenship. Digital technologies can facilitate transparency and accountability, and either open or close online spaces for the kind of "inclusive, participatory and representative decision-making at all levels" that all governments signed up to in Sustainable Development Goal 16.7 (Sustainable Development Solutions Network, 2015[1]).

Digital citizenship versus digital authoritarianism: Contesting online civic space

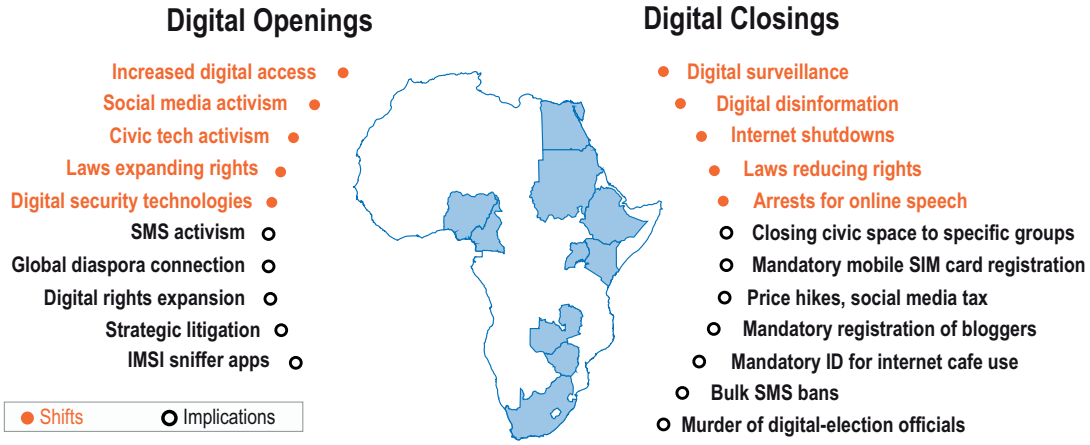
Thanks to mobile and Internet technologies, civic engagement and debate – like political, social and economic life – increasingly happen online. Digital technologies are used in campaigns to call out sexual harassment, highlight government corruption and even remove presidents. Increasingly, policy debates also take place online, including those around gender, vaccinations and migration. Therefore, it matters who gets to participate, influence and determine debate in the process of digital citizenship.

While digital divides persist within and between countries, digital citizenship has expanded, offering new opportunities and freedoms for millions of people around the world. For instance, recent research in ten African countries identified 65 positive examples of what the African Digital Rights Network calls "digital openings", which include social media activism and innovations to provide transparency and track corruption (Roberts, 2021[2]). At the same time, there is growing concern within civil society that states and corporations are using digital tools for authoritarian ends and to close online spaces for debate and dissent (Shahbaz, 2018[3]; Mare, 2020[4]). The research in Africa also found evidence of this worrying trend, identifying 115 "digital closings" of civic space,[1] including through state surveillance, online disinformation and Internet shutdowns (Roberts, 2021[2]). Figure 8.1 presents examples of digital openings and closings.

Digital citizenship and online civic engagement can counterbalance state power

Definitions of digital citizenship and digital citizens are evolving as the positive and potentially negative aspects of digital technologies become apparent. Thirteen

Figure 8.1. Incidents of digital opening and closing across ten African countries



Source: Roberts (2021[2]), Digital Rights in Closing Civic Space: Lessons from Ten African Countries, Institute of Development Studies (IDS), http://dx.doi.org/10.19088/IDS.2021.003.

years ago, Tolbert, Mossberger and McNeal (2008[5]) defined digital citizenship as "the ability to participate in society online", and digital citizens as "those who use technology frequently [daily], who use technology for political information to fulfil their civic duty, and who use technology at work for economic gain". In their view, digital citizenship is characterised by three dimensions: (1) social inclusion, (2) civic participation and (3) economic opportunity. Most digital citizenship literature between 2005 and 2015 focused on documenting and analysing the benefits of using digital technologies to enable social and economic inclusion, and their role as a tool in popular uprisings to remove repressive governments around the world.

However, not all digital citizenship is progressive or even desirable. If defined merely as online civic engagement, then online xenophobia or calls for ethnic cleansing could qualify as digital citizenship. For this reason, a definition of digital citizenship is needed that goes beyond the use of digital technologies in social life and includes a normative commitment to human rights or social justice. At a minimum, development actors have an interest in "online voice": digital citizenship that facilitates inclusion and participation of marginalised groups. Some in the development community will go further, supporting digital rights: digital citizenship that advances goals of equity and rights. Ideally, digital citizenship should shift unjust power structures (between authoritarian leaders and citizens or in gender relations).

At a minimum, development actors have an interest in "online voice": digital citizenship that facilitates inclusion and participation of marginalised groups. Some in the development community will go further, supporting digital rights: digital citizenship that advances goals of equity and rights.

For this reason, digital citizenship is more appropriately defined as the use of mobile and Internet tools in civic engagement to claim rights and social justice.

Protecting the space for civic engagement online is an ongoing battle

Digital citizenship is often most precious in authoritarian settings and when democratic space is shrinking or closed. During periods of repression, citizens forced underground or into exile often open online civic spaces to exercise their rights to freedom of speech and communication (Roberts, 2019[6]). According to Freedom House, 2021 is the 15th consecutive year of declining political freedoms worldwide (Shahbaz, 2018[3]), a period also characterised by shrinking civic space (CIVICUS, 2020[7]). The space for digital citizenship cannot be taken for granted.

Human rights activists are often early adopters of digital tools, including short texts (SMS), citizen blogging and social media. Tech-savvy young people frequently use new technologies to raise important policy issues that mainstream politicians and media do not address. Although states are often slow to respond to each new generation of digital citizenship, their deeper pockets and powerful institutions mean they can deploy an arsenal of digital technologies to dampen digital democracy, dialogue and dissent. Governments around the world regularly use Internet surveillance and mobile phone interception technologies to spy on their own citizens (Global Information Society Watch, 2014[8]; Roberts et al., 2021[9]).

This opening and closing of online civic spaces can be framed as a digital version of the Whack-a-Mole fairground attraction. First, activists pop up using Facebook, Twitter, TikTok or whatever latest digital activism technology. At some point, the state responds by hammering them down with authoritarian innovations such as compulsory mobile phone registration, biometric IDs, Twitter bans and Internet shutdowns. As the state brings one set of digital citizenship technologies under control, activists adopt new technologies and pop up in a new spaces to outmanoeuvre the government (Figure 8.2).

This battle over online civic space is unending**.** Neither side is ever completely successful. Digital citizens must use online space regularly or lose it. Development co-operation actors can play a role in keeping online space open for digital citizens to exercise their rights to free speech and communication.

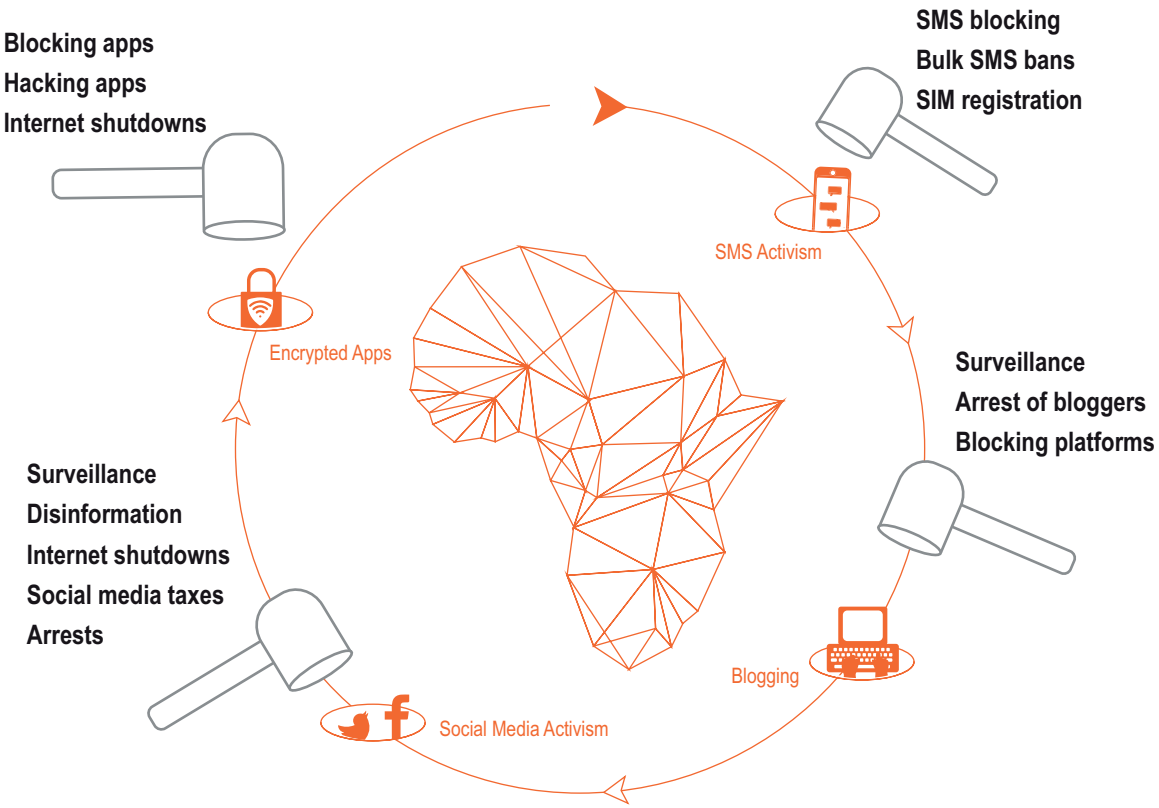
Evidence of descent into digital authoritarianism

A free and open Internet is a valuable space for open, democratic debate and deliberation. In countries where offline civic space is shrinking, this online civic space is even more precious and, as a result, fiercely contested territory. Digital authoritarianism – in the form of digital surveillance, online disinformation and Internet shutdowns – is a widening threat in much of the world. It constantly evolves to foil expressions of online civic engagement to claim rights and social justice.

The cases of Cambridge Analytica, Edward Snowden and Pegasus spyware raised awareness amongst the public and policymakers of the importance of digital citizenship**.** These three cases demonstrate that the same digital technologies that enable freedoms and opportunities also enable repression, notably mass surveillance, online disinformation and Internet shutdowns.

The Cambridge Analytica affair demonstrated how social media companies build digital profiles of individuals through systematic and secret surveillance of online behaviour, and offer them for sale to political interest groups to covertly manipulate voters' beliefs and behaviours (Cadwalladr and Graham-Harrison, 2018[11]; Zuboff, 2019[12]). Corporate lobbyists and political parties can now routinely buy such digital influence operations as a commercial service. There also is evidence that foreign

Figure 8.2. Digital Whack-a-Mole: Activism technologies and governmental control



Source: The African Digital Rights Network (2021[10]), *The African Digital Rights Network website*, https://www.africandigitalrightsnetwork.org/.

and domestic online influence operations involving hired troll farms, bot armies and cyborg operations target key development policy issues.[2] Campaigns of co-ordinated, inauthentic online behaviour have influenced development debates on vaccination, climate, immigration and gender and LGBTQ rights (Jones, 2019[13]; Woolley and Howard, 2018[14]). In the 2017 elections in Kenya, political elites reportedly spent tens of millions of dollars on fake news and disinformation campaigns designed to manipulate citizens' beliefs and voting (Brown, 2019[15]).

Surveillance agencies can tap into citizens' Internet and mobile communications, and the Snowden affair provided copious evidence that governments act outside the law in conducting systematic mass surveillance of their own citizens. The use of artificial intelligence algorithms allows the automation of parts of the surveillance process, making mass surveillance feasible even though this violates international human rights law. The Pegasus spyware revelations illustrated how commercially available software enabled repressive governments to hack the mobile phones of individuals and illegally spy on judges, journalists, activists and politicians (Marczak et al., 2018[16]). The arsenal of digital technologies being developed by corporations and deployed by states led to routine violation of citizens' basic rights to private communication in many places (Roberts et al., 2021[9]; Duncan, 2019[17]).

Internet shutdowns, too, are increasingly a tool of digital authoritarianism**.** The first recorded national Internet shutdown was during the Tahrir Square uprising in Egypt in 2001. Intentional Internet disruptions are most frequently government-ordered nationwide shutdowns; they are usually implemented ahead of elections or during online protests and are an effective way to both negate digital citizenship and obscure

human rights violations (Taye, 2020[18]). India carries out more shutdowns than any other nation (Anthonio, Skok and Díaz Hernández, 2021[19]). Governments now employ more sophisticated techniques to target Internet disruption. They can shut down a single platform, as in the case of Nigeria's Twitter ban, or shut down a single region, as in the case of Ethiopia's disruption in the Tigray region. In Africa as a whole, the number of intentional Internet shutdowns by governments grew by 25% between 2019 and 2020 (Anthonio, Skok and Díaz Hernández, 2021[19]).

Current laws are inadequate to protect fundamental rights in the digital age

All surveillance is a violation of fundamental human rights. The discovery that states routinely engage in mass surveillance of citizens was a shock for many, and there is growing concern that illegal surveillance by states is becoming routine and normalised in ways that reduce freedoms and rights. Recent research into state surveillance practices in six African countries found that all conducted surveillance beyond what is legally permissible even though national constitutions and laws and international conventions protect rights to privacy, freedom of expression and communication. When caught, the offenders enjoyed impunity (Roberts et al., 2021[9]).

Moreover, existing regulation and legislation are inadequate to contain surveillance, curtail disinformation or secure fair taxation of digital platform companies. In the analogue world, social interaction, economic life and political discourse took place in town halls, factories and newspapers. These were relatively easy to regulate and legislate for. Now social, economic and political life increasingly takes place on digital platforms owned by private monopolies formed in the United States and China. As noted in *Digital Citizenship in a Datafied Society*, "The tools that we use to enact and perform our citizenship are hosted by a small set of commercial platforms, provided by a highly concentrated business sector" (Hintz, Dencik and Wahl-Jorgensen, 2019[20]). These corporations are beyond the regulatory and legislative reach of other governments, raising questions about democratic accountability.

Civil society is essential for growing digital citizenship and countering digital authoritarianism

Strategic litigation to enforce individual rights and privacy may be a useful tactic in both democratic and authoritarian settings. For instance, civil society actors in Kenya and South Africa took their governments to the constitutional court on issues related to rights and digital technologies. These efforts raised public awareness, provided a focus for civil society, and forced the governments to revise surveillance practices and legislation. There is potential for similar approaches even in more repressive states. Box 8.1 describes how an online protest movement in Nigeria led to change.

However, better information about how states and private actors use digital technologies is crucial to supporting digital citizenship and an open digital civic space. Most of what is known about surveillance and disinformation focuses on the global North. There is relatively little in-depth research on digital authoritarianism in the global South, and local researchers, journalists, activists and policy makers lack resources and capacity to detail the dimensions and dynamics of problems in their own countries. Without such detail, it is practically impossible to define and develop measures to counter digital authoritarianism and restore free and open space for digital citizenship. Applied research with local human rights workers, lawyers and journalists would be more efficient than academic papers.

BOX 8.1. #ENDSARS: AN ONLINE PROTEST MOVEMENT THAT BROUGHT RESULTS IN NIGERIA

With about 154 million Internet users, Nigeria has the largest number of Internet users in Africa and the sixth largest number in the world (Statista, 2021[21]; 2020[22]). Nigeria is a multi-ethnic and multi-religious society with a history of acrimonious politics and events along its ethno-religious cleavages (Otite, 1990[23]). It also has the highest recorded spending on surveillance technologies among the 54 countries on the African continent (Roberts et al., 2021[9]).

In October 2020, young people launched an online protest – #EndSARS – against the excesses and cruelties of the Special Anti-Robbery Squad (SARS), an arm of the Nigeria Police Force (Punch Editorial Board, 2020[24]). The movement soon spread offline and became arguably the best organised and focused street protest in Nigeria's (recent) history. The protesters initially demanded the government dissolve SARS and compensate the victims of officers' excesses, and within a week, their online and offline pressure produced results. The government moved to abolish SARS and promised wider reforms in the police force (Ayitogo, 2020[25]). But violent protesters hijacked the movement, which led to deaths, property destruction and widespread looting.

Nonetheless, #EndSARS, which produced some one million tweets, is an important example of activism that brought an immediate and positive state response. When it could no longer ignore the protests, the Nigerian government not only disbanded SARS but acceded to protesters' demands for the immediate release of all arrested protesters, justice for all deceased victims of police brutality and appropriate compensation for their families, creation of an independent body within ten days to oversee the investigation and prosecution of all reports of police misconduct, psychological evaluation and retraining in line with the new Police Act of all SARS officers (confirmed by an independent body) as a precondition to their redeployment, and an increase in police salaries to adequately compensate them for protecting the lives and property of citizens (TheCable, 2020[26]; Vanguard, 2020[27]).

How development actors can help preserve and protect online civic space

Development co-operation actors have a range of practice and policy interventions at their disposal to grow space for digital citizenship and roll back digital authoritarianism. Collaboration with civil society and local capacity-building to exercise digital citizenship and expand civic space are key. So is building the domestic capacity of activists, journalists, lawyers and researchers to monitor, analyse and overcome illegal surveillance, online disinformation and Internet shutdowns. Interventions by development agencies can provide support to:

- raise public awareness about privacy rights and surveillance practices
- build civil society capacity to challenge digital authoritarianism
- fund digital rights organisations[3]
- support strategic litigation to end violations of privacy rights and impunity
- fund civil society participation in policy processes such as the Internet Governance Forum (IGF)
- support pressure for regulation through the International Telecommunication Union, World Summit on the Information Society, IGF and United Nations special rapporteurs
- fund applied research to monitor, analyse and end digital authoritarianism.

The descent into digital authoritarianism is not inevitable. Co-ordinated action among development co-operation agencies can strengthen digital citizenship and restore a free and open Internet for all.

REFERENCES

Anthonio, F., A. Skok and M. Díaz Hernández (2021), "Voices from Tigray: Ongoing internet shutdown tearing families, communities, businesses apart", *Access Now*, https://www.accessnow.org/voices-from-tigray-ongoing-internet-shutdown-tearing-families-communities-businesses-apart/ (accessed on 12 November 2021). [19]

Ayitogo, N. (2020), *#EndSARS: Nigeria dissolves dreaded police unit, announces police reforms*, https://www.premiumtimesng.com/news/headlines/419997-endsars-nigeria-dissolves-dreaded-police-unit-announces-police-reforms.html (accessed on 12 November 2021). [25]

Brown, E. (2019), *Online fake news is costing us $78 billion globally each year*, https://www.zdnet.com/article/online-fake-news-costing-us-78-billion-globally-each-year/ (accessed on 12 November 2021). [15]

Cadwalladr, C. and E. Graham-Harrison (2018), *Revealed: 50 million Facebook profiles harvested for Cambridge Analytica in major data breach*, https://www.theguardian.com/news/2018/mar/17/cambridge-analytica-facebook-influence-us-election (accessed on 12 November 2021). [11]

CIVICUS (2020), "Civic space on a downward spiral", in *CIVICUS Monitor: People Power Under Attack 2020*, https://findings2020.monitor.civicus.org/downward-spiral.html (accessed on 12 November 2021). [7]

Duncan, J. (2019), *Stopping the Spies: Constructing and Resisting the Surveillance State in South Africa*, Wits University Press, Johannesburg. [17]

Global Information Society Watch (2014), *Communications Surveillance in the Digital Age*, https://giswatch.org/2014-communications-surveillance-digital-age (accessed on 12 November 2021). [8]

Hintz, A., L. Dencik and K. Wahl-Jorgensen (2019), *Digital Citizenship in a Datafied Society*, John Wiley & Sons, Hoboken, NJ. [20]

Jones, K. (2019), *Online Disinformation and Political Discourse: Applying a Human Rights Framework*, Chatham House, London, https://www.chathamhouse.org/sites/default/files/2019-11-05-Online-Disinformation-Human-Rights.pdf (accessed on 12 November 2021). [13]

Marczak, B. et al. (2018), *Hide and Seek: Tracking NSO Group's Pegasus Spyware to Operations in 45 Countries*, The Citizen Lab, University of Toronto, https://citizenlab.ca/2018/09/hide-and-seek-tracking-nso-groups-pegasus-spyware-to-operations-in-45-countries/ (accessed on 12 November 2021). [16]

Mare, A. (2020), "State-ordered Internet shutdowns and digital authoritarianism in Zimbabwe", *International Journal of Communication*, Vol. 14, pp. 4244–4263, https://ijoc.org/index.php/ijoc/article/view/11494 (accessed on 12 November 2021). [4]

Otite, O. (1990), *Ethnic Pluralism and Ethnicity in Nigeria (with comparative materials)*, Shaneson C.I, Ltd., Ibadan, Nigeria. [23]

Punch Editorial Board (2020), *Looking beyond #EndSARS: Youths and people power*, https://punchng.com/looking-beyond-endsars-youths-and-people-power/ (accessed on 12 November 2021). [24]

Roberts, T. (ed.) (2021), *Digital Rights in Closing Civic Space: Lessons from Ten African Countries*, Institute of Development Studies, Brighton, UK, http://dx.doi.org/DOI:10.19088/IDS.2021.003. [2]

Roberts, T. (ed.) (2021), *Surveillance Law in Africa: A Review of Six Countries*, Institute of Development Studies, Brighton, UK, http://dx.doi.org/10.19088/IDS.2021.059. [9]

Roberts, T. (2019), "Closing civic space and inclusive development in Ethiopia", *IDS Working Paper*, No. 527, Institute of Development Studies, Brighton, UK, https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/14471 (accessed on 12 November 2021). [6]

Shahbaz, A. (2018), *Freedom on the Net 2018: The Rise of Digital Authoritarianism*, Freedom House, Washington, DC, https://freedomhouse.org/report/freedom-net/2018/rise-digital-authoritarianism (accessed on 12 November 2021). [3]

Statista (2021), *Most internet users by country (Database)*, https://www.statista.com/statistics/262966/number-of-internet-users-in-selected-countries/ (accessed on 25 November 2021). [21]

Statista (2020), *Africa number of internet users by country 2020 (Database)*, https://www.statista.com/statistics/505883/number-of-internet-users-in-african-countries/ (accessed on 25 November 2021). [22]

Sustainable Development Solutions Network (2015), *Indicators and a Monitoring Framework: Target 16.7 - ensure responsive, inclusive, participatory and representative decision-making at all levels*, https://indicators.report/targets/16-7/ (accessed on 12 November 2021). [1]

Taye, B. (2020), *Targeted, Cut Off and Left in the Dark: The #KeepItOn Report on Internet Shutdowns in 2019*, Access Now, New York, https://www.accessnow.org/cms/assets/uploads/2020/02/KeepItOn-2019-report-1.pdf (accessed on 12 November 2021). [18]

The African Digital Rights Network (2021), *The African Digital Rights Network website*, https://www.africandigitalrightsnetwork.org/. [10]

TheCable (2020), *FG accepts 5-point demand of #EndSARS protesters*, https://www.thecable.ng/breaking-fg-accepts-5-point-demand-of-endsars-protesters (accessed on 12 November 2021). [26]

Tolbert, C., K. Mossberger and R. McNeal (2008), *Digital Citizenship: The Internet, Society, and Participation*, MIT Press, Cambridge, MA. [5]

Vanguard (2020), *Five demands from #EndSARS protesters*, https://www.vanguardngr.com/2020/10/five-demands-from-endsars-protesters/ (accessed on 12 November 2021). [27]

Woolley, S. and P. Howard (2018), *Computational Propaganda: Political Parties, Politicians, and Political Manipulation on Social Media*, Oxford University Press, Oxford. [14]

Zuboff, S. (2019), *The Age of Surveillance Capitalism*, PublicAffairs, New York. [12]

NOTES

1. Civic space refers to public places where it is safe to exercise democratic freedoms of political opinion, association and speech. See also: https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/15964/Digital_Rights_in_Closing_Civic_Space_Lessons_from_Ten_African_Countries.pdf?sequence=4&isAllowed=y
2. Trolls are humans who post insincere messages online to disrupt debate or manipulate perceptions. A troll farm is a team of trolls paid to disrupt or manipulate online discussion. A bot (from "robot") is a piece of software to automate troll-like messages so that they appear to be written by a human. A cyborg falls in between the two: a human troll using some semi-automated posting.
3. Examples of digital rights organisations include Access Now, the Association for Progressive Communications, the Collaboration on International ICT Policy in East and Southern Africa, and Paradigm Initiative.



Part II
Policies to maximise gains and reduce risks

IN MY VIEW: TO TACKLE DISINFORMATION, WE MUST UPHOLD FREEDOM OF OPINION AND EXPRESSION

Irene Khan, UN Special Rapporteur on the promotion and protection of freedom of opinion and expression

Digital technology has transformed communications, creating unprecedented opportunities for people to exercise their right to information, voice their views and participate in democratic and development processes in multiple ways. Social media platforms have enabled marginalised groups to build solidarity networks, journalists to expose corruption and abuse of power, and human rights defenders to mobilise for change in real time. From online work to home schooling, from family communications to medical advice, access to the internet has been a game changer and a life saver during the pandemic.

At the same time, digital technology enables new pathways for disinformation – harmful, false or manipulated information to be created, disseminated and amplified for political, ideological or commercial motives at a scale, speed and reach never known before. Algorithms, targeted advertising and data harvesting on social media drive users towards extremist content in ways that feed and intensify disinformation, robbing individuals of their autonomy to freely select information and develop their own views.

Disinformation online exploits political, economic and social grievances in the real world, and contributes to polarising public debate, eroding public trust in factual, scientific information, inciting violence and hatred against minorities, women and vulnerable groups, threatening human rights, and disrupting democratic and development processes.

While disinformation is problematic, so too are the responses of many states. Several governments have sought to filter, throttle or block digital traffic and shut down websites. Many have introduced "false news" laws to criminalise and censor legitimate online content, or prosecute political opponents, journalists and human rights defenders. Not only are such actions disproportionate and incompatible with international human rights law, they are also short-sighted and counter-productive. By discouraging diverse sources of information, they hamper fact-finding, feed rumours, amplify misperceptions and undermine trust in public information.

Freedom of expression is not part of the problem. It is the primary means of combatting disinformation. For instance, people's trust in vaccines is built not through

Disinformation online exploits political, economic and social grievances in the real world, and contributes to polarising public debate, eroding public trust in factual, scientific information, inciting violence and hatred against minorities, women and vulnerable groups, threatening human rights, and disrupting democratic and development processes.

censorship, but through access to facts and open debate among journalists, civil society, policy makers and experts discussing alternative viewpoints and challenging falsehoods and conspiracy theories.

Ensuring the benefits of technology to advance development and democracy while mitigating the risks of disinformation requires a partnership of states, companies, development partners and civil society to uphold human rights.

What does that mean?

First, states should enhance their own transparency, proactively disclosing official data and ensuring that state institutions and political leaders do not spread or sponsor false information. Speech should not be criminalised except in the most egregious circumstances of incitement to violence or hatred. Any restriction of freedom of expression should be strictly in accordance with international human rights standards of legality, necessity, proportionality and legitimate aim.

Second, evidence shows that fostering diverse sources of information, robust public information regimes and independent journalism are strong antidotes to disinformation. States should promote the independence, diversity and pluralism of media, and ensure the safety of journalists and human rights defenders.

Third, media information and digital literacy should be part of the national school curriculum and adult education programs to empower people and build their resilience against disinformation and misinformation.

Fourth, more investment must be made to close the digital divide so that people in developing countries can have meaningful, free, open, interoperable, reliable and secure access to the Internet. The disparities in Internet access are grounded in economic, social, political and cultural disparities and gender inequalities. There is not just one divide but multiple divides to be overcome, and that requires a holistic, human rights-based approach to development.

Fifth, data protection is key to reorienting the advertisement-driven business model of the digital economy, which drives disinformation. States should adopt and enforce strong data protection laws.

Sixth and finally, the policies, practices and business models of digital platforms must be human-rights compliant. States should not compel companies to remove or block content that is legitimate under international law. Instead, they should focus on "smart" regulation to enforce transparency, accountability and human rights due diligence by companies in line

with UN Guiding Principles on Business and Human Rights. For their part, companies should enhance their transparency on content moderation, including algorithmic transparency, ensure proper recourse for users and that their business model, operations, policies and practices are in line with the Guiding Principles.

Fighting disinformation online is ultimately about restoring public trust in the integrity of the information order. The best way to do that is by strengthening the right to freedom of opinion and expression.

AGILE, COMPREHENSIVE AND PRINCIPLES-BASED: POLICY MAKING FOR A DIGITAL AGE

09

Angela Attrey, Directorate for Science, Technology and Innovation, OECD

ABSTRACT

Digital transformation holds great promise for development, spurring innovation that can improve the lives of people worldwide. The COVID-19 pandemic showcased the potential of digital technologies to help manage crises and support resilience. It also raised concerns with data governance and privacy and underscored the need for integrated and agile policy. Comprehensive policy approaches are needed to address interrelated challenges such as digital security and taxation. Policy making also must be agile to accompany rapid technological change and manage the risks. This chapter highlights lessons from the OECD's Going Digital project, which fosters integrated and principles-based policy making that ensures inclusive digital transformations, strengthens institutional and regulatory frameworks of digital governance, and promotes growth and well-being.

Key messages

- Availability and use of digital technologies varies significantly: In 2020, fixed broadband penetration in OECD countries was 33 subscriptions per 100 inhabitants, versus 11.9 in non-OECD countries.
- Policies that spur investment and increase competition in broadband networks are essential to boosting connectivity, closing digital divides, and unlocking the benefits of digital transformation.
- Digital transformation cuts across traditional sectoral boundaries necessitating a whole-of-government approach to realise its potential and to manage trade-offs across policy areas.
- Agile, principles-based policies are needed to adapt to rapid technological change. The success of these policies relies on regular monitoring, including through the cross-country comparison enabled by the OECD Going Digital Toolkit and the OECD AI Policy Observatory.

More and more economic and social activities around the world are digital and data driven, fundamentally altering how people live, work, interact, transact and engage with their government. These changes, often collectively referred to as digital transformation, hold great promise to spur innovation, boost efficiencies, and improve economic growth and well-being. Digital transformation, however, also restructures firms and markets, raising policy concerns related to privacy, security and inclusion. As data, information and ideas flow easily across borders, increasing digitalisation raises global concerns as well. The pace of change is only accelerating. The COVID-19 pandemic has further moved activities on line and placed new demands on networks, highlighting both opportunities and challenges accompanying digital transformation.

While countries are at different stages of digital transformation, common challenges and themes have emerged as important areas for policy action. As a first step, for instance, policy makers should ensure reliable connectivity, as this enables interactions between people, organisations and machines – a basic precondition for digital transformation. OECD countries' experiences also suggest that in addition to high-quality communication infrastructures and services, principles-based and integrated policies are important to shape an inclusive digital transformation. Finally, digital transformation has global implications that call for international collaboration. As commerce becomes increasingly digital and global, for example, new approaches are needed – both to govern international data flows, which underlie the increasingly global digital trade, while upholding privacy (Casalini and López González, 2019[1]), and to manage digital security risk, which can easily spread across borders through global firms and value chains (OECD, 2015[2]; 2019[3]).

Digital transformation is particularly salient for the OECD, a forum for international policy-making discussions on such issues as global taxation, international trade, digital security and development co-operation. In light of the rapid changes underway, these policy challenges have taken on new urgency. Notably through the Going Digital project (Box 9.1), the OECD is providing tools and evidence to help policy makers design holistic approaches and sound digital economy and data governance policies that will promote growth and enhance well-being in the digital era.

Digital transformation: Promises, pitfalls and the pandemic

Access to the Internet and digital technologies is a gateway to a world of economic and social opportunities. Frictionless access to new and up-to-date information can reduce co-ordination costs,

BOX 9.1. THE OECD GOING DIGITAL PROJECT: POLICIES TO PROMOTE GROWTH AND WELL-BEING IN THE DIGITAL AGE

Since 2017, the OECD Going Digital project has supported policy makers seeking to shape a positive digital future through a better understanding of digital transformation and how digital technologies impact economies and societies. The project has benefited from the input of almost every policy and measurement community at the OECD, including the International Transport Forum and the International Energy Agency which have contributed expertise to the project. The project provides targeted policy advice in specific areas – labour markets, trade, finance, consumer policy, small and medium-sized enterprises, agriculture, health, public governance, competition, and the environment as well as complementary cross-cutting, evidence-based policy analysis that draws on the OECD's expertise in measurement.

The first phase of the project (2017-18) delivered new evidence and policy insights on the effects of digital transformation on economies and societies and launched the OECD Going Digital Toolkit (OECD, n.d.[4]), which helps countries assess their state of digital development. Notable deliverables include the launch of the cross-cutting OECD Going Digital Integrated Policy Framework (OECD, 2020[5]), which has been used to develop country digital strategies and serves as the analytical lens for OECD Reviews of Digital Transformation. Reviews have been conducted of a range of countries and regions, among them Sweden (OECD, 2018[6]), Southeast Asia (OECD, 2019[7]), Colombia (OECD, 2019[8]), Brazil (OECD, 2020[9]) and Latvia (OECD, 2021[10]).

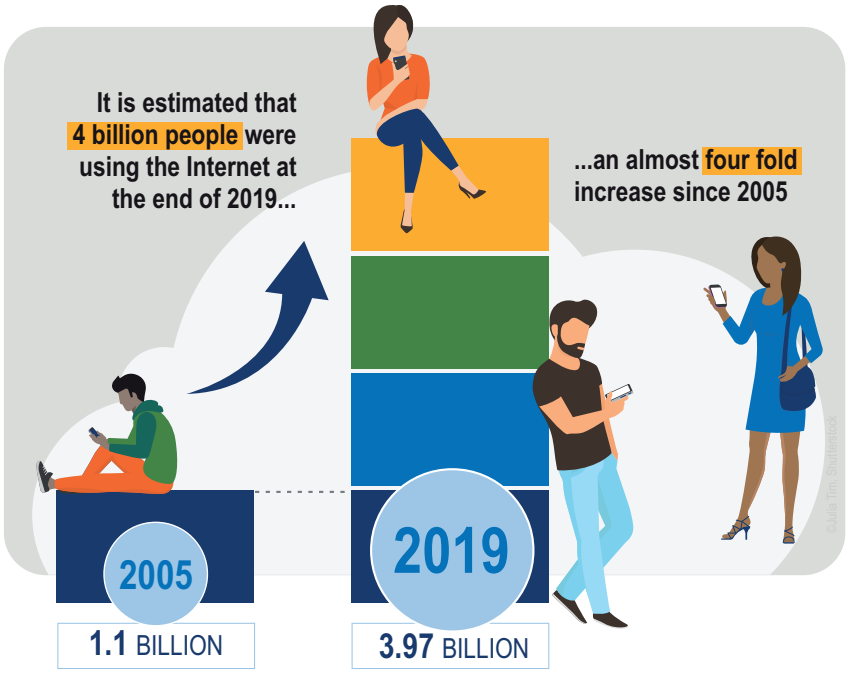
Building on this base, the second phase of the project (2019-20) analysed frontier technologies, notably artificial intelligence (AI) and blockchain, with an ongoing focus on jobs, skills and social inclusion as well as productivity, competition and market structures. A key achievement of Phase II was the launch of the OECD. OECD.AI Policy Observatory (OECD, 2021[11]) and the development of the OECD AI Principles (OECD, 2019[12]), which have been widely adopted and frame the development of AI policies all over the world.

The current third phase (2020-21) turns to data, which drive digital transformation, constitute a key ingredient of digital technologies such as AI, and are an increasingly essential enabler of enhanced productivity and improved decision making, including during the COVID-19 crisis. In this phase, the Going Digital project aims to support countries in designing interoperable data governance policies that promote growth and well-being. While still underway, this work is already pushing the international policy agenda, notably through the OECD Recommendation of the Council on Enhancing Access to and Sharing of Data (OECD, 2021[13]), which was adopted in October 2021.

overcome information asymmetries and spur new forms of data-driven innovation in a wide range of applications, including finance, health, education, agriculture and public governance (OECD, 2019[14]; 2020[15]). These have already transformed lives in low- and middle-income countries (World Bank, 2016[16]; 2021[17]). By enabling the flow of data between connected devices, the Internet facilitates previously impossible economic transactions, for instance sales through e-commerce platforms between far-flung producers and consumers (OECD, 2019[18]; 2019[19]). Through other innovations such as mobile money, digital technologies can speed up activities that were already taking place, make them more efficient and extend services to people who were previously out of reach (AUC/OECD, 2018[20]) (Figure 9.1).

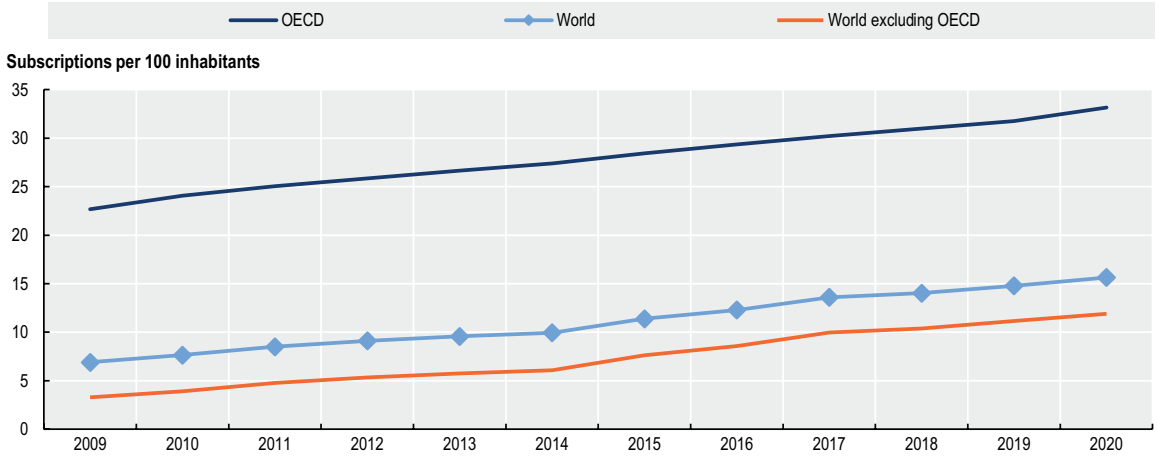
The pace of digitalisation is accelerating alongside the wider penetration of digital technologies and data into every sphere of life. It is estimated that 4 billion people were using the Internet at the end of 2019, an almost fourfold increase since 2005 (ITU, 2021[21]) (see Figure 9.2). While most people go on line via mobile networks, availability and use vary across and within countries. In non-OECD countries, an average of 56 per 100 people had a mobile broadband subscription in 2020, a 13-fold increase since 2010 (ITU, 2021[21]). The average was

Figure 9.1. The number of people online has increased



Source: Author's illustration.

Figure 9.2. Global increase in fixed broadband connections, but with disparities across countries



Sources: ITU (2021[21]), "Individuals using the Internet, total and by sex and age", ITU World Telecommunications/ICT Indicators (database), https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx; OECD (2021[22]), Broadband Portal (database), Broadband Portal - OECD.

118.3 in OECD countries (OECD, 2021[22]). Similarly, OECD countries had a level of fixed broadband penetration almost three times higher than the average in non-OECD countries, at 33 versus 11.9 subscriptions per 100 inhabitants, respectively, in December 2020.

Connectivity is not only a prerequisite for digitalisation. It also is critical to ensuring that no one is left behind as social and economic activities as well as public services delivery move on line. Further increasing connectivity will require overcoming barriers to broadband investment such as lack of

competition and policy and regulatory obstacles to infrastructure deployment. Likewise, increasing the availability and use of digital technologies will require policies to foster enablers and to address digital security and privacy risks.

Digital technologies proved essential for managing the COVID-19 crisis

The pandemic demonstrated the extent to which the Internet has become a major factor for resilience during a crisis. Public health-related restrictions on movement made it the primary arena for retail, work, education, global trade, culture and other day-to-day activities. To remain operational, many organisations brought forward investments in digital technologies (OECD, 2021[23]; 2020[24]). Across OECD countries, 21.15 million new fixed broadband connections – a record – were added in 2020 alone (OECD, 2021[22]). At the same time, Internet traffic in some countries skyrocketed by as much as 60% over pre-pandemic levels as bandwidth-intensive activities such as videoconferencing became essential for many (OECD, 2020[15]). Digital divides within and between countries, which remain wider in low- and middle-income countries, thus became more consequential. With economic and social life moving on line, offline populations found themselves not only locked down, but also locked out. This continues to be a concern due to the online nature of many activities, and the associated demands on networks are expected to persist past the end of the pandemic (McKinsey & Company, 2020[25]; Cil and Golnarian, 2020[26]; OECD, 2021[27]).

Similarly, the pandemic showcased novel ways data and digital technology could be put to use. Real-time data from hospitals helped burdened public health systems reallocate resources to where they were needed most (OECD, 2020[28]), and AI systems were used to accelerate medical research on drugs, treatments and vaccines (OECD, 2020[29]). New sources of data, like mobile call data and geolocation records, were used to monitor population movements and co-ordinate public health measures (OECD, 2020[28]), while biometric and AI systems, including those using facial recognition data, were a feature of many government-issued contact tracing and quarantine mobile applications (OECD, 2020[30]).

The crisis also focused renewed attention on the implications of using digital tools. In the context of exceptional public health measures, this specifically concerned data governance and privacy challenges, particularly when such technologies are used without specific guidance or fully informed consent (OECD, 2020[30]). Facial recognition systems, including when paired with AI, can also have inherent bias, for example when based on race or ethnic origin (OECD, 2020[31]).

The pandemic alongside the rapid digitalisation evident around the world underscore the need for policy action to maximise the benefits and manage the pitfalls of the digital age. The aim of the OECD's Going Digital project is to foster integrated and principles-based policy making that ensures inclusive digital transformations, strengthens institutional and regulatory frameworks of digital governance, and promotes growth and well-being.

Going Digital: Policies to unlock investment, manage risks and reap benefits

Equitable, high-quality and affordable access to the Internet is a precondition for digital transformation, and with more activities moving on line, the need for infrastructure investments will grow. However, to fully reap the benefits of these dynamic changes and address the challenges that arise from rapidly evolving digital technologies, countries need a holistic approach and a wider set of integrated policies, as emphasised by the OECD Going Digital Integrated Policy Framework (OECD, 2020[5]).

Increasing connectivity through policies that spur competition and investment

A strong institutional and regulatory framework plays a key role in broadband development, and two overarching policy areas in particular are key to bridging connectivity divides: fostering competition in broadband markets and encouraging investment in those markets (OECD, 2021[32]; 2021[33]).

Increasing competition in communication markets is one of the strongest levers to extend connectivity and increase quality, including in underserved areas. Communication markets are characterised by high fixed costs and barriers to entry, meaning that sectoral competitive conditions can have large impacts on the quality, affordability and availability of services. A strong institutional framework also fosters long-term investment because market players undertake most of the investment for network rollout. Competition in OECD communication markets has led to more innovation, increased investments and reduced prices for communication services (OECD, 2021[33]). For example, Mexico adopted pro-competitive regulatory reforms in 2013, with the result of an additional 50 million mobile broadband subscriptions by 2017 (OECD, 2017[34]).

Policies to encourage investment in infrastructure for both mobile and fixed networks also are important to reduce connectivity divides and unlock the benefits of digital transformation. Basic applications such as text messaging and mobile money have already transformed the lives of many in low- and middle-income countries. However, as evidenced during the pandemic, bandwidth-intensive applications are increasingly necessary for economic and social participation, and as countries develop, demand for data transmission over networks is likely to increase (OECD, 2021[33]).

At the same time, while most people go on line using mobile networks, fixed networks also are necessary to support increases in speed and capacity across all access technologies (OECD, forthcoming[35]; 2020[15]). This calls for additional investment particularly in fibre deployment. Deploying fibre further into fixed networks is viewed as necessary to boost network resilience (OECD, 2020[36]) and enable fifth generation wireless network technologies (5G), which support the high-volume, low-latency data transfers required for emerging digital applications, including those making use of AI systems and the Internet of Things (OECD, forthcoming[35]).

To fully reap the benefits of these dynamic changes and address the challenges that arise from rapidly evolving digital technologies, countries need a holistic approach and a wider set of integrated policies

Smart policies that ease broadband deployment can reduce network deployment costs, incentivise investment and reduce digital divides. For example, infrastructure sharing, such as antennae or fibre optic cables, has proven useful in expanding broadband coverage, including in underserved areas across the OECD. Well-designed spectrum assignment mechanisms, such as auctions, and easing the administrative burden to install necessary broadband infrastructure can also help spur investment (OECD, 2021[37]; 2021[33]).

Many lessons for expanding connectivity, including in low- and middle-income countries, have emerged from the extensive body of OECD work on communication infrastructures and services policy and through its Going Digital project (see Box 9.1). In Brazil, for example, the OECD provided advice on adapting the telecommunication regulatory framework, including taxation and fees, and on improving market conditions to

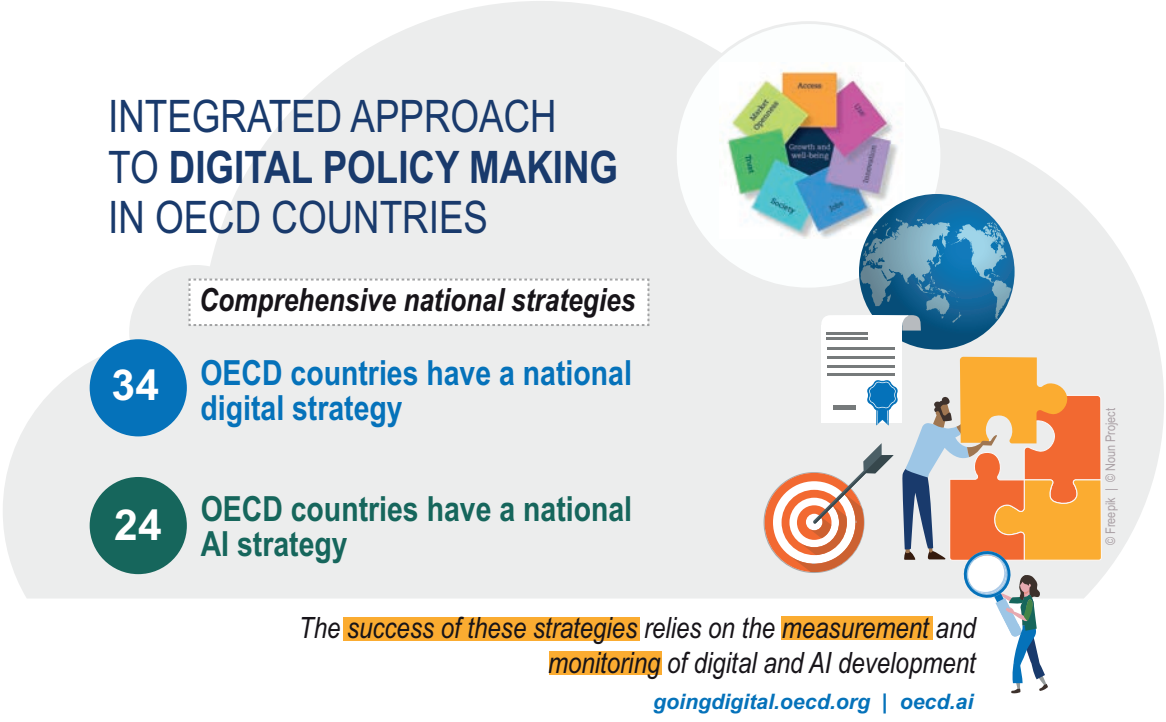
foster competition and encourage investment (OECD, 2020[38]). Another example is the OECD Recommendation of the Council on Broadband Connectivity, adopted in February 2021, which offers a roadmap for policy makers to unleash the full potential of connectivity for the digital transformation and to ensure equal access for all users.

Integrated policies can holistically address digital opportunities and challenges

The interrelated opportunities and challenges of digital transformation cut across traditional sectoral boundaries, presenting trade-offs across policy dimensions, defying siloed approaches to policy making and necessitating a holistic approach to realise the potential of digital transformation (OECD, 2020[5]; 2020[9]). The OECD Going Digital Integrated Policy Framework is a guide to such an approach. As illustrated in Figure 9.4 it sets out seven interrelated policy dimensions – access, use, innovation, jobs, society, trust and market openness – and the multiple policy domains for each dimension that should be considered jointly rather than in policy silos. For example, the framework emphasises the need to build trust in digital transformation by considering digital security, consumer protection, privacy, and small and medium-sized enterprises policies jointly and by encouraging individuals and organisations to manage their digital risks rather than seek to completely erase them.

Across the OECD, comprehensive national strategies use such an integrated approach to digital policy making: 34 OECD countries have a national digital strategy and 24 also have a national AI strategy (OECD, 2020[15]; forthcoming[39]) (Figure 9.3). Successful digital economy policy making relies on regular monitoring, including through the cross-country comparison enabled by the OECD Going Digital Toolkit,[1] which is based on

Figure 9.3. OECD countries' digital strategies: State of play



Note: AI: Artificial intelligence.
Source: Author's illustration.

Figure 9.4. OECD Going Digital Integrated Policy Framework



Source: OECD (2020[5]), "Going Digital integrated policy framework", *OECD Digital Economy Papers,* No. 292, https://dx.doi.org/10.1787/dc930adc-en.

the dimensions of the OECD Going Digital Integrated Policy Framework (OECD, 2020[5]). The framework has also been put into practice outside the OECD. Box 9.2 discusses how Thailand made use of it, with particular emphasis on the policy dimension of "use".

Agile, principles-based policies are needed to adapt to rapid technological change

The rapid advance in digital technologies can challenge traditional policy making, which is often purposefully process-driven and deliberative (OECD, 2019[43]). For example, advances in AI have exploded in recent years and hold much promise, but the technology can feature a lack of transparency that challenges traditional accountability mechanisms and could propagate biases (OECD, 2019[44]). These challenges call for policy action that minimises risks but is also agile enough to foster continued research, innovation and technology diffusion.

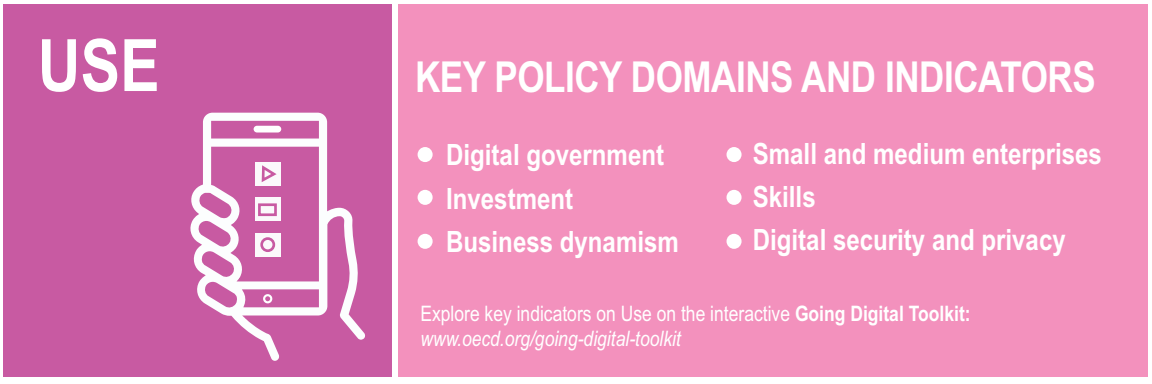
To address this technology governance challenge, governments across the OECD are adopting principles-based approaches to governance. An important example is the OECD AI Principles (OECD, 2019[12]), which were adopted in 2019 and subsequently formed the basis of the Group of Twenty's AI principles (OECD, 2019[7]). To date, OECD countries and eight non-OECD countries, including five low- and middle-income countries, adhere to the OECD AI Principles. These values-based principles[2] aim to foster confidence in the adoption of trustworthy AI, and they are designed to also stay implementable and flexible in order to adapt to future technological developments.

The OECD AI principles are an example of upstream governance that can be later complemented by downstream elements such as regulation and technical standards if necessary (OECD, 2021[45]). The OECD supports and tracks the implementation of the OECD AI Principles through its AI Policy Observatory,[3] which covers more than 60 countries, among them 12 low- and middle-income countries. The OECD AI Principles have informed the development of guidelines for trustworthy AI all over the world, including Singapore's Model AI Governance Framework and Egypt's forthcoming Charter on Responsible AI (OECD, 2021[46]).

BOX 9.2. HOW THAILAND PUT THE OECD GOING DIGITAL INTEGRATED POLICY FRAMEWORK INTO PRACTICE

Beyond OECD membership, Thailand has been using the OECD Going Digital Toolkit and Integrated Policy Framework to identify areas for policy action since 2018. The Office of the National Digital Economy and Society Commission collaborated with 19 strategic public and private partners to assess the level of digital development in Thailand, using the indicators outlined in the OECD Going Digital Toolkit for guidance (Office of the National Digital Economy and Society Commission, 2021[40]). This assessment found that the share of Thai small and medium-sized enterprises selling on the Internet and the level of monthly mobile data usage were both higher than the OECD average in 2020. Despite this potential, Internet users in Thailand bought products on line and interacted with public authorities much less than the average user in OECD countries (The Reporter, 2021[41]). Using the key policy domains brought together by the "use" policy dimension (see Figure 9.5), the Thai government was able to identify a lack of digital literacy and concerns about digital security and consumer protection in e-commerce markets as key areas for policy action to improve the use of digital technologies. Importantly, the cross-cutting policy analysis exercise resulted in a memorandum of understanding among Thai public services to foster integrated policy making.

Figure 9.5. What matters for use? A snapshot of policy domains under the use policy dimension in the OECD Going Digital Integrated Policy Framework



Note: For more details on the on the policy domains of the "use" policy dimension, see: https://dx.doi.org/10.1787/dc930adc-en.
Sources: OECD (2020[42]), "Going Digital integrated policy framework", *OECD Digital Economy Papers*, No. 292, https://dx.doi.org/10.1787/dc930adc-en.

REFERENCES

AUC/OECD (2018), *Africa's Development Dynamics 2018: Growth, Jobs and Inequalities*, OECD Publishing and African Union Commission, Paris and Addis Ababa, https://dx.doi.org/10.1787/9789264302501-en. [20]

Casalini, F. and J. López González (2019), "Trade and Cross-Border Data Flows", *OECD Trade Policy Papers*, No. 220, OECD Publishing, Paris, https://dx.doi.org/10.1787/b2023a47-en. [1]

Cil, T. and S. Golnarian (2020), "The new normal: Holiday-level Wi-Fi upload", web page, ASSIA, Redwood City, CA, https://assia-inc.com/the-new-normal-holiday-level-wi-fi-upload. [26]

ITU (2021), "Individuals using the Internet, total and by sex and age", *ITU World Telecommunications/ICT Indicators (database)*, https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx (accessed on 28 July 2021). [21]

McKinsey & Company (2020), "How COVID-19 has pushed companies over the technology tipping point – and transformed business forever", McKinsey & Company, https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever. [25]

OECD (2021), "Bridging connectivity divides", *OECD Digital Economy Papers*, No. 315, OECD Publishing, Paris, https://dx.doi.org/10.1787/e38f5db7-en. [33]

OECD (2021), "Broadband policy and technology developments", *OECD Digital Economy Papers*, No. 317, OECD Publishing, Paris, https://dx.doi.org/10.1787/e273ff77-en. [37]

OECD (2021), *Broadband Portal (database)*, https://www.oecd.org/digital/broadband/broadband-statistics/ (accessed on 28 July 2021). [22]

OECD (2021), *Going Digital in Latvia*, OECD Reviews of Digital Transformation, OECD Publishing, Paris, https://dx.doi.org/10.1787/8eec1828-en. [10]

OECD (2021), *OECD Science, Technology and Innovation Outlook 2021: Times of Crisis and Opportunity*, OECD Publishing, Paris, https://doi.org/10.1787/75f79015-en. [45]

OECD (2021), *Recommendation of the Council on Broadband Connectivity*, OECD, Paris, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0322. [32]

OECD (2021), *Recommendation of the Council on Enhancing Access to and Sharing of Data*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0463. [13]

OECD (2021), "State of implementation of the OECD AI Principles: Insights from national AI policies", *OECD Digital Economy Papers*, No. 311, OECD Publishing, Paris, https://dx.doi.org/10.1787/1cd40c44-en. [46]

OECD (2021), *Strengthening Economic Resilience Following the COVID-19 Crisis: A Firm and Industry Perspective*, OECD Publishing, Paris, https://dx.doi.org/10.1787/2a7081d8-en. [27]

OECD (2021), *The Digital Transformation of SMEs*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, https://dx.doi.org/10.1787/bdb9256a-en. [23]

OECD (2021), *The OECD Artificial Intelligence Policy Observatory*, https://oecd.ai/en/. [11]

OECD (2020), "Beyond containment: Health systems responses to COVID-19 in the OECD", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://dx.doi.org/10.1787/6ab740c0-en. [28]

OECD (2020), "Ensuring data privacy as we battle COVID-19", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://dx.doi.org/10.1787/36c2f31e-en. [31]

OECD (2020), *Going Digital in Brazil*, OECD Reviews of Digital Transformation, OECD Publishing, Paris, https://dx.doi.org/10.1787/e9bf7f8a-en. [9]

OECD (2020), "Going Digital integrated policy framework", *OECD Digital Economy Papers*, No. 292, OECD Publishing, Paris, https://dx.doi.org/10.1787/dc930adc-en. [5]

OECD (2020), "Going Digital integrated policy framework", *OECD Digital Economy Papers*, No. 292, OECD Publishing, Paris, https://dx.doi.org/10.1787/dc930adc-en. [42]

OECD (2020), "Keeping the Internet up and running in times of crisis", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://www.oecd.org/coronavirus/policy-responses/keeping-the-internet-up-and-running-in-times-of-crisis-4017c4c9. [36]

OECD (2020), *OECD Digital Economy Outlook 2020*, OECD Publishing, Paris, https://dx.doi.org/10.1787/bb167041-en. [15]

OECD (2020), *OECD Telecommunication and Broadcasting Review of Brazil 2020*, OECD Publishing, Paris, https://dx.doi.org/10.1787/30ab8568-en. [38]

OECD (2020), "The Covid-19 crisis: A catalyst for government transformation?", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://www.oecd.org/coronavirus/policy-responses/the-covid-19-crisis-a-catalyst-for-government-transformation-1d0c0788. [24]

OECD (2020), "Tracking and tracing COVID: Protecting privacy and data while using apps and biometrics", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://dx.doi.org/10.1787/8f394636-en. [30]

OECD (2020), "Using artificial intelligence to help combat COVID-19", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://dx.doi.org/10.1787/ae4c5c21-en. [29]

OECD (2019), *An Introduction to Online Platforms and Their Role in the Digital Transformation*, OECD Publishing, Paris, https://dx.doi.org/10.1787/53e5f593-en. [19]

OECD (2019), *Artificial Intelligence in Society*, OECD Publishing, Paris, https://dx.doi.org/10.1787/eedfee77-en. [44]
OECD (2019), *Digital Opportunities for Better Agricultural Policies*, OECD Publishing, Paris, https://dx.doi.org/10.1787/571a0812-en. [14]
OECD (2019), *Going Digital in Colombia*, OECD Reviews of Digital Transformation, OECD Publishing, Paris, https://dx.doi.org/10.1787/781185b1-en. [8]
OECD (2019), *Recommendation of the Council on Artificial Intelligence*, OECD, Paris, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449. [12]
OECD (2019), *Recommendation of the Council on Digital Security of Critical Activities*, OECD, Paris, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0456. [3]
OECD (2019), *Southeast Asia Going Digital: Connecting SMEs*, OECD, Paris, https://www.oecd.org/going-digital/southeast-asia-connecting-SMEs.pdf. [7]
OECD (2019), *Unpacking E-commerce: Business Models, Trends and Policies*, OECD Publishing, Paris, https://dx.doi.org/10.1787/23561431-en. [18]
OECD (2019), "Vectors of digital transformation", *OECD Digital Economy Papers*, No. 273, OECD Publishing, Paris, https://dx.doi.org/10.1787/5ade2bba-en. [43]
OECD (2018), *Going Digital in Sweden*, OECD Reviews of Digital Transformation, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264302259-en. [6]
OECD (2017), *OECD Telecommunication and Broadcasting Review of Mexico 2017*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264278011-en. [34]
OECD (2015), *Digital Security Risk Management for Economic and Social Prosperity: OECD Recommendation and Companion Document*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264245471-en. [2]
OECD (forthcoming), *Assessing the Comprehensiveness of National Digital Strategies and Their Governance*, OECD Publishing, Paris, forthcoming. [39]
OECD (forthcoming), *Networks of the Future*, OECD Publishing, Paris, forthcoming. [35]
OECD (n.d.), *OECD Going Digital Toolkit*, https://goingdigital.oecd.org/en/ (accessed on 1 March 2021). [4]
Office of the National Digital Economy and Society Commission (2021), *Thailand Digital Outlook 2020: Summary Pocket Book*, Thailand Ministry of Digital Economy and Society, Bangkok, https://www.onde.go.th/view/1/E-BOOK/EN-US. [40]
The Reporter (2021), "ONDE survey finds Thais spend up to 10 hours daily surfing", The Reporter, https://www.thereporter.asia/en/2021/09/20/onde-survey-thais-daily-surfing. [41]
World Bank (2021), *World Development Report: Data for Better Lives*, World Bank, Washington, DC, https://www.worldbank.org/en/publication/wdr2021. [17]
World Bank (2016), *World Development Report 2016: Digital Dividends*, World Bank, Washington, DC, http://dx.doi.org/10.1596/978-1-4648-0671-1. [16]

NOTES

1. See also: https://goingdigital.oecd.org.
2. The OECD values-based AI Principles include: inclusive growth, sustainable development and well being; human-centred values and fairness; transparency and explainability; robustness, security and safety; and accountability. See: https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449.
3. See also: https://www.oecd.ai.

10 CASE STUDY: COMBATTING CYBER THREATS, DISINFORMATION, AND INTERNET SHUTDOWNS

Estelle Masse, Access Now
Marwa Fatafta, Access Now
Felicia Anthonio, Access Now
Verónica Arroyo, Access Now

ABSTRACT

The same digital technologies that can improve people's lives also can be used to restrict freedoms and, deliberately or inadvertently, widen inequalities and exclusion. The potential for harms and abuses include cyber-attacks, disinformation and hate speech on social media, digital identification systems that fail to protect personal data and exclude marginalised populations, and so-called smart cities where digital tools enable the surveillance of citizens. As the pace of digitalisation accelerates, human rights-based policies and frameworks are urgently needed to manage both the negative and positive outcomes.

Key messages

- Through Internet shutdowns, disinformation and mismanaged digital ID programmes, many governments restrict human rights and fundamental freedoms. Nascent smart cities programmes are putting safety, privacy and public budgets at risk.
- Developing countries lag in cybersecurity capacity and enforcement, lacking the resources, technological know-how and ecosystems to effectively mitigate risks and respond to cybercrimes.
- Development co-operation actors should engage with civil society to evaluate the impact of digital technologies and tools and better assess community needs and mitigate risks.

Digital transformation provides a range of innovative and powerful tools that governments can deploy to improve public services and the lives of their citizens and, alternatively, to curtail free speech and conduct mass surveillance. Internet shutdowns have been on the rise for a decade, occurring even amid the COVID-19 pandemic when so much of the world's economic and social life was forced on line. By the same token, the same social media platforms that enable communication and community also host hate speech and disinformation. Digital identification (ID) programmes that promise more efficient public service delivery can also expose personal data to misuse and exclude populations without proper safeguards in place. Access Now monitors the uses of digital technology and calls out abuses and potential risks to governments, companies and civil society.

Internet shutdowns and free speech

Governments sometimes impose Internet shutdowns during critical moments, violating rights with a devastating impact on people's lives (Google, 2021[1]). In 2020, there were at least 155 documented Internet shutdown incidents in 29 countries even as billions of people turned to the Internet for school, work and communication during the COVID-19 crisis (Taye, 2021[2]). In the first five months of 2021, at least 50 Internet shutdowns were recorded in 21 countries. The longest on record started in November 2020 in Ethiopia's Tigray region, where war has raged for the past year, and has hampered humanitarian aid, disrupted businesses, and prevented journalists and human rights groups from uncovering abuses (Access Now, 2021[3]).

Governments and non-state actors also have used social media to spread disinformation, propaganda or hate, interfere with elections, and abuse private data.

Disinformation and hate speech

Governments and non-state actors also have used social media to spread disinformation, propaganda or hate, interfere with elections, and abuse private data (Access Now, 2021[4]) and to enforce discriminatory laws. In these cases, though tech tools became an enabler of harm, companies often failed to anticipate, mitigate or respond to the risks. Internal Facebook documents about the company's operations "paint a grim picture" (Garfield, 2021[5]). For instance, the Facebook Papers reveal that employees repeatedly criticised the company's failure to limit posts inciting violence in Ethiopia (Access Now, 2021[6]) and warned managers about "problematic actors" spreading inflammatory content (Mackintosh, 2021[7]). Despite huge deployment in the Middle East and Africa, for instance, most tech companies fail to engage civil society in the region or hire content reviewers and employees who understand local languages, context and nuances (Gani, 2021[8]).

Digital identification and exclusion

In recent years, governments and development actors have focused on developing ID systems. The World Bank Group, through its Identification for Development, or ID4D, initiative[1] has mobilised more than USD 1 billion to support civil registration and related projects in over 45 countries (World Bank, 2019[9]). But in many countries, digital ID systems have been developed without first considering the impacts on equality, privacy and security (Aggarwal and Chima, 2021[10]). This raises two questions: First, whether access to public services should depend on having government ID; and second, whether identification systems should be only digital.

In countries with digital ID systems, citizens may have to register for online identification to claim benefits or access essential services such as health, education and voting. These requirements do not always result in better service. In some cases, digital ID programmes simply move poor-quality services on line. They also can exclude individuals and entire communities. In India, for example, the digital Aadhaar card is often required to access vaccines and health centres have turned people away even when they have other official forms of identification (Chakravarti, 2021[11]). Such systems do not account for the digital divide in access to electricity and Internet access (Chandran, 2021[12]). Nor do they consider differences in access to electronic devices, digital literacy, or structural discrimination and inequality (Renaldi, 2021[13]).

In addition, while governments collect a trove of personal data, safeguards to protect these data from fraud or theft are sometimes missing and data breaches have occurred. Kenya enacted comprehensive data protection legislation in 2019 (Access Now, 2021[14]), and Ethiopia, India and Uganda are considering proposed data protection measures alongside the introduction of digital ID programmes. Done right, these safeguards protect people's rights beyond securing their information. But the legislation in these countries is either stalled or difficult to enforce. Other countries rushed the adoption of data protection as a box-ticking exercise when the need is for human rights-centred approaches aligned to principles of transparency, good governance and public consultation.

The #WhyID coalition,[2] led by Access Now, provides governments with a set of questions about the objectives, needs and benefits of digital ID programmes to be considered before they are implemented. Access Now also publishes a do's and don'ts guide for lawmakers to assist them in developing data protection laws that will protect and empower people.[3]

Cybercrime and surveillance

Positive outcomes from digitalisation require online security; safety and privacy; and a trusted, resilient cyberspace. The International Telecommunication Union has warned of a growing cyber capacity gap, with least developed countries especially lacking the resources, technological know-how and cybersecurity ecosystem to effectively mitigate the growing cyber risks and prepare for "opportunistic actors that [take] advantage of our desire for information" (ITU, 2020[15]). Box 10.1 outlines the knowledge and infrastructure gaps in Africa and initiatives to help governments build cyber capacity.

The privacy and human rights impact of the spread and commercialisation of digital technologies are also a challenge. For instance, digital technologies meant to make cities safer can erode freedoms. In smart cities, people interact with sensors, cameras, biometric tech and other tools that can lead to increased surveillance. Governments largely do not address the privacy and human rights impact of these technologies. Many of the smart cities in Africa that were billed as the solution to poverty and urban crime are considered failures (Baraka, 2021[24]). In some countries, social and welfare spending

BOX 10.1. NEW INITIATIVES AIM TO IMPROVE CYBERSECURITY IN AFRICA

PROVIDED BY AFRICA TEAM, GLOBAL FORUM ON CYBER EXPERTISE

While African countries have made progress in their commitments to respond to cybersecurity threats, challenges remain to building a secure and resilient cyberspace. The International Telecommunication Union's latest Global Cybersecurity Index suggests that many African countries need to reach more robust cybersecurity levels and notes that the COVID-19 crisis demonstrates that collective action problems such as health security and cybersecurity require a multidisciplinary and comprehensive approach (ITU, 2020[15]). The African Union's 2020-30 Digital Transformation Strategy for Africa also highlights the need for a greater capacity to detect and mitigate cyberattacks (African Union, 2020[16]).

Governments and international bodies should collaborate to promote cybersecurity in Africa. Development co-operation actors are stepping up support for cybersecurity with a focus on capacity building:

- The World Bank Global Cybersecurity Multi-Donor Trust Fund provides cybersecurity assessment and comprehensive cybersecurity capacity development (World Bank, 2021[17]). In collaboration with INTERPOL, the United Kingdom is investing GBP 22 million to establish new cyber operation hubs in Ghana, Kenya, Nigeria and Rwanda to facilitate joint cybercrime operations (UK Government, 2021[18]).
- The African Development Bank has contributed USD 2 million to establish the African Cybersecurity Resource Center to deliver cybersecurity services and information exchange across Africa (African Development Bank, 2021[19]). The Africa Cyber Capacity Building Coordination Committee aims to provide oversight on specific projects and develop new projects for the region (African Union Development Agency, 2021[20]).
- A programme of the Global Forum on Cyber Expertise and the African Union will build a community of cyber experts from the different African countries, identify national cyber capacity gaps, prioritise and communicate cyber capacity needs, and co-ordinate existing and emerging cyber capacity-building efforts in Africa (Global Forum on Cyber Expertise, 2021[21]).

Currently, cybersecurity legislation, policies and standards have yet to be developed in Africa. Only two countries have computer emergency response teams and computer security incident response teams that are fully equipped and operational. Only 11 institutions on the continent offer cybersecurity training (Keystone Masterstudy, 2021[22]). Where cybersecurity laws exist, they have sometimes produced negative outcomes. Legislation and regulations affecting digital service users in Burundi, the Democratic Republic of the Congo, the United Republic of Tanzania, Uganda and Zambia have undermined producer and consumer trust and restricted human rights (CIPSEA, 2019[23]).

Tightening cybersecurity must not damage Internet openness or user trust. Protocols or standards on cybersecurity also should be developed in consultation with different stakeholders and international agreements on related areas such as electronic payments and data protection should take cybersecurity into account. The 2014 African Union Convention on Cyber Security and Personal Data Protection (Malabo Convention) incorporates such a cross-cutting approach. The Convention is yet to enter into force.

suffered as resources went to pursue investment for these projects. Moreover, the tech systems meant to fix societal issues have proved ineffective. In Nairobi, crime fell by 46% in the first year after a Huawei-built surveillance system was installed in 2014, rose by 13% and then by an additional 50% in 2016 and 2017 (Baraka, 2021[24]).

REFERENCES

Access Now (2021), *Data Protection in Kenya: How is This Right Protected?*, Access Now, Brooklyn, NY, https://www.accessnow.org/cms/assets/uploads/2021/10/Data-Protection-in-Kenya.pdf (accessed on 8 November 2021). [14]

Access Now (2021), "LGBTQI communities: Proud and secure online", web page, https://www.accessnow.org/lgbtqi-communities-proud-and-secure-online (accessed on 8 November 2021). [4]

Access Now (2021), *Open letter to Facebook on violence-inciting speech: act now to protect Ethiopians*, https://www.accessnow.org/open-letter-to-facebook-protect-ethiopians/ (accessed on 8 November 2021). [6]

Access Now (2021), "What's happening in Tigray? Internet shutdowns avert accountability", web page, https://www.accessnow.org/tigray-internet-shutdowns (accessed on 8 November 2021). [3]

African Development Bank (2021), "The African Development Bank extends a grant of $2 million to strengthen cybersecurity and boost financial inclusion in Africa", press release, African Development Bank, https://www.afdb.org/en/news-and-events/press-releases/african-development-bank-extends-grant-2-million-strengthen-cybersecurity-and-boost-financial-inclusion-africa-42526 (accessed on 10 November 2021). [19]

African Union (2020), *The Digital Transformation Strategy for Africa (2020-2030)*, African Union, https://au.int/sites/default/files/documents/38507-doc-dts-english.pdf. [16]

African Union Development Agency (2021), "Africa Cyber Capacity Building", African Union Development Agency, https://www.nepad.org/news/africa-cyber-capacity-building (accessed on 10 November 2021). [20]

Aggarwal, N. and R. Chima (2021), "Privacy for sale: India is pushing for more data exploitation, not personal data protection", *Access Now Blog*, https://www.accessnow.org/india-personal-data-protection (accessed on 8 November 2021). [10]

Baraka, C. (2021), "The failed promise of Kenya's smart city", Rest of World, New York, NY, https://restofworld.org/2021/the-failed-promise-of-kenyas-smart-city (accessed on 8 November 2021). [24]

Chakravarti, A. (2021), "For Covid-19 vaccine Aadhaar is mandatory even if registration on CoWin done with other ID. Sort of.", India Today, https://www.indiatoday.in/technology/news/story/for-covid-19-vaccine-aadhaar-is-mandatory-even-if-registration-on-cowin-done-with-other-id-sort-of-1805290-2021-05-21 (accessed on 8 November 2021). [11]

Chandran, R. (2021), "India's digital IDs for land could exclude poor, indigenous communities", Reuters, https://www.reuters.com/article/india-landrights-digital-idUSL8N2LT0E6 (accessed on 8 November 2021). [12]

CIPSEA (2019), *Digital Rights in Africa: Challenges and Policy Options*, Collaboration on International ICT Policy for East and Southern Africa, Kampala, https://cipesa.org/?wpfb_dl=287 (accessed on 12 November 2021). [23]

Gani, A. (2021), "Facebook's policing of vitriol is even more lackluster outside the US, critics say", The Guardian, https://www.theguardian.com/technology/2021/oct/17/facebook-policing-vitriol-outside-us (accessed on 8 November 2021). [8]

Garfield, L. (26 October 2021), "What you need to know about the Facebook Papers", *Access Now Blog*, https://www.accessnow.org/facebook-papers-what-you-need-to-know (accessed on 8 November 2021). [5]

Global Forum on Cyber Expertise (2021), "AUC-GFCE Collaboration: "Enabling African countries to identify and address their cyber capacity needs"", Global Forum on Cyber Expertise, https://thegfce.org/auc-gfce-collaboration-enabling-african-countries-to-identify-and-address-their-cyber-capacity-needs (accessed on 10 November 2021). [21]

Google (2021), "The Current: The Internet shutdowns issue", *Jigsaw* 4, https://jigsaw.google.com/the-current/shutdown (accessed on 8 November 2021). [1]

ITU (2020), *Global Cybersecurity Index 2020*, International Telecommunication Union, Geneva, https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-GCI.01-2021-PDF-E.pdf. [15]

Keystone Masterstudy (2021), "Masters programs in cybersecurity in Africa 2022", web page, https://www.masterstudies.com/Masters-Degree/Cyber-Security/Africa. [22]

Mackintosh, E. (2021), "Facebook knew it was being used to incite violence in Ethiopia. It did little to stop the spread, documents show", CNN Business, https://edition.cnn.com/2021/10/25/business/ethiopia-violence-facebook-papers-cmd-intl/index.html (accessed on 8 November 2021). [7]

Renaldi, A. (2021), "Indonesia's invisible people face discrimination, and sometimes death, by database", Rest of World, https://restofworld.org/2021/indonesias-invisible-people-face-discrimination-and-sometimes-death-by-database (accessed on 8 November 2021). [13]

Taye, B. (2021), *Shattered Dreams and Lost Opportunities: A Year in the Fight to #KeepItOn*, Access Now, Brooklyn, NY, https://www.accessnow.org/cms/assets/uploads/2021/03/KeepItOn-report-on-the-2020-data_Mar-2021_3.pdf. [2]

UK Government (2021), "UK pledges £22 million to support cyber capacity building in vulnerable countries", press release, UK Government, London, https://www.gov.uk/government/news/uk-pledges-22m-to-support-cyber-capacity-building-in-vulnerable-countries (accessed on 10 November 2021). [18]

World Bank (2021), "Cybersecurity Multi-Donor Trust Fund", web page, https://www.worldbank.org/en/programs/cybersecurity-trust-fund. [17]

World Bank (2019), "Inclusive and trusted digital ID can unlock opportunities for the world's most vulnerable", World Bank, Washington, DC, https://www.worldbank.org/en/news/immersive-story/2019/08/14/inclusive-and-trusted-digital-id-can-unlock-opportunities-for-the-worlds-most-vulnerable (accessed on 8 November 2021). [9]

NOTES

1. For more information on the initiative, see: https://id4d.worldbank.org.
2. For more information on the coalition, see: https://www.accessnow.org/whyid.
3. For more information, see: https://www.accessnow.org/cms/assets/uploads/2019/11/Data-Protection-Guide-for-Lawmakers-Access-Now.pdf.

11 MAKING THE LEAP FROM E-GOVERNMENT TO DIGITAL GOVERNMENT

Felipe González-Zapata, Directorate for Public Governance, OECD
Mariane Piccinin-Barbieri, Directorate for Public Governance, OECD

ABSTRACT

To characterise and benchmark the transition from e-government to more comprehensive digital government, the OECD Digital Government Index assesses six dimensions critical for digital competence in the public sector. While OECD countries have made progress on the foundations for digital government, digital tools and data will need to be leveraged better to be transformational in the public sector. Experience of OECD and other governments participating in the index provide lessons for digital government strategies in low- and middle-income countries, including the critical need for sound governance frameworks; focusing on people and their needs; the importance of investing in reliable, reusable and interoperable systems and tools; and fostering digital co-operation on challenges that defy boundaries.

Key messages

- Digital governments must take a whole-of-government and human-centric approach to redesign public operations and services by adopting digital tools and data to foster more open and participatory government.
- The highest scoring countries in the OECD Digital Government Index focus on the foundations of a digitally enabled public sector that meets the needs of its constituents, and outlasts any one administration.
- To avoid widening digital divides that exclude already disadvantaged populations, digital services should co-exist with face-to-face or over-the-phone service delivery for those who need it, and underlying processes should be integrated and coherent.

Early e-government efforts aimed to put analogue processes and services on line, reducing the reliance on paper and in-person procedures (OECD, 2020[1]). While streamlining procedures in individual domains, however, the overall result was often fragmented and government-centred. More recently, full-fledged digital government aims to rethink and re-engineer government processes and public services to respond to users' needs and expectations.

Experience in OECD countries shows that progress towards digital government is built on solid foundations of strategy, governance and investment that foster collaboration between public sector entities. Thinking digitally at the outset, engaging users in the design and delivery of services, ethically governing and using public data, and nurturing digital talent and skills can then contribute to the success of digital government.

Using the OECD Digital Government Policy Framework, this chapter examines a paradigm shift towards digital governments, essential to foster a human-centric, fair and sustainable government transformation, and to progress beyond the idea of digitally enabled services and operations as isolated outputs and secondary effects of individual policies.

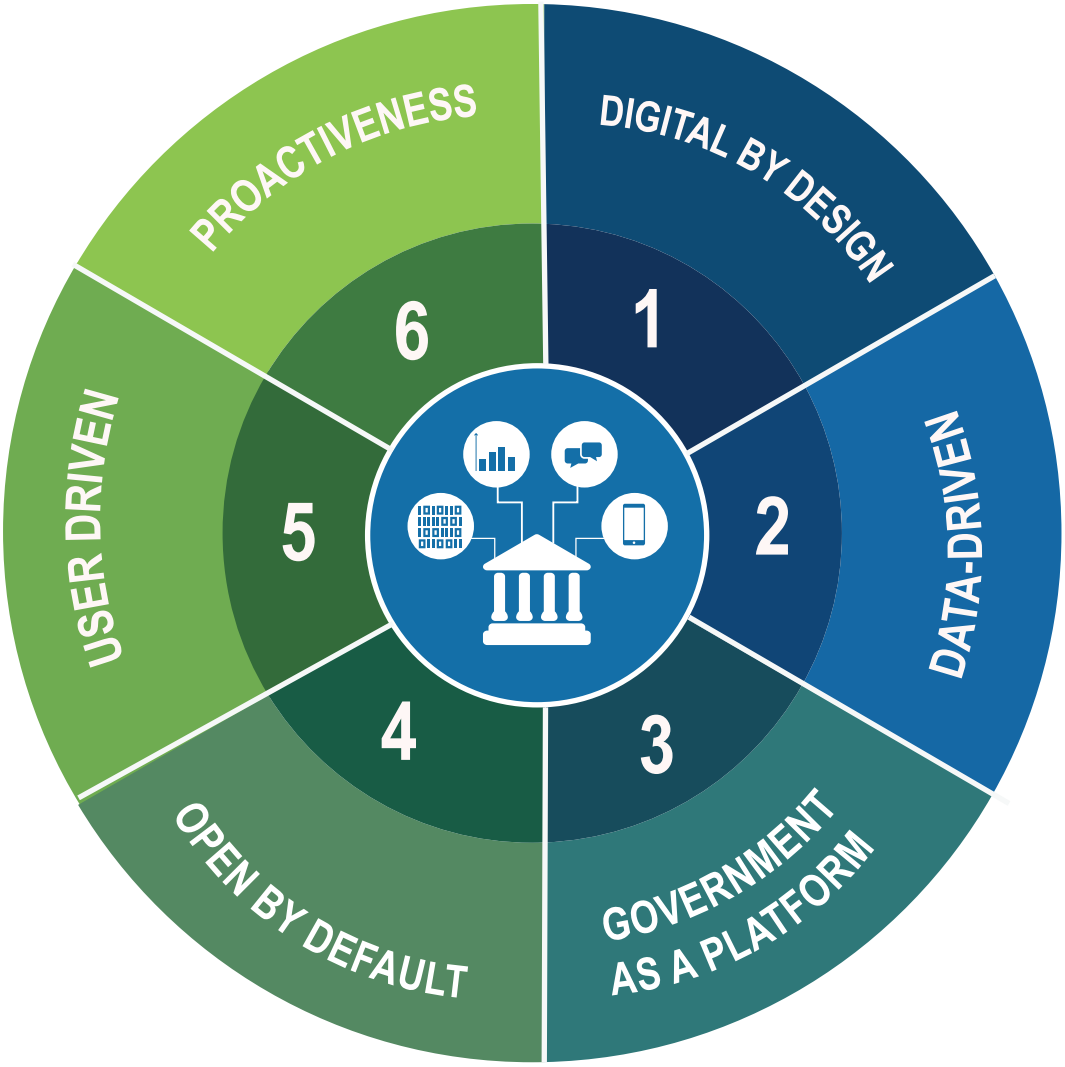
Towards human-centred and long-term digital transformation of the public sector

Government shapes the digital transformation of societies and economies via its role as a regulator by developing policies that align interests and influence incentives, and by transforming public governance using digital tools and data to build a more democratic, fair and sustainable public sector. Most governments begin by putting analogue services on line (known as e-government), a process often characterised by government-centric and technology-led approaches. Going beyond e-government, the concept of full-fledged "digital government" means taking strategic decisions about and using digital technologies and data to rethink how policies and public services are designed and implemented to meet the changing needs and expectations of citizens.

The OECD *Recommendation of the Council on Digital Government Strategies* (OECD, 2014[2]) emphasises that digital government enables the public sector to operate efficiently and effectively in the digital environment, breaking down organisational silos to deliver seamless and user-driven public services, while mitigating the risks of digital technologies for individuals and societies. The Digital Government Policy Framework (DGPF) (OECD, 2020[1]) characterises governments across six dimensions that constitute human-centric and sustainable digital government (Figure 11.1.).

The OECD Digital Government Index (DGI) measures the maturity of digital government across the six dimensions of the DGPF (OECD, 2020[4]).Evidence from the first and pilot edition of the DGI in 2019 (Figure 11.2) shows that OECD countries strengthened their governance systems, their shared and interoperable digital tools, and (to a lesser extent) their strategic governance, sharing and use of public sector data for improved policies

Figure 11.1. The six dimensions of the OECD Digital Government Policy Framework



Source: OECD (2020[3]), "The OECD Digital Government Policy Framework: Six dimensions of a digital government", OECD Public Governance Policy Papers, No. 02, OECD Publishing, Paris, https://dx.doi.org/10.1787/f64fed2a-en.

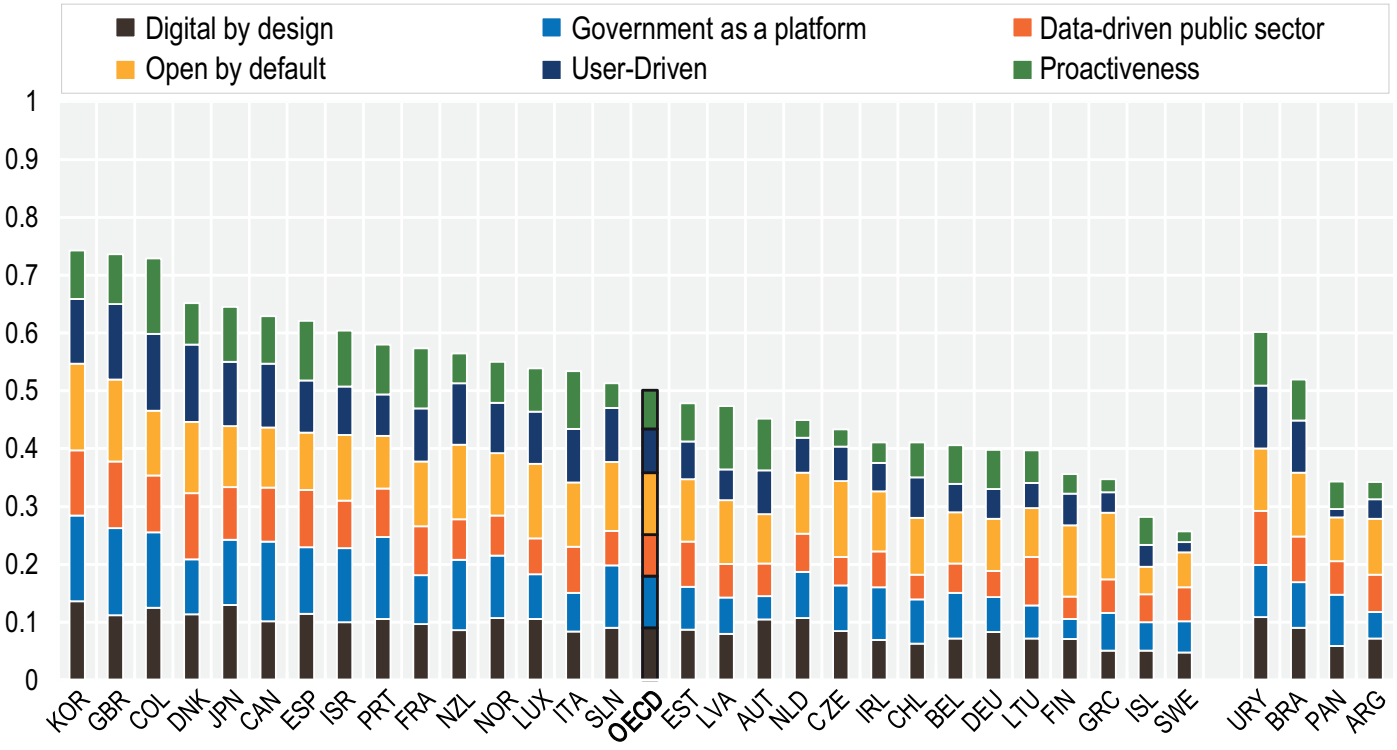
and services (DGPF Dimensions 1-4). But these advances contrast with limited progress in understanding, addressing and anticipating people's needs through digital tools and data (Dimensions 5 and 6). By 2019, most OECD countries still lacked policies and mechanisms to be user-driven and proactive when designing and delivering services for citizens.

The three highest-ranking countries – Korea, the United Kingdom and Colombia – focused on building the foundations of a digitally enabled public sector that transforms public services and processes to meet the needs of their constituents. Similarly, Brazil and Uruguay achieved progress thanks to sustained and transformative policy efforts across different administrations. Understanding how progress was made by OECD countries in some DGPF dimensions and the barriers to progress in others could offer lessons for governments at different points in their digital transformation journey.

OECD countries scored well on Dimensions 1-4, contributing to solid foundations for digital government

Digital by design (Dimension 1) leverages digital technologies to rethink

Figure 11.2. OECD Digital Government Index 2019 composite results



Note: Data are not available for Australia, Hungary, Mexico, Poland, the Slovak Republic, Switzerland, Turkey or the United States.
Source: OECD (2020[5]), "Digital Government Index: 2019 results", OECD Public Governance Policy Papers, No. 03, OECD Publishing, Paris, https://dx.doi.org/10.1787/4de9f5bb-en.

and re-engineer public processes, simplify procedures, and create channels of communication and engagement. Embracing change as a core feature of digital government helps navigate the uncertainties in digital technologies and project development. This requires project-management methods that have agility to iterate, learn from, and improve digital and data projects during the development cycle, and thus help mitigate the risks of large and rigid projects. It is also fundamental to engage users to design services driven by people's needs (OECD, 2020[6]).

This encompasses strategies, leadership, co-ordination, institutional models and resources that transform policies into concrete digitally enabled public services. Governments that score well on Dimension 1 tend to score highly on other dimensions too. Investing in digital governance can sustain government efforts across multiple administrations and involve other public sector organisations in joint action. These benefits help overcome the challenges of less stable political systems to foster policy continuity. One success factor in the six top-performing countries is formal mechanisms to co-ordinate cross-government ICT projects with representation from different policy areas. For example, Korea's E-Government Special Committee, chaired by the Ministry of the Interior and Safety, gathers ministries and private sector experts to define the digital government strategy and action plans since 2001 (Korean Ministry of the Interior and Safety, 2020[7]). In contrast, four of the six bottom-performing countries lack such mechanisms (OECD, 2020[4]). The extent to which digital government strategies translate into policies and digitally enabled services relies also on the financing approach. For example, Australia and Denmark enable digital government via portfolio management for digital investments (Danish Agency for Digitisation, n.d.[8]; Australian Digital

Transformation Agency, n.d.[9]), and along with Chile, use value-proposition mechanisms to approve and fund digital investment in the public sector (Chilean Budget Directorate, 2021[10]; Australian Digital Transformation Agency, 2015[11]). Along with the financial dimension, project management standards and practices (e.g. agile management methodologies) that promote an agile culture to iterate, learn and incrementally improve digital projects are drivers of success – avoiding large and rigid projects that have higher chances of failing (OECD, 2020[6]).

A digitally competent public sector fosters the skills (technical, socio-emotional, professional and leadership) and environment to develop and retain digital talent (OECD, 2021[12]). By 2019, several countries prioritised dedicated strategies (79%) or concrete initiatives (50%) to develop digital skills, including the use of digital tools, data analytics, project management, service design, user research, and open-government data release and reuse (OECD, 2020[4]). For example, the United Kingdom's Government Digital Service Academy is a comprehensive online and in-person programme that provides training to foster user research, data and digital leadership competencies, among others (OECD, 2021[12]).

Here, it is important to distinguish "digital by design" from "digital by default" (i.e. requiring users to access services on line only), which creates new forms of exclusion through digital divides that affect segments of the population with limited access or ability to use digital technologies (OECD, 2020[1]). When digital by design is implemented successfully, public sector services work seamlessly across multiple on- and offline channels, ensuring that no citizen is left behind due to uneven access or lack of skills necessary to use digital technologies (OECD, 2020[1]).

Data-driven public sector (Dimension 2) values data as a strategic asset and establishes ethical and trust frameworks for governance, access, sharing and reuse of data to improve decision making and public services. OECD countries are slowly progressing towards a data-driven public sector. This dimension is the second lowest in the DGI in contrast with the emphasis and political momentum for open government data (OECD, 2020[4]). Evidence from OECD work on government data reveals that developing the governance frameworks, tools and skills to harvest and analyse data is among the barriers to a data-driven public sector. Once overcome, however, they can help to ensure that policy and services are based on evidence rather than solely political considerations (OECD, 2021[13]).

Here, it is important to distinguish "digital by design" from "digital by default" (i.e. requiring users to access services on line only), which creates new forms of exclusion through digital divides that affect segments of the population with limited access or ability to use digital technologies.

Government as a platform (Dimension 3) deploys guidance, standards and digital tools for teams to focus on user needs in public service design and delivery. Shifting from e-government's siloed and technology-led approaches, digital government invests in shared, standardised and interoperable digital goods and infrastructure. This means investments in open-source and reusable digital tools that equip teams to digitalise services while promoting vertical and horizontal integration across government entities. Similarly, open and interoperable tools remove barriers, allowing the private

sector (including GovTech entrepreneurs) to contribute to the development of integrated systems and services, especially in countries with limited internal public-sector capacity.

Examples include digital public infrastructure (e.g. shared cloud platforms or interoperability systems), and digital public goods such as identity, notification and payment systems. These enable end-to-end service transformation and promote a seamless experience for users when interacting with digital public services. OECD countries have advanced in the development of common building blocks: for example, in 2019, 75% had a single digital identity system in place. Out of this group, 48% of the digital identity systems gave access to at least half of digital services (OECD, 2020[4]).

But as observed among G20 countries, interest in cross-border services now challenges digital identity systems to be interoperable at international levels and allow citizens consent and control of their personal data (OECD/G20, 2021[14]). More co-operation and standards setting is required to enable portable and cross-border identity solutions for trusted digital services, such as by the OECD and G20, the European Commission's e-IDAS, and the GEAL Network's cross-border digital signature in Latin America and the Caribbean.

Open by default (Dimension 4) makes government data and policy-making processes (including algorithms) available to the public (within the limits of existing legislation and in balance with the national and public interest). Open government data can enable more collaborative government through the availability and reuse of machine-readable and free-to-use public data. Participant countries attained the highest DGI score in this dimension. The OECD's Open, Useful and Reusable Data Index (OURdata) shows that countries are mainstreaming open government data, but must strengthen policies and actions to nurture and collaborate with the data ecosystem to deliver public value (OECD, 2020[15]). Leading countries, like Colombia and Korea, to have comprehensive open government data initiatives that foster the availability of public data sets and their reuse within and outside the public sector.

Dimensions 5 and 6, making digital government transformational, are a challenge for all governments

User-driven (Dimension 5) refers to giving a central role to people's needs and convenience in shaping processes, services and policies, and adopting inclusive mechanisms that enable this to happen. These new forms of interaction contribute to public confidence in government and are crucial for strengthening the citizen-state relationship and fostering people's well-being (OECD, 2021[16]; 2020[6]; Welby, 2019[17]).

Understanding, meeting and anticipating user needs requires a bottom-up approach to public services, driven by the needs and expectations of citizens. OECD countries must further invest in user research: 45% of countries noted mechanisms to engage users at the service design stage and 27% at the provision stage. Only a third require ministries or agencies to use digital tools to crowdsource ideas from stakeholders during service development (OECD, 2020[4]). Delving into user needs requires moving away from top-down assumptions; enabling service teams to work alongside citizens, businesses and other stakeholders; and reflecting this in streamlined and seamless services (OECD, 2020[6]). For example, the United Kingdom's Government Digital Service uses a 14-principle service standard and manual for a cohesive and co-ordinated approach to design and delivery, including understanding user needs, problem-solving, omni-channel, simplicity, inclusiveness, agility, openness and reliability (UK Government Digital Service, 2016[18]).

To build citizens' confidence in government, a user-driven public sector can help, but it requires an inclusive approach from the

outset of digital government reforms (OECD, 2021[16]). Several countries use digital tools to promote a more democratic and inclusive public sector. For example, Colombia ("Urna de Cristal"), Denmark ("Høringsportalen") and Portugal ("Simplex") use digital tools to channel citizens' feedback, leading to collaboration and co-creation that reflect public expectations for policies and services. Furthermore, adherence to ethical principles for the use of digital technologies and data is essential for a human-centric digital government. This includes digital identity services that give citizens control and consent over their data (OECD, 2019[19]; OECD/G20, 2021[14]), or ethical principles for access, sharing and use of data in training artificial intelligence models to address bias, discrimination and limited data quality (OECD, 2020[4]; 2021[20]).

Some countries are also taking action to foster digital ethics. For example, France issued the Digital Republic Bill in 2019 to promote equal access and rights in the digital age. Similarly, the United Kingdom's Data Ethics Framework and Canada's Algorithmic Impact Assessment Tool promote integrity and fairness when using digital tools and data in the public sector. But by 2019, only 34% of OECD countries reported requirements to adhere to guidelines and initiatives to apply ethical principles to data-related initiatives (OECD, 2020[4]).

Proactiveness (Dimension 6) refers to anticipating people's needs and responding to them rapidly, avoiding cumbersome data and service delivery processes. For digital government, this means digital working practices, advanced use of data, and suitable deployment of digital public goods and infrastructure. Proactive and user-driven design implies an omnichannel approach to ensure inclusive digital transformation, allowing digital services to co-exist with face-to-face or over-the-phone service delivery for those who need it, and ensuring that underlying processes are digitally integrated and coherent (OECD, 2020[6]). For example, Portugal's "Citizens Shops and Spots" blend online channels with in-person locations across the country to ensure that public services are available to all Portuguese citizens.

Lessons for building digital government

Harnessing the benefits of digital government challenges countries at all levels of economic and digital development. In addition, as discussed elsewhere in this report, low- and middle-income countries face connectivity and digital infrastructure hurdles, but can still make strategic decisions and investments to sustainably advance the digital transformation of the public sector. Based on lessons from OECD countries' journey from e-government to digital government, developing countries can focus on six aspects that support sustainable and human-centric digital government:

1. **Build governance competencies for sustainable delivery.** Countries can foster leadership and co-ordination mechanisms to legitimise and promote their digital transformation agenda within and outside the public sector. Broad buy-in will help navigate the uncertainty of changing political systems while promoting a coherent, whole-of-government and systemic transformation. Such governance approaches proved effective in OECD countries for making strategic decisions and investments in adopting and using digital technologies.
2. **Focus on people and their needs.** Digital government is about putting people first and driving decisions, investments and processes to meet their needs. This requires continuous and inclusive dialogue with users to capture their expectations, and to reflect them in the design and delivery of services, offered through different but integrated channels. Understanding user needs means distinguishing informational from transactional needs, and addressing each one accordingly. Similarly, it requires fostering talent and training that empower

civil servants to unlock the benefits and address the challenges of digital government.

3. **Invest in reliable, reusable and interoperable digital public good.** Outcomes of e-government reforms show that countries now face siloed and fragmented systems and tools, leading to high integration and alignment costs and constraining a whole-of-government transformation. Developing countries can avoid these challenges by prioritising reusable and interoperable digital tools and infrastructure from the outset. Among OECD countries, 70% have frameworks to promote open-source solutions, which can be effective in achieving interoperability, but require local capacity to adapt, deploy and maintain digital tools, and avoid the vendor lock-in of proprietary solutions. Similarly, countries can prioritise the most impactful and transformative digital tools, such as digital identity systems, that enable citizens to interact with the public sector.
4. **Treat data as a strategic asset and openness as an advantage.** Digitalisation of the public sector creates unprecedented amounts of data that can help govern and transform policies and services. Many benefits of the digital age rely on timely, trustworthy and high-quality data. Developing countries can prioritise efforts towards creating and safeguarding data infrastructures that capture the equal representation of society and contribute to public value while respecting individual interests. Data can also be effective for creating new channels of interaction, transparency, and collaboration with communities and the private sector, such as open government data initiatives.
5. **Assess digital government investments in terms of value.** Limited financial resources mean prioritising the most impactful and scalable digital technologies while maintaining legacy systems. Developing countries can develop their capacity to plan, prioritise, fund and monitor digital technologies to ensure that benefits are realised. This includes multi-faceted cost/benefit analysis to define the value proposition of digital government projects; funding for shared digital systems; and adaptable standards and practices to assess the impact, feasibility and scalability of digital transformation projects.
6. **Foster digital co-operation on challenges that defy boundaries** Promoting policy dialogue and collaboration between governments proves effective for addressing the challenges posed by the digital age. There is growing interest in promoting cross-border services and access to and sharing of data, demanding standardised digital public goods such as digital identity. Multilateral co-operation can help identify common bottlenecks, policy levers and interoperable digital tools to address present and future challenges.

Among OECD countries, 70% have frameworks to promote open-source solutions, which can be effective in achieving interoperability, but require local capacity to adapt, deploy and maintain digital tools, and avoid the vendor lock-in of proprietary solutions.

REFERENCES

Australian Digital Transformation Agency (2015), *ICT Business Case Guide*, Australian Department of Finance, Canberra, https://www.dta.gov.au/sites/default/files/2021-09/ICT_Business_Case_Guide.pdf. [11]

Australian Digital Transformation Agency (n.d.), "ICT investment approval process", web page, https://www.dta.gov.au/help-and-advice/digital-and-ict-investments/ict-investment-approval-process. [9]

Chilean Budget Directorate (2021), *Instrucciones para la formulación de proyectos TIC – EVALTIC 2022*, Chilean Budget Directorate, Santiago de Chile, https://digital.gob.cl/transformacion-digital/estandares-y-guias/instrucciones-para-la-formulacion-de-proyectos-tic-evaltic-2022. [10]

Danish Agency for Digitisation (n.d.), "Model for portfolio management of ICT systems", web page, https://en.digst.dk/ict-portfolio-management/model-for-portfolio-management-of-ict-systems. [8]

Korean Ministry of the Interior and Safety (2020), *Why Korean e-Government?*, Korean Ministry of the Interior and Safety, https://www.mois.go.kr/cmm/fms/FileDown.do?atchFileId=FILE_00069021VA-a9ol&fileSn=1. [7]

OECD (2021), *Good Practice Principles for Data Ethics in the Public Sector*, OECD, Paris, https://www.oecd.org/gov/digital-government/good-practice-principles-for-data-ethics-in-the-public-sector.htm. [20]

OECD (2021), *Government at a Glance 2021*, OECD Publishing, Paris, https://dx.doi.org/10.1787/1c258f55-en. [16]

OECD (2021), *Recommendation of the Council on Enhancing Access to and Sharing of Data*, OECD, Paris, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0463. [13]

OECD (2021), "The OECD Framework for Digital Talent and Skills in the Public Sector", *OECD Working Papers on Public Governance*, No. 45, OECD Publishing, Paris, http://dx.doi.org/10.1787/4e7c3f58-en. [12]

OECD (2020), *Digital Government in Chile – Improving Public Service Design and Delivery*, OECD Digital Government Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/b94582e8-en. [6]

OECD (2020), *Digital Government Index: 2019 results*, OECD Publishing, Paris, https://doi.org/10.1787/4de9f5bb-en. [5]

OECD (2020), "Digital Government Index: 2019 results", *OECD Public Governance Policy Papers*, No. 03, OECD Publishing, Paris, https://dx.doi.org/10.1787/4de9f5bb-en. [4]

OECD (2020), "Open, Useful and Re-usable data (OURdata) Index: 2019", *OECD Public Governance Policy Papers*, No. 01, OECD Publishing, Paris, https://dx.doi.org/10.1787/45f6de2d-en. [15]

OECD (2020), *The OECD Digital Government Policy Framework: Six dimensions of a digital government*, OECD Publishing, https://dx.doi.org/10.1787/f64fed2a-en. [3]

OECD (2020), "The OECD Digital Government Policy Framework: Six dimensions of a digital government", *OECD Public Governance Policy Papers*, No. 02, OECD Publishing, Paris, https://dx.doi.org/10.1787/f64fed2a-en. [1]

OECD (2019), *Digital Government in Chile – Digital Identity*, OECD Digital Government Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/9ecba35e-en. [19]

OECD (2014), *Recommendation of the Council on Digital Government Strategies*, OECD, Paris, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0406. [2]

OECD/G20 (2021), *G20 Collection of Digital Identity Practices: Report for the G20 Digital Economy Task Force*, OECD, Paris, https://assets.innovazione.gov.it/1628073752-g20detfoecddigitalid.pdf. [14]

UK Government Digital Service (2016), *Service Manual*, UK Government, London, https://www.gov.uk/service-manual. [18]

Welby, B. (2019), "The impact of digital government on citizen well-being", *OECD Working Papers on Public Governance*, No. 32, OECD Publishing, Paris, https://doi.org/10.1787/24bac82f-en. [17]

CASE STUDY: BENIN AND ESTONIA'S E-GOVERNMENT PARTNERSHIP

12

Marit Lani, eGovernment Academy, Estonia

ABSTRACT

Over the past three years, Benin has made remarkable progress in digital transformation, designing national e-government frameworks, and developing e-services for citizens and businesses. This case study shows how, guided by strong political will and motivated public officials, with the support of the Estonian e-Governance Academy and partners from the private sector, Benin has set an example for many countries.

Key messages

- Where there are limited financial and human resources, it is important to have a clear understanding of the context and overall governance structure before starting to work on the individual components of a new digital system. The true value of e-government lies in wider interoperability that provides a seamless experience for the user.
- The partnership with Estonia's eGovernance Academy allowed the Beninese government to learn from and build on European good practice in e-government interoperability frameworks, while carefully adapting it to the local context.
- The collaboration with Estonia has resulted in increasing the technical capacities of the Information Services and Systems Agency of Benin and sparked the creation of numerous further e-services.

Challenge

Digital transformation is a central element of Benin's public sector structural reforms. However, pitfalls can be encountered with digital deployment if sufficient attention is not paid to digital governance issues. The Government of Benin turned to Estonia to learn from this small country's experience of becoming a world leader in e-government. A Memorandum of Understanding was established with the e-Governance Academy Foundation, an Estonian non-profit organisation that has helped governments all over the world set up national frameworks for going digital. The agreement included establishing a governmental interoperability solution, a national e-service portal and providing general advisory support for the implementation of smart governance (e-Governance Academy, n.d.[1]).

Approach

The first phase of the co-operation focused on setting up the e-government architecture and related organisational framework in Benin. This included:

- establishing the interoperability framework ensuring that public sector organisations can share and reuse information for more effective public service delivery
- reviewing the legislative framework so that it corresponds to the needs of a digital society
- conducting an inventory of existing public sector information systems and databases
- training public sector officials.

In addition, a data exchange solution for public authorities (Unified eXchange Platform) was implemented (e-Governance Academy[2]) based on X-Road, the open-source technology used in Estonia (e-Estonia[3]).

In the second phase, a one-stop shop portal (Government of Benin[4]) was developed and launched enabling citizens and businesses to access public services and other relevant information. The technical solution was provided in co-operation with private sector companies: Cybernetica from Estonia and Open SI from Benin.

Throughout the process, the e-Governance Academy acted as an advisor to the Beninese government on a wide range of topics related to co-ordination and e-government structure. They also involved private sector partners for the technical implementation and practical training. Specific emphasis was placed on training activities, to increase the skills of Beninese public sector officials and guarantee the sustainability of the results.

Results

The co-operation with Estonia has helped the Beninese government prepare for the deployment of their digital governance system. Both partners jointly developed the Beninese e-government interoperability framework, by defining the most suitable high-level e-government setup from an organisational and technical perspective. Although the interoperability framework builds on European good practice (European Commission, 2017[5]), Beninese officials and legal experts have carefully adapted it

to the local context. The partnership with Estonia has also provided practical tools for officials responsible for co-ordinating state information systems by establishing a public catalogue of available information systems, databases, registers, e-services, and assets.

Through workshops and mentoring, public officials have become more aware of the organisational, legal, and technological aspects of digital transformation and have gained specific practical skills. A high number of developers and administrators have been trained to maintain and further develop the newly introduced systems and solutions.

In addition to establishing a fully functioning public service portal that provides information on around 150 public services (including more than 25 newly developed e-services), the collaboration with Estonia has resulted in increasing the technical capacities of the Information Services and Systems Agency of Benin and sparked the creation of numerous further e-services, including publishing national exam results, electronic driver's license exams and e-voting at elections.

Lessons learnt

- **Success is underpinned by the people.** It is essential to have a critical mass of motivated and knowledgeable people to drive digital transformation. In Benin, there has been clear direction from the President and much support from the Minister of Digital Affairs and Digitalization. Although some time and negotiations were involved, the Information Services and Systems Agency of Benin, boasts an increasing number of skilled staff, who lead and co-ordinate the everyday processes and projects.
- **Establish a solid framework.** The importance of establishing an interoperability framework prior to developing the individual components cannot be overstated. Where there are limited financial and human resources it is important to have a clear understanding of the context and overall governance structure before starting to work on individual elements of the e-governance structure. Although it is important both politically and for the motivation of public servants to find "quick wins" with one-off solutions, the true value of e-government lies in wider interoperability that provides a seamless experience for the user. Understanding of and support for this approach at the highest political level, is key to its success, as demonstrated in Benin.
- **Public-private partnerships.** Including the private sector in developing public e-services is needed to attract additional knowledge and capacity, and helps advance the local information and communications technology sector.

Through workshops and mentoring, public officials have become more aware of the organisational, legal, and technological aspects of digital transformation and have gained specific practical skills.

This case study is also published on the OECD's virtual peer learning platform Development Co-operation TIPs • Tools Insights Practices as part of its *In Practice* series. The series presents real life responses to a diverse range of development co-operation challenges, with a focus on results and lessons learnt.

FURTHER INFORMATION

e-Governance Academy, https://ega.ee.

e-Governance Academy, *Data exchange platform for Benin*, https://ega.ee/project/data-exchange-platform-benin.

e-Governance Academy, *Citizen Portal for Benin*, https://ega.ee/project/citizen-portal-benin.

e-Governance Academy, *Introductory mission to Benin*, https://ega.ee/project/introductory-mission-benin.

e-Governance Academy, *Success story of Benin: Tangible outcomes after just 2 years of collaboration*, https://ega.ee/success_story/success-story-benin-tangible-outcomes-after-just-years-collaboration.

XROAD BJ website, https://xroad.bj.

XROAD BJ, *The catalogue of interoperable solutions*, https://catis.xroad.bj.

REFERENCES

e-Estonia (n.d.), *Interoperability services*, https://e-estonia.com/solutions/interoperability-services/x-road (accessed on 25 November 2021). [3]

e-Governance Academy (n.d.), *Data exchange platform for Benin*, https://ega.ee/project/data-exchange-platform-benin (accessed on 25 November 2021). [2]

e-Governance Academy (n.d.), *eGA to assist e-governance development in Benin*, https://ega.ee/news/ega-to-assist-e-governance-development-in-benin (accessed on 25 November 2021). [1]

European Commission (2017), *The New European Interoperability Framework*, https://ec.europa.eu/isa2/eif_en (accessed on 25 November 2021). [5]

Government of Benin (n.d.), *Site Officiel de l'Administration Béninoise*, https://service-public.bj (accessed on 1 December 2021). [4]

CASE STUDY: KNOWLEDGE SHARING ON USER-CENTRED DIGITAL CITIZEN SERVICES: COLOMBIA'S EXPERIENCE

13

Digital Citizen Services Team, Digital Government Directorate, Ministry of Information and Communication Technologies, Colombia

ABSTRACT

In 2019, Colombia's Ministry of Information and Communication Technologies (MinTIC) and the United Kingdom's Government Digital Service (GDS) agreed to exchange information and share learning on the development of digital government services. This case study describes the collaboration between the two teams on reviewing and improving Colombia's digital citizen portal.

Key messages

- Designing digital services requires a user-centred approach. A focus on the users and their needs in each design phase is crucial for ensuring uptake and usability of the services.
- The partnership with the United Kingdom's GDS was invaluable to the Colombian team. International development partners add most value when they share lessons and expertise on the challenges that the government is trying to address.

Challenge

Colombia's MinTIC identified the absence of a standardised technological solution to facilitate the relationship and interactions between public institutions and citizens. Public service information was spread over more than 8 000 different web pages of various public institutions, all hosted on the gov.co website. This resulted in a fragmented and complex user experience, impeding citizen access to government information and services. Even though user experience is an important element of Colombia's digital transformation strategy, MinTIC's expertise in this area was limited.

Colombia partnered with the United Kingdom's GDS team to review and improve its digital citizen portal. The partnership began in October 2019, with a request via the British Embassy to help MinTIC develop and strengthen its digital foundations. The partnership has five main aims: exchange information and share experiences on creating accessible, user-focused services; help prioritise open standards for government information and software; identify opportunities for collaboration with the IT industry; develop digital skills and capabilities in government, and provide better digital public services (MinTIC, 2020[1]).

Approach

Over the last three years, Colombia's MinTIC, in partnership with the United Kingdom's GDS, has strengthened technical solutions to improve service delivery and information provision on the 8 000 web pages of Colombia's digital citizen portal. The programme involved a review stage followed by technical implementation.

The review phase included a technical review of gov.co, focused on safeguards for a robust and secure portal hosting all public services, and a technical desktop review of the current gov.co site, leading to a set of recommendations for creating a "secure-by-default" site. These reviews enabled Colombia's Digital Citizen Services (DCS) team who manage gov.co to redesign and reshape its internal and external delivery methodologies and processes to support further development of the digital citizen portal.

For the implementation phase, the DCS team worked with the United Kingdom's GDS on:

- **Developing an approach to service design.** The DCS team held collaborative work sessions with stakeholders to share knowledge and lessons learnt on the development of digital government services from the experience of the United Kingdom's GDS team.
- **Adopting new work methodologies and learning new skills.** The DCS team were trained in agile methodologies and efficient use of project resources. The partnership with the United Kingdom helped the DCS team to acquire new knowledge and skills. In addition, MinTIC hired user-centred design experts to reinforce the ministry's internal capacity.
- **Using international models as inspiration**. In 2020, DCS adapted and launched the Estonian X-ROAD platform (e-Estonia[2]).

Results

- The review and several workshops with the United Kingdom's GDS team resulted in **visible improvements in the user**

experience of gov.co and of other services, such as the Digital Citizen Folder capturing citizen's government digital transactions (Government of Colombia[3]) and Digital Authentication.

- Since the launch of gov.co 2.0 in December 2020, the portal has received **over 9 million visits,** with 126 715 visitors having signed up to the Authentication Service and 8 346 to the Digital Citizen Folder (as of 3 November 2021).
- The revamped DCS portal has generated **interest and positive responses from peers**. Colombia has shared its experience with partners such as Spain, Ecuador, Costa Rica, Peru, the Dominican Republic and Brazil. In 2021, MinTIC chaired the (Red GEALC[4]) (Latin American and Caribbean e-Government Network) steering committee. This leadership role combined with the DCS experience allows Colombia to advocate for the advancement of digital services to citizens among its Latin American peers.
- Colombia's work on digital citizen services has also resulted in **partnerships with the United Nations Population Fund (UNFPA) and the Inter-American Development Bank (IDB)**.

Lessons learnt

- **Designing digital services requires a user-centred approach.** A focus on the users and their needs in each design phase is crucial. Heeding feedback allowed the DCS team to improve the user experience for institutions and citizens.
- **Knowledge is shared better when access to it is easy.** In July 2021 gov.co launched an online toolbox (Government of Colombia[5]) providing tools and tips for institutions and citizens on using the portal.
- **Cultivate an adaptive mindset for new work methodologies.** Soft skills in the DCS team were crucial and invaluable for the purpose of negotiating the MoU with the United Kingdom and the development of gov.co.
- **Data and research are the main drivers of service design.** Decisions to improve the government databases have been guided using the PowerBI analytics tool, which is open and accessible to all.
- **Learning from international partners adds value.** The partnership with the United Kingdom's GDS was invaluable to the Colombian team. International development partners add most value when they share lessons and expertise on the challenges that the government is trying to address. This is good practice.

This case study is also published on the OECD's virtual peer learning platform Development Co-operation TIPs • Tools Insights Practices as part of its *In Practice* series. The series presents real life responses to a diverse range of development co-operation challenges, with a focus on results and lessons learnt.

FURTHER INFORMATION

PowerBi, Gov.co site usage statistics, https://app.powerbi.com/view?r=eyJrIjoiNzUzZmE4MTUtYjEzMi00NjcxLWFlNjAtMTBkZTUyZTk5NTE4IiwidCI6IjFhMDY3M2M2LTI0ZTEtNDc2ZC1iYjRkLWJhNmE5MWEzYzU4OCIsImMiOjR9&pageName=ReportSection2eb8b0e9bdcd0b508d58.
PowerBi, Digital Transactions in Colombia: https://app.powerbi.com/view?r=eyJrIjoiOTM2NWU2YWMtMGZiZi00YzQwLWIwZGMtYzIxMjQ4ZWZjZDZlIiwidCI6IjFhMDY3M2M2LTI0ZTEtNDc2ZC1iYjRkLWJhNmE5MWEzYzU4OCIsImMiOjR9.

REFERENCES

e-Estonia (n.d.), *Interoperability services*, https://e-estonia.com/solutions/interoperability-services/x-road. [2]

Government of Colombia (n.d.), *Digital Citizen Folder*, https://carpetaciudadana.and.gov.co (accessed on 26 November 2021). [3]

Government of Colombia (n.d.), *Public Entities Toolbox 'Caja de Herramientas', Guidelines Library*, https://www.gov.co/biblioteca (accessed on 25 November 2021). [5]

MinTIC (2020), *Review of a partnership between Colombia and the United Kingdom for the digital transformation of the Colombian State*, https://www.gov.co/uploads/14122020_Blog_MoU%20_English_fv.pdf (accessed on 26 November 2021). [1]

Red GEALC (n.d.), *Red GEALC*, https://www.redgealc.org/ (accessed on 26 November 2021). [4]

TAXING DIGITAL ECONOMIES

14

Joseph Stead, Centre for Tax Policy and Administration, OECD

ABSTRACT

The digitalisation of the global economy raises significant challenges in terms of taxing corporate income and imposing and collecting value-added tax on cross-border online sales. Newly agreed international tax rules could significantly benefit developing countries, expanding their right to tax the foreign income of multinational enterprises and improving their ability to protect their tax base from tax avoidance. There is also largely untapped revenue potential from the rapid growth of e-commerce. A significant portion of this market is international transactions. As most African countries have not yet updated their value-added tax rules to account for digital trade, this chapter highlights that they are missing out on significant tax revenues. While some developing countries have digitalised their tax systems, improving efficiency and generating increased revenue, many more need support to implement the digital transformation of their tax administrations.

Key messages

- More than 60 developing countries played a key role in negotiating new international tax rules to address the challenges of the increasingly digitalised global economy and stand to benefit substantially from new taxing rights over profits of multinational enterprises.
- Evidence from countries that have implemented internationally agreed value-added tax standards on cross-border sales of digital services shows significantly increased tax revenues.
- Developing countries will need technical assistance and expertise to make the necessary changes in their laws and tax systems to take advantage of international reforms, build tax policy and administration capacity, and address the evolving taxation challenges of digital economies.

Digital transformation has significant implications for developing countries' domestic tax revenues. Increasing their tax base is vital to ensuring that they have the resources necessary for their development needs. In Africa, for example, taxes represent a far smaller share of countries' gross domestic product (GDP) on average than they do in OECD countries (16.5% versus 33.9%, respectively).[1] In low- and middle-income countries overall, corporate income tax and value-added tax (VAT) often are the main components of the tax base. However, in a digitalised economy, protecting this tax base has become more and more challenging as digitalisation has accelerated in the 21st century. For example, the rules for taxing international business income, which were developed more than 100 years ago, are no longer fit for purpose and have resulted in multinational enterprises (MNEs) not paying their fair share of tax despite the huge profits many of these businesses have garnered as the world has become increasingly interconnected. Ensuring that the appropriate amount of VAT is collected in respect of online sales of goods and services has also become increasingly important as e-commerce has grown dramatically in recent years.

The Two-Pillar Solution: Reforming international tax rules for a digitised world

Following years of detailed and intensive work and negotiations to bring the international tax rules into the 21st century, members of the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS) (the Inclusive Framework) agreed on 8 October 2021 to the Statement on the Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy.[2] The Two-Pillar Solution will ensure that MNEs will be subject to a minimum tax rate of 15% and will reallocate profits of the largest and most profitable MNEs to countries worldwide.

In addition to these changes to the taxation of MNEs, the Inclusive Framework has established a clear standard to co-ordinate the imposition and collection of VAT to the online sales of goods and services, which is already generating significant tax revenue for many jurisdictions around the world. These advances in the international tax architecture provide opportunities for developing countries to increase their tax revenues. To fully capture the benefits, tax administrations are moving towards digitalised services to improve compliance, efficiency and the overall quality of service for taxpayers. Developing countries can benefit greatly from these technological advances to protect their tax bases and are often able to lead the way by leapfrogging more advanced economies.

New taxing rights will boost developing country revenues

The digitalisation of the global economy creates new challenges for all countries in

the taxation of MNEs and the provision of digital goods and services that call for global solutions. The newly agreed two-pillar reform is designed to address two key problems with the existing international tax rules:

1. MNEs often conduct large-scale business in jurisdictions where they have little or no physical presence. But under existing rules, broadly, the profits of a foreign company can only be taxed in another country where the foreign company has a physical presence. While this made perfect sense a century ago when business revolved around factories, warehouses, and bricks-and-mortar stores, it does not reflect today's digitalised world.
2. Most countries tax only domestic business income and not foreign income of their MNEs, on the assumption that foreign business profits will be taxed where they are earned. With digitalisation and the growth of intangibles such as brands, software algorithms, copyright and patents, MNEs can more easily shift profits to jurisdictions that impose little or no tax. Moreover, many jurisdictions are engaged in tax competition by offering reduced taxation – and often zero taxation – to attract foreign direct investment, which is a further challenge.

Pillar One of the Two-Pillar Solution provides the jurisdictions where the biggest and most profitable MNEs have their markets a right to tax a share of those profits, regardless of whether the MNE has a physical presence in the jurisdiction. Under this reform, more than USD 125 billion of profits are expected to be reallocated to the market jurisdictions.

Pillar Two provides a minimum tax on corporate profit of 15%, thus establishing a floor on tax competition. Where effective tax rates on MNEs in a particular jurisdiction are below the agreed minimum, additional taxes will be allowed to bring the rate up to the agreed minimum. As a result, tax competition is now backstopped by a minimum level of taxation wherever an MNE operates. Pillar Two will generate around USD 150 billion in additional tax revenues per year.

An inclusive reform process recognised developing countries' needs

Developing countries make up a large part of the Inclusive Framework's membership and their voices have been active and effective throughout the negotiations. Of the 140 member countries and jurisdictions in the Inclusive Framework, 68 are developing economies, as are 10 of the 24 members of the Steering Group.[3]

They work on an equal footing with other countries, and their participation has helped ensure that the reforms consider developing economies' needs and priorities. In Pillar One, for instance, the threshold for the new taxing right to apply to MNEs is reduced for smaller jurisdictions with a GDP below EUR 40 billion, and special rules will apply to developing economies with respect to opting out of mandatory binding arbitration provisions in certain circumstances. In Pillar Two, developing economies will have the right to request the first call on the right to levy the top-up tax on certain high-risk payments. The OECD estimates that, on average, countries of all income levels – low, middle and high – would experience revenue gains because of Pillar One. However, these gains are expected to be larger (as a share of current corporate income tax revenues) for low-income jurisdictions. Overall, the Pillar Two rules will relieve pressure on developing countries to provide excessively generous tax incentives to attract foreign investment. At the same time, there will be carve outs for activities with real substance. Box 14.1 describes the benefits that Egypt, an active participant in the development of the new rules, expects to gain from the reforms.

Countries need technical support to adapt their tax systems to international reforms

The agreed timeline for completing the technical work on the two pillars and

BOX 14.1. EGYPT IS WORKING WITH THE OECD TO IMPROVE TAX COLLECTION

BY RAMY MOHAMED YOUSSEF, HEAD OF THE TAX POLICY UNIT AND ADVISOR TO THE MINISTER OF FINANCE FOR INTERNATIONAL TAX AND TAX REFORMS, EGYPTIAN MINISTRY OF FINANCE

Egypt became a member of the Inclusive Framework on Base Erosion and Profit Shifting in 2016. With the support of other members and through the Egypt-OECD country-tailored domestic resource mobilisation programme, it has remained actively engaged in the international tax reforms, including the BEPS minimum standards requirements and measures to tackle tax avoidance, improve the coherence of the international tax system and ensure a more transparent environment to encourage foreign direct investment. Egypt is already seeing benefits of the various reforms underway to address the tax challenges of digitalisation.

The Inclusive Framework aims to close gaps in the international taxation system that can lead to tax evasion and to erosion of the tax base through aggressive tax-planning schemes, outcomes that tend to disproportionately affect developing countries. As it relies heavily on tax as a key revenue source, these efforts are immensely important to Egypt: Tax accounts for approximately 75% of total revenues for the 2020/21 fiscal year.

In September 2020, Egypt deposited its instrument of ratification of the Multilateral Convention to implement tax treaty-related measures, evidence of its support for updating international tax rules and lessening the opportunity for tax avoidance by multinational enterprises. In 2021, it has played an important role in the negotiations to reach the Two-Pillar Solution, which could increase Egypt's tax revenues by approximately USD 70 million from Pillar One reforms and by USD 130 million from Pillar Two provisions. These amounts could be even higher, given that recent statistics indicate that Egypt now has 60 million active Internet users in various fields such as travel, online services and online purchases and that USD 1.4 billion is now spent on online advertising.

Egypt also is working with the OECD on applying both the value-added tax on e-commerce and on reforms of international tax legislation. These efforts began to bear fruit for Egypt in 2020, generating additional and much-needed tax revenues during the pandemic. For instance, the Egyptian Tax Authority managed to finalise transfer pricing-related adjustments amounting to EGP 685 million (Egyptian pounds), the equivalent of USD 98 million, which have led to EGP 154 million (USD 22 million) in additional tax collected as well as USD 10 million in related penalties. To strengthen tax administration and build capacity to successfully carry out legislative reforms, the OECD Centre for Tax Policy and Administration is also supporting Egypt in building a reliable and technically competent team at the Egyptian Tax Authority's International Tax Unit.

subsequent implementation is ambitious, with the necessary model legislation and guidance due to be completed in 2022 and implementation to take place in 2023. The scale and speed of these changes will be challenging for developing countries, and many will need significant support, both technically and politically, to cover the range of legislative and administrative changes both pillars will require. In addition, some countries may require assistance to reform existing tax incentive regimes to secure the global minimum tax. Support to capacity building for domestic resource mobilisation has increased significantly in recent years, from USD 178 million in 2015 to USD 266 million in 2019.[4] Yet, these amounts still represent only around 0.2% of official development assistance and will need to continue to increase.

Equally important is providing expertise to developing economies in this area. As international taxation is a highly specialised field, and skilled practitioners are in short supply, it is vital for OECD countries to provide more experts for capacity-building programmes, among them the Global Relations Programme training courses[5] that offer intensive, expert-led training on a range of tax policy and administration

issues and the Tax Inspectors Without Borders initiative,[6] a joint initiative of the OECD and the United Nations Development Programme, which provides experts to work hand-in-hand with tax administrators on live cases. Tax Inspectors Without Borders and related programmes in partnership with the African Tax Administration Forum and the World Bank Group have raised over USD 1 billion in additional revenues to date (OECD, 2021[1]). Support to capacity building for domestic resource mobilisation has increased significantly in recent years, from USD 178 million in 2015 to USD 266 million in 2019.[7] Yet, these amounts still represent only around 0.2% of official development assistance and will need to continue to increase.

Support to capacity building for domestic resource mobilisation has increased significantly in recent years, from USD 178 million in 2015 to USD 266 million in 2019.[8] Yet, these amounts still represent only around 0.2% of official development assistance and will need to continue to increase.

Low- and middle-income countries should focus on value-added tax on e-commerce

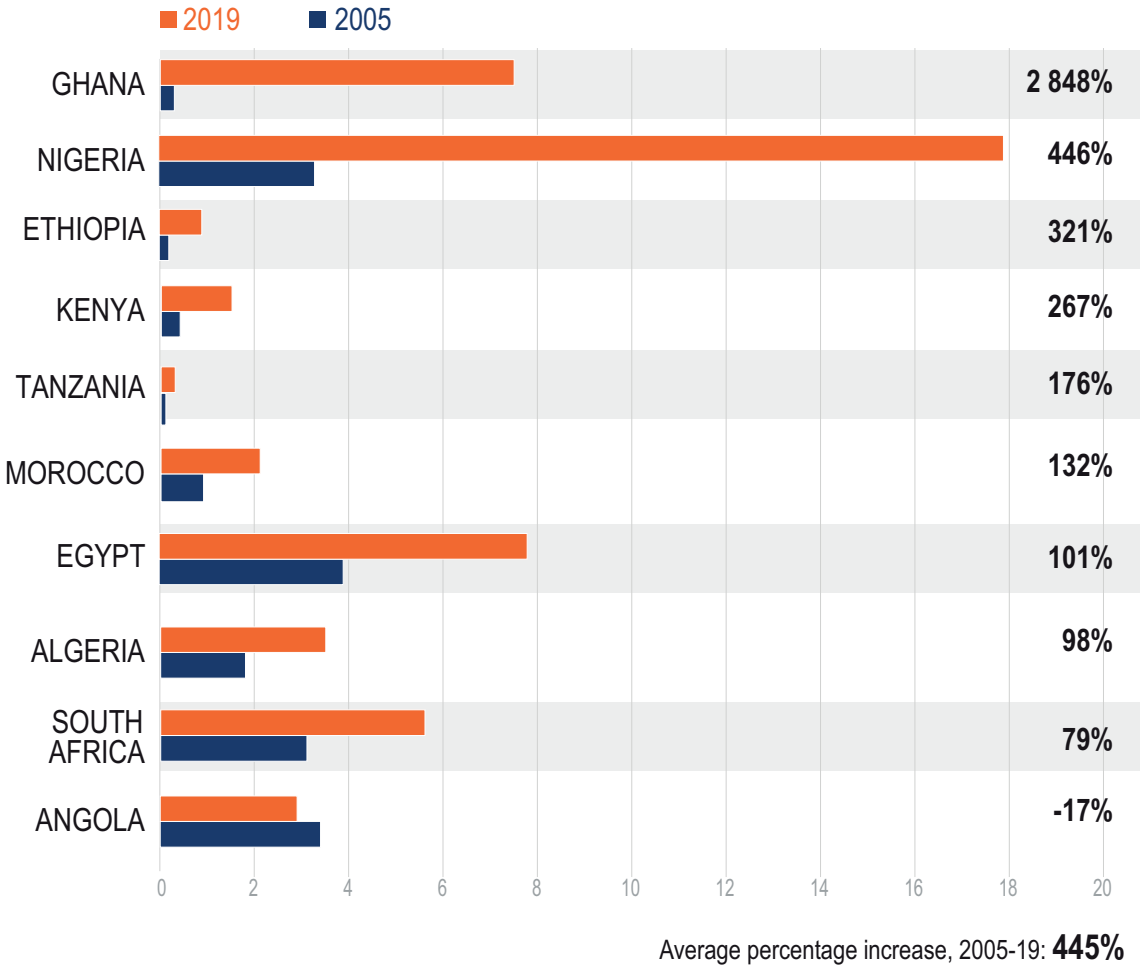
Digitalisation has greatly increased the volume of sales of goods and services over the Internet. When the buyer and seller are located in different jurisdictions, the appropriate imposition and collection of VAT can be challenging. On average, VAT is the single most important source of tax revenue in developing countries. In 2018, for example, VAT provided 29.7% of total domestic revenues in Africa and 27.8% of the total in Latin America and the Caribbean compared to 20.2% in OECD countries (OECD, African Union Commission and African Tax Administration Forum, 2020[2]). Securing effective VAT collection on e-commerce will be important to ensure the competitiveness of the VAT system and sustainability of VAT revenues. For example, the African e-commerce market is already worth USD 27 billion and expected to grow by around 13% a year, to reach USD 46 billion by 2025 (Statista, 2021[3]). A significant portion of this market is international transactions, and the value of imports of digitally deliverable services in Africa's ten largest economies increased by an (unweighted) average of 445% over 2005-19 (Figure 14.1) (UNCTAD, 2021[4]). As most African countries have not yet implemented updated VAT rules to facilitate the application of VAT on e-commerce, significant VAT revenues are being forgone.

Much of the projected growth in the African e-commerce market will be new consumption driven by overall economic growth. However, the increase will also reflect a shift from physical transactions to e-commerce, as seen elsewhere in the world. It is important to ensure effective VAT on these online sales to not only generate revenues from new activity, but also preserve revenues from activity that will move online.

Using Inclusive Framework standards to enhance VAT collection

Traditional VAT rules make it difficult and complicated for countries to effectively assert taxing rights over VAT and also to collect VAT on the online sale of digital products and services (e.g. applications on mobile phones or on-demand television

Figure 14.1. The value of imports of digitally deliverable services in Africa's ten largest economies increased dramatically, 2005-2019



Notes: The value of imports is measured in USD billions. The average percentage increase is an unweighted average.
Source: UNCTAD (2021[4]). International Trade in Digitally-deliverable Services, Value, Shares and Growth, Annual (database), https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=158358

streaming services), particularly when suppliers in foreign jurisdictions are selling to private consumers. The volume of imports of low-value goods sold on line continues to rise globally, presenting VAT collection challenges under the traditional customs procedures. These challenges could result not only in considerable VAT revenue losses, they also create unfair competitive pressure on domestic businesses that are required to charge VAT on their sales while low-value imports of equivalent goods (e.g. t-shirts) often receive exemptions from VAT. Moreover, higher value items are vulnerable to fraudulent undervaluation and miscategorisation by foreign suppliers wishing to benefit from exemptions of this kind.

Internationally agreed standards developed by the OECD Global Forum on VAT provide ready-made solutions for all countries for the effective collection of VAT on e-commerce. More than 70 countries (more than half of them developing countries) have either implemented or announced the intention to implement standards on cross-border supplies of digital services. The impact on their revenues is significant: Since implementation in 2014, South Africa has raised more than ZAR 15.3 billion (South African rand), the equivalent of about USD 929 million, for instance. Recognising that

online marketplaces and/or digital platforms facilitate a large proportion of online sales, the OECD standards recommend leveraging the power of the platforms by creating a central role for them in the VAT collection process in certain circumstances. Developing countries can benefit from the experience already gained in implementing these standards, not least evidence that most of the major online platforms (which are responsible for the majority of online sales) have developed the systems and processes to comply with these standards and so have at their disposal the means to become compliant as additional countries implement the standards.

The OECD is developing a series of regional VAT Digital Toolkits in partnership with the World Bank Group and relevant regional partners. The first toolkit – for the Latin American and Caribbean region, published in June 2021 – provides detailed guidance for the policy design, implementation and operation of a comprehensive VAT strategy targeting digital trade, including strategies to strengthen the enforcement of VAT collection obligations on non-resident businesses such as digital platforms (OECD et al., 2021[5]). It also draws on expertise and best practices, including from jurisdictions in the Latin American and Caribbean region that have successfully implemented the standards, including Bahamas, Barbados, Chile, Colombia, Costa Rica and Mexico. These early adopters have already achieved very positive results in terms of VAT revenue collection, compliance levels, and reduction of competitive distortion between traditional bricks-and-mortar stores and foreign online vendors. The OECD is finalising toolkits for Asia Pacific and Africa at the time of writing. These will be complemented by e-learning programmes and workshops.

Digital infrastructure and peer learning can revolutionise tax administration

Many tax administrations are increasing their efficiency and effectiveness by shifting to e-administration and new technology, aiming to both enhance compliance and reduce the administrative burden on taxpayers (OECD, 2019[6]). Off-the-shelf software can jump-start the digitalisation of developing countries' tax systems, for example by allowing taxpayers to upload electronic tax returns. More complex digital tools can enable the direct transfer of information from taxpayers to tax administrations, though introducing them is more resource intensive.

While some developing countries are making significant progress in digitalising their tax administrations, many others lag behind, as shown by responses to the 2020 International Survey on Revenue Administration.[9] The survey found that while basic online registration and filing for taxpayers is fast becoming the norm globally, including in many developing countries, 36% of developing countries had not yet offered online taxpayer registration by 2019. Where digitalisation is progressing, some tax administrations in developing countries are achieving great results. According to the survey, 26 developing countries reached a level of 100% online filing for corporate income tax and 18 reached 100% online filing for personal income tax. More broadly, many developing countries are not yet able to make full use of more innovative digital tools. For example, only 24% of those surveyed were using or introducing artificial intelligence and/or machine learning into their tax administration by 2019, compared to 64% of high-income countries. Such tools can process much higher volumes of data, which help develop taxpayer profiles and identify risks, non-compliance and irregularities. These can improve the efficiency and revenue collection of tax administrations.

International support of digital peer learning is crucial for tax administrations

Peer learning can help address challenges such as Internet reliability; the availability of investment for longer term projects; and ensuring access to e-services for all

taxpayers, which is especially difficult in rural areas and hampered by skills shortages (Wilton Park, 2017[7]). While many of these challenges require broader responses, there is significant scope for peer learning across tax administrations. Initiatives of regional tax organisations can provide valuable support.

For example, the African Tax Administration Forum provides 38 African tax administrations training, guidance and research on all aspects of tax administration, including digitalisation. Ensuring that developing economies can learn from others' successes (and failures) can help tax administrations digitalise faster and more effectively. The Tax Administration 3.0 initiative of the 53-member Forum on Tax Administration also sets out a vision for the digital transformation of tax administrations that results in an increasingly seamless and frictionless taxation process over time (OECD, 2020[8]). The specific challenges faced by developing countries in digitalisation is the focus of one of the workstreams of this initiative, which aims to identify potential solutions including, for example, adapting the Tax Inspectors Without Borders model and providing experts to work in tax administrations on their digital transformation.

To digitalise tax administrations and apply the new international standards on VAT and corporate income tax, developing countries will require technical and other support. Facilitating peer learning, and more broadly ensuring access to and training in the necessary technical expertise, will be crucial. As technical expertise is currently in such short supply, development partners have important roles to play in providing and building technical tax expertise and opportunities for peer learning.

[…] many developing countries are not yet able to make full use of more innovative digital tools. For example, only 24% of those surveyed were using or introducing artificial intelligence and/or machine learning into their tax administration by 2019, compared to 64% of high-income countries.

REFERENCES

OECD (2021), "Tax Inspectors Without Borders and partners pass USD 1 billion milestone in additional tax revenues for developing countries", web page, https://www.oecd.org/tax/tax-inspectors-without-borders-and-partners-pass-usd-1-billion-milestone-in-additional-tax-revenues-for-developing-countries.htm (accessed on 17 September 2021). [1]

OECD (2020), *Tax Administration 3.0: The Digital Transformation of Tax Administration*, OECD, Paris, http://www.oecd.org/tax/forum-on-tax-administration/publications-and-products/tax-administration-3-0-the-digital-transformation-of-tax-administration.htm (accessed on 17 September 2021). [8]

OECD (2019), *Tax Administration 2019: Comparative Information on OECD and Other Advanced and Emerging Economies*, OECD Publishing, Paris, https://dx.doi.org/10.1787/74d162b6-en. [6]

OECD, African Union Commission and African Tax Administration Forum (2020), *Revenue Statistics in Africa 2020: 1990-2018*, OECD Publishing, Paris, https://dx.doi.org/10.1787/14e1edb1-en-fr. [2]

OECD et al. (2021), *VAT Digital Toolkit for Latin America and the Caribbean*, OECD, Paris, https://www.oecd.org/tax/consumption/vat-digital-toolkit-for-latin-america-and-the-caribbean.htm (accessed on 17 September 2021). [5]

Statista (2021), *Digital Markets: eCommerce – Africa (database)*, https://www.statista.com/outlook/dmo/ecommerce/africa (accessed on 17 September 2021). [3]

UNCTAD (2021), *International Trade in Digitally-deliverable Services, Value, Shares and Growth, Annual (database)*, https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=158358 (accessed on 17 September 2021). [4]

Wilton Park (2017), *Tax Capacity Building for Tomorrow: Digital and Analogue Approaches to Reform*, Wilton Park, https://www.wiltonpark.org.uk/wp-content/uploads/WP1566-Report-1.pdf. [7]

NOTES

1. See the OECD Global Revenue Statistics Database (2018 data) at: https://stats.oecd.org/Index.aspx?DataSetCode=RS_GBL#.
2. See: https://www.oecd.org/tax/beps/statement-on-a-two-pillar-solution-to-address-the-tax-challenges-arising-from-the-digitalisation-of-the-economy-october-2021.htm.
3. As the name suggests, the role of the steering group is to steer the Inclusive Framework and provide advice to help inform the framework's decisions.
4. The figures refer to total disbursements by countries in the Development Assistance Committee, countries' total, disbursements, constant prices.
5. For more information on the Centre for Tax Policy and Administration Global Relations Programme in taxation, see: https://www.oecd.org/ctp/tax-global/global-relations-calendar-of-events.htm.
6. For more information on the initiative, see: www.tiwb.org.
7. The figures refer to total disbursements by countries in the Development Assistance Committee.
8. The figures refer to total disbursements by countries in the Development Assistance Committee.
9. More than 150 tax administrations are covered in the International Survey on Revenue Administration, which is conducted jointly by the Asian Development Bank, the Inter-American Center of Tax Administrations, the International Monetary Fund, the Intra-European Organisation of Tax Administrations and the OECD. Apart from the Middle East and North Africa region, the survey has wide geographic and income-level coverage. See more: TAS Database - Forum on Tax Administration (oecd.org)

15 SEIZING OPPORTUNITIES FOR DIGITAL TRADE

Javier López González, Trade and Agriculture Directorate, OECD
Silvia Sorescu, Trade and Agriculture Directorate, OECD

ABSTRACT

Digitalisation offers new opportunities for developing countries and firms of all sizes to overcome existing trade cost disadvantages and deliver their products to a wider range of markets. This chapter highlights that the benefits of digitalisation for trade, and of trade for digitalisation, are not automatic. It stresses that ensuring that these are realised and shared more inclusively requires a regulatory environment that allows governments in developing countries to respond to new challenges raised by digitalisation. While international co-operation and technical assistance can support developing countries in addressing digital connectivity and skills gaps to maximise benefits, developing countries in regional and global discussions that will shape the rules underpinning a growing part of their economies.

Key messages

- Digitalisation provides new opportunities for developing countries to engage in international trade – particularly for micro, small and medium-sized enterprises and women entrepreneurs – helping them overcome existing trade cost disadvantages and deliver their products to global markets.
- Ensuring that the benefits of digitalisation for trade, and of trade for digitalisation, are realised and shared more widely requires a regulatory environment that allows governments in developing countries to respond to new challenges raised by digitalisation.
- It is important that developing countries participate in international discussions on digital trade to help shape the rules that will underpin a growing part of their economies.
- International co-operation and technical assistance, through initiatives such as Aid-for-Trade, can support developing countries in addressing issues related to digital connectivity and skills gaps.

The increase in adoption of digital technologies has led to unprecedented reductions in the costs of engaging in international trade, changing both how and what is traded and contributing to growing competitiveness (López González and Jouanjean, 2017[1]). It has also helped open new opportunities for trade, not least in the context of tackling some of the consequences of the COVID-19 pandemic and helping economic recovery (OECD, 2020[2]). Yet, while in many ways it has never been easier to engage in international trade, the adoption of new business models by firms has made international trade transactions and policy issues more complex (López González and Ferencz, 2018[3]).

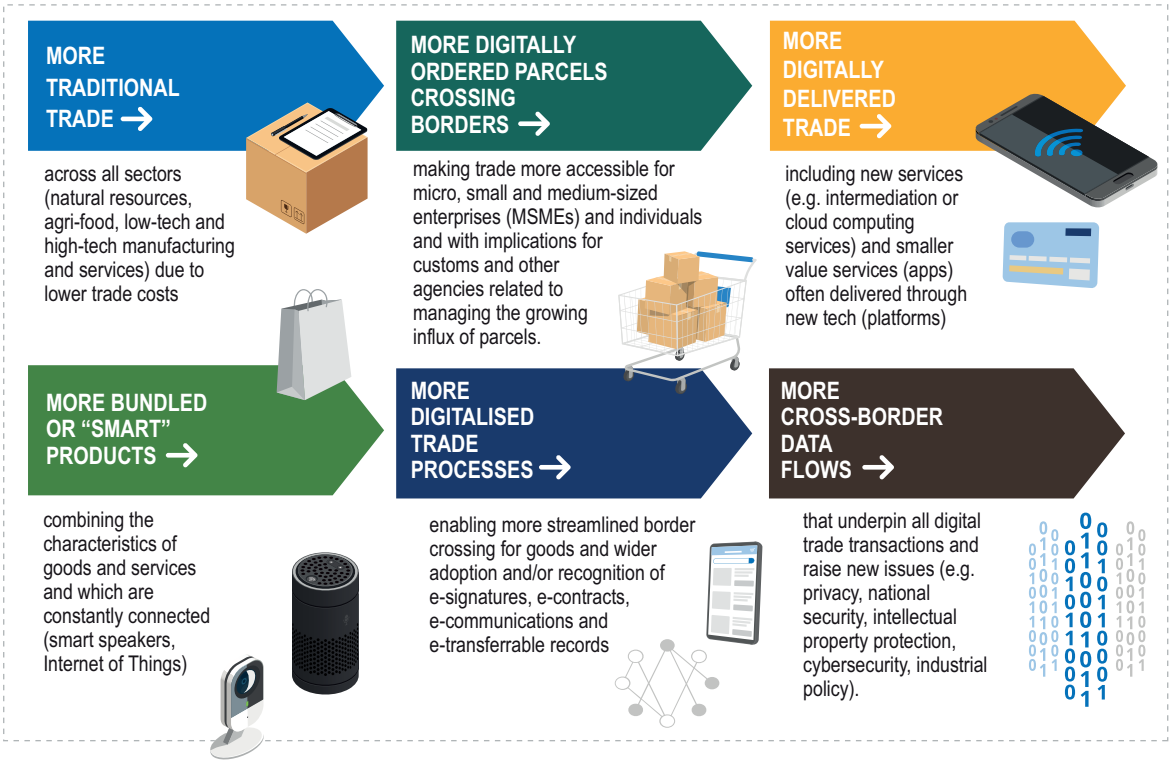
Digital trade offers new opportunities for individuals and firms of all sizes in both developed and developing economies. However, governments are facing growing regulatory challenges in ensuring that these opportunities can be realised and shared more inclusively. Getting the policy mix right calls for greater dialogue among different stakeholders to fashion more holistic approaches that allow everyone to reap the benefits of the digital transformation of trade.

What is digital trade and why does it matter?

In much the same way that reductions in transport and co-ordination costs enabled the fragmentation of production along global value chains, declining costs of sharing information are powering a digital trade revolution that is changing what and how we trade. Digital trade involves digitally enabled or digitally ordered cross-border transactions in goods and services which can be either digitally or physically delivered (López González and Jouanjean, 2017[1]). Digital trade means (Figure 15.1):

- more traditional trade → across all sectors (natural resources, agri-food, low-tech and high-tech manufacturing and services) due to lower trade costs
- more digitally ordered parcels crossing borders → making trade more accessible for micro, small and medium-sized enterprises (MSMEs) and individuals and with implications for customs and other agencies related to managing the growing influx of parcels
- more digitally delivered trade → including new services (e.g. intermediation or cloud computing services) and smaller value services (apps) often delivered through new tech (platforms)
- more bundled or "smart" products → combining the characteristics of goods and services and which are constantly connected (smart speakers, Internet of Things)
- more digitalised trade processes → enabling more streamlined border crossing for goods and wider adoption and/or recognition of

Figure 15.1. Effects of digitalisation on trade



Source: Authors' illustration.

e-signatures, e-contracts, e-communications and e-transferrable records

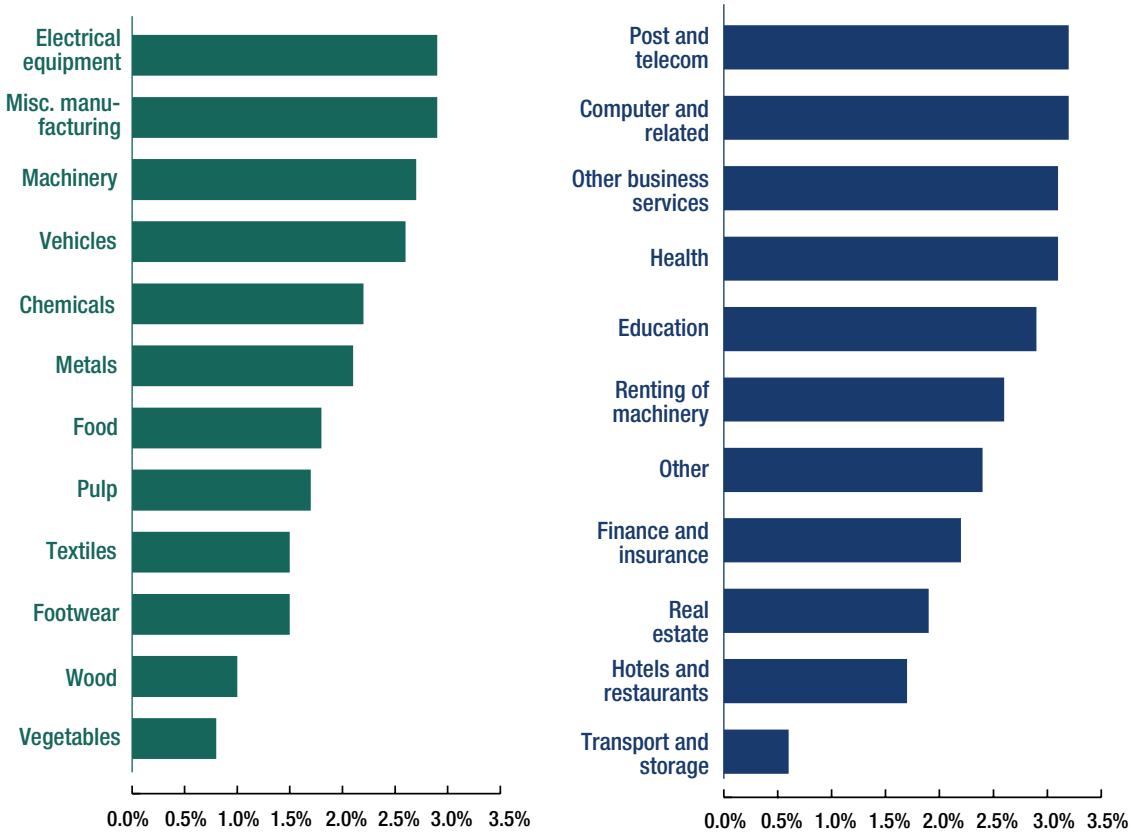
- more cross-border data flows → that underpin all digital trade transactions and raise new issues (e.g. privacy, national security, intellectual property protection, cybersecurity, industrial policy).

Digital trade matters because it creates a range of benefits. Countries with better digital connectivity, such as a higher degree of Internet penetration, have a greater degree of trade openness and sell more products to more markets. More digitalisation also means more trade: A 10% increase in digital connectivity between countries[1] raises goods trade by nearly 2% and trade in services by over 3% (López González and Ferencz, 2018[3]). Importantly, these positive effects emerge across all sectors (Figure 15.2). So, whether for trading carrots, cardigans, copper, household appliances or laptops, digitalisation has the potential to help increase exports. When goods are traded internationally in small parcels, a 10% increase in bilateral digital connectivity (both countries increasing their connectivity rates) raises parcel exports by up to 4% (López González and Sorescu, 2021[4]).

Digitalisation can also help countries draw greater benefits from their regional trade agreements. When combined with a regional trade agreement, a 10% increase in digital connectivity gives rise to an additional 2.3% growth in goods exports (López González and Ferencz, 2018[3]).

In addition, digital trade facilitation tools can help reduce the costs of trade at different stages of the supply chain. Sustained implementation of the World Trade Organization (WTO) Trade Facilitation Agreement (TFA), for instance, has enabled the wider digitalisation of trade processes. Even modest efforts to reduce performance gaps in automated border processes could further increase trade by as much as 4%

Figure 15.2. Digitalisation has a positive impact on trade in goods and services



Note: The figure shows the percentage increase in exports as a result of a 10% increase in bilateral digital connectivity and is derived from a gravity model on a sample of 160 countries.

Source: López González, J. and J. Ferencz (2018[7]), "Digital trade and market openness", OECD Trade Policy Papers, No. 217, OECD Publishing, Paris, https://dx.doi.org/10.1787/1bd89c9a-en.

across all goods sectors[2] (OECD, 2020[5]). In addition, greater use of digital tools for streamlining border processes can increase exports of small parcels by more than 6% (López González and Sorescu, 2021[4]). Importantly, automation of border processes can help MSMEs in developing countries to engage in international trade and increase the value of their exports and imports by more than 4.5% (López González and Sorescu, 2019[6]).

Digital trade is especially important for developing country MSMEs and women entrepreneurs. Access to cheaper, more sophisticated and diverse digital inputs – including productivity-enhancing software, communications technology or e-payment services – can help firms deliver their output to a wider customer base across different countries and overcome existing trade costs disadvantages. Recent evidence suggests that access to digitally deliverable business services,[3] such as Internet banking or online accounting services, helps drive export competitiveness, especially in less developed countries (Andrenelli and López González, 2019[8]). Moreover, recent analysis shows that in developing countries, MSMEs with a digital presence in the form of a webpage are more likely to become exporters than those with no digital presence[4] (Andrenelli and López González, 2019[8]). Digital services can also help women-led firms, which are generally smaller than those led by men, overcome some of the barriers to establishing and growing their businesses and to trading on international markets, among them lowering the costs of accessing credit and obtaining

information through professional networks (Korinek, Moïsé and Tange, 2021[9]).

The wider use of digital platforms and websites to sell goods across borders has also contributed to a significant increase in the number of parcels crossing borders, a trend that was accelerated by the COVID-19 pandemic, including in many developing countries. This has created new opportunities, particularly for individuals and MSMEs, to engage more directly in trade (López González and Sorescu, 2021[4]).

How can developing countries make the most out of these new opportunities?

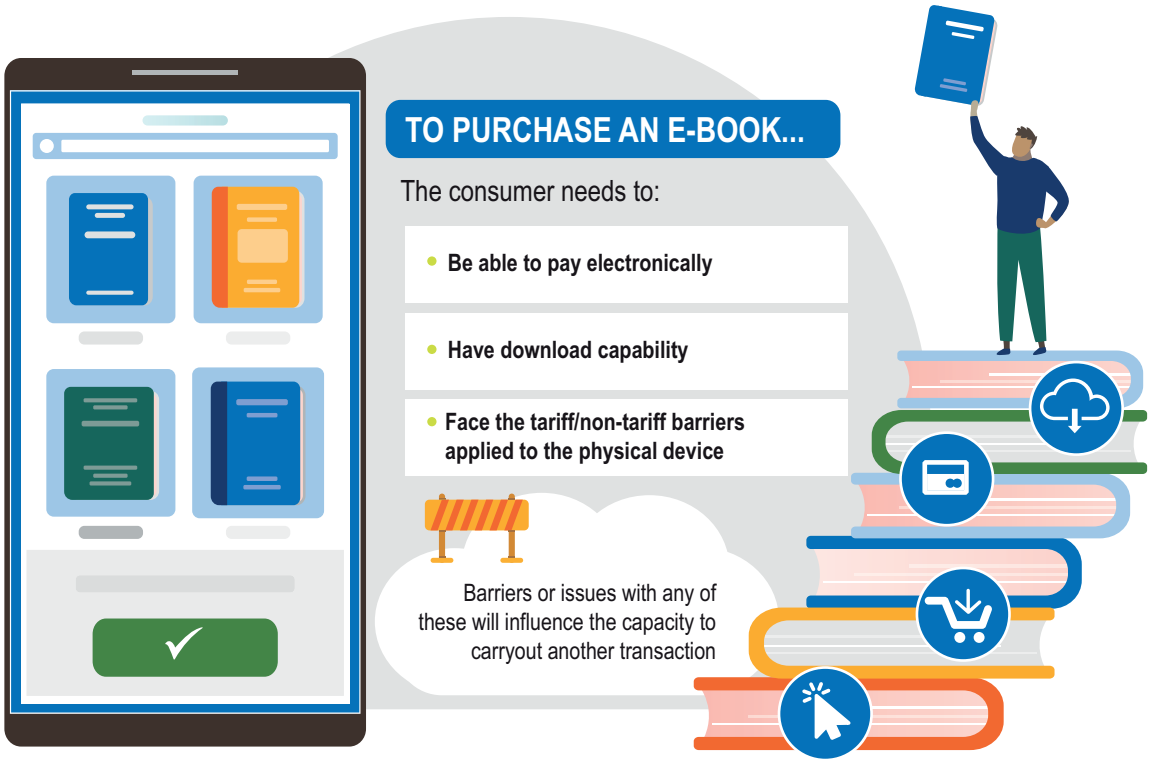
The benefits of digital trade do not flow automatically. A range of policy levers are needed to promote greater participation and benefits, including through new approaches to market openness. Today, a simple digital trade transaction rests on a series of enabling or supporting factors. Take the act of ordering an e-book. The consumer must be able to access a retailer's website, and this depends on the regulatory environment in which the retailer establishes its webpage as well as the cost of Internet access to the consumer – a cost that, in turn, is affected by the regulatory environment in the telecommunications sector. The consumer's e-book purchase is also affected by the ability to pay electronically, the download capacity (bandwidth) of the network, and the tariff and non-tariff barriers faced by the physical device used to read the e-book (i.e. the e-reader). A barrier to any one of these transactions will influence the need or ability to undertake another transaction (Figure 15.3).

Market openness, then, should be approached more holistically, taking into consideration the full range of measures that affect any particular transaction. While Internet access is a necessary condition for digitally enabled trade in goods to flourish, it is not sufficient on its own. If transportation, logistics or e-payment services in the receiving or delivering country are costly due to services trade restrictions, or if goods are held up at the border by cumbersome procedures, then the benefits of digital trade may not materialise (López González and Ferencz, 2018[3]). Survey evidence highlights that in developing countries, cross-border logistics and e-payments are among the biggest challenges to firms' participation in e-commerce (López González and Sorescu, 2021[4]).

According to OECD Trade Facilitation Indicators,[5] all emerging and developing economies have made significant progress in automating and streamlining trade processes at the border since the WTO TFA entered into force in 2017. However, further reforms are needed across areas such as the electronic submission and processing of trade documents, use of digital certificates and signatures, and implementation of electronic single windows. Advances in these areas can also support regional integration efforts through improved co-operation between border agencies and increased involvement of the private sector (OECD, 2020[10]). The challenges faced by developing countries in implementing trade facilitation reforms are explicitly recognised in the WTO TFA, which links implementation to provision of assistance. Since the start of the Aid-for-Trade Initiative in 2005, development co-operation providers[6] have disbursed approximately USD 4.7 billion for aid for trade facilitation (OECD, 2021[11]).

The benefits of digitalisation for trade, and of trade for digitalisation, also require action across a number of different policy areas, from building digital skills and addressing digital divides to improving access to information and communications technology (ICT) goods and services and the affordability and reliability of Internet connections (López González and Jouanjean, 2017[1]). Taking a holistic approach to market openness means understanding how trade policy issues interact with other policy domains such as privacy, innovation, competition, infrastructure, connectivity, taxation and skills. Successful firms in the digital age combine adoption of new

Figure 15.3. Barriers to e-book purchase



Source: Authors' illustration.

technologies with access to global markets. Thus, trade policy should be considered within the context of many other policies that also matter if the shared benefits from digital adoption are to materialise.

Discussions on digital trade are ongoing, including through the WTO Joint Statement Initiative on e-commerce and across a number of trade agreements (Nemoto and López González, 2021[12]). As highlighted in the recent OECD *Digital Trade Inventory*, there is already substantial uptake of instruments on issues related to digital trade in many developing economies. This suggests there is a solid base of international instruments that international digital trade discussions can build on. Some regional trade agreements and regional co-operation fora that include developing economies – among them the Association of Southeast Asian Nations, the Southern African Development Community, the Economic Community of West African States and the African Union – also are considering new rules of varying "depth and density" in areas

The benefits of digitalisation for trade, and of trade for digitalisation, also require action across a number of different policy areas, from building digital skills and addressing digital divides to improving access to information and communications technology (ICT) goods and services and the affordability and reliability of Internet connections.

of importance to digital trade (Nemoto and López González, 2021[12]). It is important that developing countries participate in ongoing digital trade discussions and help shape the rules that will underpin a growing part of their economies, as cross-border regulatory divergences and lack of interoperability can result in additional transaction costs where activities need to be aligned across multiple regulatory frameworks.

Box 15.1 discusses the potential of Africa Continental Free Trade Area (AfCFTA) in support of dynamic digital economy.

At the same time, it will be important that aid for trade efforts continue to support developing countries' participation in international trade. While approximately USD 0.4 billion were devoted to aid for trade in ICT in 2017-19, this represents only 0.4% of the total aid for trade disbursements. It will thus be important to enhance and better target assistance and co-operation to close these gaps and address challenges, including in the context of the COVID-19 pandemic (OECD, 2021[11]).

BOX 15.1 BUILDING FRAMEWORKS FOR A DYNAMIC DIGITAL ECONOMY: THE AFRICA CONTINENTAL FREE TRADE AREA

BY TUNDE FAFUNWA, ADVISOR TO THE ECONOMIC COMMISSION FOR AFRICA & SENIOR PARTNER, KITSKOO

Enacted in 2019, the Africa Continental Free Trade Area (AfCFTA) is building the single biggest free trade zone in the world. Negotiations regarding its e-commerce and competition protocols present an opportunity to build a dynamic, single digital market across the continent, boosting Africa's digital economy, driving innovation and spurring rapid private sector growth.

With the right policy mix and investments, the Internet economy could add USD 180 billion to Africa's gross domestic product by 2025, depending on the extent to which businesses use digital technologies (Google/IFC, 2020[13]).Realising this potential will require global, regional and national leaders to develop coherent regulatory and legal frameworks to facilitate and enable digital trade.

The COVID-19 crisis underscored the importance of e-authentication, e-signatures and digital payments, prompting the deadline for completion of the e-commerce protocol (part of the Phase III AfCFTA negotiations) to be moved up to December 2021. This protocol will influence legal and regulatory frameworks across the continent: legal instruments such as those related to market access (digital products and services, cross-border data flows, custom duties); rules and regulations (covering data protection, data governance, and electronic information and transmission); and trade facilitation (electronic trade, authentication, co-operation and administration) (Ogo, 2020[14]).

The e-commerce protocol is another opportunity to bring together essential building blocks for the digital single market. More consistent and less complicated regulations, alongside engagement of stakeholders at all levels, could unlock the benefits of e-commerce especially for micro-, small- and medium-sized enterprises (MSMEs), which account for more than 90% of all firms and 60% of all private-sector employment in Africa (ITC/Amsterdam University of Applied Sciences, 2020[15]). Economies of scale in a digital single market would increase customers and revenues, and decrease unit costs for businesses. Economies of scope would enable MSMEs to connect to continental logistics and distribution platforms to reach niche markets – even with small product volumes.

Negotiations on the AfCFTA competition protocol are another critical opportunity to develop a successful digital trade framework that can foster innovation while protecting data. The digital economy is characterised by multi-sided markets, network effects, non-price competition and platform-based business – as discussed by experts at OECD events on Competition Economics of Digital Ecosystems (OECD, 2020[16]).Applying a traditional goods and services approach to digital competition won't work.

African actors, among them Smart Africa and AfricaNenda, are working with international organisations to lay the groundwork for a cohesive digital economy, including through digital ID interoperability and work on a continent-wide data policy. But regulatory authorities on trade, competition and digitalisation in African countries must also be prepared to work together across policy areas. Currently, only two regional trade agreements mention e-commerce, and then only broadly. Only 33 of the 54 countries in Africa have formal e-transaction legislation (Banga, Macleod and Mendez-Parra, 2021[17]). It is important that African policy makers engage with global processes. International development actors can contribute by supporting open, inclusive standards in the World Trade Organisation, the United Nations Conference on Trade and Development, and other multilateral forums. This commitment would demonstrate to African regulators that cross-border, inclusive and growth-oriented digital trade is within Africa's grasp.

REFERENCES

Andrenelli, A. and J. López González (2019), "Electronic transmissions and international trade: Shedding new light on the moratorium debate", *OECD Trade Policy Papers*, No. 233, OECD Publishing, Paris, https://dx.doi.org/10.1787/57b50a4b-en. [8]

Banga, K., J. Macleod and M. Mendez-Parra (2021), "Digital trade provisions in the AfCFTA: What can we learn from South-South trade agreements?", *Supporting Economic Transformation, Overseas Development Institute*, https://set.odi.org/wp-content/uploads/2021/04/Digital-trade-provisions-in-the-AfCFTA.pdf (accessed on 27 October 2021). [17]

Google/IFC (2020), *e-Conomy Africa 2020*, https://www.ifc.org/wps/wcm/connect/e358c23f-afe3-49c5-a509-034257688580/e-Conomy-Africa-2020.pdf?MOD=AJPERES&CVID=nmuGYF2 (accessed on 27 October 2021). [13]

ITC/Amsterdam University of Applied Sciences (2020), *Business and Policy Insights: Mapping e-Marketplaces in Africa*, International Trade Centre (ITC), Geneva, https://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/B2C-marketplaces-20201221_final_Low-res.pdf (accessed on 27 October 2021). [15]

Korinek, J., E. Moïsé and J. Tange (2021), "Trade and gender: A framework of analysis", *OECD Trade Policy Papers*, No. 246, OECD Publishing, Paris, https://dx.doi.org/10.1787/6db59d80-en. [9]

López González, J. (2019), "Fostering participation in digital trade for ASEAN MSMEs", *OECD Trade Policy Papers*, No. 230, OECD Publishing, Paris, https://dx.doi.org/10.1787/63561b11-en. [18]

López González, J. and J. Ferencz (2018), "Digital trade and market openness", *OECD Trade Policy Papers*, No. 217, OECD Publishing, Paris, https://dx.doi.org/10.1787/1bd89c9a-en. [3]

López González, J. and J. Ferencz (2018), *Digital trade and market openness*, OECD Publishing, https://dx.doi.org/10.1787/1bd89c9a-en. [7]

López González, J. and M. Jouanjean (2017), "Digital trade: Developing a framework for analysis", *OECD Trade Policy Papers*, No. 205, OECD Publishing, Paris, https://dx.doi.org/10.1787/524c8c83-en. [1]

López González, J. and S. Sorescu (2021), "Trade in the time of parcels", *OECD Trade Policy Papers*, No. 249, OECD Publishing, Paris, https://dx.doi.org/10.1787/0faac348-en. [4]

López González, J. and S. Sorescu (2019), "Helping SMEs internationalise through trade facilitation", *OECD Trade Policy Papers*, No. 229, OECD Publishing, Paris, https://dx.doi.org/10.1787/2050e6b0-en. [6]

Nemoto, T. and J. López González (2021), "Digital trade inventory: Rules, standards and principles", *OECD Trade Policy Papers*, No. 251, OECD Publishing, Paris, https://dx.doi.org/10.1787/9a9821e0-en. [12]

OECD (2021), *International Development Statistics (database)*, https://stats.oecd.org/qwids. [11]

OECD (2020), *Competition Economics of Digital Ecosystems (virtual event)*, https://www.oecd.org/daf/competition/competition-economics-of-digital-ecosystems.htm (accessed on 27 October 2021). [16]

OECD (2020), "Getting goods across borders in times of COVID-19", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD, Paris, https://www.oecd.org/coronavirus/policy-responses/getting-goods-across-borders-in-times-of-covid-19-972ada7a. [5]

OECD (2020), "Leveraging digital trade to fight the consequences of COVID-19", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD, Paris, https://doi.org/10.1787/f712f404-en. [2]

OECD (2020), *Trade Facilitation Indicators (database)*, https://www.compareyourcountry.org/trade-facilitation. [10]

Ogo, I. (2020), *"An agenda for the AfCFTA protocol on e-commerce"*, tralacBlog, https://www.tralac.org/blog/article/14692-an-agenda-for-the-afcfta-protocol-on-e-commerce.html. (accessed on 27 October 2021). [14]

NOTES

1. Digital connectivity between two countries, or the potential thereof, is proxied using the minimum of the share of the population that is using the Internet. The measure acts as a mass parameter of potential digital connections, reflecting that both supplying and demanding countries require good connectivity for digitally enabled trade to flourish. Internet penetration indicators are used as a proxy for digital connectivity since such data are available for more countries and more time periods than for other indicators. Internet penetration indicators also have a high correlation with other measures of digital connectivity (e.g. business and household use of broadband, access to computers, and wireless broadband and fixed broadband subscriptions).
2. The potential increase in trade across sectors is based on a reduction of 0.1 points in the bilateral performance gap, based on the OECD Trade Facilitation Indicators for 163 economies.
3. Digitally enabled services are services that can be (although they are not necessarily) delivered remotely over ICT networks.
4. These estimations are derived using the World Bank Enterprise Survey and follow the method established in López González (2019[18]) and López González and Sorescu (2019[6]).
5. The 11 OECD Trade Facilitation Indicators, developed in 2013, include measures relating to the full spectrum of administrative procedures at the border: inspection and clearance of goods, transparency of information and administrative simplification, use of information technology for data processing and exchange, and co-operation between customs and other border agencies. For Trade Facilitation Indicators by jurisdiction, see: https://www.compareyourcountry.org/trade-facilitation.
6. As reported in the OECD Creditor Reporting System.





16 CASE STUDY: PLANNING FOR THE FUTURE OF WORK

Stijn Broecke, Directorate for Employment, Labour and Social Affairs, OECD

ABSTRACT

Technologies such as robotics and artificial intelligence are rapidly making their way into the workplace, creating winners and losers. Drawing on evidence and policy analysis by the OECD, this case study looks at the impact of automation on employment and its implications for the future of work.

Key messages

- The greatest employment growth of any occupation between 2012 and 2019 was for information and communication technology professionals.
- There is no evidence that the adoption of new technologies leads to lower employment growth.
- Skills investments must match labour market needs, including forecasting skills needs in light of automation trends.

Automation creates jobs in some sectors and destroys them in others

Technologies such as robotics and artificial intelligence are rapidly making their way into the workplace. They promise to increase productivity and improve the health and safety of workers, and even the quality of jobs in some cases. New technologies also contribute to uncertainty about the future of work. It is estimated that 14% of jobs in OECD countries are at high risk of automation, with another third at risk of significant change (Nedelkoska and Quintini, 2018[1]) (Figure 16.1). The highest employment growth was observed for information and communication technology (ICT) professionals (51.3%) between 2012 and 2019 (Georgieff and Milanez, 2021[2]). Over the past ten years, employment growth was lower in occupations at highest risk for automation, such as mobile plant operators and agricultural workers.

Evidence from advanced economies shows that while technology destroys some jobs, it also creates new ones. These are either entirely new, directly related to the development, maintenance and use of the technology, or are created because of technology boosting productivity, wages, and under certain conditions, demand for goods and services. However, the jobs created are different from those destroyed. Most of the job growth in advanced economies has been at the high end of the skills spectrum (OECD, 2019[3]). This is good news but also presents the challenge of ensuring that workers have the skills to take advantage of these new opportunities. The OECD estimates that six out of ten adults still lack basic ICT skills or have no computer experience (OECD, 2019[4]).

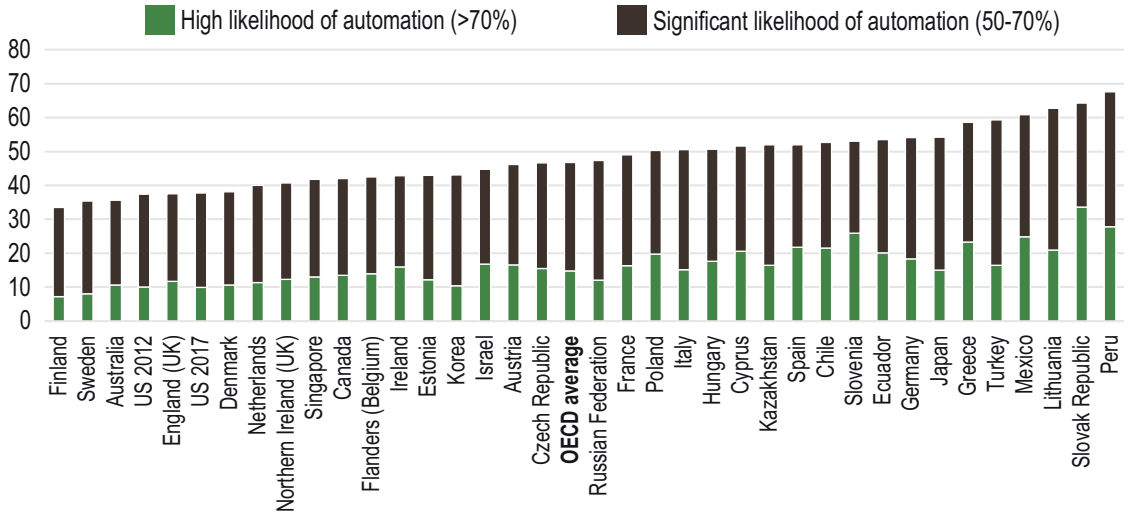
The risk of job loss from automation is higher in low- and middle-income countries than in advanced economies because many workers carry out routine tasks that can more easily be automated. Given the constraints on social safety nets, public employment services and training, automation could have a greater impact on workers and employment growth in low-income countries.

Employment trends in relation to automation and platforms

At the country level, there is no evidence in advanced economies that automation has had a negative overall impact on employment (Georgieff and Milanez, 2021[2]) (Figure 16.2). But education is a crucial factor for staying employed: the risk of automation is at least three times higher for workers without a secondary qualification than for workers with a tertiary qualification (Nedelkoska and Quintini, 2018[1]).[1]

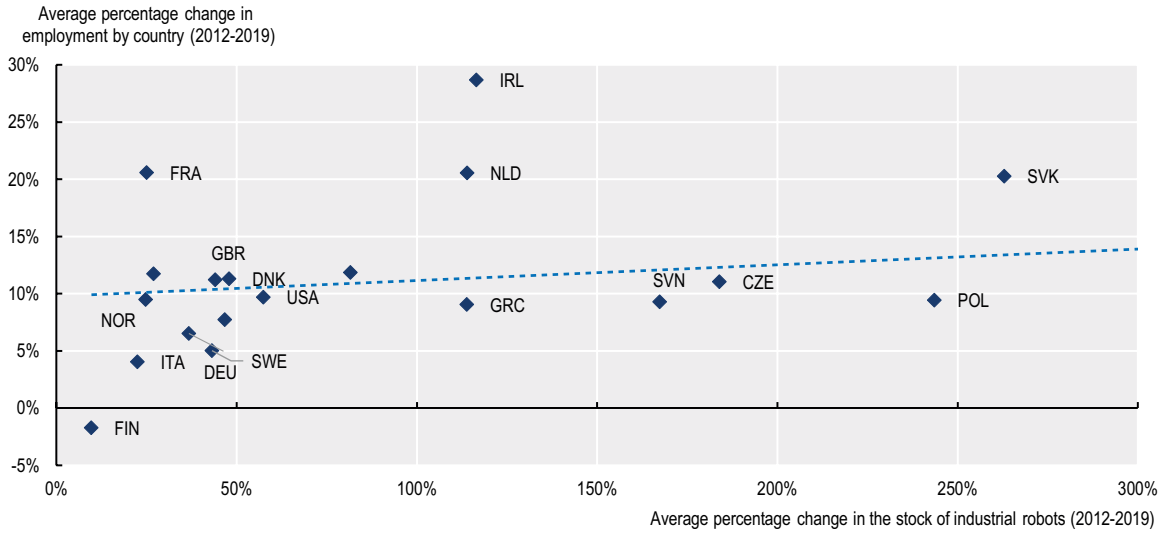
From a social policy perspective, automation contributes to employment uncertainty for specific demographic groups that work on routine tasks, meaning that workers' welfare is at increased risk in countries where social safety nets, public employment services and training are less well developed (OECD, 2019[4]). The COVID-19 crisis might have added to this uncertainty by accelerating automation as companies tried to rely less on human labour and contact between workers or to re-shore some production (Georgieff and Milanez, 2021[2]). Thus, automation reduces labour demand in some sectors and puts downward pressure on employment and wages, known as 'the displacement effect'. This might lead to overall productivity gains for the economy, but these may not be

Figure 16.1. Automation is likely to affect 50% of jobs on average



Source: Nedelkoska, L. and G. Quintini (2018[1]), "Automation, skills use and training", *OECD Social, Employment and Migration Working Papers*, No. 202, OECD Publishing, Paris, https://doi.org/10.1787/2e2f4eea-en.

Figure 16.2. Automation has not negatively impacted employment growth in advanced economies, 2012-19



Source: OECD (2019[4]), "The Future of Work in Figures", https://www.oecd.org/future-of-work/Future-of-work-infographic-web-full-size.pdf.

reflected in workers' wages at the same rate (Acemoglu and Restrepo, 2017[5]).

Advances in technology and innovation in business models have led to the rise of the platform economy, in which workers and clients use digital platforms to exchange labour for money – typically short tasks (or gigs) (see Chapter 17). Many of these tasks can be carried out entirely online. There has been strong growth in employment mediated through these platforms, boosted further by the COVID-19 pandemic and associated digitalisation. The number of job postings on five of the largest online freelance labour platforms increased by about 50% since 2017 (The iLabour Project, n.d.[6]). Freelance labour platforms offer lower market entry barriers, creating opportunities for individuals to

sell their services, including in software development, customer service, design, and legal and accounting services.

At the same time, however, employment in the platform economy represents only a very small share of overall employment. It accounts for about 1-2% of total employment in advanced economies (OECD, 2019[3]). There are also concerns around the quality of jobs in the platform economy. While platform jobs may offer some opportunities for formalisation (through the digitalisation of transactions), most of the jobs created are likely to remain precarious and self-employed, providing few rights and protections to workers. The OECD estimates that such self-employment, part-time and temporary work tends to be 50% less likely to be unionised than standard employment. In some countries, people in these types of jobs are also 40-50% less likely to receive income support when out of work (OECD, 2019[3]).

While the potential for automation is high in low-income countries, technology adoption may be slower than in more advanced economies, which could hamper productivity and economic growth. Several factors constrain investments in new technologies in low-income countries (Alonso Soto, 2020[7]). The availability of a large and young workforce and low wage costs mean that firms have less incentive to replace workers with robots. In addition, as a large share of firms in low-income countries are small-sized, the cost of adopting new technologies is a significant barrier. Finally, limited skills to develop and work with robots and artificial intelligence deters such investments. Of robots being installed around the world, 80% are in advanced economies (Alonso Soto, 2020[7]).

Social, education and labour market policy considerations for the future of work

To date, in advanced economies, there is no evidence that the adoption of new technology has resulted in lower employment growth. New technologies have contributed

The OECD estimates that such self-employment, part-time and temporary work tends to be 50% less likely to be unionised than standard employment. In some countries, people in these types of jobs are also 40-50% less likely to receive income support when out of work.

to structural change in the labour market and strong growth in high-skilled jobs. Investments in digital infrastructure and basic digital skills necessary to promote technology adoption (i.e. not only advanced technical skills required to develop and maintain such technologies) are still important everywhere. Even in advanced economies, 50% of adults struggle to use computers (OECD, 2013[8]). While technological advances create new and better jobs, they also result in some job destruction. This creates both winners and losers, highlighting how important it is for policy makers to ensure that skills investments for prospective workers match the needs of the labour market, including by forecasting skills needs in light of automation trends (Georgieff and Milanez, 2021[2]).

The challenge for all governments, therefore, is to ensure that individuals who lose from digitalisation and automation receive help to seize the new opportunities that arise. Evidence suggests that successful transitions in the labour market depend on three factors (OECD, 2019[3]):

1. An adequate social safety net prevents individuals who lose their job from falling into poverty. It also gives them the time and resources to look for a job that matches

their skills and preferences, factors that improve retention and productivity.
2. Adequate social protection needs to be combined with expectations that a worker will participate in measures, such as training, to improve their employability.
3. Transitions from sectors and occupations that are declining to those that are expanding tend to be smoother in countries where employer organisations and unions are representative of their constituents, and where social dialogue is constructive.

REFERENCES

Acemoglu, D. and P. Restrepo (2017), "Secular Stagnation? The Effect of Aging on Economic Growth in the Age of Automation", *NBER working paper*, http://dx.doi.org/10.3386/w23077. [5]

Alonso Soto, D. (2020), ""Technology and the future of work in emerging economies: What is different"", in *OECD Social, Employment and Migration Working Papers, No. 236*, OECD Publishing, Paris, https://www.oecd-ilibrary.org/social-issues-migration-health/technology-and-the-future-of-work-in-emerging-economies_55354f8f-en (accessed on 12 October 2021). [7]

Georgieff, A. and A. Milanez (2021), "What happened to jobs at high risk of automation?", in *OECD Social, Employment and Migration Working Papers*, OECD Publishing, Paris, https://www.oecd-ilibrary.org/social-issues-migration-health/what-happened-to-jobs-at-high-risk-of-automation_10bc97f4-en (accessed on 11 October 20201). [2]

Nedelkoska, L. and G. Quintini (2018), "Automation, skills use and training", *OECD Social, Employment and Migration Working Papers*, Vol. 202, https://doi.org/10.1787/2e2f4eea-en (accessed on 11 October 2021). [1]

OECD (2019), *"The Future of Work in Figures"*, OECD Publishing, https://www.oecd.org/future-of-work/Future-of-work-infographic-web-full-size.pdf. [4]

OECD (2019), *OECD Employment Outlook 2019: The Future of Work*, OECD Publishing, Paris, https://www.oecd-ilibrary.org/employment/oecd-employment-outlook-2019_9ee00155-en (accessed on 11 October 2021). [3]

OECD (2013), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264204256-en. [8]

The iLabour Project (n.d.), *The Online Labour Index website*, https://ilabour.oii.ox.ac.uk/online-labour-index/. [6]

NOTE

1. This is an estimate based on https://www.oecd-ilibrary.org/employment/automation-skills-use-and-training_2e2f4eea-en.

CASE STUDY: IS GIG WORK DECENT WORK?

17

Bama Athreya, Open Society Foundations and Fellow, Just Jobs Network

ABSTRACT

Over the past decade, development actors have increasingly put their investments, and their hopes, in the potential of digital technology to expand and ensure decent work. However, some evidence shows that platforms may degrade opportunities for decent work. This chapter discusses how development co-operation providers and other investors could measure more effectively platform effects on labour markets, support projects to enhance collective rights for gig workers, and take measures to ensure that platforms use data to foster more decent work.

Key messages

- Digital platforms commonly fragment available work and encourage an oversupply of labour, a form of arbitrage that undermines wages and working conditions.
- Limited access to worker data sets creates information asymmetries that increase platform control over work and reduce worker agency.
- Development co-operation actors and national policy makers should focus on measuring the macro effects of platforms on labour markets to determine how they affect overall employment and working conditions.
- Projects that enhance collective rights for gig workers outside of traditional union structures are a necessary complement to "worker voice" technologies.

Since early 2020, the COVID-19 pandemic has accelerated a global transition to digital mediation in the world of work. Many of the big winners in the economic shifts – Amazon, DoorDash and Instacart, to name but three – are global companies that enable web-based platform interface between buyers and sellers of goods and services. They are now an important source of work worldwide.

The transition to platform work has been a novelty in countries where formal employment is the norm. It is less so in low- and middle-income countries where informal service work is already prevalent. The long-term resilience of economies may rely on the ability of workers, including low-wage and precarious workers, to negotiate for decent work in digitally mediated markets.

Over the past decade there has been a steady increase in development co-operation investments in digital technology for decent work. These have included interventions to smooth labour markets by connecting workers with jobs or short-term tasks (gigs) and interventions using technology to collect and curate information about workplaces for worker-management relations. It is not surprising that development co-operation providers have invested in platforms that promised to correct for labour market information gaps (USAID, 2019[1]). Developing country policy makers, too, consider platforms a possible solution to long-standing and seemingly intractable unemployment and underemployment. It is appealing to believe new technologies can address these problems. Yet, digitalisation is no panacea for persistent systemic barriers to decent work.

Assumption versus reality: Platform effects on labour markets and workers

Imperfect labour markets, and in particular the information asymmetries that make it easy to exploit workers, are an important development challenge. The promise of digitalisation was that it would open new opportunities for workers and empower them. Yet, the limited evidence available suggests that platforms that match workers with tasks or jobs may not create more work for more people and that purport to enhance communication may not reduce information asymmetries that leave workers with little control over the data they share with employers.

New opportunities or greater precarity?

Assumption: Platforms create more opportunities for workers

In certain contexts, web-enabled technology has helped connect economic actors. Platforms such as Etsy, which harnessed growing enthusiasm for a peer-to-peer sharing economy, have played a useful role in addressing information asymmetries across geographies. Some job-matching platforms such as the International Labour Organization's Employment Counselling System in Jordan have intentionally targeted refugee populations, correctly identifying this group as facing significant barriers to employment. Development co-operation

providers such as United States Agency for International Development (USAID) have invested in digital platforms such as Babajob (India) and Bong Pheak (Cambodia), to name just two, on the assumption that more and better information will reduce search costs and other frictions, enable more jobseekers to find work, and ultimately reduce unemployment (Athreya, 2020[2]).

But projects have generally measured success in terms of engagement metrics, i.e. number of users or "hits", rather than a platform's broader labour market effects on unemployment or underemployment. While this may help evaluate effectiveness among the target group, such projects have not shared evidence regarding possible displacement effects in local labor markets. In short, there is little to suggest that such platforms create employment.

Reality: Platforms, by design, produce an excess supply of labour, which erodes wages and working conditions

To date, there is little systematic evidence of the global effects of platforms on people in low-wage and precarious work, despite the growing number of platforms catering to this population. The International Labour Organization conducted the first comprehensive global survey, interviewing 12 000 platform workers worldwide for its recent flagship report (ILO, 2021[3]). The report charts trends indicating increased penetration of digital labour platforms in every region but, notably, the data were insufficient to project actual estimates of the worldwide platform labour force.

Where evidence does exist, it suggests that platforms are designed to draw in very large numbers of users and then engage in labour arbitrage – the practice of shifting existing jobs away from higher paid and more secure workers to lower paid and more precarious workers – both within countries and across borders. The International Labour Organization found evidence throughout its survey that digital platforms cultivate and benefit from excess labour supply, which leads to greater competition among workers for tasks and lowers per-task prices.

Platforms are designed to draw in very large numbers of users and then engage in labour arbitrage – the practice of shifting existing jobs away from higher paid and more secure workers to lower paid and more precarious workers – both within countries and across borders

This can be seen in the case of service platforms such as Uber and Grab, which have disrupted local taxi and transportation options in many locales and flooded the market with unregulated providers. Across all such platforms, according to recent studies, more than 80% of work is performed by approximately 20% of the available workforce. Without these full-time workers, platforms could not fulfill the demand for services (Gray and Suri, 2019[4]). At the same time, a vast reserve pool of part-time or occasional workers is extremely important for continued labour arbitrage. By creating a situation of labour surplus, they ensure a continuous downward pressure on prices or wages for those who are engaged in full-time work. In location-based sectors such as transportation, this pressure is on traditional as well as platform providers, and evidence suggests that conditions for transportation providers in many low- and middle-income countries have deteriorated (Rest of World, 2021[5]).

Labour arbitrage also takes place at a regional and global level. Global platforms

for cloud-based work such as Amazon's Mechanical Turk, Rev and Upwork are designed so that work is performed virtually, thus pitting workers in less developed countries against those in OECD countries as they bid for tasks. This includes tasks requiring specialised skills such as editing, dubbing and design work (Hill, 2017[6]). Some types of digital piece work, such as geo-tagging, have from the outset been outsourced to countries where informal work is the norm, and here, the competition may occur between workers in different low- and middle-income countries.

Digital platforms also appear to be leading a fragmentation of available work. One widespread trend, even in countries with large formal economies, seems to be the fragmenting of formerly salaried or long-term contract positions into piece work (De Stefano, 2016[7]). In all countries, workers also face the fragmentation of piece-work assignments into ever smaller micro-tasks. There are insufficient data to determine whether this has increased either overall work available or average incomes for informal workers.

Whether platforms are employers is a heavily contested question in OECD countries (International Lawyers Assisting Workers, 2021[8]). In countries where informality is widespread, however, workers performing platform-enabled tasks such as delivery, transportation and even cloud-based task work were in most cases already working outside of formal employment relationships, with fluctuating availability of gigs or piece-work assignments.

Giving workers a voice or monetising their data?

A number of platforms established in recent years provide digital tools for workers to provide direct feedback to employers on workplace conditions – what has been called worker voice technology. There has also been substantial investment, including through development co-operation, in experiments using platforms to connect workers with one another. The promise of improved conditions for workers is not always realised. Evidence to date suggests that replacing offline social networks with such online tools is problematic, with platforms able to amass and potentially monetise workers' data for other purposes.

Assumption: Technology empowers workers

Development co-operation providers and private philanthropic donors have invested in technology intended to provide management with information about the conditions of the people they employ, prompted by their growing fascination with information and communications technology as an enabler of social justice and what is commonly called worker voice. Ulula and Labor Link typify such investments.

Most such platforms have followed a data-extractive model and target improved business solutions (e.g. lower turnover and heightened workplace productivity) (Rende Taylor and Shih, 2019[9]). They typically extract information from workers via push-pull methods such as sending polling messages to capture data sets regarding common workplace issues, though individual workers have limited means to follow up on the results of these polls. While the underlying assumption is that employers will use results to improve conditions for workers, project outcomes generally are not measured in terms of actual workplace improvements, but in the level of worker engagement with the platform.

Some of the projects aim to use digital platforms to connect workers with one another to foster collective information sharing and possible collective action (Farbenblum, Berg and Kintominas, 2018[10]). These projects built on observations that low-wage and precarious workers such as migrant domestic workers in the Gulf states, though hindered by limited access to social media, were nevertheless finding and connecting with one another in organic ways on common messaging platforms such as WhatsApp and Facebook Messenger. Some organisations, inspired by this model, have created targeted apps such as Just Good Work (Fifty Eight, United Kingdom)

and Golden Dreams (Issara Institute, Thailand) to attempt to reach and provide means for workers to share information.

Reality: Workers lack power to control how their data on digital platforms are used

Worker and citizen data sets can be a valuable asset for governments and societies, and worker voice platforms enable clients to apply the data they amass about their workers to internal business solutions. But monetisation of client and worker data sets is also fundamental to platform business models (Lee, 2018[11]), and data sets may not always be handled in ways that protect workers' interests and privacy. Development co-operation agencies investing in worker voice and other platforms that capture data tend to have strong guidelines to protect individual privacy. Some agencies have open data policies that enable data sets to be accessed by other public entities such as academic researchers. But workers themselves, and their representative organisations, have lacked rights to access these data sets or to control their further use.

This imbalance is increasingly salient as more such apps are developed and deployed. Recently, private sector actors backed by venture capital have developed apps that target workers' mutual interest in connecting with one another (Gurley, 2021[12]). Any value recouped from such activity will surely be in the data sets accumulated over time regarding worker behaviour.

Data-collecting platforms as labour market disrupters

A common feature of platforms is their tendency to treat workers as individual data points rather than as members of a group who are capable of acting collectively. Platforms to assign gig work use individual data to optimise work assignments, disrupting the traditional social networks that play a major role in informal labour markets. While this may create opportunities for some workers, it may displace others (ILO, 2021[3]). Furthermore, the data harvesting that is integral to the business model of platforms also enables labour market manipulation.

A common feature of platforms is their tendency to treat workers as individual data points rather than as members of a group who are capable of acting collectively. Platforms to assign gig work use individual data to optimise work assignments, disrupting the traditional social networks that play a major role in informal labour markets.

Increased use of algorithmic management is another significant labour market disruptor. Algorithmic management uses artificial intelligence both for data collection and continuous surveillance of workers. Researchers have documented a number of harms resulting from the lack of guardrails on algorithmic management and have noted that codes are set to exert downward pressure on wages (Mateescu and Nguyen, 2019[13]). Design features created to manage workers through client ratings, or to de-platform workers for minor infractions, can leave workers with little choice but to perform work under exploitative conditions for fear of negative ratings. Mateescu and Nguyen (2019[13]) found these management features may deter workers from reporting harassment or abuse.

Other researchers note that continuous algorithmic cues to perform more work may lead workers to ignore their own well-being (Kellogg, Valentine and Christin, 2020[14]). Indeed, working through extreme fatigue has been a documented problem in the ride-hailing sector, and as accident rates became known, some platforms created features that force drivers to log out after a certain number of hours (Scheiber, 2017[15]).

Platform companies possess a sophisticated ability to penetrate labour markets and substantially direct economic activity. This power can be used for good or for ill. When workers have themselves attempted to collect their own data and then reverse-engineer the code, they have gained important insights into overall labour markets that enabled them to negotiate better terms of work (van Doorn, 2020[16]). Indeed, platform data sets on workers, utilised properly, could enable policy makers to work with employers and worker organisations to truly optimise labour market outcomes for all actors.

Some labour rights organisations such as the Centre for Migrant Rights (Centro de los Derechos del Migrante) are developing platforms that work directly with unions. For example, the centre has developed and launched its own platform to connect workers with employers and with each other. They work directly with a union that represents the workers and therefore gives them a collective say in how the platform is governed. These investments are worth supporting and expanding. So, too, are experiments to enhance collective rights for gig workers outside of traditional union structures. Examples include data platforms owned and controlled by worker organisations such as WeClock, Worker Info Exchange and Driver's Seat.

Worker-focused investment and policy can optimise platforms for decent work

It is tempting to believe there is a technological fix for every difficult problem. In the case of platform work, relying on anecdotes or even overall engagement metrics to judge the success of digitally enabled interventions may lead to the conclusion that gig work is, indeed, decent work. Individual workers, constrained by unpaid care burdens and offered a choice of flexible work, may report that gig work has improved their income. However, when an entire community or class of such workers begins collectively to rely on platform gatekeepers, opportunities for decent work may fade. Policy makers seeking to expand opportunities for decent work should be wary of investments that measure success in terms of short-term and individualised outcomes.

Development co-operation providers and other investors should help ensure that technology in digitally mediated markets lives up to its promise to expand work opportunities and empower workers. The following three recommendations are important to promote and protect decent work:

1. Measure labour market investments based on their macro, not micro effects. As a starting point, governments and development co-operation providers will need to measure deficits and gains in decent work in broader terms than individual success. If some individuals benefit but labour markets as a whole weaken, policy makers must consider how platforms may be contributing structurally and systemically to the erosion of decent work.
2. Enable workers to negotiate over their data and its use. In situations where workers willingly provide certain data to companies, they need visibility into the data set and the right to contest the programming logic behind automated decision making. This is true regardless of whether those companies are using workers' data for job matching or receive the data as feedback on workers' issues. Moreover, workers have a right not only to the raw data they provide. They also have a right to know how companies are using these data. This entails obliging companies, including those

providing a human resource function, to share code with workers where that code is directly relevant to their work; see, for example, such a case in the United Kingdom (International Employment Lawyer, 2021[17]). Spain has been an early mover in mandating that platform workers have transparent access to algorithmic decision making (Ortiz, 2021[18]).

3. Keep worker organisations in the loop. Too often, interventions aimed at empowering workers, particularly those who have been restricted or excluded from traditional labour markets, are designed without consultation with relevant worker and civil society organisations that represent their collective interests. This failure gives rise to simplistic notions of worker voice that conflate aggregation with collective agency. Taking the time to consult these groups and consider the consequences of new tools is crucial. Technological interventions can reduce friction and increase the speed and ease of certain transactions. However, only when humans are firmly in the loop can they make sure that decisions do not sacrifice too much humanity for the sake of efficiency.

REFERENCES

Athreya, B. (2020), "Slaves to Technology: Worker control in the surveillance economy", *Anti-Trafficking Review* 15, pp. 82-101, http://dx.doi.org/10.14197/atr.201220155. [2]

De Stefano, V. (2016), "The rise of the "just-in-time workforce": On-demand work, crowdwork and labour protection in the "gig economy"", *Conditions of Work and Employment Series*, No. 71, International Labour Organization, Geneva, https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_443267.pdf. [7]

Farbenblum, B., L. Berg and A. Kintominas (2018), *Transformative Technology for Migrant Workers: Opportunities, Challenges and Risks*, Open Society Foundations, New York, NY, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3295430 (accessed on 13 October 2021). [10]

Gray, M. and S. Suri (2019), *Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass*, Mariner Books, Boston, https://ghostwork.info/ghost-work (accessed on 13 October 2021). [4]

Gurley, L. (2021), "A new app is taking labor unions out of union organizing", Motherboard/VICE Media, https://www.vice.com/en/article/epn87m/a-new-app-is-taking-labor-unions-out-of-union-organizing. [12]

Hill, S. (2017), *Raw Deal: How the "Uber Economy" and Runaway Capitalism are Screwing American Workers*, St. Martin's Griffin, New York, NY, https://us.macmillan.com/books/9781250135087/rawdeal. [6]

ILO (2021), *World Employment and Social Outlook 2021: The Role of Digital Labour Platforms in Transforming the World of Work*, International Labour Organization, Geneva, https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_771749.pdf. [3]

International Employment Lawyer (2021), "The battle for transparency in AI decision-making", International Employment Lawyer, https://www.internationalemploymentlawyer.com/news/battle-transparency-ai-decision-making. [17]

International Lawyers Assisting Workers (2021), *Taken for a Ride: Litigating the Digital Platform Model*, International Lawyers Assisting Workers, https://www.ilawnetwork.com/wp-content/uploads/2021/03/Issue-Brief-TAKEN-FOR-A-RIDE-English.pdf. [8]

Kellogg, K., M. Valentine and A. Christin (2020), "Algorithms at work: The new contested terrain of control", *Academy of Management Annals*, Vol. 14/1, pp. 366-410, https://doi.org/10.5465/annals.2018.0174. [14]

Lee, K. (2018), *AI Superpowers: China, Silicon Valley, and the New World Order*, Houghton Mifflin Harcourt, Boston. [11]

Mateescu, A. and A. Nguyen (2019), *Explainer: Algorithmic Management in the Workplace*, Data & Society, Washington, DC, https://datasociety.net/wp-content/uploads/2019/02/DS_Algorithmic_Management_Explainer.pdf. [13]

Ortiz, M. (2021), "Spain is about to shatter the gig economy's algorithmic black box", Wired, https://www.wired.co.uk/article/spain-gig-economy-algorithms (accessed on 13 October 2021). [18]

Rende Taylor, L. and E. Shih (2019), "Worker feedback technologies and combatting modern slavery in global supply chains", *Journal of the British Academy*, Vol. 7/1, pp. 131-165, https://www.thebritishacademy.ac.uk/publishing/journal-british-academy/7s1/worker-feedback-technologies-and-combatting-modern-slavery-in-global-supply-chains. [9]

Rest of World (2021), "Gig workers are uncertain, scared, and barely scraping by", https://restofworld.org/2021/the-global-gig-workers (accessed on 13 October 2021). [5]

Scheiber, N. (2017), "How Uber uses psychological tricks to push its drivers' buttons", *The New York Times*, https://www.nytimes.com/interactive/2017/04/02/technology/uber-drivers-psychological-tricks.html (accessed on 13 October 2021). [15]

USAID (2019), *Gig Work on Digital Platforms: Executive Summary – Learning, Evaluation and Research Activity II (LER II)*, United States Agency for International Development, https://pdf.usaid.gov/pdf_docs/PA00WHJ7.pdf. [1]

van Doorn, N. (2020), "At what price? Labour politics and calculative power struggles in on-demand food delivery", *Work Organisation, Labour & Globalisation*, Vol. 14/1, pp. 136-149, https://doi.org/10.13169/workorgalaboglob.14.1.0136. [16]

CASE STUDY: FOSTERING FORMAL WORK WITH DIGITAL TOOLS

18

Vicky Leung, Development and Investment Branch, International Labour Organization

ABSTRACT

The COVID-19 pandemic has been a harrowing reminder of the precarity of the vast informal labour market, with even more informal jobs being created in the economic recovery in developing countries. Helping workers transition to more formal working arrangements is not only good for them, but also good for development. While there is debate over whether digitally facilitated ways of working lead to greater informality in developing countries, digitalisation of government services, greater access to digital technology and co-ordinated policies can foster formal work. In particular, the use of digital tools to increase productivity, improve norms and regulations, provide incentives, and strengthen enforcement systems can contribute to the transition.

Key messages

- Digital transformation of the labour market is challenging the notion of decent work with new forms of informality.
- There is an increasing trend to apply digital tools in policy design and implementation for accelerating the transition to formality.
- For national policy makers, designing and implementing a policy framework for e-formalisation can ensure that digital transformation leads to inclusive outcomes for informal workers.
- Development co-operation partners can disseminate good practice of e-formalisation, facilitate the exchange of knowledge and provide technical advice through South-South and triangular co-operation.

Digitalisation is redefining work in the informal labour market. Digitalisation is remaking the world of work, not least in the vast informal economy that provides livelihoods for more than 2 billion people worldwide. Whether digital technology can improve working conditions and help workers transition to formal working arrangements is the subject of much current debate in the field of labour policy, and statistics standards are evolving to better track the impact on informal employment (Figure 18.1). The changes are far reaching. The digital transformation of the labour market is undermining formal work and creating new forms of informal employment in the gig economy (ILO, 2021[1]). At the same time, technology may well accelerate the transition of workers and enterprises to formality. The International Labour Organization (ILO) and others call this process e-formalisation (Chacaltana, Leung and Lee, 2018[2]; Divald, 2021[3]). From a policy perspective, e-formalisation refers to the application of digital technologies to support the design and implementation of policies that increase productivity, improve norms and regulations, create incentives, and strengthen enforcement systems as pathways towards formality (Kring and Leung, 2021[4]; Williams, 2021[5]). The right kind of e-formalisation strategy – designed in consultation with workers and businesses – should be focused on improving conditions for informal workers. For national policy makers, designing and implementing a policy framework for e-formalisation can ensure that digital transformation will be managed and guided towards pro-poor and inclusive outcomes for informal workers. Development co-operation partners can identify and disseminate good practice of e-formalisation, facilitate the exchange of knowledge, and provide technical advice through South-South and triangular co-operation.

The pandemic shows how digitalisation can affect the precarity of informal work

Globally, over 2 billion workers earn their living in the informal economy. The latest ILO (2018[10]) statistical overview found that 92.1% of employed women and 87.5% of men in low-income countries are in informal employment. In emerging and developing economies, only 15.6% of people aged 15-24 are employed formally, compared to 80% of their counterparts in developed countries (ILO, 2018[10]). According to the same ILO report, countries with lower informality rates also have higher Human Development Index values (Figure 18.1) and, in general, as gross domestic product (GDP) per capita rises, the share of informal employment in total employment falls[1] (ILO, 2018[10]). From this perspective, transition to formality is an important development objective.

Informal employment – characterised by low wages, low productivity and the absence of social protection – also is precarious from workers' perspective. The COVID-19 pandemic drove this home: In the first month of the crisis, 80% of informal workers saw their incomes drop by 60% (ILO, 2020[11]). Some workers received income support thanks to the use of digital tools. For example, in Nigeria, the government used satellite-based

BOX 18.1. DIGITALISATION AND INFORMALITY: ADAPTING OFFICIAL STATISTICS TO AN EVOLVING LABOUR MARKET

The standards for determining who is classified as informally employed in official statistics are changing to capture the impact of digitalisation on the labour market. Traditionally, informal employment referred to three basic forms of work and workers (ILO, 1993[6]; ILO, 2003[7]; ILO, 2013[8]):

1. Self-employed: people in business activities that are not registered with any national authority and maintain only partial or no accounting records
2. Employee: people whose employer does not make social insurance contributions for them or provide them access to paid annual leave and paid sick leave
3. Contributing family workers: people who work without pay in a business or farm owned by a family member or have informal jobs by default due to the nature of their employment.

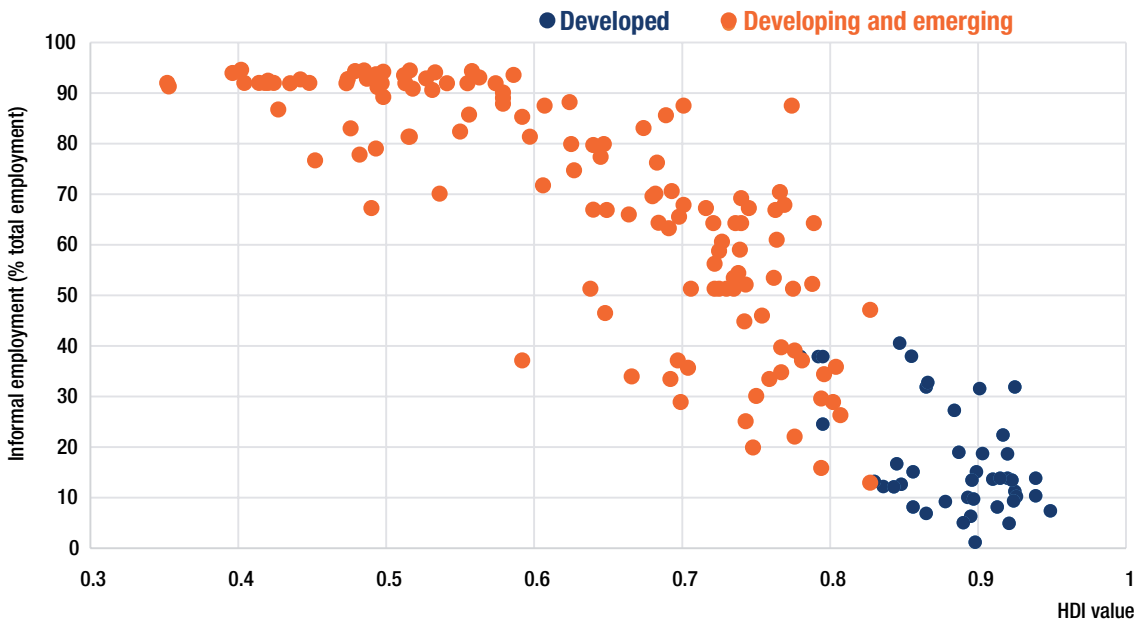
With digitalisation, the statistical standards evolved. Beginning in 2018, statistical classifications included a new status of dependent contractors, who straddle the border between being an employee and being self-employed. The change helps make visible in the data the growing number of workers who are dependent on digital platforms, such as those providing rideshare or delivery services, but who are not employees and may or may not have formal arrangements in place (ILO, 2018[6]).

Another proposed revision to the statistical standards will be discussed in 2023 that aims to capture how unpaid work is associated with informality and the ways informal workers transition to formality. The revised standards should also make available better data on informality, including for sectors impacted by digitalisation and e-formalisation. Definitions and approaches to measure the phenomenon of digitalisation itself is the subject of separate discussions.

Growing digitalisation also creates the potential for data to be drawn from digital sources. These data could complement data generated by traditional collection methods, for instance household surveys.

Note: Michael Thye Frosch, Jessica Gardner and Kieran Walsh from the International Labour Organization's Department of Statistics contributed this box.

Figure 18.1. Mapping informal employment against Human Development Index values



Source: ILO (2018[10]), Women and Men in the Informal Economy: A Statistical Picture – Third Edition, International Labour Organization, Geneva, http://www.ilo.org/global/publications/books/WCMS_626831/lang--en/index.htm.

poverty maps, big data mining and machine learning to identify and register informal sector households so that they could receive social protection support (Kring and Leung, 2021[4]). In urban areas, the government collaborated with mobile network operators to identify informal workers through airtime purchase patterns (Davidovic et al., 2021[12]).

Where there are signs of an economic recovery from the pandemic's impacts in developing countries, it is the informal sector that seems to be driving it: From mid-2020 to the first quarter of 2021, 70% of the new jobs generated in Latin American countries were informal jobs (Maurizio, 2021[13]). This expansion of the informal labour market underscores the importance of promoting and accelerating transitions to formal work. Helping workers make the switch to more formal work arrangements can give them greater access not only to productive employment, but also to rights at work, social protection and social dialogue. A number of governments, including in developing countries, are using digital technology in innovative ways to reach informal workers and spur this transition.

E-formalisation can promote and accelerate transitions to formal work

E-formalisation is the aggregate effect of three interlinked approaches and actions: 1) co-ordination across a range of government policy areas that are relevant for formality transitions; 2) support to the digital economy;[2] and 3) development of e-government services[3] (Kring and Leung, 2021[4]). The right balance of increasing productivity, improving norms and regulations, creating incentives, and strengthening enforcement systems has been shown to contribute to these transitions from informal to more formal employment arrangements[4] (Chacaltana and Leung, 2020[14]; Ohnsorge and Yu, 2021[15]). E-formalisation can facilitate these actions.

Where there are signs of an economic recovery from the pandemic's impacts in developing countries, it is the informal sector that seems to be driving it: From mid-2020 to the first quarter of 2021, 70% of the new jobs generated in Latin American countries were informal jobs.

Increasing productivity

Efforts to increase productivity can include macro policies to improve the enabling environment, meso policies aimed at the sectoral and value chains level, and micro policies aimed at firm-level interventions (Chacaltana, Leung and Lee, 2018[2]). A good example of applying digital tools in business operations is the tablet project of the Confederation of Chambers of Commerce, Services and Tourism of Mexico. Specifically designed to increase the productivity and competitiveness of small and medium-sized enterprises (SMEs), the tablet project offers a year of free Internet connection, helps businesses record and provide sales reports, enables electronic sales and electronic billing, and includes a sales point terminal with a slot for credit and debit cards. It also facilitates employment formalisation by helping the SMEs register their employees. In its first year, the project successfully reached 15 086 beneficiaries of a special tax regime for SMEs (*régimen de incorporación fiscal*), Mexico's main public formalisation programme. It also has verified that 89% of the beneficiaries made tax declarations, and it was estimated that 25 646 workers benefited from it (Chacaltana, Leung and Lee, 2018[2]).

Improving norms and regulations

Simplifying procedures has improved norms and regulations (Chacaltana, Leung and Lee, 2018[2]). Examples include the eSocial electronic employment registration system in Brazil and e-work permits for refugees and host communities in Jordan, where employees and employers can submit all required documents only once on the online portal instead of posting the same set of documents or visiting different government offices in person (ILO, 2019[16]); and the digital payment of wages in the construction sector in the People's Republic of China, which helps curb wage arrears and improve the norms to protect migrant workers (Huang, 2021[17]). These digital-driven programmes have proved popular: The number of workers registered in the Electronic Payroll system in Peru increased from 2.17 million in 2008 to 3.13 million in 2013 (Chacaltana, Leung and Lee, 2018[2]). Mobile payment services for social security contributions with M-PESA in Kenya and Vodafone Cash for informal workers in Ghana reduce the cost and time to make payments compared to in-person cash payments and facilitate compliance (Chacaltana, Leung and Lee, 2018[2]).

National tax systems also are being digitalised to varying degrees in countries including Ghana, Indonesia, Mexico, Nepal and Rwanda, generally in areas such as taxpayer registration and filing, compliance and audit, payments, and dispute management (Rosengard, 2020[18]). Tax digitalisation in Rwanda between 2010 and 2016 increased the tax-to-GDP ratio from 13.1% to 16.6% and led to a 14% average annual increase in revenue collected from 2010 to 2018 (Rosengard, 2020[18]).

Providing incentives

Incentives can take various forms, such as linking tax incentives to social security contributions or simply guaranteeing access to public services or public space for informal workers (Chacaltana, Leung and Lee, 2018[2]). For example, online business registration in Cambodia reduces registration fees by about 40% compared to the registration process done on paper; almost 6 000 companies registered during the first year of its launch in 2020 (Kring and Leung, 2021[4]).

Improving enforcement systems

Enforcement systems are predicated on the state's capacity to deliver services and ensure standards are met. When implemented, these systems build a compliance culture and can be enhanced through automation or upgrading and special regimes (Chacaltana, Leung and Lee, 2018[2]). The Digital Labour Inspector Programme in Argentina, the Labour Inspection Management Application in Bangladesh and the Labour Inspection System Application in Sri Lanka are examples of digital applications that help inspecting authorities work more efficiently, allowing them to document working conditions and record other information that can provide insights for policy makers into levels of informality in particular sectors. Before the Labour Inspection System Application, for instance, labour inspections in Sri Lanka were a laborious, paper-based process; now inspectors finish the whole inspection process on site with easy access to information (ILO, 2015[19]). E-formalisation has also been found to help in the enforcement of minimum wage policies with digitally generated records (UNDP, 2019[20]). Since the introduction of the electronic worker registration system (*planilla electronica*) in Peru, minimum wage compliance is greater by businesses that have made online declarations than by those that do not use the system (ILO, 2017[21]).

How e-formalisation can contribute to sustainable, inclusive development

The *ILO Centenary Declaration for the Future of Work* (ILO, 2019[22]) and the United Nations Development Programme's *Human Development Report 2019* (UNDP, 2019[20]) highlighted that by opening a path from informal to formal work, e-formalisation can raise productivity and foster greater equity

in labour markets, thus contributing to the achievement of the Sustainable Development Goals.

Much depends, though, on the extent to which government policies underpinning e-formalisation, including the delivery of services through digital technologies, focus on bettering conditions and expanding opportunities for informal workers. Some guiding principles have emerged from practice to date that can help e-formalisation realise this potential:

- The outcomes of digital transformations are not predetermined, and the result depends on how they are managed and the extent to which they are guided towards pro-poor, inclusive outcomes. Governments and development co-operation partners need to ensure that the objective of e-formalisation considers transition to formality as the means to provide decent work for workers in the informal economy. This should be an integral goal of COVID-19 crisis recovery efforts.
- Governments should maximise the potential of e-formalisation and develop co-ordinated strategies with the right mix of economic and institutional policies that are appropriate to each national context. Local authorities can play a leading role in implementing policies so that they benefit communities.
- At country level, the best way to design an e-formalisation policy and ensure that it is implemented and monitored is to engage government representatives, employers and workers in a tripartite social dialogue. Informal economy workers know their own problems and concerns best, and social dialogue provides them with a channel for their voices to be heard.

REFERENCES

Chacaltana, J. and V. Leung (2020), "Pathways to formality: Comparing policy approaches in Africa, Asia and Latin America", in Kucera, D. and D. Schmidt-Klau (eds.), *Global Employment Policy Review 2020: Employment Policies for Inclusive Structural Transformation*, International Labour Office, Geneva, https://www.ilo.org/employment/Whatwedo/Publications/WCMS_734489/lang--en/index.htm (accessed on 30 September 2021). [14]

Chacaltana, J., V. Leung and M. Lee (2018), "New technologies and the transition to formality: The trend towards e-formality", *EMPLOYMENT Working Paper*, No. 247, International Labour Organization, Geneva, http://www.ilo.org/employment/Whatwedo/Publications/working-papers/WCMS_635996/lang--en/index.htm (accessed on 30 September 2021). [2]

Davidovic, S. et al. (2021), "Beyond the COVID-19 crisis: A framework for sustainable government-to-person mobile money transfers", in Deléchat, Corinne, C. and L. Medina, Leandro (eds.), *The Global Informal Workforce: Priorities for Inclusive Growth*, International Monetary Fund, Washington, DC, https://doi.org/10.5089/9781513575919.071. [12]

Divald, S. (2021), *e-Estonia: A Digital Society for the Transition to Formality*, International Labour Organization, Geneva, http://www.ilo.org/employment/areas/e-formality/WCMS_781500/lang--en/index.htm (accessed on 30 September 2021). [3]

Huang, K. (2021), "Using information technology to guarantee wage payment to construction workers in China", *ILO Working Paper*, paper presented at the ILO South-South Knowledge Sharing Forum, International Labour Organization, Geneva. [17]

ILO (2021), *World Employment and Social Outlook 2021: The Role of Digital Labour Platforms in Transforming the World of Work*, International Labour Organization, Geneva, http://www.ilo.org/global/research/global-reports/weso/2021/WCMS_771749/lang--en/index.htm (accessed on 30 September 2021). [1]

ILO (2020), "Impact of lockdown measures on the informal economy", *ILO Brief*, International Labour Organization, Geneva, http://www.ilo.org/global/topics/employment-promotion/informal-economy/publications/WCMS_743523/lang--en/index.htm (accessed on 30 September 2021). [11]

ILO (2019), *ILO Centenary Declaration for the Future of Work*, International Labour Organization, Geneva, https://www.ilo.org/wcmsp5/groups/public/@ed_norm/@relconf/documents/meetingdocument/wcms_711674.pdf. [22]

ILO (2019), *Promoting Transition to Formality for Peace and Resilience*, International Labour Organization, Geneva, https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/instructionalmaterial/wcms_736145.pdf. [16]

ILO (2018), *Resolution Concerning Statistics on Work Relationships*, International Labour Organization, Geneva, https://www.ilo.org/stat/Publications/WCMS_647343/lang--ja/index.htm (accessed on 30 September 2021). [6]

ILO (2018), *Women and Men in the Informal Economy: A Statistical Picture – Third Edition*, International Labour Organization, Geneva, http://www.ilo.org/global/publications/books/WCMS_626831/lang--en/index.htm (accessed on 30 September 2021). [10]

ILO (2017), *Minimum Wage Policy Guide*, International Labour Organization, Geneva, https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_508566.pdf. [21]

ILO (2015), "Technology lightens the load for factory inspector", news, International Labour Organization, Geneva, http://www.ilo.org/asia/info/public/features/WCMS_353256/lang--en/index.htm (accessed on 30 September 2021). [19]

ILO (2013), *Resolution Concerning Statistics of Work, Employment and Labour Underutilization*, http://www.ilo.org/global/statistics-and-databases/standards-and-guidelines/resolutions-adopted-by-international-conferences-o. [9]

ILO (2003), *Guidelines Concerning a Statistical Definition of Informal employment (17th International Conference of Labour Statisticians)*, http://www.ilo.org/global/statistics-and-databases/standards-and-guidelin. [8]

ILO (1993), *Resolution Concerning Statistics of Employment in the Informal Sector (15th International Conference of Labour Statisticians)*, http://www.ilo.org/global/statistics-and-databases/standards-and-guidelines/resolutions-adopted-by-international-conferences-of-labour-statisticians/WCMS_087484/lang--en/index.htm. [7]

Kring, S. and V. Leung (2021), *Renewing the Social Contract Through e-Formalization in the World of Work*, International Labour Organization, Geneva, https://www.ilo.org/employment/areas/e-formality/WCMS_826464/lang--en/index.htm. [4]

Maurizio, R. (2021), *Employment and Informality in Latin America and the Caribbean: An Insufficient and Unequal Recovery*, Labour Overview Series, International Labour Organization, Geneva, https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/---sro-port_of_spain/documents/genericdocument/wcms_819029.pdf. [13]

Ohnsorge, F. and S. Yu (2021), *The Long Shadow of Informality: Challenges and Policies*, World Bank, Washington, DC, http://documents.worldbank.org/curated/en/416941623441535708/The-Long-Shadow-of-Informality-Challenges-and-Policies (accessed on 30 September 2021). [15]

Rosengard, J. (2020), *Success Factors in Tax Digitalization*, Better Than Cash Alliance, New York, NY, https://btca-production-site.s3.amazonaws.com/documents/501/english_attachments/Success_Factors_in_Tax_Digitalization_full.pdf?1606759509 (accessed on 30 September 2021). [18]

UNDP (2019), *Human Development Report 2019 – Beyond Income, Beyond Averages, Beyond Today: Inequalities in Human Development in the 21st Century*, United Nations Development Programme, New York, NY, https://digitallibrary.un.org/record/3846848?ln=en (accessed on 30 September 2021). [20]

Williams, C. (2021), *E-formalization in Europe*, International Labour Organization, Geneva, https://www.ilo.org/employment/areas/e-formality/WCMS_823279/lang--en/index.htm. [5]

NOTES

1. The level of GDP per capita and its growth are potentially important for reducing informality, as they influence employment generation and the economic capacity of economic units and workers. However, higher levels of GDP are not sufficient. Significant levels of dispersion in each level of GDP are also seen in the data presented in the 2018 ILO report, *Women and Men in the Informal Economy: A Statistical Picture* (ILO, 2018[10]). In other words, the sectoral distribution of level of GDP and the pattern of growth matter. As noted by Chacaltana and Leung in 2020, an integrated approach combining economic and institutional policies brings more robust results and impact. See: https://www.ilo.org/employment/Whatwedo/Publications/WCMS_734489/lang--en/index.htm.
2. The digital economy includes public policies, but also encompasses wider private sector developments at national and global level, including the growth of e-commerce, platforms, Fintech and so forth.
3. E-government strategies refer to the suite of government policies around the use of information and communications technologies and digital innovations to improve governance, enhance service delivery, digitise aspects of operations and administration, and enable greater citizen participation. E-government strategies are often linked to wider national development frameworks that implicitly, but rarely explicitly, support formalisation.
4. The ILO has identified the pathways towards formality as the following: generating formal and productive employment through inclusive structural transformation; facilitating the transition from the informal to the formal economy for workers in their current positions, called in situ formalisation, via institutional policies including the extension of social protection; and preventing informalisation of the formal economy. See also the ILO 2015 Transition from the Informal to the Formal Economy Recommendation at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R204.

BRIDGING ENERGY GAPS WITH DIGITAL SOLUTIONS

19

George Kamiya, International Energy Agency
Vida Rozite, International Energy Agency
Ghislaine Keiffer, International Energy Agency
Brendan Reidenbach, International Energy Agency

ABSTRACT

Digital technologies can provide off-grid solutions for the millions of people without electricity but progress made over the last decade in expanding electrical grids in least served areas has stalled. This chapter provides the latest data on universal access to energy and funding gaps and discusses ways forward for mobilising urgent investment in physical and digital energy infrastructure to prevent Africa from falling further behind in its digital transformation. In the short term, digital solutions can bridge the gap and offer affordable, clean energy to marginalised, isolated and impoverished communities. In the long term, co-ordination of investments and strategies in digitalisation and energy can enable countries to faster deploy low-carbon, demand-responsive and resilient energy systems.

Key messages

- In a reverse of nearly a decade of progress, the number of people worldwide without access to electricity is set to increase by 2% in 2021, due largely to population growth and impacts of the COVID-19 pandemic in sub-Saharan Africa.
- Digital innovations such as peer-to-peer electricity trading networks and digitally enabled solar electricity units can provide stopgap energy for low-income, remote and other underserved communities.
- Digital and energy transitions should complement one another, with digital technology driving energy efficiency and innovation and a clean and secure energy supply supporting digitalisation.
- Investment in electricity grids, now stalled or inadequate, must be resumed at sufficient scale and speed to overcome the USD 350 billion funding gap to ensure universal access to affordable, reliable energy by 2030.

Emerging and developing economies currently account for around two-thirds of the global population, but only one-fifth of global investments in clean energy (IEA, 2021[1]). To achieve global targets of net zero emissions by the middle of the century, much more investment in electricity grids will need to be mobilised to provide access to clean energy. The COVID-19 pandemic is reversing progress made over the past decade in expanding access, threatening to push Africa, with the least developed energy infrastructure in the world, further behind and jeopardising its digital transformation.

Energy and digital transitions are intertwined: Communities and individuals need reliable, affordable electricity if they are to fully reap the economic, social and environmental benefits of digitalisation. Lack of energy access, by the same token, is one of the drivers of digital inequality. While it will take time and large upfront investments to construct the necessary utility-scale generation and electricity grids to achieve the goal of universal energy access, innovative digital solutions can quickly provide affordable, clean electricity to power development and improve the lives of millions of people who have yet to be connected to an electricity grid.

Efforts to expand energy access are at a turning point

Over the past decade, investments in modernising and expanding electrical grids have increased energy access in Africa. The number of people with no access fell to 580 million in 2019 from the peak of 610 million in 2013. This improvement was largely due to electricity grid construction in Ethiopia, Ghana, Kenya, Rwanda and Senegal,[1] with energy access in Kenya alone expanding from 20% to 85% of the population. Progress has been uneven across the region, however. While Gabon, for example, has improved energy access from 31% to 92% of its population since 2000, only 3% of the population of the Central African Republic and 1% of the population of South Sudan currently have access.[2] Moreover, about 110 million of the people in Africa who still lack access to energy live within distance of connection to the electricity grid but remain unserved due to chronic underfunding of the national grids.

The costs of failing to act and invest are high. In Nigeria, for instance, total energy consumed by diesel and petrol generators for primary energy supply or as backup generation to manage grid blackouts is eight times greater than the total national electricity grid output. Even the inhabitants of the megacity of Lagos rely on backup generators for half of their electricity needs. The opportunity cost of loss of revenue streams to the power utilities and grid operator is estimated to be USD 12 billion per annum, while the fumes from fossil fuel generators in Nigeria contribute to the highest levels of air pollution on

the continent and the fourth highest in the world.

Progress towards universal energy access is at a turning point. As of 2020, the global funding gap to achieve energy access for all by 2030, in line with Sustainable Development Goal 7.1, was USD 350 billion, with two-thirds of this spending required in sub-Saharan Africa alone. Meanwhile, the COVID-19 crisis is unravelling the progress already made towards expanding energy access in the region – dampening government investment in electricity grids and leaving a growing number of Africans unable to either afford or connect to reliable, clean electricity – at a time when demand for digital technology is exploding.

The pandemic has set back progress, widening energy and digital divides

The effects of the pandemic on efforts to expand energy access are especially acute in Africa. Globally, the number of people without access to electricity is set to rise in 2021 by 2% over pre-pandemic levels to 770 million people, with 600 million of these in sub-Saharan Africa (Cozzi, Tonolo and Wetzel, 2021[2]). In addition, 30 million people in the region who previously had access to electricity in 2019 – 6% of the connected population – may no longer be able to afford basic electricity services (IEA, 2020[3]). These setbacks make it all the more urgent to reverse the decline in access to energy, given that population growth and ongoing digital transformation will mean that more people will need access to reliable, clean electricity to avoid being further disadvantaged.

Increased digital demand calls for co-ordinating new energy and digital infrastructure

The number of Internet users worldwide has doubled over the past decade and global Internet traffic has grown by more than fifteen-fold (ITU, 2021[4]; Cisco, 2018[5]; IEA, 2021[6]). However, energy use from digital technologies has remained relatively flat thanks to strong energy efficiency improvements (Malmodin and Lundén, 2018[7]). Global data centre energy use, for example, has been steady at around 1% of global electricity use since 2010, despite a more than sevenfold increase in demand for data centre services (Masanet et al., 2020[8]; IEA, 2021[6]). And while overall Internet traffic grew by over 40% in 2020, several large network operators have reported the same or lower electricity use (Koomey and Masanet, 2021[9]).

Demand for data and digital services is expected to continue its exponential growth over the coming years, both in terms of users and the data intensity of applications. The number of mobile Internet users is projected to increase from 4 billion in 2020 to 5 billion by 2025, while the number of Internet of

As of 2020, the global funding gap to achieve energy access for all by 2030, in line with Sustainable Development Goal 7.1, was USD 350 billion, with two-thirds of this spending required in sub-Saharan Africa alone.

Globally, the number of people without access to electricity is set to rise in 2021 by 2% over pre-pandemic levels to 770 million people, with 600 million of these in sub-Saharan Africa.

Things connections is expected to double to 24 billion (GSMA, 2021[10]). New data centres and network infrastructure will be needed to accommodate strong demand growth, particularly in developing countries. Serving this expanding user base will require new, local infrastructure and effective policy to ensure data sovereignty and service quality.

New digital and energy infrastructure can complement one another and drive energy efficiencies. To limit greenhouse gas emissions from new digital infrastructure projects, for instance, regulators can require that new data centres be fully powered by renewable energy through on-site generation or matched through power purchase agreements.[3] Despite concerns that the rapid growth of data centres and networks in developing countries could overstretch underdeveloped energy systems, preliminary market research suggests that new data centres are more likely to be located near urban centres that have more developed electricity infrastructure rather than in rural areas where energy access rates are especially poor. In rural areas, new mobile data transmission network infrastructure and services may also promote inclusive development by enabling access to energy outside traditional electricity grids for isolated or unserved communities through new business models.

Inclusive, people-centred digital solutions can bridge electricity gaps

Digital technology can help mitigate the challenges around lack of access to a traditional electricity grid, unlocking new business models and equipping isolated and vulnerable communities and individuals with affordable clean energy solutions. Digitally enabled mobile communications technology especially plays a crucial role. Mobile banking and payments, for instance, unlock new business models for people without access to affordable electricity. Innovative, people-centred approaches also can help ensure that energy and digital transformations are inclusive, positively address gender equity and explicitly include access provision for marginalised groups.

As demand for electricity in OECD countries has increased about 15% since 2000, Africa's electricity consumption has almost doubled in the same period,[4] with digitally enabled solutions increasingly helping to meet the growing demand. Across Africa, about 4.3 million pay-as-you-go (PAYG) solar home electricity systems were installed in 2020 alone (GOGLA, 2020[11]), providing clean energy solutions for people in urban, peri-urban and rural areas unserved by power grids. These units, enabled by smart meters and two-way digital communication, allow customers to spread out their payments in small instalments over time, according to their consumption, thus avoiding a high upfront lump sum for service. Such small-scale digital solutions have also proven useful in humanitarian situations: displaced persons in the Kakuma refugee camp in northwest Kenya, for instance, gained access to electricity thanks to the installation of 1 000 PAYG solar home systems (Casswell, Sharma and Khan, 2019[12]). As these systems do not depend on traditional grid infrastructure, low-income customers can leapfrog traditional providers and install renewable energy and efficient technologies in their dwellings.

Another example is the SOLshare project in Bangladesh, where 75% of the population lives in rural areas but fewer than 30% of rural residents have secure energy access. In the world's first digitally enabled peer-to-peer electricity trading network for rural households, people with a PAYG solar home system can use a digital platform to sell excess clean electricity to their neighbours, further reducing reliance on fossil fuel-powered generators or kerosene lamps. SOLshare, which has installed more than 70% of the home systems, estimates that Bangladesh alone could have as many as 20 000 digital peer-to-peer nanogrids supplying 1 million people by 2030 (UN, 2021[13]).

Development of battery storage to hold excess energy produced during the day would help scale up nanogrid P2P energy trading technology. For instance, lithium battery cells from electric vehicles are suited to stationary power storage even after the useful life of the vehicle (Engel, Hertzke and Siccardo, 2019[14]) and could be used effectively in nanogrid and microgrid applications. Larger microgrids with more connected properties and larger solar installations offer improved system resilience and efficiency. Given that microgrids can be up and running in as little as two months (Shah and Chandrasekaran, 2020[15]), they have enormous potential to power development and provide useful energy to support businesses, schools and healthcare services. This is especially important in sub-Saharan Africa where, according to the World Health Organization, only about 30% of healthcare facilities have access to reliable electricity (Stottlemyer, 2020[16]).

Improving energy and digital transitions: The way forward

Digital technologies can help bridge the gap and provide energy solutions for people and communities who have no access to electric grids and lack basic electricity services. Development finance can be instrumental in scaling energy access; for example, the African Development Bank mobilised EUR 24 million in 2018 that partially guaranteed local financing to supply power to 100 000 rural households in Côte d'Ivoire (Ahouassou, 2018[17]). National and international actors can ensure digital and clean energy transitions that emphasise efficiency, inclusion and affordability.

- The International Energy Agency's Global Commission on People-Centred Clean Energy Transitions[5] has proposed 12 recommendations to influence the clean energy policies and programmes of governments, funders, investors and international organisations engaged globally in energy transitions. These recommendations encourage actors to consider the social and economic impacts on communities and individuals, including gender equity and social inclusion, the creation of decent jobs, and ensuring worker protection when approaching how energy is produced, used and the technologies involved to ensure the overall success of clean energy transitions on the path to net zero (IEA, 2021[18]).
- By sharing best practices on policy design and implementation, policy makers can better integrate fairness and inclusivity in both digital and energy transitions and take measures to ensure that digital technologies are deployed in ways that promote a just and equitable net zero transition.
- Improving energy efficiency can help reduce the demand for energy in developing countries. However, real-world data on energy use by data transmission networks and data centres are scarce, making it impossible to provide robust estimates of the current and projected energy use or their impact on local grids and energy access. To ensure a sustainable and equitable build-out of digital infrastructure, policy makers should ensure that such data are collected and publicly reported.

REFERENCES

Ahouassou, A. (2018), "Côte d'Ivoire: African Development Bank to help mobilize over CFAF 15 billion to finance pay-as-you-go solar home systems", African Development Bank, https://www.afdb.org/en/news-and-events/cote-divoire-african-development-bank-to-help-mobilize-over-cfaf-15-billion-to-finance-pay-as-you-go-solar-home-systems-18244 (accessed on 9 November 2021). [17]

Casswell, J., A. Sharma and M. Khan (2019), *Mobile-enabled Energy for Humanitarian Contexts: The Case for Pay-as-you-go Solar Home Systems in Kakuma Refugee Camp*, GSMA, London, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/02/Mobile_Enabled_Energy_M4H.pdf. [12]

Cisco (2018), *Cisco Visual Networking Index: Forecast and Trends, 2017-2022*, Cisco, https://cyrekdigital.com/uploads/content/files/white-paper-c11-741490.pdf. [5]

Cozzi, L., G. Tonolo and D. Wetzel (2021), "The pandemic continues to slow progress towards universal energy access", International Energy Agency, Paris, https://www.iea.org/commentaries/the-pandemic-continues-to-slow-progress-towards-universal-energy-access (accessed on 27 October 2021). [2]

Engel, H., P. Hertzke and G. Siccardo (2019), "Second-life EV batteries: The newest value pool in energy storage", *McKinsey & Company Insights*, McKinsey & Company, https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/second-life-ev-batteries-the-newest-value-pool-in-energy-storage (accessed on 27 October 2021). [14]

GOGLA (2020), *Global Off-Grid Solar Market Report Semi-Annual Sales and Impact Data*, GOGLA, Amsterdam, https://www.gogla.org/sites/default/files/resource_docs/global_off-grid_solar_market_report_h2_2020.pdf. [11]

GSMA (2021), *The Mobile Economy 2021*, GSMA, London, https://www.gsma.com/mobileeconomy/wp-content/uploads/2021/07/GSMA_MobileEconomy2021_3.pdf. [10]

IEA (2021), *Data Centres and Data Transmission Networks*, International Energy Agency, Paris, https://www.iea.org/reports/data-centres-and-data-transmission-networks (accessed on 27 October 2021). [6]

IEA (2021), *Recommendations of the Global Commission on People-Centred Clean Energy Transitions*, International Energy Agency, Paris, https://www.iea.org/reports/recommendations-of-the-global-commission-on-people-centred-clean-energy-transitions (accessed on 9 November 2021). [18]

IEA (2021), *World Energy Investment 2021 Special Report*, International Energy Agency, Paris, https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf. [1]

IEA (2020), "The COVID-19 crisis is reversing progress on energy access in Africa", International Energy Agency, Paris, https://www.iea.org/articles/the-covid-19-crisis-is-reversing-progress-on-energy-access-in-africa (accessed on 27 October 2021). [3]

ITU (2021), *Statistics (database)*, International Telecommunication Union, Geneva, https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx (accessed on 27 October 2021). [4]

Koomey, J. and E. Masanet (2021), "Does not compute: Avoiding pitfalls assessing the Internet's energy and carbon impacts", *Joule*, Vol. 5/7, pp. 1625-1628, https://doi.org/10.1016/j.joule.2021.05.007. [9]

Malmodin, J. and D. Lundén (2018), "The energy and carbon footprint of the global ICT and E&M sectors 2010-2015", *Sustainability*, Vol. 10/9, p. 3027, https://doi.org/10.3390/su10093027. [7]

Masanet, E. et al. (2020), "Recalibrating global data center energy-use estimates", *Science*, Vol. 367/6481, pp. 984-986, http://dx.doi.org/10.1126/science.aba3758. [8]

Shah, R. and N. Chandrasekaran (2020), "Why microgrids are key to solving energy poverty worldwide", *Fortune*, https://fortune.com/2020/01/21/microgrids-energy-poverty-africa-asia (accessed on 27 October 2021). [15]

Stottlemyer, J. (2020), "Is energy efficiency the missing link in health access?", *Medium*, https://medium.com/efficiency-for-access/is-energy-efficiency-the-missing-link-in-health-access-9390feb71d88 (accessed on 27 October 2021). [16]

UN (2021), "ME SOLshare: Peer-to-peer smart village grids – Bangladesh", web page, United Nations Framework Convention on Climate Change, https://cop23.unfccc.int/climate-action/momentum-for-change/ict-solutions/solshare (accessed on 27 October 2021). [13]

NOTES

1. For details, see: https://www.iea.org/reports/sdg7-data-and-projections/access-to-electricity.
2. See: https://www.iea.org/reports/sdg7-data-and-projections/access-to-electricity.
3. A power purchase agreement is a contractual agreement between energy buyers and sellers. It is becoming more commonplace for large corporate consumers to purchase directly from renewable energy generators to decarbonise their electricity supply in long-term 10- or 20-year contracts to reduce exposure to price volatility.
4. For details, see: https://www.iea.org/data-and-statistics/data-browser?country=WEOAFRICA&fuel=Energy%20consumption&indicator=TotElecCons.
5. For more information on the programme, see: https://www.iea.org/programmes/our-inclusive-energy-future.

20 CASE STUDY: THE DIGITAL DEVICE LIFE CYCLE: FROM MINING TO E-WASTE

Antoinette van der Merwe, ETH Zurich
Fritz Brugger, ETH Zurich

ABSTRACT

The world's appetite for digital devices has significant economic, social and ecological consequences for developing countries. It is contributing to a mining boom and shifting manufacturing. While this demand offers potential economic growth for low- and middle-income countries – the source for many of the raw materials for ICT products – mining jobs are often precarious and unsafe. ICT products in turn contribute to the world's growing streams of hazardous e-waste, for which low- and middle-income countries are often the dumping ground. Governments with minerals in high demand for ICTs should leverage their position to maximise the economic benefits. Regulation of e-waste recycling is also necessary to combat health and safety risks.

Key messages

- Increased demand for digital devices has contributed to a global mining boom. This boom holds potential economic gains in developing countries, but is contributing to pollution, e-waste and increasing demand for land.
- Development partners and host governments should focus on maximising the benefits for development, including tax arrangements, local content provisions and investing in the capacity of the local workforce, as well as increased oversight of the e-waste recycling industry.

Managing the ripple effects of non-stop global demand for digital devices

Digitalisation is creating an ever-growing appetite for digital devices, and that demand is creating ripple effects across low- and middle-income countries. Many of these information and communication technologies (ICTs) and products use metals that are extracted largely in countries where regulation is uneven, are manufactured in places where worker protections are still weak, and eventually get discarded in ever-growing streams of untreated hazardous e-waste. While this increased demand is fuelling growth, developing country governments also are grappling with its far-reaching economic, social and environmental consequences: how to manage revenues from the resulting mining boom, ensure that the benefits are sustainable through safe and meaningful jobs, and avoid becoming the dumping ground for the e-waste left behind.

Demand is fuelling hard-to-manage growth in metals-mining countries

A typical smartphone contains 15 different metals, including lithium-ion batteries, copper wiring and gold that is used in circuit boards. Many other metals now used in ICTs, among them rare earth metals, are being used on a significantly larger scale than ever before (UNCTAD, 2020[1]). Demand for products such as ICT devices and renewable energy has led to a new mining boom in Africa since 2000 (Bezzola, 2020[2]). For many countries, mining is an economic blessing. Seven metals primarily used for ICTs (including indium and tantalum) contribute 68% of the total value of all metals produced in Rwanda, 23% in Burundi, and 15% in Ethiopia (UNCTAD, 2020[1]). Further, since 2000, resource-rich countries in Africa have had, on average, about 60% higher economic growth than other African countries (Chuhan-Pole, Andrew and Land, 2017[3]; Bezzola, 2020[2]). However, this ICT-driven mining boom is not without significant economic, environmental and social risks, including pollution, lack of rehabilitation, increasing demand for land, hazardous working conditions, and conflicts between mining companies and local populations.

Seven metals primarily used for ICTs (including indium and tantalum) contribute 68% of the total value of all metals produced in Rwanda, 23% in Burundi, and 15% in Ethiopia.

Transparency and regulation can help ensure that mining fosters inclusive development. Many African governments relaxed mining regulations and granted generous tax holidays to attract foreign investment in the early 2000s (Campbell et al., 2004[4]). However, increasing mining did not always translate into better development outcomes (Gamu, Le Billon and Spiegel, 2015[5]). One reason is that regulatory frameworks tend to be weak in most low- and middle-income countries, resulting in weaker enforcement of even minimal standards and making it less likely that society benefits from resource wealth (Natural Resource

Governance Institute, 2017[6]). A recent survey of 81 jurisdictions shows that only 19 – with Ghana the sole African country among them – have governance frameworks and procedures in place that make it likely that citizens benefit from extractive resource wealth (Natural Resource Governance Institute, 2017[6]).

Managing mining revenues can also be overwhelming for capacity-constrained tax administrations, and proceeds from mining can be vulnerable to capture by political elites. The Extractive Industries Transparency Initiative[1] is the most established and widely supported policy initiative to curb corruption in the extractive sector. In addition to mine-level reconciliation of tax information provided by companies and tax authorities, the initiative now requires disclosures along the value chain: starting with licensing and beneficial ownership on to extraction, production and exportation, and including information on how revenue makes its way to the government and how revenues are managed and distributed, including to the subnational level.

In artisanal mining, certification schemes such as Fairtrade Gold[2] and Fairmined[3] foster responsible production and improve traceability. Increasing the supply of certified metals is limited by ill-defined regulatory frameworks for artisanal miners in the host countries and low demand and willingness to pay by consumers. However, increased due diligence, such as disclosing the provenance of metals, can result in companies withdrawing entirely from areas with a high risk of conflict or of widespread or serious human rights abuses, which also jeopardises the livelihood of all workers in these areas. Other initiatives focus on formalising and monitoring artisanal mines, among them the United Nations Minamata Convention,[4] the most extensive international effort to formalise the artisanal (gold) sector.

While mining provides jobs, these are often semi-skilled, unsafe and precarious

Alongside the increased demand for metals used in ICT products, the mining industry is undergoing a digital transformation of its own. Mechanising repetitive work can bring down costs. At the first fully automated mine in the world, the Syama gold mine in Mali, for example, costs have been reduced by 30% (Bongaerts, 2019[7]). But the shift to automation will also reduce the demand for semi-skilled labour in a sector where, at the mine site level, resettlement, pollution and unmet expectations regarding jobs already frequently lead to conflict and civil unrest. Corporate social responsibility initiatives tend to be motivated by the company's own interest, though recent approaches like the Resource Impact Dashboard[5] are focused on holistically monitoring development trends in industrial mining areas and bring mining companies together with local people and governments to foster evidence-based decision making.

Outside the formal mining sector, the poorest find work in artisanal mining that extracts many metals used in ICTs such as gold and tantalum. The number of people involved in this dangerous and strenuous work has increased dramatically, from an estimated 6 million in 1993 to 44.7 million in 2021 (Delve, 2021[8]). However, due to the high level of informality and despite initiatives such as the open-source data-sharing platform Delve,[6] very limited disaggregated data on artisanal mining are available. While research suggests that artisanal mining has a significant potential to alleviate poverty, the sector also is associated with a range of serious environmental and social concerns, including pollution, deforestation, hazardous working conditions and the use of child labour (Swenson et al., 2011[9]). A large percentage of artisanally mined metals is exported through illicit channels without being taxed and used to launder money or even finance armed groups (OECD, 2018[10]).

Manufacturing is shifting to new countries to meet global demand

Manufacturing to satisfy the exploding demand for digital products is expanding

to new countries, prompting concern that safe working conditions and workers' rights may not be protected. Electronics manufacturing has extended beyond traditional centres such as the People's Republic of China, Korea and Thailand to Cambodia, Indonesia and Viet Nam, among others. Firms in these countries face frequent criticism over conditions for their workers, including exposure to harmful chemicals, low wages and denial of the right to unionise. Similar to the civil society initiatives focused on improving conditions in the garment industry, campaigns such as Make It Fair[7] and Electronics Watch[8] are pressuring electronics firms to commit to more sustainable production and urging governments to do more to protect the rights of workers in electronics supply chains (Evans and Vermeulen, 2021[11]).

Though most of the value creation from the extraction of metals used for ICTs comes from processing and manufacturing, the low-income countries where such mining occurs remain mainly exporters of unprocessed raw materials. Building the capacity for such activities will require an expansion of vocational training and tertiary education as well as the introduction of industrial policies that promote value addition. Botswana followed such a strategy for the diamond industry (Maennling and Toledano, 2018[12]) and could serve as a model for other countries.

E-waste from ICTs is predominantly ending up in developing countries, where capacity for safe recycling is low

Once in the hands of consumers, digital devices and ICTs have short lifespans – discarded and replaced quickly because they tend to be fragile, difficult or impossible to repair, and often rendered obsolete as newer models or devices are developed. This rapid turnover for digital products is contributing to e-waste – hazardous waste containing heavy and toxic metals – that is one of the world's fastest-growing waste streams (Lundgren, 2012[13]).

About 53.6 million metric tonnes (Mt) of e-waste, or 7.3 kilogrammes (kg) for every person in the world, were generated in 2019 (Forti et al., 2020[14]). The e-waste volume had grown at a rate of approximately 21% in the five years before 2019; by 2030, as much as 74.7 Mt per year could be generated (Forti et al., 2020[14]; WHO, 2021[15]). Although Asia produced the most e-waste overall in 2019, it also accounts for a large share of the world population, and thus it produces a lower amount of e-waste per capita (5.6 kg per person) than Europe (16.2 kg per capita), Oceania (16.1 kg per capita) and the Americas (13.3 kg per capita) (Forti et al., 2020[14]).

Only 17.4% of all global e-waste is formally recycled. The amount recycled varies widely across regions, ranging from less than 1% of e-waste in Africa to 43% in Europe (Forti et al., 2020[14]). The fate of the rest of the e-waste is largely undocumented. While most was probably mixed with other waste streams and not optimally treated, an estimated 7-20% was shipped illegally to low-income countries, according to research by Forti et al. (2020[14]). Although exporting e-waste is prohibited under the Basel Convention, the researchers said it is still done by falsely labelling the e-waste as scrap metal or devices intended for reuse.

There exist, however, potential opportunities in e-waste, which is a rich source of secondary metals. The value of raw materials embedded in the 53.6 Mt of e-waste generated in 2019, for instance, is estimated at about USD 57 billion (Forti et al., 2020[14]). Integrated interventions to promote responsible recycling practices on the part of producers and consumers could capture these metals and reintroduce them into formal supply chains.

Low-income countries now lack the technical capacity to safely recycle e-waste, which leads to dangerous contaminants flowing to local communities and environments (Wang, Zhang and Guan, 2016[16]; Awere et al., 2020[17]). While capacity-building initiatives such as the Sustainable Recycling Initiative[9] are supporting

sustainable e-waste processing, most e-waste in low- and middle-income countries are not safely treated. As the World Health Organization noted in a recent report, millions of people, including 13 million women and children as young as 5 years old, work in the informal waste sector, and the toxic environments created by e-waste are particularly harmful to children, who absorb more toxic elements than adults (WHO, 2021[15]).

Producers are being encouraged to design modular devices that are easier to repair and dismantle for recycling and to design devices to handle more software updates. Governments can implement regulations that limit waste generation and require businesses that manufacture, import and produce products to be responsible for the waste these products create. An example is the proposed "right to repair" legislation in the United States and Europe. Recycling initiatives in low- and middle-income countries should also not exclude informal waste workers, but give them the necessary tools and training to do their work safely. Consumers can reduce e-waste inflow by using devices for longer, repairing broken devices and only then recycling those beyond repair. Given the environmental costs of mining, and the advantages of not generating more e-waste, recovering unused or old devices from consumers can be cost-effective (Corwin, 2019[18]; Van der Merwe and Günther, 2020[19]).

Development co-operation can help manage repercussions of growing demand

Demand for digital products will only increase as more economic and social activities are digitalised. Development co-operation actors have an important role to play to help low- and middle-income countries – the source for many of the raw materials for ICT products and often the dumping ground for the e-waste these products create – manage the consequences of this boom. Support for capacity building, for example, can help governments maximise and beneficially manage revenues from the mining of metals needed for digital devices; develop regulatory frameworks to ensure safe working conditions in mining and manufacturing; and safely, and even profitably, deal with e-waste.

Millions of people, including 13 million women and children as young as 5 years old, work in the informal waste sector, and the toxic environments created by e-waste are particularly harmful to children, who absorb more toxic elements than adults

The digitalisation boom's demand for primary resources gives leverage to governments of countries with minerals that are much in demand. Development partners and host governments should focus on negotiating licensing conditions that maximise the benefits for development, including tax arrangements and local content provisions. Another important area is technical support to agencies mandated to enforce existing social and environmental regulations, including by investing in the capacity of the local workforce and exploring the potential of industrial clusters.

Finally, there is a need to increase the oversight of the recycling industry by implementing e-waste standards, collaborating and synchronising initiatives from all private and public groups, including non-governmental organisations, businesses, local governments and the informal recycling industry.

REFERENCES

Awere, E. et al. (2020), "E-waste recycling and public exposure to organic compounds in developing countries: A review of recycling practices and toxicity levels in Ghana", *Environmental Technology Reviews*, Vol. 9/1, pp. 1-19, https://doi.org/10.1080/21622515.2020.1714749. [17]

Bezzola, S. (2020), *The Consequences of Corporate Social Responsibilities for Mining Communities in Africa (doctoral thesis)*, ETH Zurich, https://doi.org/10.3929/ethz-b-000460842. [2]

Bongaerts, J. (2019), "Mining 4.0 in developing countries", in *Scientific and Practical Studies of Raw Material Issues*, CRC Press, LLC, Boca Raton, FL. [7]

Campbell, B. et al. (2004), "Regulating mining in Africa: For whose benefit?", *Discussion Paper*, No. 26, Nordiska Afrikainstitutet, Uppsala, Sweden, https://www.files.ethz.ch/isn/96055/26%20-%205%20chapters.pdf. [4]

Chuhan-Pole, P., A. Andrew and B. Land (2017), *Mining in Africa: Are Local Communities Better Off?*, French Development Agency/World Bank, Paris/Washington, DC, https://openknowledge.worldbank.org/bitstream/handle/10986/26110/9781464808197.pdf?sequence=6&isAllowed=y (accessed on 29 September 2021). [3]

Corwin, J. (2019), "Between toxics and gold: Devaluing informal labor in the global urban mine", *Capitalism Nature Socialism*, Vol. 31/4, pp. 106-123, https://doi.org/10.1080/10455752.2019.1690533. [18]

Delve (2021), *DELVE: A Global Platform for Artisanal & Small Scale Mining Data (database)*, https://delvedatabase.org. [8]

Evans, R. and W. Vermeulen (2021), "Governing electronics sustainability: Meta-evaluation of explanatory factors influencing modes of governance applied in the electronics value chain", *Journal of Cleaner Production*, Vol. 278, p. 122952, https://doi.org/10.1016/j.jclepro.2020.122952. [11]

Forti, V. et al. (2020), *The Global E-waste Monitor 2020: Quantities, Flows, and the Circular Economy Potential*, United Nations University, Tokyo, https://collections.unu.edu/eserv/UNU:7737/GEM_2020_def_july1.pdf. [14]

Gamu, J., P. Le Billon and S. Spiegel (2015), "Extractive industries and poverty: A review of recent findings and linkage mechanisms", *The Extractive Industries and Society*, Vol. 2/1, pp. 162-187, https://doi.org/10.1016/j.exis.2014.11.001. [5]

Lundgren, K. (2012), *The Global Impact of E-Waste: Addressing the Challenge*, International Labour Organization, Geneva, https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_196105.pdf. [13]

Maennling, N. and P. Toledano (2018), *Leveraging the Negotiating Position – Botswana: Downstream Linkages*, Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, Ottawa, Ontario, https://www.iisd.org/sites/default/files/publications/case-study-botswana-downstream-linkages.pdf. [12]

Natural Resource Governance Institute (2017), *2017 Resource Governance Index*, Natural Resource Governance Institute, https://api.resourcegovernanceindex.org/system/documents/documents/000/000/333/original/2017_Resource_Governance_Index.pdf. [6]

OECD (2018), *Gold at the Crossroad: Assessment of the Supply Chains of Gold Produced in Burkina Faso, Mali and Niger*, OECD, Paris, https://mneguidelines.oecd.org/Assessment-of-the-supply-chains-of-gold-produced-in-Burkina-Faso-Mali-Niger.pdf. [10]

Swenson, J. et al. (2011), "Gold mining in the Peruvian Amazon: Global prices, deforestation, and mercury imports", *PLoS ONE*, Vol. 6/4, p. e18875, https://doi.org/10.1371/journal.pone.0018875. [9]

UNCTAD (2020), "Digital economy growth and mineral resources: Implications for developing countries", *Technical Notes on ICT for Development*, No. 16, United Nations Conference on Trade and Development, Geneva, https://unctad.org/system/files/official-document/tn_unctad_ict4d16_en.pdf. [1]

Van der Merwe, A. and I. Günther (2020), *Old Mobile Phones: A Potential Gold Mine*, NADEL Center for Development and Cooperation, ETH Zurich, https://doi.org/10.3929/ethz-b-000448320. [19]

Wang, Z., B. Zhang and D. Guan (2016), "Take responsibility for electronic-waste disposal", *Nature*, Vol. 536/7614, pp. 23-25, https://doi.org/10.1038/536023a. [16]

WHO (2021), *Children and Digital Dumpsites: E-waste Exposure and Child Health*, World Health Organization, Geneva, https://www.who.int/publications/i/item/9789240023901. [15]

NOTES

1. For more information on the initiative, see: https://eiti.org.
2. For more information, see: https://fairgold.org/#:~:text=Fairtrade%20Gold%20is%20sourced%20exclusively,Minimum%20Price%20for%20their%20product.
3. For more information, see: https://fairmined.org and https://www.responsiblemines.org/en.
4. For more information on the convention, see: https://www.mercuryconvention.org.
5. For more information, see: www.resource-impact.org.
6. For more information on the platform, see: https://delvedatabase.org.
7. For more information on the project, see: https://www.themakeitfairproject.com. https://www.themakeitfairproject.com/
8. For more information on the initiative, see: https://electronicswatch.org/en.
9. For more information on the initiative, see: https://www.sustainable-recycling.org.

CASE STUDY: OPTIMISING TOOLS AND PARTNERSHIPS FOR RESILIENCE

21

Olivia Neal, Microsoft
Alexandre Pinho, Microsoft
Carolyn Nguyen, Microsoft

ABSTRACT

Digital technologies have enormous potential to help governments operate more sustainably, plan for climate emergencies and protect the environment. This case study focuses on how further collaboration and partnerships between the private sector, non-profit organisations and governments can generate and use data to design better environmental policies and help societies build resilience to the effects of climate change.

Key messages

- Digital tools can help governments improve the design and delivery of public services while advancing progress towards sustainability by using high-quality data to evaluate and adapt policy implementation.
- To reach sustainability targets, all sectors will have to contribute. Governments and civil society should partner with firms, researchers and initiatives that contribute technology capacity and expertise.

Governments around the world are transforming services and regulations to tackle urgent environmental challenges such as climate change and biodiversity loss. Digital technologies and solutions can enhance their ability to collect, store, analyse and visualise data – empowering them to make better and quicker decisions and leading to more effective policy delivery and enforcement.[1] Partnerships between public and private sector actors use the power of digital tools and data to increase Internet connectivity and address environmental and climate change risks.

One example, the Microsoft Planetary Computer and Artificial Intelligence (AI) for Earth programme, provides technical resources including open-source tools, models, infrastructure, data and application programming interfaces to accelerate technology development for environmental sustainability (Microsoft, 2021[1]). Used by researchers, non-profits, start-ups and academics, these resources offer solutions that governments can apply as well. Through this programme, governments and private sector partners use technology to:

- improve well-being and protect life and property in the face of climate change
- use data to enable more informed policy development and ensure compliance with standards that drive a sustainable society
- demonstrate leadership by meeting environmental targets and improving sustainability in their respective operations.

The examples outlined here illustrate the range of uses for data and digital tools. They use an Assess-Accelerate-Transform approach to show how digital technology solutions help evaluate current conditions, expedite solutions, and create better ways of working and outcomes for both citizens and the planet.

Using digital technologies to address the causes and impacts of climate change

Tools such as cloud-enabled data capabilities and artificial intelligence are being used in developing and developed countries alike to deliver sustainable energy and Internet connectivity, model extreme weather patterns to better build resilience, and inform preparedness efforts. A project evaluation framework focused on data, resilience and capacity angles, as outlined below, help show the value of the collaboration.

Produce data to support sustainable energy use and build disaster resilience

Example: In Africa, as in all parts of the world, Internet connectivity depends on access to affordable electricity. Yet, 600 million people still lack such access (IEA, 2020[2]). Through the Airband Initiative, Microsoft partners with Internet providers, telecom equipment makers, non-profit organisations and local entrepreneurs on energy solutions for improving access to affordable Internet, affordable devices and digital skills. For instance, M-KOPA, the largest provider of solar home systems in East Africa, uses cloud-enabled data capabilities to generate predictive insights, including on weather patterns, allowing better service and access to sustainable energy (Microsoft, 2018[3]).

Example: In the United States, digital technologies help the US Army Engineer Research and Development Center (ERDC) model the risk of coastal extreme weather. A new agreement between the ERDC and

Microsoft will improve climate modelling and natural-disaster resilience using cloud-based, predictive analytics-powered tools and AI. One aim of the agreement is to determine the scalability of the ERDC coastal storm modelling system and allow researchers to replicate the workflow on other affected coastlines (US Army Corps of Engineers, 2021[4]).

Building resilience and capacity

These projects assess current issues and emerging risks by:

- bridging gaps between long-range forecasts, short-range situational awareness and real-time interventions
- defining capacities to support faster and more accurate decision-making capabilities
- sharing and using predictive modelling to understand environmental, infrastructure and human responses to critical events.

This approach helps stakeholders accelerate their response to near-term demands by:

- equipping organisations to share data across governmental and geographic boundaries
- enabling real-time communication and collaboration between teams in crisis environments and/or where resources are scarce
- managing responses based on real-time information.

These pre-emptive actions build resilience and transform public service management by:

- sharing data across government and industry to create a common operating picture
- increasing warning times and specificity to respond more effectively
- utilising past lessons to inform future preparedness.

Using data and AI to protect vulnerable marine and forest ecosystems

Researchers and environmental groups use digital technologies such as AI to pinpoint potential threats to fragile ecosystems. Governments and regulatory agencies use these data to head off risks and enforce protections.

Artificial intelligence algorithms to identify threats in real time

Example: Illegal and unregulated fishing is one of the greatest threats to marine ecosystems. However, many governments lack the resources and expertise to monitor and control their marine areas against illegal fishing operations. OceanMind, a non-profit organisation, powers enforcement and compliance to protect the world's oceans. Using digital technology, it works with government agencies in Costa Rica and Thailand, among others, to protect fishing stocks by pulling public data on vessel positions into the cloud and tracking each boat in real time. AI algorithms analyse ship movements to identify suspicious behaviour such as staying still for too long or venturing off established routes. Government agencies use the insights to help patrol boats target illegal actions (Microsoft, 2021[5]).

Example: In Brazil, Imazon, a research institution to promote conservation and sustainable development in the Amazon, uses AI algorithms to deliver data and insights for policy and decision makers to protect biodiversity and safeguard the rainforest. Through its partnership with Microsoft and Fundo Vale, a social and environmental investment and development fund, Imazon stores satellite images of Brazil's Amazon rainforest in the cloud, where AI algorithms detect unofficial roads and other risk factors for deforestation. The resulting output is visualised in an interactive map that highlights areas where action is needed to reduce risks, such as forest fires, before they occur (Microsoft, 2021[6]).

Sharing data and enhancing data standards

These projects use measurement to assess current conditions by:

- sourcing data and assuring their quality
- applying standardised approaches to data curation

- publishing data in standard formats and maintaining their accuracy.

The approach develops and enforces evidence-based policies to accelerate change by:

- communicating and sharing data across organisational and geographic boundaries
- modelling impacts of policy options and actions
- automating data collection, facilitating compliance monitoring and enforcing adherence.

These improvements transform policy making and enforcement of regulation by:

- collecting, monitoring and publishing data on outcomes
- comparing investments to impacts
- using real-time intelligence to respond to non-compliance
- adapting policies and guidance where targeted outcomes are not achieved.

Applying digital technologies to improve the environmental sustainability of government services

Public sector organisations must overcome siloed structures, databases and communications to visualise information effectively and act on the insights. Automation and standardisation of data flows provide real-time data and insights that can help companies and governments record and report on their environmental impacts at scale. New tools can support organisations in using data flows to reduce carbon emissions.[2] Digital tools can lower costs and increase the efficiency of public services, building expertise in the government workforce and helping governments enact leadership in environmental protection and sustainability, and reach their net zero commitments.

Data flows to improve environmental performance

Example: In Norway, C4IR Ocean, an independent non-profit, developed the Ocean Data Platform (ODP),[3] an open and collaborative data platform that helps governments, regulators and maritime transport companies track data from shipping vessels. This is combined in the cloud with data generated by an open Automated Identification System (AIS) used to monitor vessel traffic and positioning. Advanced analytics and machine learning models are applied to this combined data to help forecast greenhouse-gas emissions and other environmental costs of transportation activities.

The city was able to reduce the annual energy consumption of its light posts by 66%, resulting in a net reduction of 20% on its electricity bill or an annual savings of EUR 400 000.

Example: The city of Gandía, Spain, uses connected streetlights to report energy consumption and operational status. The resulting system allows for improved control, lower energy costs, better citywide lighting and a 2 723-tonne reduction in annual carbon emissions. The city was able to reduce the annual energy consumption of its light posts by 66%, resulting in a net reduction of 20% on its electricity bill or an annual savings of EUR 400 000 (Microsoft, 2019[7]).

Reducing the carbon footprint of the public sector

These projects assess public sector operations and identify areas for action by:

- recording the environmental impact of the entire operational and value chain
- sourcing reliable data from telemetry, sensors, and internal and external sources
- analysing, visualising and reporting resource use, environmental impacts and progress towards sustainability.

These projects accelerate solutions and actions to meet sustainability targets by:

- using data intelligence, feedback loops and automation to reduce resource consumption and emissions footprints
- identifying opportunities to achieve climate goals within the government and among service providers
- developing employee skills to adopt new technologies
- communicating and sharing data across different agencies and geographies.

These projects improve public services and transform their contribution to sustainability by:

- monitoring real-time data on progress, reviewing impacts, and adapting actions and approaches
- to replace high-carbon footprint actions with low-carbon footprint alternatives.

Governments must urgently apply digital technologies in a holistic way

Governments must move aggressively to meet environmental targets by making more effective use of data and clean technologies to make their operations greener and to better enforce environmental protections. These technologies can support responses to the climate and other crises by predicting and helping better prepare for severe weather events, and by reducing environmental risks. With advanced modelling, governments can take a proactive stance to adapt and build resilience.

Governments should encourage partnerships across sectors to take advantage of digital approaches that can better assess current conditions and accelerate their response. These include collaboration between governments, financing organisations, non-profit organisations, established technology providers, start-ups, and researchers and academics. All organisations can use technology in their activities as suppliers, investors, employers, policy advocates and partners to move from making pledges towards making progress on solving climate challenges.

REFERENCES

IEA (2020), *Energy access website*, International Energy Agency, Paris, https://www.iea.org/topics/energy-access (accessed on 12 November 2021). [2]

Microsoft (2021), *AI for Earth Partners:Imazon website*, Microsoft Corporation, Seattle, WA, https://www.microsoft.com/en-us/ai/ai-for-earth-imazon (accessed on 12 November 2021). [6]

Microsoft (2021), *AI for Earth partners:OceanMind website*, Microsoft Corporation, Seattle, WA, https://www.microsoft.com/en-us/ai/ai-for-earth-OceanMind (accessed on 12 November 2021). [5]

Microsoft (2021), *Planetary Computer website*, Microsoft Corporation, Seattle, WA, https://planetarycomputer.microsoft.com/ (accessed on 12 November 2021). [1]

Microsoft (2019), *"Spanish city goes green and cuts costs through cloud-based smart city initiatives"*, Customer Stories website, Microsoft Corporation,Seattle, WA, https://customers.microsoft.com/en-us/story/724147-city-of-gandia-government-azure (accessed on 12 November 2021). [7]

Microsoft (2018), *"Using the Cloud and IoT to deliver safe, affordable energy in Africa"*, Microsoft Corporation, Seattle, WA, https://download.microsoft.com/download/6/C/9/6C955541-5053-4A1C-BF0E-22F3BA34CE0F/Microsoft_Airband_M-KOPA_Casestudy.pdf. [3]

US Army Corps of Engineers (2021), *"ERDC, Microsoft agreement aims to analyze risk of extreme weather in the cloud"*, Engineer Reserach and Develoment Center, https://www.erdc.usace.army.mil/Media/News-Stories/Article/2693893/erdc-microsoft-agreement-aims-to-analyze-risk-of-extreme-weather-in-the-cloud/ (accessed on 12 November 2021). [4]

NOTES

1. For more information on how digital approaches can support governments in addressing sustainability challenges, see: https://wwps.microsoft.com/whitepaper/sustainability/.
2. For more information on the Microsoft Cloud for Sustainability, see: https://blogs.microsoft.com/blog/2021/10/27/advancing-a-net-zero-future-ahead-of-cop26-new-carbon-accounting-tools-available-with-the-microsoft-cloud-for-sustainability-now-in-public-preview/.
3. For more information on the Ocean Data Platform, see: https://www.oceandata.earth/.




Hospital del Bienestar
Dr. Emiliano Cruz

Part III
Hardwiring inclusion into digital transformation

IN MY VIEW: ARTIFICIAL INTELLIGENCE AND DATA ANALYTICS CAN UNLOCK NEW ECONOMIC OPPORTUNITIES

Timothy Kotin, CEO and Co-Founder, Superfluid Labs

All human beings deserve a chance to fulfil their potential. However, in today's world, opportunity is not evenly distributed. Barriers include limited or lacking access to essential elements of a good life, such as healthcare, education, nutrition, energy, communication, mobility, financial services and gainful employment. Current economic realities combined with the adverse effects of climate change threaten to accelerate and codify this state of inequity.

The use of data analytics and artificial intelligence (AI) technologies can help overcome some of these barriers and re-balance opportunity. Superfluid Labs focus on empowering hundreds of small businesses and millions of individuals across Africa with technology. The goal is to unlock new economic opportunities where there were none and expand existing avenues where they are limited. Business efficiency through better data insights yields many dividends for small businesses, such as the millions of informal merchants who employ most of Africa's increasingly youthful workforce. For example, informal merchants in Nigeria and Kenya can now better predict consumer demand for their goods and easily place orders for new stock via basic mobile devices. Additionally, by digitising their sales transactions for the first time, many of these businesses can access loans from local lenders through the alternative credit scores Superfluid Labs generate using artificial intelligence. The result is enhanced business viability and expanded employment capacity, which in turn attract more risk capital for new business formation.

It is true that increased digitisation of services, accelerated by COVID-19, means that individuals leave ever-larger digital footprints, raising concerns around data privacy and the harms that can come with technology, such as mis- and disinformation. But digital footprints can be useful signals that help access new products and services, using blockchain and other decentralised technologies to harness the potential of AI without sacrificing security. For example, AI can use credit scores to determine who should be eligible for a personal loan. AI-based systems are also used to provide smallholder farmers with better insurance. By capturing and sharing the precise co-ordinates of their farm sites using GPS-enabled mobile devices, farmers now enjoy weather-related risk insurance that can also trigger automatic pay-outs via mobile money wallets.

Policies that promote, improve and multiply the positive aspects of AI are needed just as much as regulations around consumer data protection, consent and privacy. Development actors and governments have important roles in mobilising the potential of AI by creating enabling policy environments and expanding AI skills training.

Access to computing devices is essential to capture relevant data as input for AI models and to access new services enabled by AI. But many in low- and middle-income countries cannot afford a smartphone to participate in the digital economy even as the world becomes decentralised and remote-first, with COVID-19 accelerating the transition of businesses to digital delivery models. To avoid a worsening of the digital divide, development partners must give greater explicit support to private-sector initiatives that provide access to affordable smartphones via innovative financing models. Google, Facebook and Starlink have undertaken many promising initiatives across East and West Africa. Governments too should embrace connectivity-for-all as a worthwhile goal because computing and connectivity are the first step towards harnessing the power of AI.

Development partners and governments can play an important role in catalysing economic opportunities and shared prosperity. Introducing data and AI content early in the educational curriculum will improve the readiness of graduates to join and improve the fourth industrial revolution and address the AI talent shortage – a major barrier to the growth of data-first companies. The existing workforce needs support for training and reskilling initiatives around data, analytics and AI to ensure that new job opportunities are being created as fast as automation is redefining many traditional job roles. Such training is especially important to maintain adequate productivity for healthy economic growth and curb the risk that digital transformation might lead to massive unemployment or job displacement.

Also, funding and support for early-stage AI businesses will go a long way to help the ecosystem flourish while delivering direct societal impact. Support could take the form of direct investments, access to expertise or local computing infrastructure such as data centres, and commercial contracts for businesses to pilot solutions to pressing international and domestic development challenges.

It is time to view artificial intelligence and data as the electricity of this century – a potentially revolutionary and overwhelmingly net positive. For this reason, we must act cautiously but also with hope, optimism, decisiveness and urgency. Let's build a world where everyone can rise to their full potential.

Funding and support for early-stage AI businesses will go a long way to help the ecosystem flourish while delivering direct societal impact.

22 PRACTICAL SOLUTIONS TO CONNECT THE LAST MILE

Aminata Amadou-Garba, International Telecommunication Union

ABSTRACT

Billions of people around the world do not use mobile Internet for stubbornly persistent reasons: lack of network infrastructure, lack of affordable Internet service and devices, gaps in skills and ability, and the perception that the Internet is not relevant. Based on insights from its Last-mile Internet Connectivity Solutions Guide, the International Telecommunication Union calls for more precise data to identify underserved populations and geographies. Sustainable connectivity solutions should then be selected based on their technical and financial appropriateness to the specific context and by balancing regulatory, revenue and usage models. Expanding connectivity requires creativity and collaborative approaches comprising policy and market mechanisms.

This chapter is based on ITU (2020[1]), *The Last-mile Internet Connectivity Solutions Guide: Sustainable Connectivity Options for Unconnected Sites,* http://handle.itu.int/11.1002/pub/8174ed4c-en.

Key messages

- As of 2021, about 38% of the world's population and as many as 73% of people in least-developed countries did not use the internet, excluded from the digital economy and from public digital services.
- Local conditions, affordability and market potential are barriers to broadband Internet provision in underserved areas, and policy and regulations sometimes make these worse.
- Policy makers should support creative, technology-neutral approaches to bridge the access gap, especially when more traditional approaches are insufficient or not financially viable.
- Financing should seek creative and blended approaches to overcome market constraints, including by mixing targeted subsidies and tax incentives with a variety of public, non-profit and private investment.

Globally, the number of Internet users has been growing and this growth accelerated during the pandemic: according the ITU's latest data about 800 million more people were online in 2021 compared to 2019 – increasing from 4.1 billion people in 2019 to 4.9 billion people in 2021 (ITU, 2021[2]). Nevertheless, about 38% of the world's population, or 2.9 billion people, were still offline and excluded from the benefits of the global digital economy (ITU, 2021[2]). About 67% of the population in Africa, 39% in Asia Pacific and 73% in least-developed countries were offline.

Bridging the digital divide is a social and economic imperative given that health, education, government and other services and applications rely on affordable, reliable and high-speed connectivity to serve communities. The COVID-19 pandemic, has shown an even higher value of Internet connectivity for work, health, conferences, and social activities, and hence a higher cost of being unconnected.

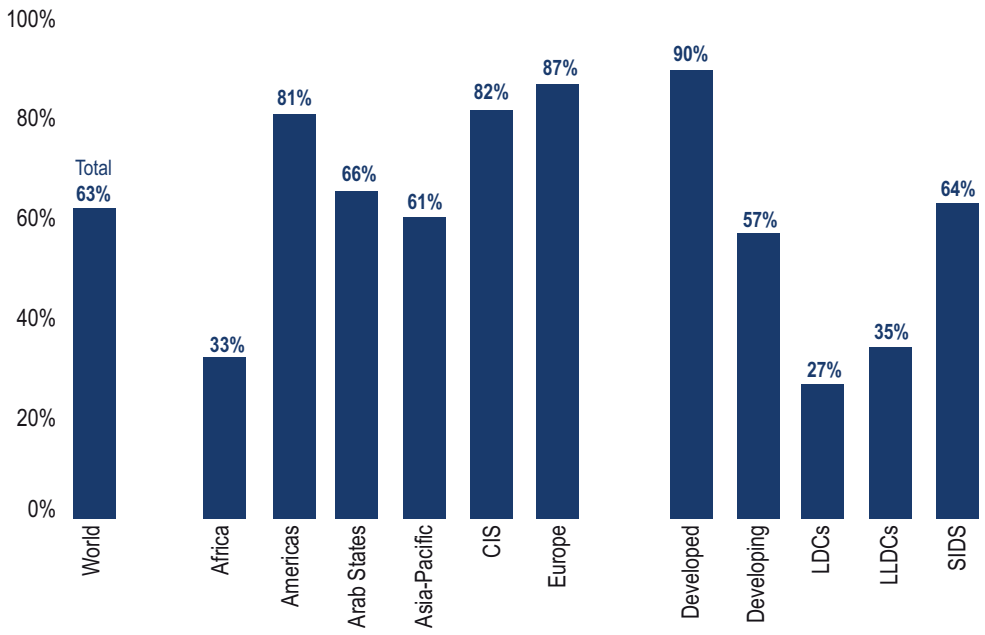
The International Telecommunication Union (ITU) Last-mile Internet Connectivity Solutions Guide (the Guide) proposes a four-step planning and policy development process to encourage deployment of network infrastructure (ITU, 2020[1]). First, more and better data are required to identify digitally underserved geographies and populations. Second, while several technological solutions exist, they should be reviewed for technical and financial appropriateness to each context. Third, identifying the most viable Internet connectivity solution requires balancing regulatory, revenue and usage models. Finally, implementing interventions to expand connectivity will take creative, collaborative approaches that use both policy and market mechanisms.

Inadequate connectivity holds back digital transformation

The digital transformation of economies depends on universal connectivity, itself underpinned by broadband. Sustainable Development Goal (SDG) 9 includes a specific target (9.c) of universal, affordable Internet access in least-developed countries by 2020. Nevertheless, the Alliance for Affordable Internet estimates that SDG 9.c will only be achieved in 2044, 22 years after the intended target date of 2020 (A4AI, 2020[3]). Furthermore, average prices for entry-level mobile broadband service are unaffordable (above 2% of average gross national income for 1 GB of data) for over a billion people in at least 57 countries – almost all of them developing or least-developed (A4AI, 2020[3]).

In 2019, major multi-stakeholder groups emphasised universal Internet access as central to digital transformation. In its June 2019 summary report, the United Nations Secretary-General's High-level Panel on Digital Cooperation recommended "that by 2030, every adult should have affordable access to digital networks, as well as digitally-enabled

Figure 22.1. Percentage of individuals using the Internet, by region and development status, 2021



Note: 2021 values are estimated by ITU.
Source: ITU (2021[2]), *Measuring Digital Development: Facts and Figures 2021*, https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2021.pdf.

financial and health services, as a means to make a substantial contribution to achieving the SDGs" (UN Secretary-General's High-Level Panel on Digital Cooperation, 2019[4])

There are four main reasons why billions of people remain offline: (1) lack of network infrastructure, (2) lack of affordable Internet service and devices, (3) gaps in skills and ability, and (4) lack of perceived relevancy. Even where telecommunication networks are present, coverage gaps characterise the deployment of all network technologies, but access to the Internet is additionally limited by the high prices of service and devices, the relevance of services and applications, and/or users' lack of digital skills. According to the GSM Association (GSMA, 2021[5]), more than 450 million people (approximately 6% of the global population) are not covered by mobile broadband (3G or higher), particularly in rural and remote areas. This coverage gap is compounded by a usage gap with 43% of the world's population living within a mobile broadband coverage but not using the Internet.

Steps to connect the unconnected

The ITU's Guide to last-mile connectivity solutions proposes four steps to encourage deployment of network infrastructure through planning and policy development in interventions.

Step 1. Identify digitally underserved geographies

Identifying the geographic limits of network infrastructure in relation to a population's location is key to closing the digital divide. However, there is no systematic, publicly available and universal dataset of global connectivity infrastructure.[1] A database for all connectivity-related information made open and available to all would help policy makers, development co-operation providers, private sector actors and other stakeholders

make informed decisions about investments and approaches. The Guide offers a list of mapping resources.

Step 2. Review the options among existing solutions

The next step is to compare existing technologies, business models, and regulations and/or policies for connectivity. The Guide provides summary tables of common wireless, wired and emerging technologies, and assesses their potential throughput and coverage area, the capital expenditure needed to deploy a new network, the ongoing operating expenses and whether a particular technology is suitable for rural deployment, where connectivity is lowest.[2]

Step 3. Match the viability of solutions to contextual constraints

Determining the binding constraints is a prerequisite to designing an appropriate, sustainable, connectivity intervention for a given unconnected geography or community. The most sustainable Internet connectivity solution for a context is a matter of fit across different criteria. This requires refinement to balance the following factors:

- **Affordability:** Technical and financing decisions impact the cost of connectivity. It is important to select characteristics and models that fit within target prices for end users.
- **Usage:** Understanding why and how the connectivity will be used is important to ensure delivery of meaningful access and to determine the network type best suited for a locality. At the same time, the network should be able to accommodate demand growth and changing usage patterns. Understanding usage also means putting in place the services and applications that are best suited to the local population and adapting those to users' needs and local languages.
- **Financial viability:** It is important to measure the economic viability of the investment. Some technologies are better suited to commercial operations, while non-profit entities likely prefer low-cost technologies. Viable solutions depend on the nature of the access gap in the target locality and can impact the choice of operating entity that is most appropriate for the intervention. Financial viability is important for both commercial and non-profit entities.
- **Structure:** Policies and regulations are also key levies for extending connectivity access but often narrow the options for intervention, especially those deployed by non-government entities. While they can be a helpful parameter, understanding how policies or regulations might stand in the way of adopting an appropriate technology or business model can also guide policy makers and regulators to reform and remove structural barriers.
- **Financial sustainability:** A solution's revenue model and expected uptake in the target locality will determine whether the solution can cover the network's operating expenses. For-profit entities will examine the additional question of desired profit within a reasonable timeframe.

Regulatory influence is the starting point for economic viability. Market-expanding interventions increase market efficiency.

A database for all connectivity-related information made open and available to all would help policy makers, development co-operation providers, private sector actors and other stakeholders make informed decisions about investments and approaches.

However, when viability cannot be achieved by market mechanisms alone, a government may want to induce universal access by using policy and regulatory interventions such as subsidies, tax alleviation, and free or low-cost licensing.

Step 4. Implement mechanisms that can expand connectivity

The last step is to consider financing mechanisms and market and policy interventions. The Last-mile Connectivity Case Studies Database review of 123 interventions shows several ways to increase universal coverage and service for Internet connectivity.[3] Internet policy and regulatory actions found to increase deployment by encouraging market expansion and addressing market failure include:

- **Authorise licences with simplified procedures for rural areas**. This model is particularly helpful when the regulatory requirements for a full-service operator constitute a barrier to entry for new entities. Tanzania's Micro Mobile Network Operator license encourages cellular service for small populations in rural areas. In Peru, the Telecommunication Investment Fund's subsidy auction lets service providers compete by requesting the lowest subsidy from the government for service in targeted rural areas. This widely replicated model works best with flexible regulatory policies and low-cost technologies.
- **Discount the cost of a license, provide auction credits for frequencies or allocate frequencies for social use**. These interventions reduce financial barriers to deploying wireless technologies where they are appropriate but not viable due to the cost of spectrum licensing. Mexico's Federal Telecommunications and Broadcasting Law of 2014 (Brennan et al., 2014[6]) introduced a "social use" concession for spectrum assignments[4] reserved for community, educational, cultural or scientific purposes. Measures can include co-ordination of radio emissions to avoid interference or allocation of scarce radio frequencies among competing uses.
- **Reduce risk through public-private partnerships that attract new players to the market and encourage existing ones to expand.** By mitigating their exposure to risk, private entities become more willing to invest resources in areas that might not offer as good a return as other networks. Brazil enacted policies that incentivise service providers to deploy networks in areas deemed commercially nonviable, including rural and remote areas. The incentives include state tax credits granted to mobile service providers, limited to the amount proven as invested by the company.
- **Encourage blended finance.** Investment structures that pool commercial capital with public and/or "patient" capital (private capital that seeks sub-commercial returns) reduce the risk of networks in low-return areas. Creative funding strategies can bridge the access gap caused by demand uncertainty or lagging demand growth in rural areas. The ITU-UNICEF Giga initiative (see Chapter 24) uses resource pooling to connect schools to the Internet in underserved regions.[5]
- **Implement tax incentives and reduce costs for service providers**. Reducing taxes on mobile handsets and connectivity devices directly improves access in areas where networks already exist. Kenya's exemption of mobile handsets from the 16% value-added tax, increased ownership and mobile services purchases (Deloitte LLP and GSMA, 2011[7]). Gabon World Telecom Labs, supported by capital from the Universal Service Fund, aims to expand access to 2 700 villages in remote areas following an infrastructure-as-service approach whereby different providers share network infrastructure, reducing their costs (Barton, 2017[8]).

More generally, encouraging competition improves market efficiency. Whether through more players, anti-trust regulation or other mechanisms, competition helps bring down the cost of access for end users. A more competitive market also lowers barriers for new entrants

that might deploy networks in areas unserved by incumbents, directly increasing coverage. For example, to lessen monopolisation of services, Ghana and Nigeria granted new submarine cable licenses to private-sector operators building undersea cable networks, thus increasing the number of players and encouraging competition (Ukodie, 2008[9]).

Box 22.1 provides an overview of how policies, commitments and actions by digital technology companies are key to achieving inclusive digital transformation.

Bridging the access and usage gap: Next steps to universal connectivity

Achieving connectivity for all requires a collaborative approach. Creating networks of stakeholders in each country and globally will enable continuous collaboration, partnership and discussion of evolution opportunities in the sector. Where the barriers are technological, a technology-neutral policy environment encourages creative deployment in areas that need new approaches to connectivity. In many cases, technological solutions exist for technical problems, such as terrain, that prevent access in a locality. Authorising innovative uses of communication technology for commercial and non-commercial service and allowing entities to use new and emerging technologies can bridge the access gap, especially where more traditional technologies prove insufficient or are not financially viable.

But in many cases, policy, regulations and financing remain the biggest barriers to expanding access to connectivity. Bridging the access and usage gaps takes flexible policies and regulation, and innovative

Authorising innovative uses of communication technology for commercial and non-commercial service and allowing entities to use new and emerging technologies can bridge the access gap, especially where more traditional technologies prove insufficient or are not financially viable.

and collaborative financing of connectivity infrastructure, services and devices.

In both cases, ensuring that enough information is available to Internet service providers and other partners to make informed decisions can help expand coverage and connectivity. Identifying underserved populations and the solutions they need by improving market data on network coverage, infrastructure assets, population density and income, and grid electrification is a foundational step towards market efficiency. While most infrastructure and socio-economic data represent country averages, mapping underserved areas to provide last-mile connectivity requires databases with finer precision and accuracy.

BOX 22.1. CORPORATE ACTION CAN DRIVE INCLUSIVE DIGITAL TRANSFORMATION

BY LOURDES O. MONTENEGRO, WORLD BENCHMARKING ALLIANCE

The policies, commitments and actions of digital technology companies are key to achieving inclusive digital transformation. The World Benchmarking Alliance's Digital Inclusion Benchmark rates the most influential digital technology companies on four areas:

- enhancing universal access to digital technology
- improving school connectivity and all levels of digital skills
- fostering safe use and respect for digital rights
- practising open, ethical and inclusive innovation.

In 2020, the average score across 100 companies was just 35% of the possible maximum, with software and IT service companies trailing hardware manufacturers and telecommunications operators. Companies scored lowest on access and skills, and better in the use and innovation measurement areas. Some indicators highlight alarming trends. For example, only 16 companies demonstrated any high-level commitment to child online protection or had guidelines for the ethical development and use of artificial intelligence. Digital companies need to adopt a principled and harmonised approach towards issues such as privacy rights, cybersecurity and child protection online, among many others, raising the bar and working with regulators to drive inclusive digital transformation.

Access initiatives are ad hoc, and transparency around economic contributions varies greatly

The most common initiatives for universal and affordable access often involve distribution of equipment or provision of free or discounted services to vulnerable populations. However, many of these were short lived and it is unclear how many people benefitted from them. Most of the programmes for women and girls involved mentorship and training to inspire interest in science, technology, engineering and mathematics, though some were more innovative. For example, Chinese technology company Baidu, Inc. included a feature on its Baidu Map application to help breastfeeding mothers find nurseries. But very few companies committed to accessibility principles early in the design process for products and services, and only 23 reported soliciting feedback from stakeholders, including disabled persons, during the design cycle.

An indicator in the access measurement area tracks company disclosure of its direct economic contribution, including taxes paid in markets of operation. Only 15 companies disclosed all elements of their direct economic contribution, with European and Asian (excluding Chinese) companies the most transparent, and US companies the least.

Training fails to build the most impactful skills, particularly for women and girls

While most companies had initiatives on technical skills and school connectivity, fewer undertook initiatives for basic and intermediate skills that boost people's livelihoods. The ad hoc nature of many access and skills initiatives, and a lack of impact assessments are common failings. Companies need to provide clearer, more consistent support to improve digital skills, especially for women and girls.

Source: World Benchmarking Alliance (2020[10]), Digital Inclusion Benchmark, https://www.worldbenchmarkingalliance.org/digital-inclusion-benchmark/.

REFERENCES

A4AI (2020), *Affordability Report 2020*, Alliance for Affordable Internet, Washington,DC, https://a4ai.org/affordability-report/report/2020/ (accessed on 1 December 2021). [3]

Barton, J. (2017), *Gabon to Boost Rural Coverage with WTL via Shared Infrastructure*, Developing Telecoms, London, https://developingtelecoms.com/telecom-technology/optical-fixed-networks/7303-gabon-to-boost-rural-coverage-with-wtl-via-shared-infrastructure.html (accessed on 17 November 2021). [8]

Brennan, M. et al. (2014), *The new Mexican Federal Telecommunications and Broadcasting Law*, Hogan Lovells, London, https://www.lexology.com/library/detail.aspx?g=c883b1e3-d614-468f-ba3d-045b14110fec (accessed on 17 November 2021). [6]

Deloitte LLP and GSMA (2011), *Global Mobile Tax Review 2011*, Dloittle LLP and GSM Association, London, https://www.gsma.com/publicpolicy/wp-content/uploads/2012/03/gsmaglobaltaxreviewnovember2011.pdf (accessed on 17 November 2021). [7]

GSMA (2021), *The State of Mobile Internet Connectivity 2021*, GSM Association, London, https://www.gsma.com/r/wp-content/uploads/2021/09/The-State-of-Mobile-Internet-Connectivity-Report-2021.pdf (accessed on 1 December 2021). [5]

ITU (2021), *Measuring Digital Development: Facts and Figures 2021*, International Telecommunication Union (ITU), Geneva, https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2021.pdf (accessed on 1 December 2021). [2]

ITU (2020), *The Last-mile Internet Connectivity Solutions Guide: Sustainable Connectivity Options for Unconnected Sites*, International Telecommunication Union, Geneva, http://handle.itu.int/11.1002/pub/8174ed4c-en (accessed on 17 November 2021). [1]

Ukodie, A. (2008), *"Ghana, Nigeria, granted Submarine Cable License"*, Ghana Business News, Accra, https://www.ghanabusinessnews.com/2008/12/10/ghana-nigeria-granted-submarine-cable-license/ (accessed on 17 November 2021). [9]

UN Secretary-General's High-Level Panel on Digital Cooperation (2019), *The Age of Digital Interdependence*, United Nations, New York, https://digitallibrary.un.org/record/3865925 (accessed on 17 November 2021). [4]

World Benchmarking Alliance (2020), *igital Inclusion Benchmark*, https://www.worldbenchmarkingalliance.org/digital-inclusion-benchmark/. [10]

NOTES

1. Additional information such as population, cost of usage, type of usage, type of devices, base stations, spectrum usage, applications usage would be very helpful.
2. See Tables 17, 19 and 25 of the Guide at: http://handle.itu.int/11.1002/pub/8174ed4c-en.
3. The database is available at: https://docs.google.com/spreadsheets/d/11OX2LEXxzll3N7wOZ21iDxIq-FBda_K3EJsmy6tMbBI/edit#gid=222819063.
4. Frequency spectrum allocation refers to the process of determining the use of a given block of frequencies. Frequency spectrum assignment refers to the determination of who is allowed to utilise that block.
5. For more information, see: https://www.itu.int/en/ITU-D/Initiatives/GIGA/Pages/default.aspx.

23 BEYOND THE BASICS: QUALITY, SPEED, AFFORDABILITY, RELEVANCE

Eleanor Sarpong, Alliance for Affordable Internet

ABSTRACT

Universal access to the Internet is a global goal. But digital divides based on gender and income will persist unless development actors and governments also aim for meaningful connectivity, measured in terms of the reliability, quality, speed and cost of digital services and devices. These targets should inform planning, regulation and policies for broadband development and markets. A number of developing countries have found creative solutions to lower costs and improve the quality of broadband connectivity. Development co-operation actors should support them to effectively track and measure meaningful connectivity and address inequities in targeted, inclusive ways.

Key messages

- National figures on Internet access currently overlook whether investments in broadband connectivity are improving quality, speed, affordability and relevance.
- Sound planning, an effective policy environment and incentives have helped developing countries lower the costs of digital services and devices.
- Using meaningful connectivity as the standard for truly universal, affordable and accessible broadband can help developing countries measure and better address income and gender disparities.
- Development co-operation actors should support regulatory and policy frameworks that encourage competitive markets and advance meaningful broadband connectivity.

Having access to the Internet is one thing. Having meaningful access – in terms of speed, devices, data and frequency of use – is another. As governments turn towards recovery from the shocks of the COVID-19 pandemic, improving citizens' access to affordable broadband should be a priority. The meaningful connectivity standard, developed by the Alliance for Affordable Internet (A4AI), raises the bar for Internet access. It can help governments set broadband policy targets and monitor whether their digital development is providing quality and affordable Internet access for all.

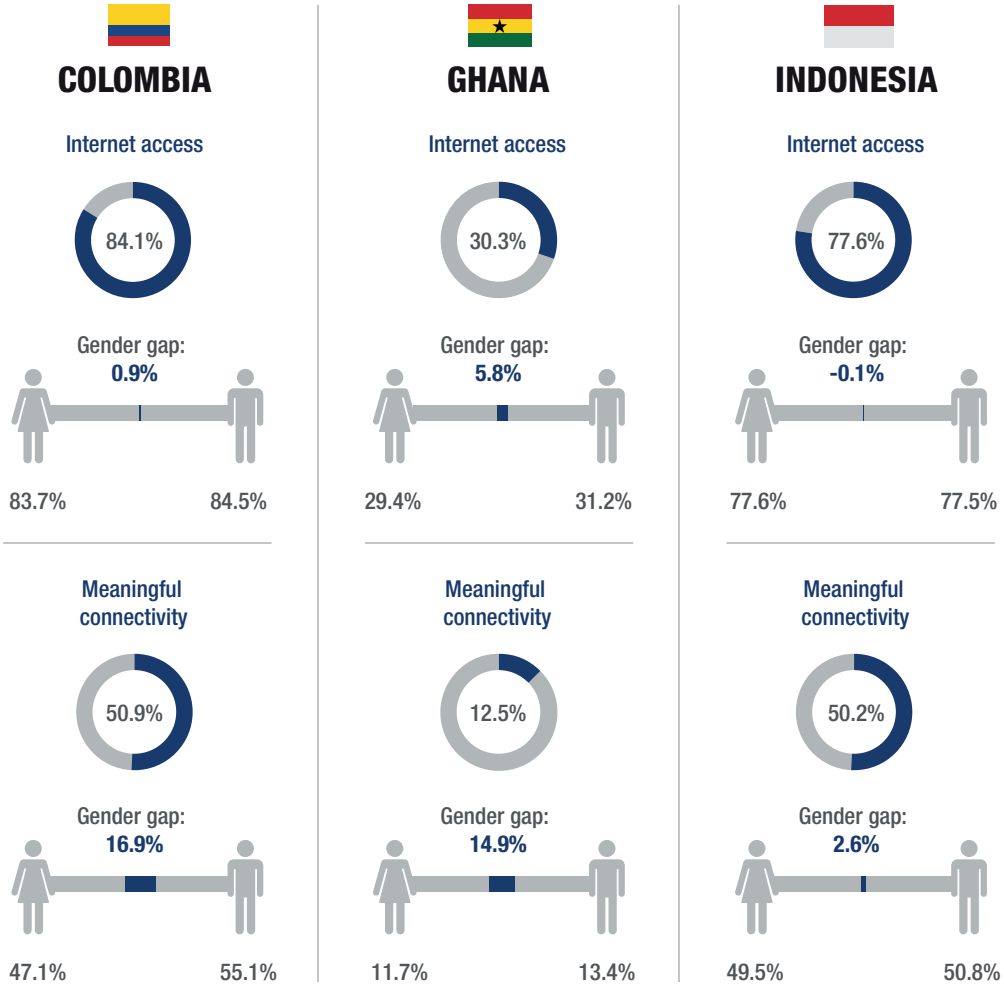
The right policies and planning can go a long way towards ensuring that broadband markets are healthy, competitive and serve the evolving needs of users. As private, government and development co-operation actors pursue the goal of universal access to 4G-equivalent mobile broadband,[1] they should consider how their investments and policies also can promote meaningful connectivity that is affordable, accessible and inclusive to all.

Measures of meaningful connectivity highlight digital gender and quality gaps

The meaningful connectivity standard captures users' evolving expectations for their digital experiences across four dimensions: a fast and affordable Internet connection with enough data available at all times using appropriate smart devices to access relevant digital content.[2] This approach looks beyond the traditional binary metric of connectivity – whether people are on line or offline – and evaluates the quality of their access. The distinction can alter the connectivity picture within and across countries significantly. For example, 84.1% of people in Colombia have Internet access, according to the International Telecommunication Union (ITU). But, using the A4AI measure, only 50.9% have meaningful connectivity (A4AI, 2020[1]). Meaningful connectivity metrics also highlight digital inequality between men and women: In Ghana, for example, the gender gap in terms of daily use of the Internet is 5.8%; when measured in terms of meaningful connectivity, though, the gender gap more than doubles for daily Internet use to 14.9% (Figure 23.1). This suggests that in addition to factors such as lack of digital skills and their greater concerns over privacy that affect their level of Internet use, women who are connected often have poorer quality of access or inadequate devices relative to connected men (World Wide Web Foundation, 2020[2]).

By adopting national targets for meaningful connectivity, policy makers can set more ambitious and specific goals that aim for higher quality and more inclusive broadband connectivity. To meet the target in their particular national context, governments should use an evidenced-based approach to identify disparities and gaps, develop policy solutions through inclusive and

Figure 23.1. The gender gap in meaningful connectivity is higher than for Internet use



Source: World Wide Web Foundation (2020[2]), *Women's Rights Online: Closing the Digital Gender Gap for a More Equal World*, http://webfoundation.org/docs/2020/10/Womens-Rights-Online-Report-1.pdf.

participatory processes, and tackle the four dimensions of meaningful connectivity in phases where necessary. Box 23.1 describes how policy makers in Indonesia are using 4G signal data to measure subnational disparities in meaningful connectivity and help target mobile infrastructure investments.

Connectivity is only meaningful if devices and data are affordable

No matter how fast the connection, how many data are available, how smart the device or how relevant the digital content, people do not have meaningful connectivity if they cannot afford mobile services. Almost 2.5 billion people live in countries where the most affordable smartphone costs more than a quarter of the average monthly income (A4AI and World Wide Web Foundation, 2020[4]).

Countries' progress towards providing affordable broadband is tracked in two ways: The Affordability rankings and the Affordability Drivers Index[5] (ADI). Progress in infrastructure and access, as well as improvements in the policy environment that enables them, are critical criteria that improve a country's ADI score. A high ADI score corresponds to reduced broadband costs for consumers.

BOX 23.1. INDONESIA: MEASURING MEANINGFUL CONNECTIVITY TO TARGET AND CLOSE DIGITAL DIVIDES

Spread across 17 000 islands, Indonesia has an extensive, country-wide 4G network, but with disparities in coverage and availability as measured by consumer time on a 4G signal.[3] Using Opensignal[4] data to measure disparities, policy makers test the amount of time smartphone users have a 4G signal on their phone to determine the extent to which people in various parts of Indonesia experience high-quality mobile connectivity. A minimum threshold of a 4G connection supports applications such as the streaming of educational content, gaming or business transactions. Using information on connectivity gaps, policy makers working to develop the country's digital economy can better focus their mobile infrastructure efforts to ensure reliable, high-quality connectivity is available to all. Investments such as the Palapa Ring project aim to connect seven of the archipelago's groupings through a public-private partnership to address mobile geographical divides in availability and speed.

[3] Broadband speed data can be used as a proxy for access to a fast connection in lieu of direct surveys.
[4] OpenSignal is a globally recognised organisation that measures mobile connectivity speeds and customer experiences on broadband speed. See: https://www.opensignal.com.

Source: A4AI (2020[3]), *4G for Meaningful Connectivity: Indonesia*, https://1e8q3q16vyc81g8l3h3md6q5f5e-wpengine.netdna-ssl.com/wp-content/uploads/2021/09/WF_A4AI_MC-in-Indo_Screen_AW-1.pdf.

In 2020, broadband prices in 57 of the 100 countries where prices were measured failed to meet the so-called "1 for 2" affordability threshold; that is, 1 gigabyte (GB) of mobile broadband data available at a cost equal to or less than 2% of per capita gross national income (GNI)[6] (A4AI, 2020[3]). This means that more than 1 billion people live in countries where 1 GB of data is simply too expensive (A4AI, 2020[5]). While improving, progress towards attaining universal affordability has been generally slow. For example, in 52 of the low- and middle-income countries that A4AI analyses each year, 1 GB of mobile data has become more affordable on average, with costs falling from 7% to 2.7% of GNI per capita over the period 2015-20.[7] Least developed countries enjoyed a 15% improvement in affordability from 2018 to 2020, with costs at 7.2% of GNI per capita in 2020. However, huge disparities persist between countries (Figure 23.2). The least affordable country for mobile broadband is the Central African Republic, where 1 GB of data is priced at 24.4% of GNI per capita.

More than 1 billion people live in countries where 1 GB of data is simply too expensive

Government regulation and incentives can reduce broadband costs and inequities

Given income and other disparities within countries, it is important for governments to track subnational broadband and device affordability. Data costs in South Africa, 1.4% of GNI per capita (A4AI, 2020[6]), meet the national affordability target, for instance. Yet, 60% of the population cannot afford 1 GB of data.[8] To address this, South Africa's Competition Commission launched a market inquiry into the factors driving high data services prices[9] and issued a ruling in 2020 to force operators to drop prices by between 30% and 50%. The country's two leading mobile operators, MTN and Vodacom, complied with lower prices, with Vodacom

Figure 23.2. Ten least affordable countries for 1 GB of mobile data

GNI per capita, 2020

COUNTRY	MONTHLY COST OF 1GB OF DATA IN USD	MONTHLY AFFORDABILITY OF 1GB OF DATA (AS A % OF GNI PER CAPITA)
1 Central African Republic	USD 10.37	24.44%
2 D.R Congo	USD 8.00	20.67%
3 Togo	USD 8.64	15.10%
4 Chad	USD 8.64	14.66%
5 Malawi	USD 4.69	14.01%
6 Burundi	USD 2.92	13.83%
7 Madagascar	USD 5.51	13.78%
8 Solomon Islands	USD 19.95	11.97%
9 Sierra Leone	USD 3.87	10.73%
10 Papua New Guinea	USD 24.26	10.69%

Source: A4AI (2020[6]), *Mobile Broadband Pricing: – Data for 2020* (database), https://a4ai.org/extra/baskets/A4AI/2020/mobile_broadband_pricing_gni#.

cutting the effective price of some of its lower cost bundles by half (Buthelezi, 2020[7]).

In some countries, income inequality means some people cannot access broadband services because they cannot afford a mobile device, for example a smartphone. In 2021, the country with the most affordable smartphones was the United Kingdom, where the lowest priced smartphone cost the equivalent of 0.70% GNI per capita (Figure 23.3). By contrast, Figure 23.4 shows that smartphones in Azerbaijan are unaffordable, with the lowest priced smartphone costing consumers 333.37% of GNI per capita.[10]

Subsidies and tax breaks, including removing luxury taxes on digital devices, can increase device uptake and may incentivise manufacturers to produce low-cost devices for consumers (A4AI and World Wide Web Foundation, 2020[4]). For example, in Costa Rica, the National Telecommunications Fund, FONATEL, offers qualifying families subsidies of up to 100% of the cost of a laptop.[11] In Kenya, removing the 16% value added tax (VAT) on handsets in 2009 resulted in a 200% increase in handset purchases within two years of the tax exemption. Similarly, Colombia saw a rise in mobile adoption in 2017, one year after exempting mobile devices from VAT (up to USD 245) and removing VAT on personal desktop and laptop computers valued up to USD 550 (A4AI, 2020[9]).

The right planning and policies for broadband can build meaningful connectivity

The ITU estimates that a total investment of USD 428 billion is required globally for broadband infrastructure, digital skills, local

Figure 23.3. The five most affordable countries for smartphones

GNI per capita, 2021

	COUNTRY	AFFORDABILITY OF A SMARTPHONE (AS A % OF GNI PER CAPITA)	COST OF A SMARTPHONE IN USD
1	United Kingdom	0.70%	USD 26
2	Turks & Caicos Is.	0.74%	USD 19
3	Liechtenstein	0.78%	USD 143
4	Bermuda	0.90%	USD 89
5	Ireland	1.07%	USD 60

Source: A4AI (2021[8]), *Device Pricing 2021* (database), https://a4ai.org/research/device-pricing-2021/.

Figure 23.4. The five least affordable countries for smartphones

GNI per cpaita, 2021

	COUNTRY	AFFORDABILITY OF A SMARTPHONE (AS A % OF GNI PER CAPITA)	COST OF A SMARTPHONE IN USD
1	Azerbaijan	333.37%	USD 1 158
2	Tajikistan	290.02%	USD 221
3	Comoros	137.20%	USD 170
4	Lebanon	123.79%	USD 1 157
5	Liberia	110.94%	USD 49

Source: A4AI (2021[8]), *Device Pricing 2021* (database), https://a4ai.org/research/device-pricing-2021/.

content development and policy support to ensure universal access of 4G equivalent quality by 2030 (ITU, 2020[10]). The policy environment and planning around these investments will have a significant impact on the quality, accessibility and affordability of broadband for users. Thanks to sound broadband planning, a number of countries have made remarkable improvements in data affordability over the last six years, among them Colombia, Costa Rica, Malaysia and Rwanda. In Rwanda, for instance, the price of 1 GB of data has fallen from 20.2% to 3.39% of average monthly income since 2015 (A4AI, 2020[5]) as a result of its Vision 2020 plan and support from development co-operation partners.

Moreover, the policy environment and planning for broadband can shape how broadband markets and the industry react. Good broadband policies and practices set out a clear vision and specific and inclusive objectives and targets. The A4AI good practices database[12] and Rural Broadband Policy Framework[13] offer guidance for policy makers. Its review of good practices across countries suggests that broadband

planning should address three important areas:

1. broadband infrastructure provisions including updating licensing frameworks towards technology neutrality; strengthening spectrum management; and removing or at least reducing tariffs and import duties on devices and exploring financing schemes to help expand device ownership
2. inclusion targets to improve the availability of high-quality, affordable broadband services across geographies and particularly in underserved rural areas (Nakagaki and Sarpong, 2021[11]) and specific strategies to improve gender and social inclusion
3. demand-side objectives to increase the uptake of digital devices and services, with a focus on improving digital skills and supporting local and relevant content creation.

Stakeholder roles in broadband planning must be well defined and targets backed by adequate resources and funding. Plans

Subsidies and tax breaks, including removing luxury taxes on digital devices, can increase device uptake and may incentivise manufacturers to produce low-cost devices for consumers.

that ensure healthy, competitive broadband markets, for example, could save users in low- and middle-income countries up to USD 3.42 per GB (A4AI, 2019[12]). Open inclusive and consultative policy making is also encouraged as a way to strengthen broadband frameworks. In the Philippines for example, the country's 2019 ADI score was increased by enhanced participatory processes in regulations (A4AI, 2019[12]).

REFERENCES

A4AI (2021), *Device Pricing 2021 (database)*, Alliance for Affordable Internet, https://a4ai.org/research/device-pricing-2021. [8]

A4AI (2020), *4G for Meaningful Connectivity: Indonesia*, Alliance for Affordable Internet, https://1e8q3q16vyc81g8l3h3md6q5f5e-wpengine.netdna-ssl.com/wp-content/uploads/2021/09/WF_A4AI_MC-in-Indo_Screen_AW-1.pdf. [3]

A4AI (2020), *A4AI Good Practices Database*, Alliance for Affordable Internet, https://a4ai.org/good-practices-database (accessed on 13 October 2021). [9]

A4AI (2020), *Meaningful Connectivity: A New Standard to Raise the Bar for Internet*, Alliance for Affordable Internet, https://1e8q3q16vyc81g8l3h3md6q5f5e-wpengine.netdna-ssl.com/wp-content/uploads/2020/05/Meaningful-Connectivity.pdf. [1]

A4AI (2020), *Mobile Broadband Pricing: Data for 2020 (database)*, Alliance for Affordable Internet, https://a4ai.org/extra/baskets/A4AI/2020/mobile_broadband_pricing_gni#. [6]

A4AI (2020), *The 2020 Affordability Report*, Alliance for Affordable Internet, https://a4ai.org/affordability-report/report/2020. [5]

A4AI (2019), *The 2019 Affordability Report*, Alliance for Affordable Internet, https://1e8q3q16vyc81g8l3h3md6q5f5e-wpengine.netdna-ssl.com/wp-content/uploads/2019/10/A4AI_2019_AR_Screen_AW.pdf. [12]

A4AI and World Wide Web Foundation (2020), *From Luxury to Lifeline: Reducing the Cost of Mobile Devices to Reach Universal Internet Access*, Web Foundation, https://a4ai.org/research/from-luxury-to-lifeline-reducing-the-cost-of-mobile-devices-to-reach-universal-internet-access (accessed on 13 October 2021). [4]

Buthelezi, L. (2020), "Vodacom slashes its data prices further in agreement with the Competition Commission", news24, https://www.news24.com/fin24/companies/ict/vodacom-slashes-its-data-prices-further-in-agreement-with-the-competition-commission-20210407. [7]

ITU (2020), *Connecting Humanity: Assessing Investment Needs of Connecting Humanity to the Internet by 2030*, International Telecommunication Union, Geneva, https://digitallibrary.un.org/record/3895170?ln=en (accessed on 13 October 2021). [10]

Nakagaki, M. and E. Sarpong (2021), "Overcoming the rural digital divide and COVID-19 challenges to achieve the universal access goal", *Internet Sectoral Overview*, Vol. 1/13, https://cetic.br/media/docs/publicacoes/6/20210608124958/internet_sectoral_overview-year_13-n1-connecting_the_unconnected.pdf. [11]

World Wide Web Foundation (2020), *Women's Rights Online: Closing the Digital Gender Gap for a More Equal World*, Web Foundation, http://webfoundation.org/docs/2020/10/Womens-Rights-Online-Report-1.pdf. [2]

NOTES

1. The International Telecommunication Union defines universal Internet access as connecting 90% of the global population aged 10 years and older. See: https://www.itu.int/en/myitu/Publications/2020/08/31/08/38/Connecting-Humanity.
2. Meaningful connectivity is when a person can use the Internet every day using an appropriate device with enough data and a fast connection. For more detail, see: https://a4ai.org/meaningful-connectivity.
5. A4AI developed the ADI as a tool to assess how well a country's policy, regulatory and overall supply-side environment is working to lower industry costs and ultimately create more affordable broadband.
6. The Broadband Commission calculates this "1 for 2" target using World Bank data for GNI per capita and the monthly price charged by a country's largest operator for the cost of 1 GB of mobile broadband.
7. See: https://a4ai.org/mobile-data-costs-fall-but-as-demand-for-internet-services-surges-progress-remains-too-slow.

8. Based on internal A4AI modelling.
9. See: https://www.compcom.co.za/newsletter/data-market-inquiry.
10. These figures are based on an A4AI research. Affordability was determined by calculating the price relative to GNI per capita (https://a4ai.org/research/device-pricing-2021).
11. Through the Connected Households (Hogares Connectadas) programme, FONATEL also subsidises up to 80% of the cost of an Internet connection for families that qualify based on their household income. See: https://a4ai.org/studies/closing-the-digital-divide-with-universal-service-leadership.
12. The database and case studies are available at: https://a4ai.org/good-practices-database.
13. The Rural Broadband Policy Framework presents eight elements that policy makers should consider making affordable, high-speed Internet accessible more quickly in rural areas. See: https://a4ai.org/rural-broadband-policy-framework.

CASE STUDY: CONNECTING EVERY SCHOOL IN THE WORLD TO THE INTERNET

24

Simon Wells, UNICEF
Samantha O'Riordan, ITU

ABSTRACT

Connecting schools can benefit whole communities by aggregating demand, consolidating service delivery and controlling costs. But a huge gap exists between developed countries, where almost all schools are connected, and developing countries which have much lower school connection rates. This case study draws on the evidence generated through Giga, an initiative that works to map unconnected schools and connect them to the Internet. It highlights that sustainable connectivity for schools requires government commitment to enabling strategies, and innovative approaches to mobilise funding among governments and development co-operation actors.

Key messages

- Connecting schools to the internet benefits students and educators, and can spread connectivity locally in a cost-effective way, giving access to economic opportunities and digital public services.
- Development co-operation can support connecting the 2.8 million schools still without Internet access by mobilising initial financing to catalyse return-seeking investment as markets mature.

Internet connectivity drives access to information, opportunity, choice, economic development and community well-being. Equitable access to connectivity underlies the UN Sustainable Development Goals, particularly regarding gender and income equity, quality education, economic growth and jobs, and sustainable cities and communities. A recent report by the Economist Intelligence Unit (2021[1]) found that a 10% increase in school connectivity could contribute 1.1% to GDP per capita and 0.6% to effective years of schooling.

In schools, affordable digital infrastructure and access to devices enables new learning opportunities that complement and enrich in-person education. Hybrid, blended and online options can democratize access and make high-quality education accessible for all (Broadband Commission for Sustainable Development, 2020[2]). These new types of learning also give students greater flexibility regarding when, where and how to engage with learning, and provide valuable information to teachers and parents to better support face-to-face instruction.

But while over 97% of secondary schools have Internet access in North America and Western Europe, that figure is around 35% in least-developed countries (LDCs) (UNESCO, n.d.[3]). This creates a digital divide between those who are online and those who are not, a gap that widened during the COVID-19 pandemic.

Connecting schools and empowering whole communities

In 2019, the United Nations Children's Fund (UNICEF) and International Telecommunication Union (ITU) launched Giga, an initiative to connect every school in the world to the Internet. Giga leverages UNICEF's global reach and expertise in addressing issues that face children and young people, and ITU's experience and track record in developing telecommunication regulation, policy and best practices. Giga is also part of Reimagine Education, a broader global initiative which aims to connect every child and young person – some 3.5 billion – to world-class digital learning solutions by 2030. Focusing on school connectivity defines Giga's objectives, needs, and partners in ministries of information technology and education, among others.

Over 97% of secondary schools have Internet access in North America and Western Europe, that figure is around 35% in least-developed countries

Connectivity turns schools into anchor points for their surrounding communities. The equipment placed in schools provides a resource for teachers and students, and for surrounding communities outside of school hours. It facilitates access to digital public services, enables local entrepreneurship, provides access to online banking, improves information channels for emergencies or pandemics, and opens doors for employment through digital platforms and the gig economy. Meanwhile, the school-based approach offers a clear basis for calculating costs. Once a school receives connectivity, the relative cost to connect other facilities and homes nearby is nominal. This creates

opportunities for service providers to generate revenue from paying users, making connectivity more sustainable.

Giga maps school connectivity in 41 countries (and growing). It uses real-time, actual-use data, enables customised and innovative financing models, such as capitalising on bundled or off-hours capacity, and supports governments in procuring school connectivity. Because open data attracts both the private sector and government, the mapping (UNICEF, n.d.[4]) offers location and connectivity data licensed under Creative Commons (CC BY 4.0). Using Giga, governments can link payment of contracts to actual data use by schools, creating transparency and accounting accuracy not usually available in infrastructure work. This ensures competitive markets, reduces the advantages held by monopolies and existing players, and brings down prices for end users.

Several governments have overcome bottlenecks and made substantial cost-savings thanks to the initiative. Seeing all schools and their connectivity on a map allowed the Government of Kyrgyzstan renegotiate contracts to double speeds (from 2Mbps to 4Mbps) and reduce prices from USD 50 per month to USD 28.5 per month, saving 40% (USD 200 000 per year) of its education connectivity budget (Giga, 2020[5]). In Colombia, artificial intelligence techniques automatically mapped schools from satellite imagery to identify and locate 7 000 schools that were not part of official datasets (Giga, 2021[6]).

Criteria and creative financing for the road ahead

Giga has mapped 1 million schools and connected over 3 000 of them across four continents. The initiative also prototypes test solutions around the world, including in refugee camps and remote, mountainous regions.

But an estimated 2.8 million schools have yet to be connected. In order to join the initiative, national governments must meet certain criteria and commitments to join the initiative:

- Political support at the highest level and co-ordination across sectors between relevant agencies and ministries
- National broadband and digital education strategies, or policies that encourage the development of broadband infrastructure, school connectivity and digital skills for all
- Regulation conducive to the development of high-quality, technologically neutral networks through competition in ICT markets, market access for national and foreign players, and tax incentives
- Willingness to collect, make available and publicly share data on school location and classes (number of students, etc.), infrastructure, projects and network coverage
- Openness to varied investment and financial models and public-private partnerships to expand connectivity, in particular through Universal Service Funds or other dedicated funding mechanisms
- Commitment to equitable, universal connectivity, with emphasis on marginalised groups, including people in underserved places, women and girls, individuals with disabilities and others

An estimated USD 428 billion is needed to connect the still unconnected world to the internet. Much of that amount would offer returns for investors, but catalysing the initial investment is a challenge. To do so, Giga proposes to issue a bond for around 1% of the total amount (USD 5 billion), backed by highly-rated donor governments and private foundations with multi-year grant commitments of USD 300-500 million each, payable over five to ten years.

The bond would be one layer – the "glue" – of a blended finance approach for school connectivity. Other products and instruments include multilateral connectivity bonds, infrastructure securities and private institutional direct investment. Several of these instruments are currently being designed, prototyped and implemented in Giga partner countries.

REFERENCES

Broadband Commission for Sustainable Development (2020), *Connecting Learning Spaces: Possibilities for hybrid learning*, International Telecommunications Union, Geneva, https://broadbandcommission.org/publication/connecting-learning-spaces/? (accessed on 16 November 2021). [2]

Giga (2021), *Giga and Mapbox come together to map schools across the globe*, https://gigaconnect.org/giga-and-mapbox-map-schools/. [6]

Giga (2020), *Kyrgyzstan website*, https://gigaconnect.org/kyrgyzstan/ (accessed on 16 November 2021). [5]

Giga (2019), *Rwanda website*, https://gigaconnect.org/rwanda/ (accessed on 16 November 2021). [7]

The Economist Intelligence Unit (2021), *Connecting learners: Narrowing the educational divide*, The Economist Group, London, https://connectinglearners.economist.com/connecting-learners/ (accessed on 16 November 2021). [1]

UNESCO (n.d.), *UIS Statistics database*, http://data.uis.unesco.org/#. (accessed on 16 November 2021). [3]

UNICEF (n.d.), *Project Connect website*, https://projectconnect.unicef.org/map. [4]

DIGITAL ECOSYSTEMS COMPONENTS EVERY COUNTRY NEEDS

25

Kate Wilson, Digital Impact Alliance

ABSTRACT

National digital transformations are complex, multifaceted and often overwhelming to the people and institutions undertaking them. Experiences from pioneering countries such as Estonia, India, Korea and Singapore can inform local and global digital transitions. Approaching the challenge by considering its interlocking component parts can also help development actors to support effective and inclusive processes. Successful transformations depend on the "5 Ps": political will to enable and sustain change; the right policies to help build trust in digital systems; pricing and procurement measures to help ensure countries have access to the best-suited digital technology; the right products to build effective systems; and people with the right skills are essential not only in countries undergoing digital transitions, but in development organisations supporting them.

Key messages

- Digital transformation revolves around five factors that have proved central to successful processes: political will, policy, pricing and procurement, product, and people.
- Given the complexity and costs of digital transformation, and the need for sustained support to see it through, political will at national and global levels is crucial to drive change.
- Governments need new financing and procurement mechanisms to ensure better overall pricing for digital technology building blocks.
- Development partners must step-up co-ordination, especially on financing (given the scale required), products (to avoid duplication and waste), policy support (to minimise risks and enable opportunities) and the types of capacity built (to help ensure a level playing field).

Undertaking digital transformation is a complex exercise that requires aligning demand with supply in a holistic, well-co-ordinated way. To better understand the choices to be made, national leaders are increasingly looking to countries such as Estonia, India and Singapore that are far along in this journey. Global financiers study these same models to determine which investments in digital transformation should be prioritised and how to invest in an efficient, responsible and cost-effective way (DIAL, 2020[1]). But applying and executing these models and "recipes" for success elsewhere remains very challenging, particularly in developing countries.

To support these transitions, development actors must develop a better understanding of the factors that these models have in common as well as the needs specific to any country's unique context. Considering each of these factors individually and in relation to each other can help development actors to break down the challenge of digital transformation into its component parts, which in turn will allow for better development co-operation overall in support of individual countries' needs and priorities.

Designing a national digital transformation that aligns its component parts

Digital transformations are multifaceted. To help countries, development actors and other stakeholders should meet needs and priorities that are right for each specific context. Patterns across some of the countries that have led the way in digital transformation, and measurements of national digital transformations[1] themselves, suggest that at least five factors are critical, though not all may be initially present. The Digital Impact Alliance (DIAL) has developed a simple 5 Ps framework (Box 25.1). Considering these interrelated areas – each important to building the right digital system – can help actors identify and co-ordinate around manageable problem sets.

First is political will from national leadership to achieve a digital economy and (when relevant) an international development community to support such a digital transformation. The second factor is citizen-responsive policies that ensure that the system being built is designed with citizen protection in mind. The third and fourth – supply and demand – factors are commercially attractive pricing and procurement models and the availability of scalable products that can seamlessly connect. Finally, a fifth factor is the depth of digital literacy and capacity among all people, including in development agencies, to implement the policies, manage both the procurements and products, and ultimately build sustainable solutions that can be improved over time. Figure 25.1 elaborates the relationships among these factors, illustrating the critical role played by political will in driving change across the entire process.

BOX 25.1. THE 5 PS: A FRAMEWORK TO DESIGN, IMPLEMENT AND ASSESS DIGITAL TRANSFORMATION

In analysis by the Digital Impact Alliance and others of digital transformations undertaken by countries that have led the way in this multifaceted process, five main success factors emerge and are consistently included in available measurements of digital transformation globally (DIAL, 2018[2]; DIAL, 2021[3]). The 5 Ps framework can help development agencies, national governments, the private sector and other civil society actors better understand the challenge in each context and where they might fit in, and in this way find more easily manageable and co-ordinated ways forward.

Political will: Politics can influence a country's ability to undertake and sustain digital transformation, and the extent to which political actors prioritise the process will shape the conception, design, use and purpose of a system.

Policy: Political will is closely related to policy at national and global levels. The right policy helps build trust in digital systems by regulating the use of technology, protecting citizen data, minimising risks and enabling opportunities.

Pricing and procurement: Innovative financing and procurement approaches can derisk markets to incentivise new entrants to supply digital technology products and accelerate digital transformation.

Product: The right products that are scalable, available and able to seamlessly connect are the technology building blocks of successful systems.

People: Both countries and the development partners supporting their digital transformations need people with the right skills in areas that enable digital services.

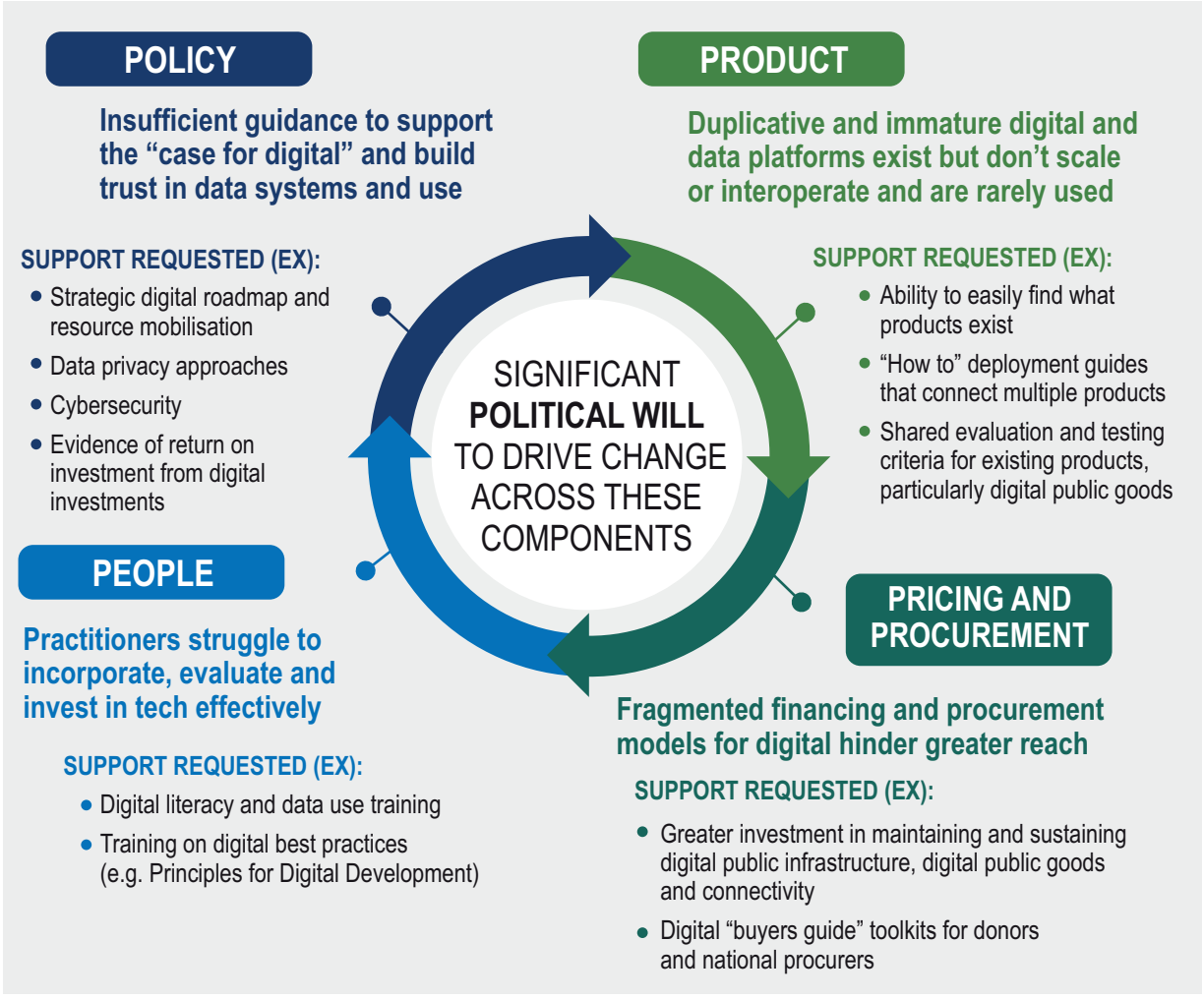
Political will that prioritises and enables holistic strategies is essential

For more than a decade, national governments and development actors have been investing in projects across the developing world[2] that use digital technology (e.g. software, big data) to achieve improved societal outcomes. OECD countries and private sector foundations also have invested in digital policy and capacity programmes and in building scalable digital products, most notably for delivering health services and promoting financial inclusion. Yet, as political, development and civil society actors acknowledge, digital technology has not fulfilled its potential to enhance the effectiveness of development programmes.[3]

At the national level, however, there is growing political will to undertake digital transformations. In the few countries where digital tools have been comprehensively incorporated (e.g. Estonia, India, Korea), there was marked and consistent political will across the government to embed the use of digital technology and data into their approach. In the last two years, and particularly due to the COVID-19 pandemic, politicians have seen that digitally enabled governments are able to administer social services remotely, deliver benefits and allowances digitally, and maintain key financial and other transactions – even in the depth of a national crisis – and do so faster and at a lower cost than governments lacking the digital capacity. Low- and middle-income country leaders are now embracing digitalisation (African Union, 2019[4]) and requesting increased support from development actors.[4]

Given the many factors that make up digital transformation, political will for inclusive, people-centred approaches at national and global levels is crucial. Without it, solutions risk harming rather than helping well-being, though, for instance, personal data leaks, lack of interoperability, redundant systems and abuse of personal data in government

Figure 25.1. Challenges and factors facing digital transformation



Source: Author's illustration.

hands. As the world addresses the multiple challenges of climate change, conflict and fragility, and the impact of COVID-19, digital and data systems can be leveraged to maximise scarce resources and bolster preparedness for future crises, but only if the harmful pitfalls can be avoided. This is the role of policy.

Policy should be transparent, inspire trust and minimise potential harms of technology

Responsible, inclusive and effective national digital transformation requires a whole-of-society approach to developing the enabling policy environment (DIAL, 2020[1]). Such approaches incorporate the values of inclusion, obliging governments to create meaningful mechanisms for societal actors to participate and engage in priority setting, stakeholder selection, implementation strategy and holding their governments accountable. Building civic ownership of digital transformation, in turn, builds citizens' trust in their government's use of digital tools and data.

An example of this approach is Estonia (see Chapter 12), which has established mutual transparency as a hallmark of its digital system, with citizen input and consent as key design principles.[5] National digital policy frameworks cover issues including data protection and privacy, cybercrime and

cybersecurity, intellectual property rights, payments and trade regulations, digital social protection, and emerging tech and innovation regulations. These policies acknowledge and help guard against more insidious economic and social impacts of digital service provision such as the use of artificial intelligence to target or limit financial assistance or healthcare offerings to citizens. Estonia's inclusive approach offers a useful model for other countries to consider when designing national digital transformations.

Innovative pricing and procurement can overcome barriers to acquiring technology

Low- and middle-income countries often lack access to the full range of digital products such as software, core mobile services and data. Frequently, these countries cannot afford the high licensing fees charged by large-scale systems providers, while lack of financing and opaque regulatory frameworks hamper the ability of domestic tech firms to develop large-scale digital technology, including proprietary software. At the same time, the small market size, dearth of local implementers to deploy the technology, and relatively smaller national technology budgets often deter international firms from supplying these countries. This uncertain demand structure and lack of consistent financing create a pricing and financing challenge for many technology products. To provide more affordable and appropriate products for low- and middle-income countries, international development actors have stepped in to finance many of the better known and needed digital public infrastructure (DPI) products in digital identity (ID) and payments – among them Mojaloop and the Modular Open Source Identity Platform (MOSIP) – as well as digital public goods (DPGs) products designed for sectors such as health (e.g. District Health Information Software 2, or DHIS2), humanitarian interventions (e.g. Primero) and agriculture (e.g. FarmOS).

> "[eTrade] provides avenues for countries to take concrete measures to address constraints so as to bring their enterprises closer to the rapidly expanding global e-commerce market".
>
> **Ratnakar Adhikari, Executive Director of the Enhanced Integrated Framework Executive Secretariat at the World Trade Organization.**

Box 25.2 provides preliminary estimates of the cost of setting up digital public infrastructure in low- and middle-income countries.

Designing holistic pricing and financing options

While the market structure is different, some of the innovative financing mechanisms used to address market failures for vaccines may help solve similar challenges in accessing affordable digital products in low- and middle-income countries. For instance, research by DIAL, Tableau Foundation and PATH found that a pooled procurement mechanism, leveraged across several markets, provided an assured market at a guaranteed price to vaccine manufacturers (DIAL, 2018[2]). It also drove consolidation and standardisation around a fewer number of products, making it easier for governments to validate the products through testing and observing their usefulness, thus leading to increased trust in the vaccine supply.

A similar pricing and procurement dynamic exists in low- and middle-income countries for digital tools that can be provided digital public goods and digital public infrastructure. As shown in Figure 25.2, today's fragmented, sector-based approach by development co-

BOX 25.2. INTERNATIONAL FINANCING IS NEEDED TO HELP CLOSE THE FUNDING GAP FOR DIGITAL PUBLIC INFRASTRUCTURE

BY SEEK DEVELOPMENT

Preliminary estimates show that total funding needed to implement DPI platforms for services to citizens across low- and middle-income countries is in the range of at least USD 30 billion. Of this, an estimated USD 20 billion is required to implement and operate digital health programmes; USD 6 billion to achieve universal ID coverage; and USD 2 billion to implement real-time, interoperable retail payment systems. Most of this financing is associated with country implementation of DPIs and will thus likely need to be funded domestically. However, international financing will play a role in closing the gap.

To support countries in implementing DPIs, development co-operation providers active in the digital space could provide catalytic funding to low- and middle-income countries in three main areas:

- **Strengthen the global digital public goods ecosystem.** Provide long-term funding for the development and evolution of a portfolio of mature, interoperable, open-source digital public goods (DPGs) that can meet the needs of DPI implementation. Estimated cost: USD 20-40 million
- **Scale up in-country support.** Provide technical assistance (TA) and capacity building to support the development of national digital infrastructure strategies and the design and deployment of individual DPIs. Estimated cost: USD 55-110 million
- **Increase access to implementation financing.** Increase financing to offset the costs of DPI and related workforce development in a few countries, and help build a case globally for the importance of DPI systems. Estimated cost: USD 75-120 million.

Note: Estimates presented in this box were calculated by authors as follows. USD 20 billion required to implement and operate digital health programmes was estimated based on Digital Square's "How much does sustainability cost?" model. USD 6 billion to achieve universal ID coverage is calculated by subtracting the USD 3 billion that has already been committed by multilateral development banks from the USD 9 billion that the World Bank's ID4D and International Development Association estimate is required to achieve universal ID coverage; USD 2 billion to implement real-time, interoperable retail payment systems calculated based on input from Mojaloop Foundation and Bill and Melinda Gates Foundation Financial Services for the Poor team.

operation providers increases transaction costs and spreads too little money over too many digital efforts. Compounding these issues is the current lack of shared evaluation criteria across development actors to certify which products work and could be used with few changes in another country. This dynamic results in an uneven supply of products that do not have sufficient capital to scale and increases the already high risks that digital public infrastructure and DPG implementers face.

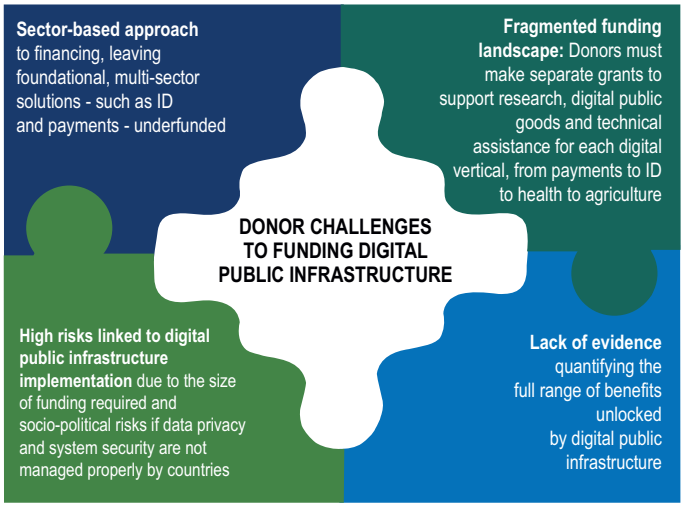
Development actors have launched initiatives that consider both the pricing and financing challenge such as Digital Square and Giga (see Chapter 24) and the sustainable product challenge. But these address the issue only at the sectoral (e.g. education, health) and functional (e.g. connectivity, application) level. To date, there is no consensus that a holistic, cross-sectoral pooled financing mechanism that combines private and public sector financing is viable.

Supporting effective procurement of digital tools

Pricing and financing of digital public infrastructure and DPGs are often debated internationally. Equally important, in the view of partner country governments, is effective procurement of new digital tools, in part due to the cross-cutting nature of digital technologies and data and the challenges of aligning investments across ministries and development co-operation

Figure 25.2. International financing for digital public infrastructure is lagging

International financing has not addressed low- and middle-income countries' financing needs due to several systemic challenges



The current digital public infrastructure funding landscape hampers donor investment in – and low- and middle-income country adoption of – digital infrastructure by:

1) Increasing the transaction costs of donors seeking to invest in digital development.
2) Forcing donors and advocacy partners to spread their resource mobilisation efforts across competing projects.
3) Impeding co-ordination of resource allocation across geographies and solutions.
4) Undermining low-and middle-income country confidence in the sustainability of open-source digital public goods.

Sources: Stakeholder interviews by SEEK team. DIAL series on financing digital technologies, Dhillon and Kastner (2019[5]), "Financing digital technologies", https://digitalimpactalliance.org/financing-digital-technologies/. Digital Square donor analytics research.

partners.[6] An additional procurement issue is that neither the development life cycle of digital solutions, nor agile development approaches, nor ongoing maintenance and support costs mesh well with traditional government financing cycles. Procurement processes and standards may not be suited to the acquisition of digital technology or harmonised across government agencies. In short, national procurement expertise and current processes may be misaligned with national digital transformation ambitions.

However, public procurement can be used to foster digital transformation objectives such as promoting small and medium-sized enterprises and greater tech adoption. In nearly every country, the government is the single biggest buyer and the equivalent of trillions of dollars are exchanged in public contracts each year (The Economist Intelligence Unit, 2020[6]), including USD 11 trillion in 2018 alone (Bosio and Djankov, 2020[7]). Countries can leverage this large spend volume to drive the market towards digital transformation objectives. Public procurement should be considered a policy tool for national digital transformation and included as part of national digital transformation strategy setting (DIAL, 2021[3]).

National procurement expertise and current processes may be misaligned with national digital transformation ambitions.

In sum, new financing and procurement mechanisms are needed to ensure better overall pricing for digital technology building blocks. Tactics include pooling procurement needs from low- and middle-income countries around reusable technology building blocks; creating a pooled financing fund for digital products; and investing in evidence that illustrates how these market-shaping mechanisms can drive down pricing and increase the supply of proven digital solutions. The right policies and right procurement and financing mechanisms to drive better pricing are the demand side of digital transformations. On the supply

side are the technology building blocks, or products that make up digital systems.

The right products are key to building inclusive, safe digital infrastructure

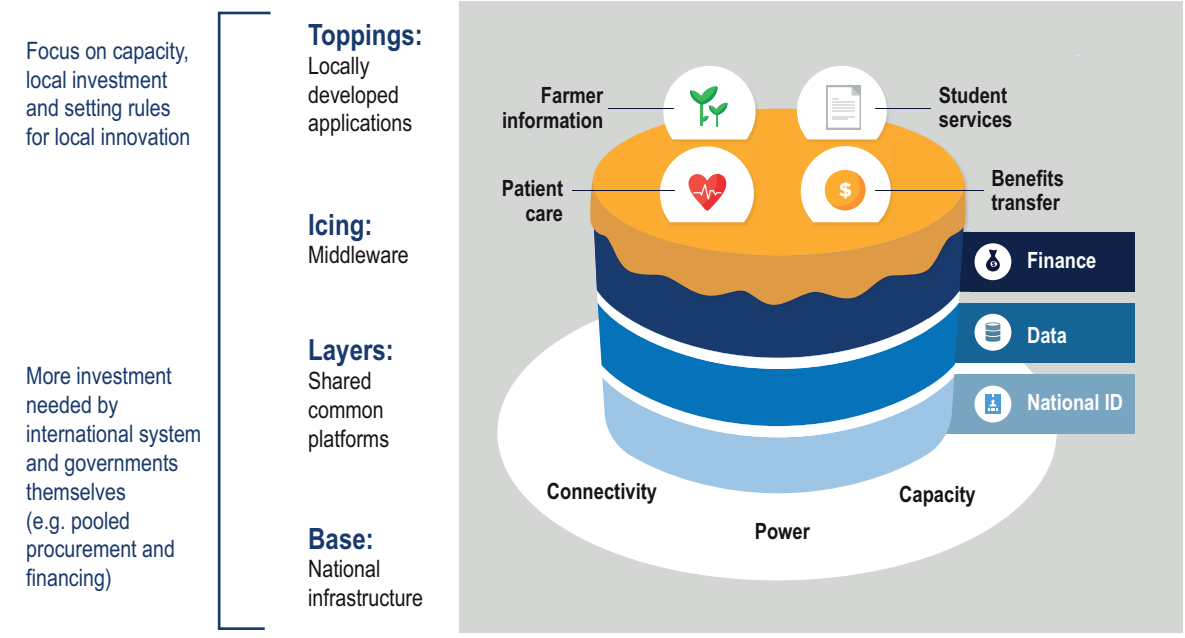
Digital platform economics[7] suggest that while each country's requirements may be unique, there are common technology building blocks or products that every country needs to realise a full national digital stack; that is, all the technology layers that together create the system that allows a service to be delivered digitally.

In general, these building blocks include at minimum a national digital identifier layer, a digital payments layer and a data protection layer. When these elements are interoperable and built to be extensible with an application programming interface (API) layer to connect to new apps and services, a country can save time and money, and stimulate local innovators to build locally designed citizen services. While this may appear to be a one-solution approach, it is helpful to imagine a digital stack as a layer cake, with the technology building blocks as the component ingredients (Figure 25.2). Just as most cakes share some common ingredients, such as eggs, flour, a rising agent and cooking oil, to name a few, recipes, flavours and myriad other details vary, and chefs build on what others have tried. Similarly, digital architects of national digital transformations consider the "recipes" that other countries have tried and the ingredients – the products – used.

For many countries, the foundational infrastructure layer starts with connectivity, electricity and engineering skills. Many countries, among them Estonia and India, added national digital ID, payments and data layers that are connected by common standards and middleware. On top of these, countries have then built an API[8] infrastructure that enables other applications (e.g. for digital

Figure 25.3. A view of the national stack: What is the recipe?

When the public and private sectors and civil society work together to develop inclusive and safe infrastructure platforms with key building blocks, new applications and services can be built by local solutions providers to meet each country's unique needs and serve its citizens.



Source: Wilson (2021[8]), *Is there a digital recipe for country resilience?*, https://digitalimpactalliance.org/is-there-a-digital-recipe-for-country-resilience.

passport renewal, school registration) to extend the national core infrastructure that innovators in that country can design and develop. This ecosystem promotes a digital economy and allows new service applications tailored to local needs (e.g. for virtual learning and utility payments) to be created more quickly. These applications are the most visible – and to society, the most rewarding – part of the stack. But they could not exist without the base and foundational layers.

Ensuring equal access to digital solutions for all countries

The United Nations Secretary-General's Roadmap for Digital Cooperation underscores the importance of DPGs for achieving the Sustainable Development Goals, defining them as "open-source software, open data, open artificial intelligence models, open standards and open content that adhere to privacy and other applicable international and domestic laws, standards and best practices and do no harm" (UN, 2021[9]). Countries embarking on digital transformations must decide the right first step to develop DPGs and their digital and data public infrastructure. Several recent international initiatives offer guidance, among them the SDG Digital Investment Framework developed by the International Telecommunication Union and DIAL,[9] the Digital Public Goods Alliance open standard,[10] and tools such as the DIAL Catalog of Digital Solutions.[11] For digital public goods to be a realistic choice for governments, though, available products must have long-term, sustainable revenue sources, as well as rigorous certification processes and sustained investment over decades by development co-operation providers.

Some investment is going to digital building blocks such as financial payments (Mojaloop), digital identity (MOSIP) and health information management systems (DHIS2). Yet sustainable investments in essential digital public goods remain rare, particularly for core engineering support, community governance and standards adoption. It should be stressed that despite the current focus on DPGs, the private sector has an important role to play. An ecosystem of local system implementers and integrators is needed to help support and maintain the national digital stacks employed by governments to deliver services. Commercial off-the-shelf software as a service, known as SaaS, and bespoke private sector offerings are becoming commonplace digital government solutions in high-income countries. Low- and middle-income countries are entitled to the same choices. If finance was more assured for both open source and proprietary technology, the public and private sectors would be more likely to come together to create a thriving digital ecosystem of interoperable digital global goods and services.

A whole-of-government approach to policies has led Estonia, India, Korea and other countries to invest in interoperable building block digital products and services that became digital global goods supported by a community of users. This approach can even inform regional co-operation around technology stacks, standards and regulatory frameworks in areas such as digital ID and payments.[12] The GovStack partnership,[13] for instance, invites both product suppliers and country governments to participate in a community committed to designing specifications based on best practices of generic, reusable digital components, creating models of digital government services platforms and providing support on procurement and implementation in low-resource contexts.

All these efforts illustrate that development actors, bilaterally and in partnerships, are already working to unite investments (e.g. the Principles of Donor Investment in Digital Health)[14] in cross-cutting technical building blocks and to build frameworks based on the design of reusable and interoperable digital components. What is missing is the ability to unite these efforts at national, regional and global levels under a common digital transformation framework that has sufficient financing to fund needed products.

Addressing skills gaps in people involved in digital systems should be a priority

Designing, maintaining, investing in and regulating digital platforms and data use at national level requires deepening digital competencies broadly, within government agencies and the private sector and across civil society. Conversations in the development sphere about building digital capacity often focus primarily on enhancing citizens' ability to access digital services, source information on line, and navigate new digital spaces and media. Yet, digital literacy of development actors is especially important if they are to effectively support countries to build new policies, finance and procure new products, and deploy and sustain digital products. To fund scalable information systems, development actors also should carefully research which skills gaps matter most, which are needed and which should be prioritised. The results may be surprising.

For example, DIAL research in 2019 found that, for software development in Africa, softer skills such as programme management were a greater challenge than engineering skills for leaders (DIAL, 2019[10]). Other studies highlight technical skills gaps in procurement for digital solutions.[15] Communications and general legal expertise as well as specific expertise in artificial intelligence, data analytics and cybersecurity are also required, according to the United States' National Security Commission on Artificial Intelligence (2021[11]), which notes that the United States also faces such a talent gap.

Fortunately, development actors are aligning efforts to fill the world's collective digital capacity gaps. One example is the new Digital Capacity initiative,[16] a project of the United Nations Development Programme and the International Telecommunication Union, which aims to build a database of existing digital skills trainings to help match up those seeking digital and data trainings with providers and to convene a multistakeholder network promoting more holistic and inclusive approaches to digital capacity development. More than

A whole-of-government approach to policies has led Estonia, India, Korea and other countries to invest in interoperable building block digital products and services that became digital global goods supported by a community of users.

270 digital development organisations also have endorsed the Principles for Digital Development,[17] a set of guidelines established in 2014 to support better processes and thereby better results. Courses around the world have used DIAL adaptable training materials to build digital awareness among OECD development co-operation providers.[18]

It would be worthwhile to extend such trainings to the global scale to make a meaningful impact on the seemingly intractable digital capacity gap, yet challenges remain. As the UN Secretary-General's Roadmap notes, these initiatives primarily benefit speakers of a few minority-world languages, and funding and appetite for a large-scale push to grow capacity globally have not materialised (UN, 2021[9]). Development co-operation actors must keep in mind that ultimately, making progress on the people component of national digital transformation will require longer term shifts in the global mindset in terms of what training is needed and greater investments in making existing training more accessible.

Priority actions for development co-operation

The 5 Ps framework is intended to help policy makers and development co-operation

partners deconstruct the complex undertaking of digital transformation in low- and middle-income countries into manageable problem sets and then identify ways forward. Three overarching recommendations apply to all five factors and are critical to success.

1. **Openly share learning.** Every digital transformation journey is different. But learning from each country's story can help development actors understand and resolve common challenges. Actors should invest the time and resources to publicly share learning. Knowledge-sharing initiatives and peer-learning networks can help ensure that development actors learn from the many digital transformation efforts occurring worldwide and understand how best to maximise development gains from digital investments and minimise negative impacts. The 5 Ps framework is one way of organising and understanding the common pitfalls all countries and development actors face.
2. **Co-ordinate approaches, financing and support.** Global digital transformation requires a step change in how development co-operation actors and country counterparts define, fund and support solutions. More co-ordination is essential given the scale of financing required to identify, build, evaluate and support whole-of-society, cross-sectoral digital public goods that can be of value to as many nations as possible for their own digital transformation efforts. In addition to co-ordinating this product financing work, there is a need to align and finance the myriad aspects of policy, capacity building, and pricing and procurement work so that the products, or technology building blocks, will be of use. The political will for this is clearly starting to grow, and now is the time to seize that momentum.
3. **Leave no one behind in digital transformations.** In all this work, all actors should consciously employ the principles and practices of the leave no one behind pledge and balance the potential benefits of digital transformation against the potential harms, particularly for the most vulnerable and marginalised groups.[19] This means investing in building digital capacity around responsible design practices such as the Principles for Digital Development, ensuring an inclusive and consultative approach to digital governance, and supporting ongoing scrutiny of the impacts of digital transformation on vulnerable groups. These are all critical if development actors are to ensure that everyone can benefit from digital transformation.

REFERENCES

African Union (2019), "African leaders redefine the future through digital transformation", press release, African Union, https://au.int/en/pressreleases/20190211/african-leaders-redefine-future-through-digital-transformation (accessed on 29 October 2021). [4]

Bosio, E. and S. Djankov (2020), "How large is public procurement?", *World Bank Blogs*, https://blogs.worldbank.org/developmenttalk/how-large-public-procurement (accessed on 29 October 2021). [7]

Dhillon, D. and A. Kastner (2019), "Financing digital technologies", Digital Impact Alliance, https://digitalimpactalliance.org/financing-digital-technologies/. [5]

DIAL (2021), "Public procurement of digital technology", *Leadership Series Brief*, No. 3, Digital Impact Alliance, Washington, DC, https://digitalimpactalliance.org/wp-content/uploads/2021/09/DIAL_LeadershipBrief3-Procurement.pdf. [3]

DIAL (2020), "Accelerating national digital transformation", *Leadership Series Brief*, No. 1, Digital Impact Alliance, Washington, DC, https://digitalimpactalliance.org/wp-content/uploads/2021/08/DIAL_LeadershipBrief1-DX2_v1.pdf. [1]

DIAL (2019), "Insight 4: Moving forward as an ecosystem to support the next generation of software developers", Digital Impact Alliance, Washington, DC, https://digitalimpactalliance.org/insight-4-moving-forward-as-an-ecosystem-to-support-the-next-generation-of-software-developers (accessed on 12 October 2021). [10]

DIAL (2018), *Financing Digital Markets: What Vaccines Can Tell Us About Scaling Digital Technologies in Low- and Middle-Income Countries*, Digital Impact Alliance, Washington, DC, http://digitalimpactalliance.org/wp-content/uploads/2018/12/DIAL_Financing_Digital_Markets_final.pdf. [2]

The Economist Intelligence Unit (2020), *The Future of Public Spending: Why the Way We Spend is Critical to the Sustainable Development Goals*, The Economist Intelligence Unit, https://unops.economist.com/wp-content/uploads/2020/01/Thefutureofpublicspending.pdf. [6]

UN (2021), *United Nations Secretary-General's Roadmap for Digital Cooperation: Strengthening Digital Capacity Building*, United Nations, New York, NY, https://www.un.org/techenvoy/sites/www.un.org.techenvoy/files/general/Capacity_Building_Summary_PDF.pdf. [9]

US National Security Commission on Artificial Intelligence (2021), *Final Report*, National Security Commission on Artificial Intelligence, Washington, DC, https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf. [11]

Wilson, K. (2021), "Is there a digital recipe for country resilience?", Digital Impact Alliance, Washington, DC, https://digitalimpactalliance.org/is-there-a-digital-recipe-for-country-resilience. [8]

NOTES

1. Common variables and indicators were analysed to measure national digital transformation. For more information, see: https://digitalimpactalliance.org/collaborating-to-measure-digital-transformation-sharing-dials-draft-digital-transformation-indicator-library-for-consultation-and-comment.
2. The World Bank Group, for example, invested USD 12.6 billion in information and communications technologies over the period 2006-16. See: https://www.worldbank.org/en/publication/wdr2016.
3. See: https://digitalimpactalliance.org/research/digital-impact-alliance-2018-baseline-ecosystem-study.
4. Political will at the global level also is building, as evidenced by the digital co-operation and digital transformation agendas that have emerged as priorities for the OECD, the World Bank and the United Nations, through the United Nations Conference on Trade and Development and the International Telecommunication Union. Germany, the United Kingdom and the United States are among the bilateral donors prioritising digital transformation.

5. See: https://e-estonia.com/cornerstone-governance-trust.
6. As noted in a 2020 report published by DIAL, "Some countries also struggle with improving connectivity and digital literacy because of issues of affordability, and challenges in procurement often create negative downstream effects for ICT access, challenging the continued improvement of digital government services." See: https://digitalimpactalliance.org/research/unlocking-the-digital-economy-in-africa-benchmarking-the-digital-transformation-journey. For an additional discussion, see: https://digitalimpactalliance.org/wp-content/uploads/2021/09/DIAL_LeadershipBrief3-Procurement.pdf.
7. See: https://www.institutefordigitaltransformation.org/how-the-platform-economy-contributes-to-sustainable-development.
8. APIs simplify software development and innovation by enabling applications to exchange data and functionality easily and securely. See: https://www.ibm.com/cloud/learn/api#:~:text=Application%20programming%20interfaces%2C%20or%20APIs,and%20functionality%20easily%20and%20securely.
9. See: https://digitalimpactalliance.org/research/sdg-digital-investment-framework.
10. See: https://digitalpublicgoods.net/standard/#:~:text=The%20DPG%20Standard%20itself%20is,our%20growing%20list%20of%20endorsers.
11. See: https://solutions.dial.community.
12. For examples of regional efforts, see: https://www.astroawani.com/berita-dunia/adgmin1-successfully-concludes-charting-5year-vision-asean-digital-development-plan-279282; https://www.csis.org/analysis/digital-africa-leveling-through-governance-and-trade; and https://au.int/sites/default/files/documents/38507-doc-dts-english.pdf.
13. See: https://www.govstack.global.
14. See: https://digitalinvestmentprinciples.org.
15. See, for example, "takeaway" 4 at: https://digitalimpactalliance.org/research/public-procurement-of-digital-technology-leadership-series-brief-3 and https://www.nao.org.uk/wp-content/uploads/2011/02/1011757.pdf, particularly pp. 17-18.
16. The Digital Capacity initiative is a follow-up to the UN Secretary-General's Roadmap for Digital. See: https://digital-capacity.org.
17. See: www.digitalprinciples.org.
18. Agencies participating in the training include Deutsche Gesellschaft für Internationale Zusammenarbeit; the Swedish International Development Cooperation Agency; the Norwegian Agency for Development Cooperation; Lux Dev; the UK Foreign, Commonwealth & Development Office; and United States Agency for International Development.
19. DIAL's proposed principles and practices to inform inclusive digital transformations are available at: https://digitalimpactalliance.org/research/leave-no-one-behind-leadership-series-brief-2. DIAL plans to release practical case studies on whole-of-society, inclusive policy-making approaches in early 2022.

26 DIGITAL PUBLIC GOODS: ENABLERS OF DIGITAL SOVEREIGNTY

Liv Marte Nordhaug, Digital Public Goods Alliance
Lucy Harris, Digital Public Goods Alliance

ABSTRACT

Digital sovereignty helps countries maintain control over their decision making and implementation of services. Proprietary technology can lead to technological lock-ins and silos that threaten digital sovereignty, but digital public goods, a type of open-source solution, allow countries to adopt, adapt and scale technology in ways that maintain their flexibility. As uptake of digital public goods – and thus digital sovereignty – spreads, it is reshaping the patterns of development co-operation.

Key messages

- Digital public goods are types of open-source software, models and standards that countries can use to operationalise their digital public infrastructure (e.g. payment and data exchange systems).
- While proprietary solutions dominate digital public infrastructure, concerns over contractual lock-ins and lack of interoperability have led countries to turn to open-source solutions.
- Governments can adapt digital public goods with technical and financial support from development co-operation partners, and can contract support from the private sector where appropriate.
- Development partners can contribute by focusing on underlying challenges like co-ordinating multilateral efforts, improving public procurement, supporting financial and project continuity, and breaking down silos to enable co-development.

Digital public infrastructure (DPI) refers to platforms such as identification (ID), payment and data exchange systems that help countries deliver vital services to their people. Digital public goods (DPGs) are open-source software, open data, AI models, standards and content that make DPI an operational reality (UN Secretary-General, 2020[1]). DPG's open format can be freely adopted and adapted, offering countries cost savings and digital sovereignty – control over technology and data – in building out their DPI. Digital sovereignty maintains countries' flexibility in decision making and unencumbers their efforts towards the Sustainable Development Goals (SDGs). The effects are reshaping traditional models for development co-operation (Figure 26.1).

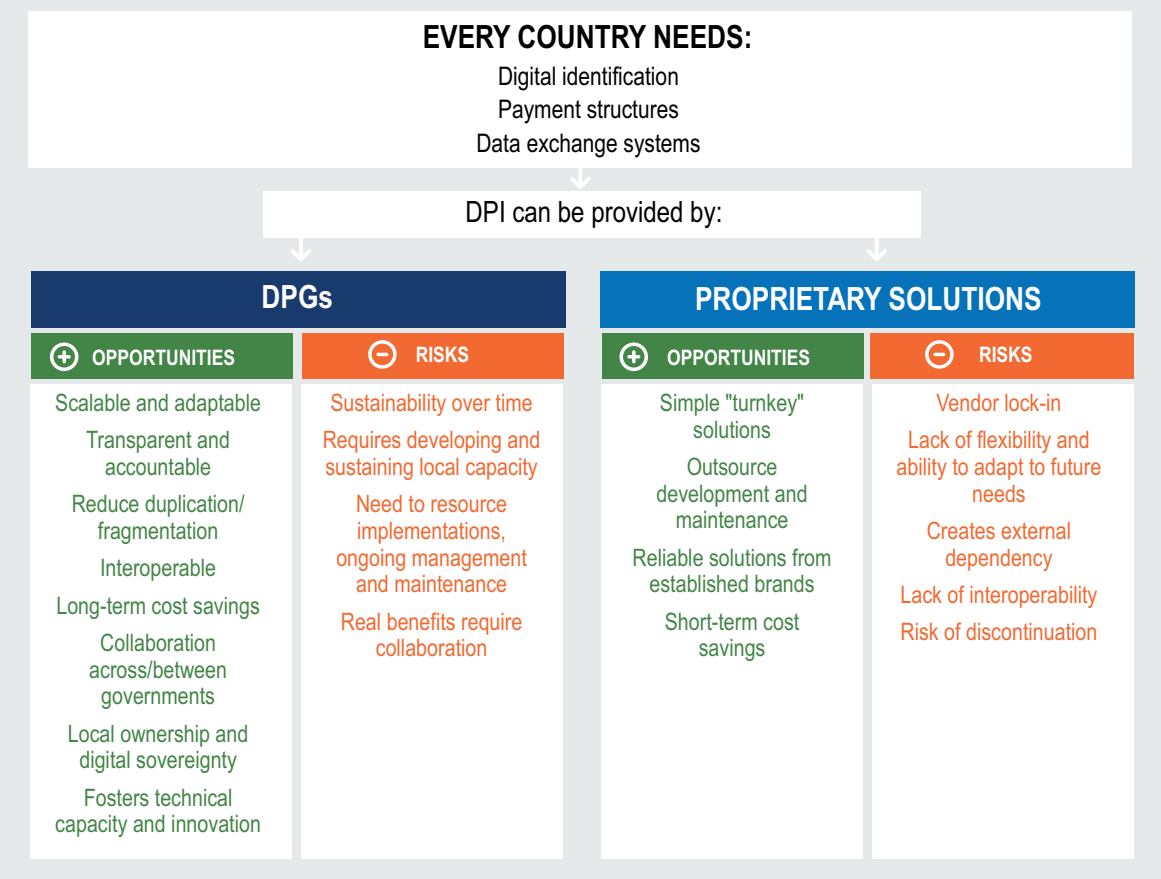
The COVID-19 pandemic showed how the presence of good DPI influenced countries' responses. The pandemic also highlighted the need for comprehensive and co-ordinated support for reforms to public procurement frameworks, and for technical assistance, long-term capacity-building and sustainable funding for digital solutions. These are key to realising the transformative potential of digital sovereignty.

Balancing digital sovereignty and proprietary solutions

Digital sovereignty is the power and authority of a national government to make free decisions affecting citizens and businesses within the digital domain – covering data, software, standards and protocols, infrastructure, and public services (Gawen et al., 2021[2]). National-level digital technologies are often provided by private-sector companies with the ability to answer high volume, global requests with round-the-clock assistance, meet international quality standards, and build to scale resulting in savings on technology and software licenses (ID4D, 2020[3]; Burt, 2018[4]). This lets these companies influence the design, use and contractual obligations of systems, including the ability to discontinue or modify their product unilaterally (Behrends et al., 2021[5]), thereby threatening digital sovereignty and entrenching technological power imbalances.

Digital sovereignty is a growing priority for countries everywhere. Germany, Denmark, Estonia and Finland, are leading the call for the EU to become digitally independent (Fleming, 2021[6]). According to a survey by ID4Africa in 2018, vendor lock-in is the largest concern among national identity authorities in Africa (Burt, 2018[4]). Vendor lock-in can include: being locked into long-term contracts with limited flexibility and large, sometimes unexpected fees; proprietary knowledge for IT system operation and expansion (Sjoerdstra, 2016[7]) limiting data sovereignty by outsourcing the collection, use and storage of citizen data to foreign vendors; lack of customisation to local context; inability to integrate citizens into governance and decision making; and centralising the market

Figure 26.1. Options for providing digital public infrastructure



around only a few companies (Behrends et al., 2021[5]).

Increased digital sovereignty also increases oversight as digital tools host and exchange increasingly sensitive and private information. US-owned servers store an estimated 92% of the West's data, making it difficult for citizens of other countries to exercise individual recourse or achieve digital sovereignty (Fleming, 2021[6]). While a country need not store all its own data to be digitally sovereign, access to and control over that data is important. For example, Estonia created the world's first 'data embassy' in Luxembourg, where they created a backup of their national data servers, addressing both data storage needs and the desire for digital sovereignty (e-Estonia, 2017[8]).

Low- and middle-income countries have less capacity and fewer resources to negotiate contracts around the implementation of proprietary technologies, making the challenge of digital sovereignty particularly acute. Furthermore, digitalisation initiatives are often driven by international development donors and donor-funded organisations. This approach results in silos, fragmentation and duplication as support is sector-specific, with relatively short-term funding, and underemphasises interoperability between technologies. For example, ID systems that are not interoperable deprive countries of the benefits from verification and data sharing between sectors (OECD, 2019[9]). Collectively, these shortcomings hamper the ability of governments to build out holistic DPIs that can evolve to meet future needs. They also hinder building out local vendor ecosystems around and on top of these platforms.

However, a role remains for private enterprise in the need for systems

integration, maintenance services, infrastructure such as cloud and data-centre services, and cybersecurity. Thus, rather than a model where proprietary vendors control the core, governments can adopt open-source technologies, control their platforms and ensure they are interoperable, and enable a more vibrant and diverse commercial ecosystem to be built on top.

Digital public goods save resources, build trust and enable scaling

DPGs are a subset of open-source technologies, which people can modify and share because their programming is publicly accessible (Opensource, n.d.[10]). Open-source technologies enable digital sovereignty and cultivate trust in technology through openness, direct involvement and preserving entities' autonomy.

This allows countries to iterate for future needs and bring down costs over the long-term (Gawen et al., 2021[2]). Many municipalities in Brazil switched to open-source software in the early 2000s because "estimates at the time concluded that across the country, nearly USD 200 million per year was spent on licensing fees to Microsoft alone and, by switching, USD 120 million could be saved." (Blind and Böhm, 2021[11]). In India, switching primary and secondary schools' digital solutions to open-source software reduced costs by USD 1.3 billion (Blind and Böhm, 2021[11]).

Trust in technology is particularly pertinent for solutions that involve sensitive information, as in the case of digital public infrastructure. Over 70% of African identity authorities report wanting increased oversight of their own ID data (Burt, 2018[4]). Similarly, the Philippines implemented open-source options when building their GovStack.

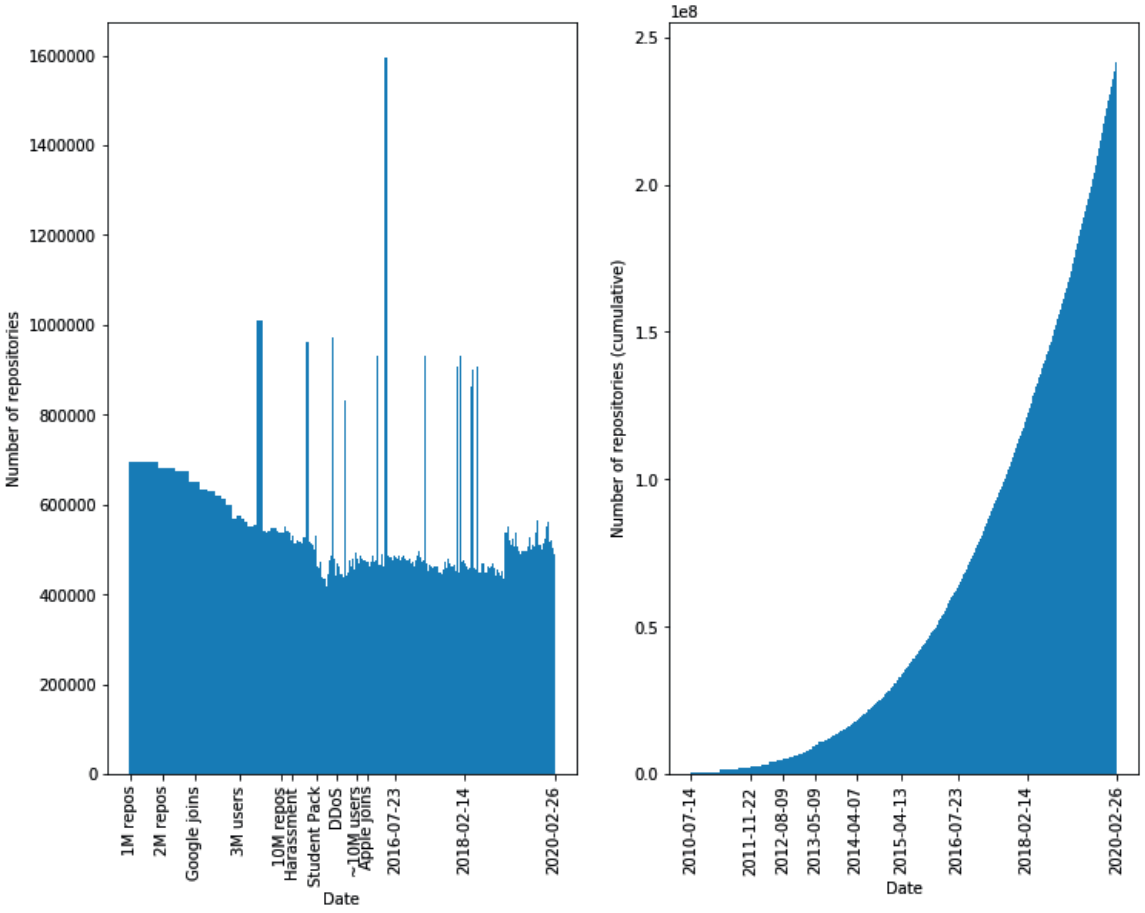
Open source leaves the door open for solutions to be added, which reduces time and financial costs of scaling (Mukherjee and Maruwada, 2021[12]). Use and recognition of open source's value have grown to where nearly all software has some open-source component. Open-source codebases are the majority in core sectors including FinTech (69%), HealthTech (82%) and EdTech (82%) (Synopsys, 2021[13]). These form part of a rising tide of open-source components in app development, which grew by 628% between 2014 and 2020 (Synopsys, 2021[13]). shows the growth between 2010 and 2020 of repositories on GitHub, a provider of Internet hosting for open-source software development (Figure 26.2).

Low- and middle-income countries have less capacity and fewer resources to negotiate contracts around the implementation of proprietary technologies, making the challenge of digital sovereignty particularly acute.

Key features of digital public goods: Adoptability, accountability, interoperability

Digital public goods can be freely adopted and adapted by governments and other users. Adapting DPGs that were successfully implemented at scale in other countries can save resources and enable faster piloting and roll-out. District Health Information Software version 2 (DHIS2) was first used in South Africa and became a global open-source project co-ordinated by the Health Information Systems Programme (HISP) at the University of Oslo. More than 73 countries use it to support the generation and analysis of national and regional health data. Implementing this solution at scale allows for training and resources to be utilised in other regions, while the DPG remains customisable to the local context.

Figure 26.2. Increase in number of repositories on GitHub between 2010 and 2020



Source: GitHub (2020[14]), The Rise of GitHub, https://github.com/bugout-dev/mirror/blob/master/notebooks/rise-of-github.ipynb.

Open-source licensing of DPGs means that their code base can be independently scrutinised and audited. This facilitates accountability and public discourse around issues such as incorporating best practices and designing DPGs with the aim of doing no harm. All DPGs are verified against the best-practice and do-no-harm by design indicators embedded in the DPG Standard stewarded by the Digital Public Goods Alliance (Digital Public Goods Alliance, 2021[15]). This can help identify shortcomings to address before a technology is adopted more widely.

Finally, DPGs allow interoperability for systems and digital solutions to function together regardless of their origin (Box 26.1). The European Union, a world leader in interoperable government systems, recognised the importance of this issue: "In 2004, the Pan-European eGovernment Programme (IDABC) in DG DIGIT issued their European Interoperability Framework (EIF 1.0) with a strict minimum definition of open standards and mandated their use in pan-European eGovernment services." (Almeida, Oliveira and Cruz, 2011[16]) A 2019 study found that France's Circulaire 5608 guidelines on the use of free software by the French administration created a 9-18% yearly increase in the number of IT-related start-ups as entrepreneurs built on top of open-source solutions (Blind and Böhm, 2021[11]).

Digital sovereignty shifts old patterns of development co-operation

The advent and dissemination of DPGs for government services may usher in a new

BOX 26.1. DIGITAL PUBLIC GOODS EXPEDITED THE ROLLOUT OF COVID-19 VACCINATION CERTIFICATES

Digital Infrastructure for Vaccination Open Credentialing (DIVOC) is an open-source software and DPG. During the COVID-19 pandemic, DIVOC was used to issue hundreds of millions of certificates in India and cited as a reference implementation by the World Health Organization (WHO), which led to its take-up elsewhere, including in Sri Lanka and the Philippines.

Sri Lanka identified high tourist inflow as a vulnerability in their COVID-19 response. This made gathering information on incoming passengers and their mobility a priority to control the spread of COVID-19. The Ministry of Health implemented a digital COVID-19 surveillance system based on DHIS2, a free and open-source health management information system, to work with existing health sector technologies, staff capacity, procurement procedures and digital infrastructure.

The provision of cryptographically verifiable vaccination certificates was outside the scope of DHIS2. However, the open-source nature of DHIS2 and DIVOC allowed for integration of the two systems to produce COVID-19 vaccination certificates. This was the first adoption of DIVOC outside India for national-level vaccination certificates and helped pave the way for adoption in the Philippines.

Remittances from more than 2 million overseas Filipino workers are an important economic resource for the Philippines, amounting to approximately 10% of GDP. Therefore, with an increasing number of countries introducing COVID-19 vaccination requirements for international arrivals, the Philippines urgently needed a digital vaccination certificate that could interface with other vaccine information management systems.

The Departments of Health and of ICT developed a system based on DIVOC using existing resources and support from the DIVOC development team. Their VaxCertPH[1] system launched in less than three months, making the Philippines among the first to implement the WHO's Digital Documentation of COVID-19 Certificates standard. By mid-September, 100 000 overseas Filipino workers and travellers had a VaxCertPH. Looking forward, this first implementation of verifiable credentials can create opportunities for decentralised identification and digital wallets in the country.

Source: Philippines Department of Health (2021[17]), VaxCertPH website, https://vaxcert.doh.gov.ph/.

paradigm for international development based on co-operation and co-development rather than traditional donor-recipient models.

India stands out in this space for its IndiaStack (n.d.[18]) digital public infrastructure and an increasing number of DPGs, like the Digital Infrastructure for Vaccination Open Credentialing (eGov Foundation, n.d.[19]) and the Modular and Open Source Identity Platform,[1] now also being implemented by other countries. Likewise, Estonia leads the world in digital government and service provision – during the pandemic, 99% of government services in Estonia remained available online (Silaškova and Takahashi, 2020[20]) – and is a central partner in international initiatives like GovStack (GovStack, n.d.[21]), which aim to accelerate the digital transformation of government services.

Further examples question old assumptions about capacity in developing countries. Togo introduced a cash-transfer program leveraging its election database to deliver emergency relief payments to workers in the informal economy impacted by lockdown measures (The Rockefeller Foundation, 2021[22]). In contrast, insufficient, non-interoperable or outdated DPI in some developed countries limited their ability to respond to the pandemic. In the United States, fewer than 60% of eligible adults living below the poverty line received emergency cash transfers within one month of their disbursement (The Rockefeller Foundation, 2021[22]).

These examples signal a shift in the development co-operation status quo, with countries driving their own digitisation solutions to strengthen the public sector (known as GovTech). From 2014 to 2021, over 80 countries launched GovTech initiatives to modernise and digitise public services. Of these, approximately 50 are low- or middle-income (Dener et al., 2021[23]). For example, Sierra Leone's National Innovation and Digital Strategy (DSTI, n.d.[24]) seeks to ensure that institutions, markets, citizens and the government consider open-source technologies as an opportunity to digitise inclusively by bringing together regulators, learners and innovators. With partners, Sierra Leone also developed OpenG2P (n.d.[25]), a DPG that facilitates large-scale cash transfers.

The trend will likely accelerate as more countries implement DPGs and share their experiences and technologies. Following Sierra Leone's example, Ethiopia (Bankless Times staff, 2021[26]), Guinea (The World Bank, 2015[27]), East Timor (Government of the Timor-Leste, 2019[28]) and others show interest in collaborative investment and implementation of DPGs, for reasons ranging from greater country ownership to growing the local IT sector.

Donors can enable more countries to leverage digital public goods

This new form of international digital development confirms the potential for a new development co-operation paradigm to supersede existing patterns of 'donor' and 'recipient' for one based more on openness and co-development. Despite the opportunities that implementing DPGs brings to facilitate community building, knowledge sharing and training across boundaries, challenges remain. There are hurdles in terms of project and financial sustainability, and continuity of service. DPGs require support throughout the lifecycle of the technology, from development to implementation, governance, maintenance and oversight (Behrends et al., 2021[5]). This requires a global approach to mobilising resources, and co-ordination to unlock the potential of DPGs.

From 2014 to 2021, over 80 countries launched GovTech initiatives to modernise and digitise public services. Of these, approximately 50 are low- or middle-income.

Therefore, efforts are underway in the bilateral and philanthropic donor community to redefine collaboration and support DPGs. For example, in August 2021, The Rockefeller Foundation partnered with the Norwegian Ministry of Foreign Affairs and the Digital Public Goods Alliance, and convened government representatives and philanthropist leaders to highlight the elements needed for stronger international co-operation to support DPGs. These elements include ensuring that government policies and procurement practices are conducive to open-source adoption, using co-development models to ensure cross-sectoral collaboration between public, private and academic institutions, mobilising more financing, and busting silos to disrupt the current approaches to development support (The Rockefeller Foundation, 2021[22]).

REFERENCES

Almeida, F., J. Oliveira and J. Cruz (2011), "OPEN STANDARDS AND OPEN SOURCE: ENABLING INTEROPERABILITY", *International Journal of Software Engineering & Applications (IJSEA)*, Vol. 2/1, http://dx.doi.org/10.5121/ijsea.2011.2101. [16]

Bankless Times staff (2021), *"Ethiopia to Use IOHK Technology to Create ID, Recording Systems for Education"*, Bankless Times, https://www.banklesstimes.com/2021/04/27/ethiopia-to-use-iohk-technology-to-create-id-recording-systems-for-education/ (accessed on 18 November 2021). [26]

Behrends, J. et al. (2021), "Digital Public Goods: Guidance for Development, Governance, and Stewardship", https://ethics.harvard.edu/files/center-for-ethics/files/dpg_guidance_v2.pdf?m=1630420782 (accessed on 18 November 2021). [5]

Blind, K. and M. Böhm (2021), *The Impact of Open Source Software and Hardware on technological independence, competitiveness and innovation in the EU economy, Final Study Report*, European Commission, Brussels, https://digital-strategy.ec.europa.eu/en/library/study-about-impact-open-source-software-and-hardware-technological-independence-competitiveness-and (accessed on 18 November 2021). [11]

Burt, C. (2018), "Vendor lock-in hindering African identity projects", *Biometric Update*, https://www.biometricupdate.com/201806/vendor-lock-in-hindering-african-identity-projects (accessed on 18 November 2021). [4]

Dener, C. et al. (2021), *GovTech Maturity Index: The State of Public Sector Digital Transfromation*,, World Bank Group, Washington, SC, http://dx.doi.org/10.1596/978-1-4648-1765-6. [23]

Digital Public Goods Alliance (2021), *Digital Public Goods Standard website*, https://digitalpublicgoods.net/standard/ (accessed on 18 November 2021). [15]

DSTI (n.d.), *"Sierra Leone National Innovation & Digital Strategy (2019 – 2029)"*, Government of Sierra Leone Directorate of Science, Technology and Innovtion, Freetown, https://www.dsti.gov.sl/sierra-leone-national-innovation-digital-strategy-2019-2029/ (accessed on 18 November 2021). [24]

e-Estonia (2017), *"Estonia to open the world's first data embassy in Luxembourg "*, e-Estonia, https://e-estonia.com/estonia-to-open-the-worlds-first-data-embassy-in-luxembourg/ (accessed on 18 November 2021). [8]

eGov Foundation (n.d.), *Digital Infrastructure for Vaccination Open Credentialing website*, https://divoc.egov.org.in/ (accessed on 18 November 2021). [19]

Fleming, S. (2021), *Who owns data and who controls it?*, https://www.weforum.org/agenda/2021/03/europe-digital-sovereignty/ (accessed on 18 November 2021). [6]

Gawen, E. et al. (2021), *Open source in government: creating the conditions for success*, Public Digital,London, https://public.digital/research (accessed on 18 November 2021). [2]

GitHub (2020), *"The Rise of GitHub"*, GitHub website, https://github.com/bugout-dev/mirror/blob/master/notebooks/rise-of-github.ipynb (accessed on 18 November 2021). [14]

Government of the Timor-Leste (2019), *Unique Identity System:Strategic plan (2021 to 2025), Vol. I: Trusted digital identities to unlock services for all*, http://idu.gov.tl/strategic-plan/. [28]

GovStack (n.d.), *GovStack website*, https://www.govstack.global/ (accessed on 18 November 2021). [21]

ID4D (2020), *Open Source for Global Public Goods*, World Bank Group, Washington, DC, https://documents1.worldbank.org/curated/en/672901582561140400/pdf/Open-Source-for-Global-Public-Goods.pdf (accessed on 18 November 2021). [3]

Indiastack (n.d.), *IndiaStack website*, https://www.indiastack.org/ (accessed on 18 November 2021). [18]

Mukherjee, A. and S. Maruwada (2021), "Fast-Tracking Development: A Building Blocks Approach for Digital Public Goods", *Center For Global Development*, https://www.cgdev.org/publication/fast-tracking-development-building-blocks-approach-digital-public-goods (accessed on 18 November 2021). [12]

OECD (2019), *Enhancing Access to and Sharing of Data: Reconciling Risks and Benefits for Data Re-use across Societies*, OECD Publishing, Paris, https://dx.doi.org/10.1787/276aaca8-en. [9]

OpenG2P (n.d.), *A digital public good digitizing large scale cash transfers with open source building blocks*, https://openg2p.org/ (accessed on 18 November 2021). [25]

Opensource (n.d.), *"What is open source software?"*, Opensource website, https://opensource.com/resources/what-open-source (accessed on 18 November 2021). [10]

Philippines Department of Health (2021), *VaxCertPH website*, https://vaxcert.doh.gov.ph/ (accessed on 18 November 2021). [17]

Silaškova, J. and M. Takahashi (2020), ""Estonia build one of the world's most advanced digital societies, During COVID-19, taht became a lifeline", *World Economic Forum website*, https://www.weforum.org/agenda/2020/07/estonia-advanced-digital-society-here-s-how-that-helped-it-during-covid-19/ (accessed on 18 November 2021). [20]

Sjoerdstra, B. (2016), *Dealing with Vendor Lock-in*, https://essay.utwente.nl/70153/1/Sjoerdstra_BA_BMS.pdf (accessed on 3 December 2021). [7]

Synopsys (2021), *2021 Open Source Security and Analysis Report*, Synopsys, Inc., Mountainview, CA, https://www.synopsys.com/software-integrity/resources/analyst-reports/open-source-security-risk-analysis.html (accessed on 18 November 2021). [13]

The Rockefeller Foundation (2021), *Co-Develop Digital Public Infrastructure for an Equitable Recovery*, The Rockefeller Foundation, New York, https://www.rockefellerfoundation.org/wp-content/uploads/2021/08/Co-Develop-Digital-Public-Infrastructure-for-an-Equitable-Recovery-Full-Report.pdf (accessed on 18 November 2021). [22]

The World Bank (2015), *Guinea Implements a Biometric Identification System to Conduct a Census of Civil Servants*, Who We Are website, https://www.worldbank.org/en/news/feature/2015/02/03/guinea-implements-a-biometric-identification-system-to-conduct-a-census-of-civil-servants (accessed on 18 November 2021). [27]

UN Secretary-General (2020), *Road map for digital cooperation: implementation of the recommendations of the High-level Panel on Digital Cooperation*, United Nations, New York, https://undocs.org/A/74/821 (accessed on 18 November 2021). [1]

NOTE

1. For more information see https://www.mosip.io/.

OVERCOMING EXCLUSION IN DIGITAL ECONOMIES

27

François Coupienne, UNCDF
Nandini Harihareswara, UNCDF

ABSTRACT

The United Nations Capital Development Fund's Inclusive Digital Economy Scorecard assesses a country's aggregate progress on the main components of an inclusive digital economy – skills, innovation, infrastructure, and policy and regulation – and progress specifically to improve women's inclusion. This chapter draws on the experience of twenty-three countries that have used this tool to design context-specific digitalisation strategies and policies for digital transformation. It highlights that the information generated from this tool can guide governments and development actors in identifying and addressing barriers to equal and inclusive digital economies.

Key messages

- A market-development approach and dedicated tools can help governments design digital transformation strategies, measure progress and identify constraints that exclude groups from the digital economy.
- Measuring the inclusion of women in digital economies can pinpoint gender gaps in access to finance, business ownership and skills, and financial literacy that can be addressed with common approaches in different countries.
- Development co-operation providers should tailor financing and technical support to the stage of development of a country's inclusive digital economy and leverage the roles and behaviours of existing players in the market.
- Development co-operation providers can play a role to bring together private, public and civil society actors to identify investments and regulatory changes that build inclusion in the digital economy.

Digital economies that leave no one behind can only be achieved if they are developed at the national, regional and global levels and with a deliberate focus on making them inclusive. Women, migrants, refugees, youth, elders, disabled and rural populations are often marginalised and denied digital innovation and technology due to social norms, societal status, and limited revenue and capacity. Market constraints also hold back micro-, small- and medium-sized enterprises (MSMEs) – most firms around the world – from accessing and using digital technologies.[1]

A market-development approach can help governments and the private sector build inclusive digital economies by identifying market constraints and devising step-by-step solutions to remove barriers to digital access and adoption. The United Nations Capital Development Fund (UNCDF) has a set of tools to assess the level of development of a country's digital economy and its main components. Development co-operation providers and other funders can help by investing for the long term, providing granular expertise at each stage of market development, and supporting non-traditional financing tools that help women and other marginalised groups participate in the digital economy.

Building inclusion at each stage of development of a digital economy

The COVID-19 crisis stirred new interest in enabling and advancing digital transformation. Since the start of the pandemic, the UNCDF received an increasing number of requests from public- and private-sector partners for support in leveraging digital technology to improve people's lives, especially those in marginalised groups. Demand is also increasing for new approaches to leverage existing tools such as grants, and develop non-traditional financing mechanisms and as human-centred design, research, data analytics and technical assistance.

Since the start of the pandemic, the UNCDF received an increasing number of requests from public- and private-sector partners for support in leveraging digital technology to improve people's lives, especially those in marginalised groups.

Expanding digital services at each stage of market development

To date, 23 of the 28 countries in Africa, Asia and the Pacific where UNCDF is present use its Inclusive Digital Economy Scorecard (IDES): a policy and performance tool for assessing the level of development of the

digital economy in terms of its enabling policy environment, digital infrastructure and payments, innovation ecosystem, and customer skills. The IDES also scores the main components of an inclusive digital economy (skills, innovation, infrastructure, and policy and regulation) and women's inclusion more specifically[2] (Figure 27.1).

Another score, the Digital Economy Score (DES), looks at the stage of a country's digital transformation, starting with inception, moving on to the start-up stage and establishment of digital financial services, then to expansion, when a greater range of digitally enabled services is available, and finally consolidation. Of the countries that implemented the IDES in 2021, one is at inception, 16 have start-up digital economies, five are at the expansion stage and one is at the consolidation stage. Strategic investments, financing and expertise provided by development actors and other funders at each stage of a country's trajectory can support governments and the private sector.

Inception: Little more than telecommunication services

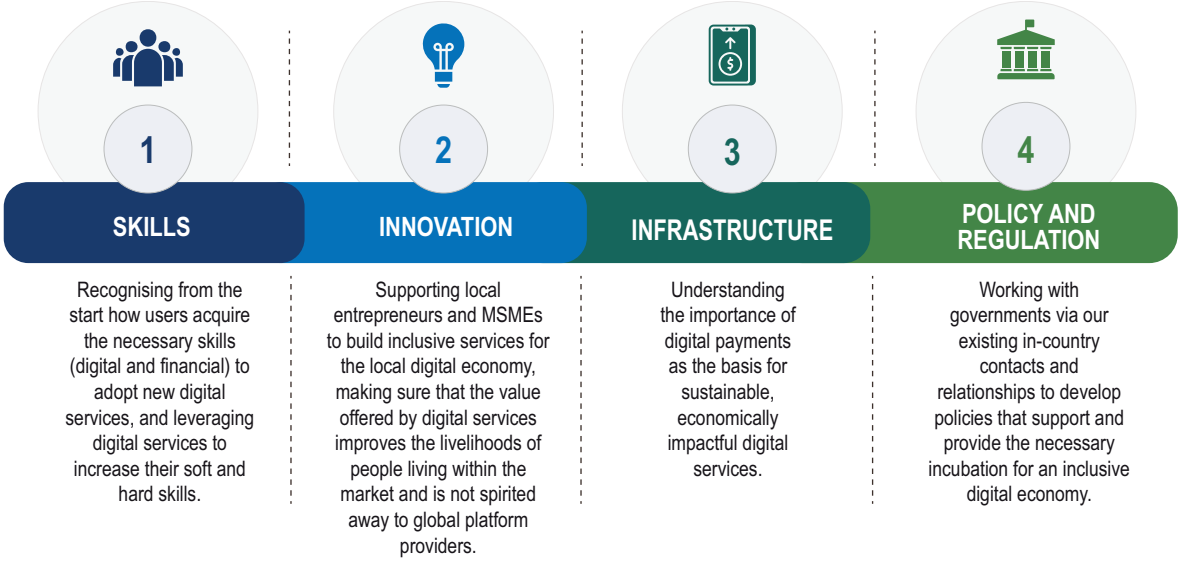
In the inception stage (IDES score up to 24%), the country lacks what UNCDF calls the foundational digital rails – policy and regulation, ID infrastructure, phone ownership, agent networks and digital financial services – that allow digital services to develop beyond voice and Internet. No providers offer mass-market digital services beyond telecommunication services, and citizens cannot rely on technology to access and use services in finance or other areas.

To advance to the next stage, digital finance providers must build mass-market services, and regulatory authorities must offer providers an enabling environment.[3] This period can last several years until systems are created, products tested, pilot projects completed and customers are using services, and digital financial services providers have regulatory approval. In this stage, development actors can provide needed expertise and grants or other financial support to help de-risk providers' investments and pilot market-entry strategies for new services.

Start-up: Digital financial services begin to reduce financial exclusion

In the start-up stage (DES score 25- 49%), the country has the foundational digital rails in place for citizens to access and use some basic digital services, mainly in the payment

Figure 27.1. Main components of an inclusive digital economy



Source: Authors' illustration.

and/or finance sector. Several providers offer mass-market digital financial services that reach the unbanked. Innovation is in its infancy, but some incubators and starts-ups have launched a limited number of products and services that either are digital payments (e.g. mobile money) or leverage digital payment services (e.g. pay-as-you-go solar).

To move to the next stage, digital finance providers must find the balance of active customers and active, accessible agents to serve the customers and reach profitability. Some markets remain stuck at this stage for many years until providers address all of the service issues that impede customer adoption and agent activity. An open infrastructure and payment system can open doors for entrepreneurs to pilot digital services in different domains (e.g. finance, agriculture, energy, health, education, e-commerce). In addition to financial support to scale successful services, development actors can provide in-depth expertise on various areas of digital infrastructure, finance and skills.

Expansion: The digital market and technologies add players and services

In the expansion phase (DES score 50-74%), digital payment systems become widely available and used, and the innovation ecosystem starts to develop with new partnerships and services in domains such as finance, agriculture, energy, health, education and e-commerce. Increasingly, people adopt digital tools and new players enter the market (providers, FinTech, start-ups, entrepreneurs, incubators, etc.).

To move beyond the expansion stage, government and private sector actors should use incentives to foster the growth of start-ups, help them source expertise and provide them with access to financing along all stages of their development. In this stage, the right mix of expertise and finance in the form of grants, loans, guarantees and equity will support innovation.

Consolidation: Varied and easy-to-use digital tools, and competition to add value

In the consolidation stage (DES score 75%-100%), a wide range of accessible and easy-to-use digital services are on offer in various domains and users have a choice of providers. Service providers, meanwhile, move beyond a focus on access and usage, and now compete to keep their clients and concentrate on adding value and increasing the impact of their services for clients.

Governments use the Inclusive Digital Economy Scorecard to measure progress

UNCDF's work on the IDES with several countries contributes to tangible and positive changes, including action by government agencies to develop digital economy strategies and focus on inclusiveness in their digital transformation. It helps government re-focus on their digital transformation with a comprehensive framework and indicators to identify gaps and set priorities for the coming years

In Uganda, digital had been seen as a horizontal, standalone focus area for the government's second national development plan (NDP). In 2020, UNCDF supported the country's National Planning Authority to mainstream digital into the third NDP as an enabler of economic development, and the government adopted the IDES to measure progress on digital transformation. Various government agencies now use IDES results to plan activities, identify funding gaps and set budgets for 2022 under the Digital Uganda Vision, the overall digital transformation policy.

The government of the Solomon Islands also uses the IDES to track progress on the country's digital transformation. The Central Bank used IDES scores and insights to inform the third version of the National Financial Inclusion Strategy. The Ministry of Communication and Aviation used it to identify key areas of focus for the development of the National Digital Economy Strategy. And work on the IDES contributed

to establishing the National Digital Transformation Authority.

The governments of Burkina Faso and Zambia also adopted the IDES in 2021 to design and support their digital transformations. The Ministry of Digital Economy, Posts and Digital Transformation of Burkina Faso uses it to identify key gaps and focus the priorities for policy and regulation, infrastructure, innovation, skills, and inclusiveness, particularly of women, youth and SMEs. In Zambia, the Ministry of Science and Technology uses the IDES to draft the country's first digital economy strategy and digital transformation plans for three ministries.

Inclusive digital economies: Equal access, agency and leadership for women

Ensuring that digital economies are inclusive requires specific focus on traditionally marginalised groups. To assess the extent to which the public and private sectors include marginalised people during digital transformation, UNCDF developed the Women Inclusiveness Score (WIS).[4] It indicates the level of inclusion of women in a country's digital economy at every stage and in each component (skills, innovation, infrastructure, and policy and regulation), and helps identify the barriers women face.[5] Countries can use the WIS to identify those components or dimension that contribute the most to a low score and thus which market constraints to address as priorities.

A country might have a high DES, but a low WIS. Difference in the two scores can indicate that there is progress on one component when measuring the aggregate situation, but less progress on that same component when it is assessed for women's inclusion. For instance, many countries have high DES for policy and regulation, but the policy, regulation and innovation components have the lowest WIS across all countries using the IDES. The reason is that many digital economy policy documents do not specifically reference the inclusion of women or design policies to be inclusive of women.

The generally low scores for innovation can be explained by the fact that the WIS is calculated from a country's gender gap in SME ownership and finance, and the extent to which digital and financial products are marketed or designed specifically for women. Thus, low WIS for innovation are not a surprise, given that the gap between men's and women's ownership of enterprises in least-developed countries averages 62% (World Bank, 2021[1]). In addition, most countries that UNCDF serves report that digital and financial services do not meet the needs of women.

The four most common market constraints for women's inclusion are digital and financial products that do not meet their needs, limited access to finance, poor entrepreneurship skills, and poor access to digital business tools and platforms. Figure 27.2 proposes actions to address the constraint on financial and digital products that do not meet the needs of women and girls.

Addressing barriers to women's digital inclusion in Papua New Guinea

Papua New Guinea is an example of how progress in developing a healthy digital economy might mask problems below the surface in the form of barriers that exclude women or offer financial products that do not meet the needs of women and girls (Figure 27.3).

Papua New Guinea has an overall WIS of 61%, meaning that 39% of women are not included in the digital economy. WIS scores for individual components range from 43-78%, which puts Papua New Guinea in the middle among countries measured. But its innovation score, at 34%, is in the lowest quintile of the IDES cohort. The reason is a large gender gap in specific areas:

- a 47% gender gap ratio in business ownership (World Bank, 2021[4])
- a 34% gender gap ratio in MSME credit constraints (World Bank, 2021[4])
- only 10% of digital products that are either marketed or designed for women.

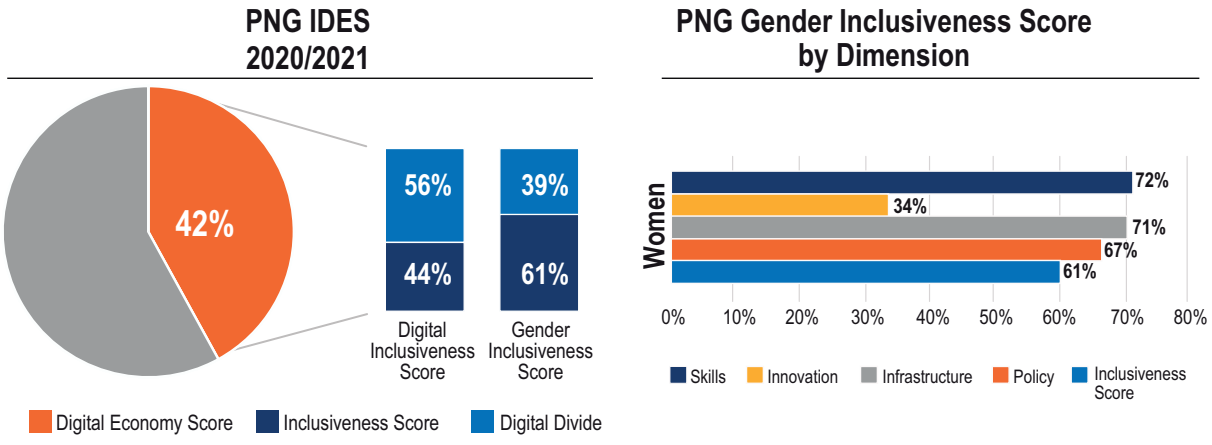
Figure 27.2. Helping digital and financial products meet the needs of women and girls

Digital and financial products (including delivery) do not meet needs of women and girls

1 DO/ADVOCATE:	Develop inclusive business models that apply behavioural science and human-centred design to develop solutions and business models fitted to needs of women and girls. See several examples from the IFC report on making a business case for investing in women and The Asian Development Bank's report on innovative financial products and services for women and CGAP's guide on designing products for low-income customers.
2 DO:	Establish an accelerator programme and/or competition with a grant-based or grant-matched challenge. See UNCDF Zambia Sprint4Women and other Fintech fund challenges by Women's World Banking and DFS Lab.
3 DO:	Skills building on e-commerce, both as a platform to deliver services or to sell/offer them. See the example of a women entrepreneur's finance initiative from the Government of Lebanon and World Bank.
4 DO:	Technical assistance and grants to support the collection and use of sex-disaggregated data by the private sector to inform gender-smart product development and market strategies. See UNCDF Myanmar smart product development.

Source: UNCDF (2021[2]), *Inclusive Digital Economies and Gender Equality Playbook*, https://www.uncdf.org/article/6875/ide-and-gender-equality-playbook.

Figure 27.3. Papua New Guinea inclusive digital economy scores



Note: Women inclusiveness scores for Papua New Guinea by dimension are not publicly available.
Source: UNCDF (2021[3]), *Inclusive Digital Economy Scoreboard* (database), https://ides.uncdf.org/dashboard.

In addition to the WIS analysis and use of the Inclusive Digital Economy and Gender Playbook,[6] UNCDF interventions and activities aim to increase the number of women-led MSMEs, improve access to finance for women-led enterprises, and increase the number and use of products that meet the needs of women. In collaboration with UN Women, UNCDF is working on a markets, economic recovery and inclusion programme supported by the Australian Department of Foreign Affairs and Trade. The programme focuses on three areas to address market constraints to the inclusion of women in digital innovation:

- **Poor entrepreneurship skills connected to innovation:** Increase capacity building for women-led enterprises, focused on financial awareness, financial education and business development skills trainings to enhance the income of women vendors in markets.
- **Digital and financial products not meeting women's needs:** Establish Mama-Bank Access Points (a low-cost, biometric system that enables women who have difficulty signing their names to carry out banking transactions using their fingerprints) in or close to markets and expand the use of financial services using this system.
- **Limited access to finance:** Provide a microfinance institution with an estimated USD 225 000 first-loss guarantee to de-risk lending to this vulnerable segment and reduce collateral requirements for women-led enterprises in target geographies.

Innovative financing can open doors to the digital economy for women

Removing market constraints to women's participation in the digital economy is key to increasing the adoption of digital technologies and ensuring that the benefits of digital transformation extend to everyone. Social and cultural norms are frequent underlying barriers to women's inclusion, but often overlooked in the design of business models and enabling environments. Another constraint can be access to finance. Non-traditional, digitally enabled financing tools can be game changers for women entrepreneurs:

- Alternative lending instruments such as digital transaction-history-based lending, crowdfunding, peer-to-peer lending and psychometric testing can lower or eliminate the need for collateral. This has proven to increase the ability of entrepreneurs, including women, to borrow money and grow their business (Feyen et al., 2021[5]).
- Digitally enabled asset financing, initially used for the purchase of solar energy products and smartphones, is now creating business models that enable low-income populations to have their first televisions, refrigerators and other assets (Mattern, 2020[6]).

How development actors can build inclusive digital economies

Long-term investments in inclusive digital economies are prerequisite to inclusive digital transformation. UNCDF uses a market-development approach to understand and intervene in market systems to address underlying constraints and improve efficiency, effectiveness and sustainability. The aim is to leverage the roles and behaviours of existing players in the market (e.g. users and providers of digital services) and support them in doing what they do better or differently; work with current players to provide financial instruments that encourage investment and de-risk new business models in order to make digital solutions more inclusive; and strengthening the systems and relationships among various players in the market (e.g. service providers, policy makers and regulators) through, for example, an enabling policy and regulatory environment. Such an environment is critical to strengthen systems and can be just as important as investment and competition.

Based on its experience with market development, UNCDF recommends that

development co-operation providers consider the following approaches:

- **Work closely with governments to drive digital transformation.** Support should help governments draft a national digital economy strategy, embed digitalisation in the national development plan, set up the governance structure and bodies to drive the transformation, provide the tools to measure and continuously monitor progress, and help national bureaus of statistics collect adequate data to track digital transformation and inclusiveness.
- **Deliberately build-in inclusivity**. Growth should be deliberately designed to narrow the digital divide. Support should focus on regular monitoring of inclusion, investment in digital and financial literacy and access, and addressing social and cultural norms, like for example, a perceived cultural norm that women should not have access to a phone.
- **Co-build with the digital ecosystem.** Working with one actor or sector ultimately does not help create the sustainable change that on-the-ground partners want to see. It is critical to take an ecosystem approach and involve the public, private and civil society sectors.
- **Invest for the long term**. When development partners take approaches that focus on market results and understand that market development takes time, they contribute to significant market change. The Mastercard Foundation's five-year funding for UNCDF Mobile Money for the Poor in 2014 helped strengthen Benin, Senegal and Zambia - countries that had almost no digital financial services. By 2019, all three showed strong growth in use of digital financial services use: Benin from 2% to 40%; Senegal from 13% to 29%; and Zambia from 4% to 44%.
- **Regulate to innovate**. Innovation requires an enabling environment that allows for testing and learning. Support for policy and regulatory frameworks that protect consumers but enable testing and learning environments can spur private sector innovation. These can include sandboxes, regulatory navigators and partnerships with innovation hubs. All can foster useful collaboration with private sector
- **Take a human-centred, context-specific approach**. Tailoring the right services to improve people's lives and livelihoods is one of the most effective ways to narrow digital divides. Context-specificity is also crucial. Institutions each possess distinct resources, and their culture's unique characteristics drive the development of digital finance and enabling ecosystems down distinct paths.
- In Zambia, UNCDF worked with Airtel Zambia to understand the barriers preventing uptake of the company's digital financial services by customers and via agents (UNCDF, 2017[7]). Analysis of the journey from being a non-customer or non-agent to being a super-user produced actionable recommendations. Different models of agent management were tested and useful ideas to improve inclusivity were solicited from the agents themselves.

Inclusive digital transformation relies on shared learning, agile responsiveness to dynamic situations, context-specific knowledge, deep relationships with public, private and civil society sectors, and long-term investments. These are the preconditions to leaving no one behind in the digital era.

REFERENCES

Feyen, E. et al. (2021), "Fintech and the digital transformation of financial services: Implications for market structure and public policy", *BIS Papers*, No. 117, Bank for International Settlements, Basel, https://www.bis.org/publ/bppdf/bispap117.pdf. [5]

Mattern, M. (2020), *Innovations in Asset Finance: Unlocking the Potential for Low-income Customers*, Consultative Group to Assist the Poor, Washington, DC, https://www.cgap.org/sites/default/files/publications/slidedeck/2020_05_Slidedeck_Innovations_Asset_Finance_0.pdf. [6]

UNCDF (2021), *Inclusive Digital Economies and Gender Equality Playbook*, https://www.uncdf.org/article/6875/ide-and-gender-equality-playbook (accessed on 4 November 2021). [2]

UNCDF (2021), *Inclusive Digital Economy Scoreboard (database)*, https://ides.uncdf.org/dashboard. [3]

UNCDF (2017), *Airtel Money: Human-Centered Design Learnings from Zambia*, https://www.uncdf.org/article/2766/human-centred-design-learnings-zambia. [7]

World Bank (2021), *Enterprise Surveys Data (database)*, https://www.enterprisesurveys.org/en/data. [1]

World Bank (2021), *World Bank SME Finance: Development news, research, data*, https://www.worldbank.org/en/topic/smefinance (accessed on 25 November 2021). [4]

NOTES

1. While the United Nations Capital Development Fund focuses on MSMEs, many of the measurement tools available focus only on small and medium-sized enterprises (SMEs). This discussion refers to both types of enterprise.
2. Scores consider the level of inclusion attained by key segments (e.g. youth, elderly, refugees, migrants, rural inhabitants, etc.) of the population (customers) in the digital economy, providing insight into the effort that public and private sectors are making to include marginalised people in developing the digital economy. Another measure, the Women Inclusiveness Score, indicates the level of inclusion of women in the digital economy. For details, see: https://ides.uncdf.org/about-the-scorecard.
3. For the four regulatory enablers for digital finance, see: https://www.cgap.org/blog/4-regulatory-enablers-digital-finance-gender-perspective.
4. The WIS is largely constructed of quantitative indicators based on global and country-based data sources. However, there is a lack of publicly available data that are disaggregated by all WIS customer segments (women, youth, elderly, migrants, etc.). UNCDF, therefore, relies on qualitative data from its country teams' assessments. To improve the methodology and indicators used, the broader IDES, the WIS and other elements are evaluated annually through feedback from external experts and UNCDF country teams.
5. UNCDF is committed to "vision equal economies" in which women have equal access, equal agency and equal leadership; see: https://www.uncdf.org/article/6930/uncdf-leverages-unique-mandate-in-service-to-gender-equality-vision-equal-economies-gender-finance-gap-zero-red-tape-zero. Its further goal is to make women the builders of inclusive digital economies everywhere UNCDF works; see: https://www.uncdf.org/article/6538/how-do-we-make-women-builders-of-the-digital-economy.
6. The playbook, published in June 2021, was originally designed to help UNCDF country teams understand the market constraints to women's digital and financial inclusion, and the interventions that could address those constraints: https://www.uncdf.org/article/6875/ide-and-gender-equality-playbook.

28 CASE STUDY: DIGITAL PAYMENTS ENABLING FINANCIAL INCLUSION

Gisela Davico, Better Than Cash Alliance, hosted by the United Nations
Shruti Sharma, Better Than Cash Alliance, hosted by the United Nations
Martin Volkmar, Better Than Cash Alliance, hosted by the United Nations
Camilo Tellez-Merchan, Better Than Cash Alliance, hosted by the United Nations

ABSTRACT

Digital financial services offer a gateway to financial inclusion, but women face barriers to accessing and using them. Digitising payment of public sector wages and social protection benefits has prompted millions of previously unbanked women to open accounts in recent years, a trend that accelerated during the COVID-19 crisis with the digital payment of emergency relief and private sector wages. As governments and companies take steps to recover from the economic impacts of the pandemic, prioritising women's digital financial inclusion will ensure stronger, more resilient economies that recognise and advance the strengths of women. Development co-operation providers should share good practices and learnings on responsible digital payments to strengthen data protections and build inclusive digital ecosystems to reach the still substantial numbers of unbanked and underserved households in low- and middle-income countries.

Key messages

- Approximately 1 billion women around the world are currently financially excluded, facing persistent barriers across digital value chains and without equal access to identification and digital devices.
- The COVID-19 pandemic accelerated the use of digital payments for emergency and social benefits that were fair, transparent and accountable and protected client data and funds.
- To increase women's digital financial inclusion, development actors should support the collection and analysis of sex-disaggregated data to inform policy, design appropriate and affordable financial products for women, and enforce anti-discrimination and consumer protection laws.

The COVID-19 pandemic introduced tens of millions of people worldwide to digital payments through digital social benefits, digital emergency relief and digital wages. There is now a great opportunity to build on this momentum to broaden financial inclusion, particularly for women, as social benefit payments are one entry point to other financial services. Women face formidable barriers to access and to use digital financial services. Responsible digitisation will help overcome barriers of mistrust and the perception of risk by ensuring that data and funds are protected. Key features of responsible digitisation of payments are providing effective grievance redressal mechanisms with accountability between provider and client, and interoperability across providers with regard to products and services. International actors, including development co-operation providers, can contribute by sharing insights, experience and guidance from their interventions to better reach the still substantial numbers of unbanked and underserved households in low- and middle-income countries.

COVID-19 digital payment initiatives may lead to greater financial inclusion

Digital payment programmes were instrumental in delivering pandemic relief and wages in at least 222 countries and territories during the COVID-19 crisis. A study for the World Bank found that in many instances, digital payment systems were used to disburse social protection benefits quickly and securely (Gentilini et al., 2021[1]). The impact of these new payments was especially important for women even prior to the pandemic. Between 2014 and 2017, 35 million women opened their first account to receive public sector wage payments and an additional 80 million women opened their first account to collect government social benefits (Demirgüç-Kunt et al., 2018[2]).The following examples show the continuation of this trend through COVID-19 response payments:

- Bangladesh's government package of support for workers in the ready-made garment sector mandated for the first time that transfers be paid digitally during the lockdown (Chowdhury, 2020[3]). In just 25 days, approximately 2 million digital accounts were opened for workers to receive their payments (Poutiainen and Rees, 14 May 2021[4]). Many of the workers, especially women, were first-time users of digital payments. Grievance redress mechanisms designed with leading apparel companies have also helped ensure that payments are made reliably and safely (Better Than Cash Alliance, 2017[5]).
- Early in the pandemic, Colombia rolled out the Ingreso Solidario (Solidarity Payment) programme.[1] This innovative public-private collaboration transferred emergency relief payments to 2.5 million households affected by the pandemic, 60% of them headed by women (Prieto, 26 October 2020[6]). Among the financial beneficiaries were 1 million previously unbanked households, reached using an app and helplines to explain and build trust in digital payments. Preliminary data show that people receiving transfers

through traditional accounts are more likely to cash out than are those who receive transfers via mobile wallets (81% versus 71%). Further, 22% of recipients via mobile wallets used the account to make deposits, which further highlights the potential for digital transfers to deepen financial inclusion and increase the uptake of e-commerce (Davico-Thaler and Tellez-Merchan, 8 November 2021[7]).

- Building on this experience, the United Nations Children's Fund, the High Commission for Refugees and the World Food Programme are working with the Colombian government to better understand the needs of the 2.2 million Venezuelan migrants in the country, more than half of whom are women, and the barriers to their digital financial inclusion (Government of Colombia, 2021[8]; Better Than Cash Alliance, 2021[9]).

Remove barriers to financial inclusion, especially for women

Digital payments have well-documented advantages over cash (Better Than Cash Alliance, 2021[10]):

- They are efficient (Better Than Cash Alliance, 2018[11]).
- They offer a transparent method of conducting financial transactions (GAO, 2015[12]).
- They are a key driver of financial inclusion, particularly for women (Better Than Cash Alliance, Women's World Banking and the World Bank Group, 2020[13]).
- Broadening financial inclusion fosters inclusive growth and development gains (UN, 2018[14]).

Yet, cash remains the dominant means of payment for more than 1.7 billion people in the world (Demirgüç-Kunt et al., 2018, pp. 35-41[2]). Indeed, nearly 15% of the adults in developing economies who are paid for agricultural products receive cash payment (World Bank Group, 2017[15]). While digital payments are an important step towards financial inclusion, it is important to address other barriers to full access to financial systems and products.

In just 25 days, approximately 2 million digital accounts were opened for workers to receive their payments.

For digital payments to increase financial inclusion, they must prioritise reaching the approximately 1 billion women around the world who are currently excluded (Better Than Cash Alliance, Women's World Banking and the World Bank Group, 2020[13]). Overcoming the persistent barriers across the digital value chain calls for providing women equal access to identification and digital devices, more appropriate financial products and services, consumer protection for women, and an enabling environment that precludes discrimination and encourages better incorporation of women in the financial and digital labour force (Better Than Cash Alliance, 2021[16]). To rebuild stronger after COVID-19, the Better Than Cash Alliance (2021[16]) has issued a ten-point call to action to reach financial equality for women. The associated advocacy campaign featured more than 20 Ministers of Finance and chief executive officers committing to one or more of the ten actions to advance women's digital financial inclusion. The call to action also includes clear and compelling indicators to track progress on each of the actions for reaching financial equality.

The COVID-19 crisis has prompted action to remove barriers and increase payment digitisation. Since the pandemic, 60% of financial authorities worldwide have noted an increase in digital transactions and FinTech is cited by nearly 70% of financial regulators as a priority (ITU, 2021[17]). Regulators have started to align their COVID-19 measures with efforts to strengthen financial inclusion. For instance, identification requirements for opening an

account have been eased and digital payment transfer fees reduced (IMF, 2021[18]). There are more opportunities to use these emergency payment programmes and the acceleration of digital financial activity as stepping stones to further develop inclusive digital payments ecosystems (Better Than Cash Alliance, 2017[19]), and the Bangladesh and Colombia programmes discussed above are great examples. These, in turn, have the potential to sustainably increase financial inclusion (Eriksson von Allmen et al., 1 July 2020[20]) as well as to foster inclusive growth (UN, 2018[14]).

Invest in systems that build trust, mitigate risk and drive inclusive growth

The pandemic offers important lessons for development co-operation and other actors to spur further financial inclusion. Specifically, it has shown that action on payment digitisation can be taken quickly while incorporating essential safeguards so that digital payments are fair, transparent and accountable and that client data and funds are protected.

Systems also should offer clear avenues for recourse when they fail to provide these protections, as such efforts can break down the distrust on the part of potential users of digital payments. Amader Kotha, the trusted national helpline for Bangladeshi garment workers, is an example.[2] Its success is attributed to responsible practices, including a gender-intentional design to address women's needs, the early forging of complex but powerful partnerships and the pioneering use of sex-disaggregated data. Distrust was found to be the main reason people in Latin America avoided e-commerce (Mastercard, 2019[21]). The new United Nations Principles for Responsible Digital Payments[3] aim to ensure that by focusing on user needs and prioritising women, responsible practices will help create trust in digital payments, mitigate risk and drive inclusive growth.

To further promote and advance responsible digital payments systems, development co-operation providers should:

Since the pandemic, 60% of financial authorities worldwide have noted an increase in digital transactions and FinTech is cited by nearly 70% of financial regulators as a priority.

- Champion the implementation of responsible and transparent digital payments that are gender intentional by bringing together digital and financial inclusion stakeholders, both public and private, at national, regional and global levels.
- Share guidance, good practices and the experience of users on responsible practices. This will require gathering insights from grants and learnings from research on the needs of the financially excluded and underserved.
- Immediately invest in better understanding the implications of increased use of artificial intelligence, machine learning and big data. This should inform and spur actions by development partners and providers to avoid discriminatory bias in areas such as coding and marketing (Kelly and Mirpourian, 2021[22]; UNESCO, 2021[23]).
- Promote all responsible forms of interoperability to drive enrolment and usage at scale so platforms can plug into national payments infrastructure to improve inclusion (Omidyar Network India and Boston Consulting Group, 2021[24]; Cook, Lennox and Sbeih, 2021[25]).
- Work collaboratively to build a future for women and men that is digital and inclusive and helps achieve all the Sustainable Development Goals.

REFERENCES

Better Than Cash Alliance (2021), *Improving Humanitarian Payments Through Digital Innovation: Challenges and Opportunities*, https://www.betterthancash.org/alliance-reports/improving-humanitarian-payments-through-digital-innovation-challenges-and-opportunities (accessed on 6 October 2021). [9]

Better Than Cash Alliance (2021), *Reaching Financial Equality For Women: A 10-point Action Plan for Governments and Businesses to Rebuild Stronger After COVID-19 By Prioritizing Women's Digital Financial Inclusion*, Better Than Cash Alliance, New York, NY, https://www.betterthancash.org/alliance-reports/reaching-financial-equality-for-women (accessed on 6 October 2021). [16]

Better Than Cash Alliance (2021), "Why digital payments", web page, https://www.betterthancash.org/why-digital-payments (accessed on 6 October 2021). [10]

Better Than Cash Alliance (2018), *The Future of Supply Chains: Why Companies are Digitizing Payments*, Better Than Cash Alliance, New York, NY, https://www.betterthancash.org/alliance-reports/the-future-of-supply-chains-why-companies-are-digitizing-payments (accessed on 6 October 2021). [11]

Better Than Cash Alliance (2017), *Building Inclusive Digital Payments Ecosystems: Guidance Note for Governments*, G20 Global Partnership for Financial Inclusion, https://btca-production-site.s3.amazonaws.com/documents/293/english_attachments/GPFI_Guidance_Note_Building_Inclusive_Dig_Payments_Ecosystems_final_0.pdf?1499784653 (accessed on 6 October 2021). [19]

Better Than Cash Alliance (2017), *Digitizing Workers' Payments in the Garment Sector in Bangladesh*, Gap Inc. et al., https://btca-production-site.s3.amazonaws.com/documents/433/english_attachments/Corporate_Pager_-_Digitizing_Worker%E2%80%99s_Payments_in_the_Garment_Sector_in_Bangladesh.pdf?1574094194 (accessed on 6 October 2021). [5]

Better Than Cash Alliance, Women's World Banking and the World Bank Group (2020), *Advancing Women's Digital Financial Inclusion*, G20 Global Partnership for Financial Inclusion, https://www.betterthancash.org/explore-resources/advancing-womens-digital-financial-inclusion (accessed on 6 October 2021). [13]

Chowdhury, A. (2020), "Inclusive digital payments solutions for the garment sector workers in Bangladesh", web page, Business Fights Poverty, https://businessfightspoverty.org/inclusive-digital-payments-solutions-for-the-garment-sector-workers-in-bangladesh (accessed on 6 October 2021). [3]

Cook, W., D. Lennox and S. Sbeih (2021), *Building Faster Better: A Guide to Inclusive Instant Payment Systems*, Consultative Group to Assist the Poor, Washington, DC, https://www.cgap.org/sites/default/files/publications/2021_01_Technical_Guide_Building_Faster_Better.pdf. [25]

Davico-Thaler, G. and C. Tellez-Merchan (8 November 2021), "Colombia's Ingreso Solidario: Public-private collaboration in Covid-19 emergency payments response", *Better Than Cash Alliance Blog*, https://www.betterthancash.org/news/learning-series-covid-colombia. [7]

Demirgüç-Kunt, A. et al. (2018), *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*, World Bank, Washington, DC, https://globalfindex.worldbank.org. [2]

Eriksson von Allmen, U. et al. (1 July 2020), "Digital financial inclusion in the times of COVID-19", *IMF Blog*, https://blogs.imf.org/2020/07/01/digital-financial-inclusion-in-the-times-of-covid-19 (accessed on 6 October 2021). [20]

GAO (2015), *National Park Service: Revenues from Fees and Donations Increased, But Some Enhancements Are Needed to Continue This Trend*, Government Accountability Office, Washington, DC, https://www.gao.gov/assets/gao-16-166.pdf. [12]

Gentilini, U. et al. (2021), *Social Protection and Jobs Responses to COVID-19: A Real-Time Review of Country Measures*, World Bank, Washington, DC, https://openknowledge.worldbank.org/handle/10986/33635. [1]

Government of Colombia (2021), *Nota estadística: Población migrante venezolana en Colombia, un panorama con enfoque de género [Statistical Note: Venezuelan Migrant Population in Colombia – A Gender Perspective Overview]*, United Nations Office for the Coordination of Humanitarian Affairs, https://reliefweb.int/report/colombia/nota-estad-stica-poblaci-n-migrante-venezolana-en-colombia-un-panorama-con-enfoque. [8]

IMF (2021), "Policy responses to COVID-19", web page, https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19 (accessed on 6 October 2021). [18]

ITU (2021), "Has digital finance softened the impact of COVID-19?", news, International Telecommunication Union, https://www.itu.int/en/myitu/News/2021/07/21/14/14/COVID-19-digital-financial-inclusion-FIGI (accessed on 6 October 2021). [17]

Kelly, S. and M. Mirpourian (2021), *Algorithmic Bias, Financial Inclusion, and Gender: A Primer on Opening Up New Credit to Women in Emerging Economies*, Women's World Banking, New York, NY, https://www.womensworldbanking.org/wp-content/uploads/2021/02/2021_Algorithmic_Bias_Report.pdf. [22]

Mastercard (2019), *Examining the Latin American and Caribbean E-commerce Market*, Mastercard, https://newsroom.mastercard.com/latin-america/files/2019/12/Whitepaper-Digital-Security-mastercard-ENG-simples-FINAL2.pdf. [21]

Omidyar Network India and Boston Consulting Group (2021), *Building India's Digital Highways: The Potential of Open Digital Ecosystems*, Omidyar Network India and Boston Consulting Group, https://opendigitalecosystems.net/pdf/ODE-Report.pdf. [24]

Poutiainen, T. and D. Rees (14 May 2021), "How digital payment systems can boost Bangladesh's push to meet the SDGs", *World Economic Forum: Global Agenda Blog*, https://www.weforum.org/agenda/2021/05/bangladesh-ready-made-garments-digital-payment (accessed on 6 October 2021). [4]

Prieto, A. (26 October 2020), "Focus on Colombia: G2P payments in response to COVID-19", *Women's World Banking Blog*, https://www.womensworldbanking.org/insights-and-impact/focus-on-colombia-g2p-payments-in-response-to-covid-19 (accessed on 6 October 2021). [6]

UN (2018), *Igniting SDG Progress through Digital Financial Inclusion*, United Nations Secretary-General's Special Advocate for Inclusive Finance for Development, New York, NY, https://btca-production-site.s3.amazonaws.com/documents/346/english_attachments/SDG_Compendium_Digital_Financial_Inclusion_September_2018.pdf?1564162236 (accessed on 6 October 2021). [14]

UNESCO (2021), "Elaboration of a Recommendation on the Ethics of Artificial Intelligence", web page, https://en.unesco.org/artificial-intelligence/ethics (accessed on 10 November 2021). [23]

World Bank Group (2017), "The Global Findex Database 2017 – Overview", web page, https://globalfindex.worldbank.org/basic-page-overview (accessed on 6 October 2021). [15]

NOTES

1. For more information, see: https://ingresosolidario.prosperidadsocial.gov.co.
2. For more information, see: https://amaderkothahelpline.net.
3. For more information, see the United Nations Principles for Responsible Digital Payments at: https://responsiblepayments.org

29 CREATING A LEVEL PLAYING FIELD FOR DATA PROTECTION

Michael Pisa, Center for Global Development
Ugonma Nwankwo, Center for Global Development
Pam Dixon, World Privacy Forum

ABSTRACT

To build trust in digital tools and systems – and the governments and companies which use them – data laws and regulations need to be well designed, tailored to local realities, and enforced effectively and consistently. Early evidence suggests that in many countries, the regulations and governance systems meant to protect against misuses of personal data fail to meet these standards, potentially undermining public confidence in the advantages of digital transformation. At the global level, low- and middle-income countries have largely been excluded from debates on data policies and have little leverage to influence how cross-border data flows are managed. Development actors should support efforts to strengthen implementation of existing data protection standards, and harmonise those standards while recognising developing countries' different needs and resources, and better measure the impact of data protection laws on economic and digital development.

Key messages

- Over the last decade, the adoption of data protection laws has accelerated dramatically in low- and middle-income countries and has been catalysed by growing concerns about data misuse.
- Despite these trends, questions remain about the impacts of weak implementation of data protection frameworks on economic, social and human rights outcomes.
- Development actors can support better data protection with initiatives to harmonise national data policies through inclusive global and regional processes and supporting low- and middle-income countries' efforts to build up regulatory and enforcement capacity.
- International actors should promote an approach to cross-border data flows that ensures data protection while allowing governments to design frameworks that meet their own needs, priorities and capacities.

As data and digital tools assume an ever-larger role in all aspects of daily life, it is increasingly important to have clear and effective rules that govern how different actors can use personal data throughout its life cycle and across different data ecosystems. A key challenge for governments is establishing rules that protect citizens from harm yet do not stifle useful innovation.

For many national governments, establishing a data protection regime is a foundational step in developing a broader approach to modern digital governance. The choices that policy makers make when creating and implementing data protection laws set a trajectory for how a government and its citizens will engage with digital ecosystems and data. These choices, therefore, have direct consequences for economic development.

Data protection laws and regulations can help build trust in digital tools and systems that promise greater efficiency and value by establishing rights that protect citizens against the misuse of their personal data and obligations that require organisations to use data in a fair, transparent and accountable manner. In theory, this greater trust should translate into greater acceptance of services that rely on data sharing and data use, leading to more investment in the resources and expertise needed to fuel a country's digital transformation (World Bank, 2021[1]; World Economic Forum, 2019[2]; Chakravorti and Chaturvedi, 2017[3]). However, early evidence suggests that in many countries that have enacted data protection laws, enforcement is weak, regulatory authorities lack independence and policies are poorly designed. The absence of harmonised and inclusive global data protection standards exacerbates the challenges, especially for low- and middle-income countries that have had little input into data policy debates. This includes discussions on designing legal frameworks for cross-border data sharing, which, at the global level, have largely been limited to G20 countries.

Over the last two years, a series of roundtables and interviews with experts working at the intersection of data policy and development were held, to better understand the relationship between data protection frameworks and economic outcomes, particularly in low- and middle-income countries. These experts welcomed the growing number of countries that have enacted data protection regimes in recent years, but also raised concerns about the effectiveness of these regimes in practice, the challenges resource-constrained governments face in implementing them and the potential negative consequences of poor implementation.

Too much, too little or poorly focused data regulation may hamper development

Data protection rules that are poorly designed or inadequately enforced can hinder

economic development through different channels that can be roughly categorised as under-regulation, over-regulation and regulating the wrong things in the wrong way.

- **Under-regulation:** Even when data protection laws exist "on the books", they often fail to translate into "law on the ground" (Pisa et al., 2020[4]). This weakens the level of protection provided and undermines trust in data use and sharing that data protection laws are meant to instil. It also contributes to regulatory uncertainty, which can hinder useful data innovation by both the public and private sectors (Mungan, 2019[5]) and the economic growth that could result.
- **Over-regulation:** As is the case in other sectors, over-regulation – in the form of high compliance costs that bear little relation to improvements in desired policy outcomes – has the potential to slow innovation by creating an unnecessary disincentive to investment. These costs are especially damaging to small- and medium-sized enterprises, which typically lack the well-resourced legal teams needed to navigate complex compliance requirements (Digital Competition Expert Panel, 2019[6]; Voss, 2021[7]).
- **Regulating the wrong things in the wrong way:** Several theorists have argued that current approaches to data protection place too much emphasis on protecting against individual harms and not enough on collective harms, putting data protection at odds with the growing reliance on machine learning algorithms that extract insights from collective data (Tisné, 2020[8]; Moerel and Prins, 2016[9]). Overemphasis on protecting against individual harms is mirrored by overreliance on informed consent as the primary basis for data processing, which often places an unreasonable burden on individuals and is meaningless in situations where they lack a basic understanding of how their data will be used (Medine and Murthy, 2020[10]; Selinger and Hartzog, 2020[11]).

Early evidence suggests that in many countries that have enacted data protection laws, enforcement is weak, regulatory authorities lack independence and policies are poorly designed

By undermining people's trust in how their data are used and raising hurdles to responsible innovation, each of these regulatory channels seem likely to lead to less investment in digital tools and data-driven services. But empirical evidence is lacking. Developing a better understanding of the causal pathways through which data regulations can affect a country's digital and economic development is crucial to designing effective policies. For example, firm-level surveys could help identify the degree to which high compliance costs or regulatory uncertainty may curtail investment.

Resources to enforce increasingly complex data protection laws vary widely

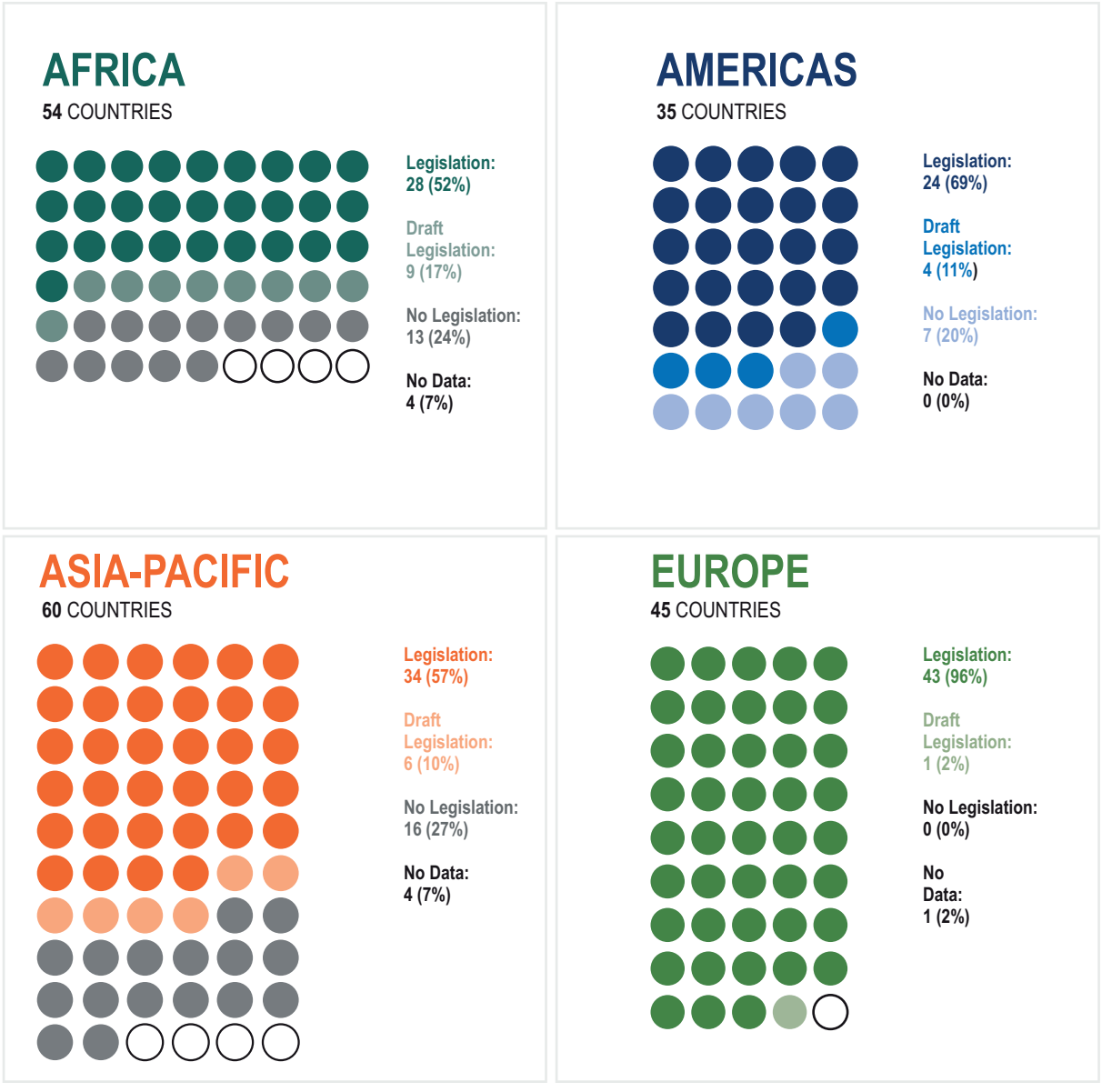
Modern approaches to data protection can be traced back to the establishment of the Fair Information Practices in the United States in the 1970s and the OECD's codification of and expansion on those principles in its Guidelines on the Protection of Privacy and Transborder Flows of Personal Data, published in 1980. The following years brought a slow and steady diffusion of national data protection frameworks, mostly in wealthier countries, based and building on these principles (Gellman, 2014[12]).

Over the last two decades, however, the number of countries that adopted data protection legislation has significantly

increased. Since 2010, 64 countries – most of which are in Africa, Asia and Latin America and over 70% of which are categorised as lower middle-income countries – have enacted new data protection laws, bringing the total with such laws in place up to 146 (Figure 29.1).

Several factors are driving the recent rapid spread of national data protection frameworks, among them growing awareness of the risks of data misuse; the desire to create an enabling framework for responsible data use and sharing; the need to meet requirements of international development partners; and, perhaps most importantly, the catalytic effect of the European Union (EU) General Data Protection Regulation (GDPR), which was enacted in 2016 and came into effect in 2018. Of the more than 60 countries that have enacted new data protections laws over the last decade, almost all modelled their approach in full or in part on the GDPR and

Figure 29.1. Country data protection laws by region



Source: UNCTAD (n.d.[13]), Data protection and privacy legislation worldwide website, https://unctad.org/page/data-protection-and-privacy-legislation-worldwide.

its predecessor, the 1995 EU Data Protection Directive (DPD).

The GDPR sets out a more rigorous model for protecting the privacy of individual data than had previously existed, altering the global data protection landscape and establishing the EU as the global leader in the field. The regulation provides mechanisms that strengthen individual control over how data are used, increased the accountability of data controllers, and raised the stakes of non-compliance through greater fines and penalties. In contrast, the United States, home to the world's largest tech firms, has taken a sectoral and relatively hands-off approach to regulating the use of personal data.

The influence of the GDPR and the DPD also reflects the extraterritorial scope of the EU's adequacy framework,[1] which calls on the European Commission to determine whether non-EU countries "offer guarantees ensuring an adequate level of protection essentially equivalent to that ensured within the Union (European Parliament, 2016[14]), in particular where personal data are processed in one or several specific sectors" as a basis for transferring data. Because companies based in countries that receive a favourable adequacy determination face lower barriers to doing business with EU citizens, achieving adequacy confers a significant competitive advantage in the global digital economy. A study published before the United Kingdom achieved GDPR adequacy, for instance, estimated that not receiving it would cost UK firms between GBP 1 billion and GBP 1.6 billion due to the additional compliance obligations (McCann, Patel and Ruiz, 2020[15]).

Although a growing number of countries have incorporated elements of the GDPR into law, early and anecdotal evidence suggests that most of them struggle to implement it effectively due to its breadth and complexity (Voss, 2021[7]). Even EU member states, which had roughly 25 years of practice implementing a similar framework under the DPD, have struggled to implement the updated law (European Commission, 2020[16]). The challenge is much greater for countries that face severe resource constraints, have a smaller pool of experts to draw from and have less experience implementing a comprehensive data protection framework.

Data protection authorities, the institutions responsible for interpreting and enforcing data protection laws in most countries that have comprehensive data protection frameworks, often lack functional independence from the executive branch or other ministries, particularly in lower income countries, which makes it difficult for them to resist political influence or to hold other government actors accountable (Davis, 2021[17]). There also are wide disparities in the level of human and financial resources available to data protection authorities across regions and economic classifications (Figure 29.2) (Fazlioglu, 2018[18]).

Acknowledging the difficulties of implementing the GDPR framework is not an endorsement of either watering down existing rules or taking an entirely different approach. In fact, the experts who participated in the roundtables were nearly unanimous in their support of the principles that underlie the GDPR and in their belief that countries should take a comprehensive and rights-based approach to personal data protection (as opposed to a sectoral approach or one that seeks to achieve an economic balance of interests) (Pisa and Nwankwo, 2021[19]).

Several experts did, however, express frustration with how current arrangements for governing cross-border data flows have, in their view, unduly restricted domestic policy choices. This includes the GDPR adequacy process, which they regarded as excessively opaque and driven by political and economic considerations rather than the fitness of a country's data protection regime that leave countries with smaller markets less likely to receive an adequacy determination (Pisa and Nwankwo, 2021[19]).

Lack of co-ordination on data regulations at the global and regional levels further

Figure 29.2. Regional disparities in staffing and budget for data protection regulation

REGION	MEDIAN PER-COUNTRY DPA BUDGET	MEDIAN PER-COUNTRY DPA STAFF
North America	USD 58 million	647
Asia/Oceania	USD 6.9 million	77
Europe	USD 2.2 million	34
Africa/Middle East	USD 500 000	14
Central and South America	USD 400 000	13
OECD		
Member	USD 6 million	50
Non-member	USD 500 000	17

Note: DPA: data protection authority.
Source: Fazlioglu (2018[18]), *How DPA Budget and Staffing Levels Mirror National Differences in GDP and Population*, https://iapp.org/media/pdf/resource_center/DPA-Budget-Staffing-Whitepaper-FINAL.pdf.

disadvantages low- and middle-income countries which, on their own, lack the economic leverage needed to influence both the practices of big tech companies that dominate global data flows and the terms on which cross-border data flows are governed in bilateral agreements with wealthier countries.

What the international community can do to strengthen data policies

The international development community and high-income countries can promote a more level playing field for data protection policies and help low- and middle-income countries advance on their path of digital transformation in five main ways:

1. **Devote more resources to strengthening domestic data governance and protection regimes in line with countries' needs and capacities.** Development organisations should work with partner countries to make sure their data governance and protection frameworks can support digital transformation. Improving how these frameworks are implemented and enforced should be a key focus of funding vehicles to support more and better data use, such as the World Bank's recently announced Global Data Facility (Hammer et al., 2021[20]).
2. **Promote a common, transparent, and flexible approach to establishing the legality of cross-border data flows.** As more countries establish their own mechanisms for determining the legality of cross-border data flows, there is a danger that a proliferation of national data protection adequacy regimes could further fragment the global digital economy. As a first step, jurisdictions should be transparent about how they reach adequacy decisions. Beyond this, countries should agree to a set of standards to govern cross-border data flows that are strong enough to ensure high-quality data protection but flexible enough to allow governments to design frameworks that meet their own needs, priorities and capacities. The Council of Europe's Convention 108+ (Council of Europe, 2018[21]), which is the only legally binding multilateral instrument on the protection

of privacy and personal data, provides a model of such an outcomes-based yet flexible arrangement, but governments are more likely to ratify a framework whose design they have provided input to.

3. **Foster global and regional initiatives to harmonise national data policies with genuine input from low- and middle-income countries.** If developing countries have a voice in shaping the data policy standards they are expected to meet, they are more likely to implement them. New institutions may be required to ensure standard-setting processes are inclusive as "existing institutional frameworks at the international level are not fit for purpose to address the specific characteristics and needs of global data governance" (UNCTAD, 2021[22]).
4. **Identify and develop better data policy metrics.** Currently, most cross-country measures about data protection policy focus solely on legislation (Greenleaf, 2019[23]; Chen, 2020[24]; UNCTAD, n.d.[13]). New metrics are needed to better understand the relationship between data protection policies and economic outcomes, including on how well or poorly data protection measures are implemented, the effect of these measures on data protection, investment outcomes, and the value created by key data ecosystems, cross-border data flows and data-driven innovation more broadly.
5. **Encourage the development of approaches that move beyond consent as the primary basis for protecting personal data.** Relying on individual consent places an unreasonable and unworkable burden on individuals. Additionally, in complex data ecosystems, obtaining consent is not always possible. Policy makers should therefore consider ways to support testing and measuring the effectiveness of different models of personal data protection and enforcement, including, for example, legitimate purposes tests, data fiduciaries and trusts, and participatory data stewardship (Medine and Murthy, 2020[10]; Ada Lovelace Institute, 2021[25]; Hardinges et al., 2019[26]; Wylie and McDonald, 2018[27]; Moerel and Prins, 2016[9]).

REFERENCES

Ada Lovelace Institute (2021), *Participatory Data Stewardship: A Framework for Involving People in the Use of Data*, Ada Lovelace Institute, London, https://www.adalovelaceinstitute.org/report/participatory-data-stewardship (accessed on 3 November 2021). [25]

Chakravorti, B. and R. Chaturvedi (2017), *Digital Planet 2017: How Competitiveness and Trust in Digital Economies Vary Across the World*, The Fletcher School, Tufts University, Medford, MA, https://sites.tufts.edu/digitalplanet/files/2020/03/Digital_Planet_2017_FINAL.pdf. [3]

Chen, R. (2020), "Mapping data governance legal frameworks around the world: Findings from the Global Data Regulation Diagnostic", *Policy Research Working Paper*, No. 9615, World Bank, Washington, DC, https://openknowledge.worldbank.org/handle/10986/35410 (accessed on 13 September 2021). [24]

Council of Europe (2018), *Convention 108+: Convention for the Protection of Individuals with Regard to the Processing of Personal Data*, Council of Europe, Strasbourg, https://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/LIBE/DV/2018/09-10/Convention_108_EN.pdf. [21]

Davis, T. (2021), *Data Protection in Africa: A Look at OGP Member Progress*, Open Government Partnership, Washington, DC, https://www.opengovpartnership.org/wp-content/uploads/2021/08/OGP-Data-Protection-Report.pdf. [17]

Digital Competition Expert Panel (2019), *Unlocking Digital Competition*, Digital Competition Expert Panel, London, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf. [6]

European Commission (2020), *Data Protection as a Pillar of Citizens' Empowerment and the EU's Approach to the Digital Transition – Two Years of Application of the General Data Protection Regulation*, COM/2020/264 final, European Commission, Brussels, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0264 (accessed on 3 November 2021). [16]

European Parliament (2016), *Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance)*, Official Journal of the European Union, L 119, 4.5.2016, pp. 1-88, https://eur-lex.europa.eu/eli/reg/2016/679/oj (accessed on 17 November 2021). [14]

Fazlioglu, M. (2018), *How DPA Budget and Staffing Levels Mirror National Differences in GDP and Population*, International Association of Privacy Professionals, Portsmouth, NH, https://iapp.org/media/pdf/resource_center/DPA-Budget-Staffing-Whitepaper-FINAL.pdf. [18]

Gellman, R. (2014), "Willis Ware's lasting contribution to privacy: Fair information practices", *IEEE Security & Privacy*, Vol. 12/4, pp. 51-54, http://dx.doi.org/10.1109/msp.2014.82. [12]

Greenleaf, G. (2019), "Global tables of data privacy laws and bills (6th Ed January 2019)", *Privacy Laws & Business International Report*, Supplement to No. 157, https://ssrn.com/abstract=3380794 (accessed on 3 November 2021). [23]

Hammer, C. et al. (2021), "Putting data and innovation to work for the SDGs: The Data Innovation Fund", *World Bank Data Blog*, https://blogs.worldbank.org/opendata/putting-data-and-innovation-work-sdgs-data-innovation-fund (accessed on 3 November 2021). [20]

Hardinges, J. et al. (2019), *Data Trusts: Lessons from Three Pilots*, Open Data Institute, London, https://theodi.org/article/odi-data-trusts-report (accessed on 3 November 2021). [26]

McCann, D., O. Patel and J. Ruiz (2020), *The Cost of Data Inadequacy*, New Economics Foundation/UCL Europe Institute, London, https://neweconomics.org/2020/11/the-cost-of-data-inadequacy (accessed on 3 November 2021). [15]

Medine, D. and G. Murthy (2020), *Making Data Work for the Poor: New Approaches to Data Protection and Privacy*, Consultative Group to Assist the Poor, Washington, DC, https://www.cgap.org/sites/default/files/publications/2020_01_Focus_Note_Making_Data_Work_for_Poor_0.pdf. [10]

Moerel, L. and C. Prins (2016), "Privacy for the homo digitalis: Proposal for a new regulatory framework for data protection in the light of big data and the Internet of Things", *Cybersecurity*, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2784123 (accessed on 3 November 2021). [9]

Mungan, M. (2019), *Seven Costs of Data Regulation Uncertainty*, Data Catalyst, Washington, DC, https://datacatalyst.org/reports/seven-costs-of-data-regulation-uncertainty (accessed on 3 November 2021). [5]

Pisa, M. et al. (2020), "Governing data for development: Trends, challenges, and opportunities", *CDG Policy Paper*, No. 190, Center for Global Development, Washington, DC, https://www.cgdev.org/sites/default/files/governing-data-development-trends-challenges-and-opportunities.pdf. [4]

Pisa, M. and U. Nwankwo (2021), *Are Current Models of Data Protection Fit for Purpose? Understanding the Consequences for Economic Development*, Center for Global Development, Washington, DC, https://www.cgdev.org/publication/are-current-models-data-protection-fit-purpose-understanding-consequences-economic (accessed on 3 November 2021). [19]

Selinger, E. and W. Hartzog (2020), "The inconsentability of facial surveillance", *Loyola Law Review*, Vol. 66/101, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3557508 (accessed on 3 November 2021). [11]

Tisné, M. (2020), *The Data Delusion: Protecting Individual Data is Not Enough When the Harm is Collective*, edited by Marietje Schaake, https://fsi-live.s3.us-west-1.amazonaws.com/s3fs-public/the_data_delusion_formatted-v3.pdf. [8]

UNCTAD (2021), *Digital Economy Report 2021 – Cross-border Data Flows and Development: For Whom the Data Flow*, United Nations Conference on Trade and Development, Geneva, https://unctad.org/system/files/official-document/der2021_overview_en_0.pdf. [22]

UNCTAD (n.d.), "Data protection and privacy legislation worldwide", web page, https://unctad.org/page/data-protection-and-privacy-legislation-worldwide (accessed on 17 November 2021). [13]

Voss, A. (2021), *Fixing the GDPR: Towards Version 2.0*, epp group in the European Parliament, https://www.axel-voss-europa.de/wp-content/uploads/2021/05/GDPR-2.0-ENG.pdf. [7]

World Bank (2021), *World Development Report 2021: Data for Better Lives*, World Bank, Washington, DC, https://doi.org/10.1596/978-1-4648-1600-0 (accessed on 3 November 2021). [1]

World Economic Forum (2019), *Data Collaboration for the Common Good: Enabling Trust and Innovation Through Public-Private Partnerships*, World Economic Forum, Geneva, https://www3.weforum.org/docs/WEF_Data_Collaboration_for_the_Common_Good.pdf. [2]

Wylie, B. and S. McDonald (2018), "What Is a data trust?", Centre for International Governance, Waterloo, Ontario, https://www.cigionline.org/articles/what-data-trust (accessed on 3 November 2021). [27]

NOTE

1. The EU adequacy process, which is detailed in Article 44 of the GDPR, grants the European Commission the power to determine whether a non-EU country offers levels of data protection that are "essentially equivalent" to that within the EU. If a third country is deemed adequate, personal data can flow from the EU to the third country without the need for additional safeguards. When assessing for adequacy in a third country, the Commission considers several factors, including: the rule of law; respect for human rights and fundamental freedoms; the effective functioning of one or more independent supervisory authorities; and international commitments the third country has entered into. In the absence of an adequacy decision, the data controller or processor should take measures to compensate for the lack of data protection in the third country through binding corporate rules or standard contractual clauses.

REUSING DATA RESPONSIBLY TO ACHIEVE DEVELOPMENT GOALS

Stefaan G. Verhulst, The GovLab at New York University

ABSTRACT

To harness and accelerate the value of data for development, new mechanisms and partnerships to access and reuse data that have already been collected will need to be established. Data collaboration is a cost-effective and innovative way to multiply the development impact of data. By combining and triangulating data from various sources, data collaboratives can generate new insights and overcome data inequalities. Establishing and operationalising structures and frameworks for responsible use and reuse of data, including addressing concerns about data misuse, should be an urgent priority to truly unlock the promise of digital data for development.

Key messages

- Developing countries can offset their limited resources and data capacity through data-collaboration and data reuse partnerships.
- Unless concerns about data misuse and privacy are addressed, data collaboration will not reach its full potential to inform and advance development.
- Development actors and other stakeholders should help develop data governance frameworks that balance risk and rewards of data use and reuse and engage the public in creating accountability mechanisms.
- Development co-operation can support data capacity building, expanded digital literacy and processes to better identify needs and priorities for data reuse.

For better or for worse, the ongoing digital transformation makes it easier to capture a wide variety of data points and store and analyse them. The challenge is to use this proliferation of data wisely, responsibly and in the public interest. There are many examples of data being used for development objectives – to improve agricultural outcomes, direct humanitarian aid where it is most needed, manage migrant flows and measure illiteracy, to name just a few. But capacity to access, use and govern data that have already been collected varies widely across countries.

The unique value of digital data is that they can be repurposed. Data reuse offers opportunities for low-income countries and others to share data costs and generate new insights and knowledge that can be put to work for sustainable development. Data collaborations are still stymied by concerns over data privacy, possible misuse and uneven governance. But data sharing, if done wisely and responsibly, can lead to better decision making in the public interest and for development. Support from development actors is needed for a framework for responsible, systemic and sustainable data reuse. The rise of social media, the Internet of Things, and the growing incursion of artificial intelligence and machine learning into everyday life have led to a process of datafication that can effect positive social change – if leveraged responsibly (Lupton and Williamson, 2017[1]).

Greater data capacity leads to greater development impact

Private and public actors generally collect data for particular purposes, typically commercial or administrative. Some of the most common are customer profiling (Poullet, 2021[2]), tracking movement and locations (The GovLab and Cuebiq, 2021[3]), and targeting social and other government services (Verhulst, Young and Zahuranec, 2019[4]). But capacity to collect, use and govern data varies widely across countries, mirroring global economic disparities. Building capacity in low-income countries to generate and use data can help achieve broader Sustainable Development Goals: economic development can lead to increased data capacity; greater data literacy is essential for development; and functional access to data for reuse can potentially spur economic development. The following examples highlight the value of digital data for development, from informing economic decision making to directing humanitarian aid:

- **Sharing data for better agricultural decisions in Colombia:** The Ministry of Agriculture and the Colombian Climate and Agricultural Sector (Clima y Sector Agropecuario Colombiano) shared data and insights with farmers on the economics and agronomy of rice cultivation, enabling them, for example, to avoid planting crops that would fail. This project allowed farmers to sustain their traditional lifestyles and yielded

an estimated USD 3.6 million in savings in the year following the launch of the initiative (Young and Stefaan, 2017[5]).

- **Mapping population movements to direct humanitarian aid in Haiti:** Following the 2010 cholera outbreak in Haiti, the telecom provider Digicel Haiti shared data with researchers at the Karolinska Institute in Sweden and Columbia University in New York. Using anonymised data from 2 million mobile phones, the researchers established population movement patterns that helped make aid delivery more effective and efficient. Similar methods have been used elsewhere (Young and Stefaan, 2016[6]).
- **Measuring illiteracy in Senegal through cell phone records:** The international development company Knuper acquired call detail record data of some 9 million subscribers in Senegal from the telecommunications company Orange Sonatel. Knuper used the data in a study to determine the usability of call detail records to improve measurements of illiteracy in developing countries. The project is a good illustration of data repurposing (The GovLab, 2019[7]).
- **Crowdsourcing new uses for data in West Africa:** In Côte d'Ivoire and Senegal, Orange Telecom hosted the Data 4 Development Challenge, an international competition that offered anonymised data to researchers seeking to address development problems, effectively crowdsourcing expertise and insights to determine new and previously unrecognised uses for privately held data (The GovLab, 2017[8]). Among the winners in Senegal were projects exploring the potential of mobile phone data for electrification, planning, how mobile phone access affects millet prices and how waterborne parasites spread through human movement.

The rush to acquire data and data capacity should not, however, lead to data (re)use being seen as a zero-sum game. Collaboration is key to successful data initiatives – ones that generate relevant insights and lead to genuine, and positive, social change.[1]

Data collaboratives offer a model for responsible reuse of data

The added value of digital data is that they can be reused by others for similar or different purposes (Verhulst and Young, 2018[9]), multiplying their potential value to development. An emerging model for data reuse are data collaboratives, a form of partnership between data holders and data users (as well as those who can act upon the insight generated and data scientists) to reuse disparate forms of data to generate new insights that can serve the public good (Verhulst et al., 2019[10]; Young and Verhulst, 2020[11]). This new approach to systematic, sustainable and responsible reuse of data has universal applicability. The GovLab has collected more than 200 examples of data collaboratives, many of them in low-income countries.[2]

Data collaboratives can be cost-effective, innovative and inclusive

The data collaborative approach offers three broad advantages:

1. **More cost efficient.** It is expensive to collect, store and use data, especially once the cost of analysing them is factored in. A 2020 study for McKinsey Digital estimated that a mid-sized institution in the United States is spending nearly USD 250 million on data annually, with spending rising by almost 50% per year (Grande et al., 2020[12]). Providing data for the United Nations High Level Panel's envisaged "data revolution" could cost a staggering USD 254 billion, according to a study by Jerven (2014[13]) for the Copenhagen Consensus Center. For low-income countries, spending of such magnitude is unimaginable. Data reuse can bring down the financial costs of data

initiatives. The McKinsey Digital report cited the example of a bank that reduced its data costs by 20% by reusing data and, more generally, improving data governance (Grande et al., 2020[12]).

2. **Generates fresh insights for better policy.** Combining data from various sources by breaking down silos has the potential to lead to new and innovative insights that can help policy makers take better decisions. Satellite data originally collected to predict weather can help manage crop prices and address poverty and hunger (Young and Stefaan, 2016[6]); cell phone data can be used to measure population movements, which in turn can help control migrant flows and address existing or emerging pandemics (The GovLab, 2017[14]). Digital data can also be triangulated with existing, more traditional sources of information (e.g. census data) to generate new insights and help verify the accuracy of information.
3. **Overcomes inequalities and asymmetries.** Social and economic inequalities, both within and among countries, are often mapped onto data inequalities (UN, 2020[15]; World Bank, 2021[16]; Vieira, 24 February 2018[17]; Alonso, Kothari and Rehman, 2 December 2020[18]). The cost of producing data and the technology needed to process these data are increasingly burdensome for low- and middle-income countries. In data collaboratives, these costs and analytical tools and techniques can be shared. For example, cloud computing, which allows analytical and other technical tools to be easily shared and accessed, can play a vital role in enabling the transfer of skills and technologies across actors and countries.

Concerns over governance and misuse of data stymie greater collaboration

Despite its promise, data collaboration is not yet widespread, particularly in low- and middle-income countries. There are persistent concerns about weak regulation and potential misuse of shared data and a limited evidence base of examples of data reuse. These obstacles highlight the need to ensure that data are managed responsibly at each step, from collection to storage to use and reuse. The challenges to greater data collaboration fall into three main categories:

Data reuse can bring down the financial costs of data initiatives. The McKinsey Digital report cited the example of a bank that reduced its data costs by 20% by reusing data and, more generally, improving data governance.

1. **Finding the right governance model.** The challenge for most countries today is not whether to regulate the digital sphere. Rather, it is how to design regulatory and institutional frameworks that can unleash the positive potential of data while limiting their potential for harm. Governance remains, at best, a work in progress. To the extent such frameworks exist, they often suffer from regulatory capture, political pressures, and insufficient knowledge or skills on the part of policy makers (Verhulst and Sloane, 2020[19]). These problems may be particularly acute in low-income countries, where regulatory capacity and independence are often weaker.
2. **Addressing concerns about misuse.** Concerns over data misuse and privacy remain one of the most significant obstacles to greater data collaboration. These are often valid concerns on the part of data holders and data subjects, and data reusers themselves. A multi-pronged strategy to address these concerns should focus on raising awareness within organisations of the risks of data misuse

and establishing effective institutional and legal frameworks to ensure accountability and responsible data reuse.

3. **Building and sharing evidence from data reuse.** Not enough is known – and shared – about how data are being reused, what works and doesn't work in data collaborations, and emerging lessons and principles for success (Verhulst et al., 2019[10]). A systematised knowledge base could help reduce duplication of effort, a daunting challenge when resources are scarce, and inform more successful initiatives. The GovLab's repository of case studies is contributing to building a solid knowledge base.

Maximising the positive potential of data reuse

The absence of clear data-sharing frameworks limits the possibilities for data collaboration to enhance development. Rather than maximising the potential of data reuse and minimising its possible harm, the existing fragmented, ad hoc regulations and policies often do the opposite. Fresh approaches are needed – to protect privacy and prevent data misuse, improve decision making, and develop the necessary human resources to effectively manage data.

Replace outdated data governance mechanisms and structures

Existing models and policies to protect privacy are largely outdated and often predicated on a risk-reduction rather than a rewards-maximisation approach.[3] Policy makers, whether in government or private bodies, need new ways of balancing risk and reward, reinvigorated institutional models and forms, and fresh ways of ensuring accountability. The following are some of the specific features required:

- Innovative risk assessment and mitigation methods across the data life cycle can better balance risk and reward (Young, Campo and Verhulst, 2019[20]).
- Data responsibility by design approaches can ensure that privacy and other protections are built into technical and institutional architectures, e.g. integrated technical means to prevent or mitigate violations such as differential privacy and other privacy-enhancing tools (The GovLab, 2021[21]).
- The development and dissemination of model data-sharing agreements (Contracts for Data Collaboration, 2021[22]) could provide templates for organisations seeking to share data or access shared data. Low-income countries, which may lack the technical and human resources to design such agreements, could find these especially valuable.
- Establishing ethics review boards to oversee how data are being reused and "data stewards" who can steer the process of sharing and reusing data can address data governance challenges (Verhulst et al., 2020[23]).
- A global governance framework that smooths cross-border data flows for development and other social purposes is essential.[4]
- Greater public engagement through citizen assemblies, awareness-raising campaigns and educational strategies can help establish a so-called "social license" to reuse data and avoid one-size-fits-all approaches, an issue of particular salience in low-income countries (Young et al., 2020[24]).

Improve decision making on data reuse priorities

Data sharing is a largely reactive process, driven less by public need than by what data are available or shared. Data collaboration will have more impact if driven by demand rather than supply, though. This entails asking the right questions to identify priorities and share data accordingly.[5] An effective questions-based approach to data sharing combines expert knowledge with broad public engagement to pinpoint priority public needs that data can address. Such a "new science

of questions" is needed in every context, but it is arguably most relevant for low-income countries where (sometimes contradictory) public priorities compete for limited resources and difficult trade-offs must be made among competing Sustainable Development Goals.[6] Asking the right questions can help establish a more systematic, unbiased and scientific approach to identifying needs and channelling scarce public resources. A science of questions is also essential to ensure that goals and initiatives are contextually sensitive – always an important concern for development projects.

Increase availability of talent and create new professional and institutional positions, such as data stewards

There are a variety of technical means (e.g. digital auditing mechanisms, decision provenance mapping tools) to help strengthen any framework for responsible data use, but data governance ultimately relies on people. Yet, technical advances are outpacing capacity to keep up. Low-income countries in particular need support to bolster their capacity to oversee responsible and systemic data sharing. Several factors are particularly important.

First, training and education can be integrated with existing formal educational systems and supplemented by more flexible, local initiatives; for example, those designed by civil society organisations to raise general awareness among the population of the risks and opportunities of data sharing (Young, Campo and Verhulst, 2019[20]).

Second, capacity building should encompass a mix of goals for different segments of the population. While countries benefit from more and better-trained data scientists, for instance, policy makers, business leaders, journalists and other societal groups also require training and upskilling. Increasing overall data literacy among the general population should be a key goal to raise citizen awareness and increase trust and buy-in of data collaboration.

A "new science of questions" is needed in every context, but it is arguably most relevant for low-income countries where (sometimes contradictory) public priorities compete for limited resources and difficult trade-offs must be made among competing Sustainable Development Goals

Third, ensuring accountability and oversight of data and data-sharing initiatives requires the creation of new institutional positions. Organisations can create roles for individuals or bodies as data stewards empowered to oversee how data are managed, identify opportunities for data sharing and enforce accountability across the data chain. These positions are increasingly common in private organisations, but are equally important for government, civil society and educational institutions (Verhulst et al., 2020[23]).

Development actors should actively support responsible data governance frameworks to support sustainable development

Capacity to produce and use data can lead to more informed policies, and reusing data in collaborative partnerships can be a cost-effective way to generate new insights and decisions on development. The promise and challenges posed by data access and data reuse are both heightened in low-income countries. Their more limited human and financial resources can undermine data

governance, fail to protect privacy and prevent data misuse, and miss opportunities to improve the well-being of their citizens.

Thus, establishing and operationalising a framework for responsible, systemic and sustainable data reuse should be an urgent priority for policy makers and all stakeholders involved in development. Updated and innovative governance mechanisms to manage data can proactively address risks and maximise the positive potential of data. The creation and training of data stewards can help create the human capital needed to design and implement responsible data collaborations that are fit-for-purpose. These governance mechanisms and professions need to be developed in a strategic and collaborative way that recognises the role data can fill for private and public organisations across society.

REFERENCES

Alonso, C., S. Kothari and S. Rehman (2 December 2020), "How artificial intelligence could widen the gap between rich and poor nations", *IMF Blog*, https://blogs.imf.org/2020/12/02/how-artificial-intelligence-could-widen-the-gap-between-rich-and-poor-nations (accessed on 21 September 2021). [18]

Contracts for Data Collaboration (2021), "C4DC", web page, https://contractsfordatacollaboration.org (accessed on 21 September 2021). [22]

Grande, D. et al. (2020), "Reducing data costs without jeopardizing growth", McKinsey Digital, https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/reducing-data-costs-without-jeopardizing-growth (accessed on 21 September 2021). [12]

Jerven, M. (2014), *Benefits and Costs of the Data for Development Targets for the Post-2015 Development Agenda*, Copenhagen Consensus Center, Lowell, MA, https://www.copenhagenconsensus.com/sites/default/files/data_assessment_-_jerven.pdf. [13]

Lupton, D. and B. Williamson (2017), "The datafied child: The dataveillance of children and implications for their rights", *New Media & Society*, Vol. 19/5, pp. 780-794, http://dx.doi.org/10.1177/1461444816686328. [1]

Poullet, Y. (2021), *Profiling in the Age of AI*, AIEthicsCourse.org, https://aiethicscourse.org/lectures/profiling-in-the-age-of-ai (accessed on 20 September 2021). [2]

The GovLab (2021), "Data responsibility journey: Risks & responsibilities throughout the data lifecycle", web page, https://dataresponsibilityjourney.org (accessed on 21 September 2021). [21]

The GovLab (2019), "Knuper data upcycling in Senegal", *Data Collaboratives Cases*, https://datacollaboratives.org/cases/knuper-data-upcycling-in-senegal.html (accessed on 21 September 2021). [7]

The GovLab (2017), "Orange Telecom Data for Development Challenge (D4D)", *Data Collaboratives Cases*, https://datacollaboratives.org/cases/orange-telecom-data-for-development-challenge-d4d.html (accessed on 21 September 2021). [8]

The GovLab (2017), "Tracking malaria in Namibia with cell phone data", *Data Collaboratives Cases*, https://datacollaboratives.org/cases/tracking-malaria-in-namibia-with-cell-phone-data.html (accessed on 21 September 2021). [14]

The GovLab and Cuebiq (2021), *The Use of Mobility Data for Responding to the COVID19 Pandemic: DATA4COVID19 Deep Dive*, Open Data Institute, London, http://theodi.org/wp-content/uploads/2021/04/Data4COVID19_0329_v3.pdf. [3]

UN (2020), *Global Issues: Big Data for Sustainable Development*, United Nations, New York, NY, https://www.un.org/en/global-issues/big-data-for-sustainable-development (accessed on 21 September 2021). [15]

Verhulst, S. and M. Sloane (2020), "Realizing the potential of AI localism", *Project Syndicate*, web page, Project Syndicate, https://www.project-syndicate.org/commentary/local-regulation-of-artificial-intelligence-uses-by-stefaan-g-verhulst-1-and-mona-sloane-2020-02?barrier=accesspaylog (accessed on 21 September 2021). [19]

Verhulst, S. and A. Young (2018), *Toward an Open Data Demand Assessment and Segmentation Methodology*, The GovLab, New York, NY, https://thegovlab.org/static/files/publications/Data+Demand.pdf. [9]

Verhulst, S. et al. (2019), *Leveraging Private Data for Public Good: A Descriptive Analysis and Typology of Existing Practices*, The GovLab, New York, NY, https://datacollaboratives.org/static/files/existing-practices-report.pdf. [10]

Verhulst, S., A. Young and A. Zahuranec (2019), "Circular data for a circular city: Value propositions for economic development", *The Circular City Research Journal*, Vol. 1, http://files.thegovlab.org/Circular_Data.pdf. [4]

Verhulst, S. et al. (2020), "Wanted: Data stewards: (Re-)defining the roles and responsibilities of data stewards for an age of data collaboration", *The GovLab Blog*, https://blog.thegovlab.org/post/wanted-data-stewards-re-defining-the-roles-and-responsibilities-of-data-stewards-for-an-age-of-data-collaboration (accessed on 21 September 2021). [23]

Vieira, H. (24 February 2018), "Without urgent action big data may widen inequality", *LSE Blogs*, https://blogs.lse.ac.uk/businessreview/2018/02/24/without-urgent-action-big-data-may-widen-inequality (accessed on 21 September 2021). [17]

World Bank (2021), *World Development Report 2021: Data for Better Lives*, World Bank, Washington, DC, https://doi.org/10.1596/978-1-4648-1600-0. [16]

Young, A., S. Campo and S. Verhulst (2019), *Responsible Data for Children: Synthesis Report*, United Nations Children's Fund/The GovLab, New York, NY, https://rd4c.org/assets/rd4c-synthesis-report.pdf. [20]

Young, A. and V. Stefaan (2017), "Aclímate Colombia: Open data to improve agricultural resiliency"*, Open Data for Developing Economies Case Studies*, The GovLab, New York, NY, https://odimpact.org/case-aclimate-colombia.html. [5]

Young, A. and V. Stefaan (2016), "Aclímate Colombia: Open data to improve agricultural resiliency"*, Open Data for Developing Economies Case Studies*, The GovLab, https://odimpact.org/case-aclimate-colombia.html. (accessed on 20 September 2021). [6]

Young, A. and S. Verhulst (2020), "Data collaboratives", in *The Palgrave Encyclopedia of Interest Groups, Lobbying and Public Affairs*, Palgrave Macmillan, New York, NY, https://doi.org/10.1007/978-3-030-13895-0_92-1. [11]

Young, A. et al. (2020), *The Data Assembly: Responsible Data Re-Use Framework*, The GovLab, New York, NY, https://thedataassembly.org/files/nyc-data-assembly-report.pdf. [24]

NOTES

1. Over several years of research and work regarding data sharing and reuse, this author has boiled down the importance of collaboration into the following three maxims or principles: 1) the data one needs, one likely doesn't possess; 2) the domain and data expertise one needs, someone else probably possesses; and 3) the computational power and technical infrastructure required to process the data likely demand access to third-party platforms.
2. The benefits and challenges outlined in this section draw from case studies and several hours of interviews, desk analysis and other research conducted over the years by The GovLab. Its case study repository is available at: http://datacollaboratives.org/explorer.html.
3. On the difficulties of balancing risk and reward, see, for example: https://www.eesc.europa.eu/en/news-media/news/big-data-how-minimise-risks-while-maximising-benefits-all. On rewards maximisation, discussion often involves consideration of the harms and dangers of what Open Data Watch calls "open by default" data policies; see, for example: https://opendatawatch.com/publications/maximizing-access-to-public-data-striking-the-balance.
4. For a discussion on the need to smooth cross-border data flows, see: https://www2.itif.org/2017-cross-border-data-flows.pdf and https://www.cigionline.org/publications/data-different-why-world-needs-new-approach-governing-cross-border-data-flows.
5. For more information, see the 100 Questions project web page at: https://the100questions.org.
6. On this topic, see, for example: https://euagenda.eu/upload/publications/untitled-80154-ea.pdf; https://doi.org/10.1057/s41599-019-0335-5 and https://expansion.eco/the-dilemma-of-the-uns-sustainability-goals-agenda-2030.

21 CASE STUDY: DIGITAL TRANSFORMATION OF PUBLIC HEALTH SYSTEMS

Jillian Oderkirk, Employment, Labour and Social Affairs Directorate, OECD
Nick Tomlinson, Employment, Labour and Social Affairs Directorate, OECD
Kerri Elgar, Development Co-operation Directorate, OECD

ABSTRACT

Countries use data and digital technologies to make healthcare more financially sustainable and better prepared for future challenges while providing efficient, high quality and people-centred services. The COVID-19 pandemic catalysed the digital transformation of health systems, but the health sector lags in harnessing the potential of data and transforming services for the 21st Century. Expanding the digital transformation of the health sector in developing countries will require national strategies that are inclusive of all stakeholders as well as more co-ordination and support from development co-operation partners.

Key messages

- The COVID-19 pandemic highlighted the benefits, risks and limitations of digital technologies for healthcare, highlighting the need for countries to transform their data and information systems, and implement digital health strategies and health data governance frameworks.
- As this transformation spreads, policymakers in health, digitalisation and development can join forces to support systems for cross-border data sharing and surveillance that consider developing-country contexts and capacity challenges.

As countries work towards Sustainable Development Goal (SDG) 3.8: Universal Health Coverage, many look to data and digital technologies to make healthcare more financially sustainable and better prepared for future challenges while providing efficient, high quality and people-centred services. The COVID-19 pandemic catalysed the digital transformation of health systems. This ranges from innovating healthcare delivery (e.g., telehealth), to establishing health information systems (e.g., digitising patient records or providing vaccine passports), to setting up disease monitoring and management systems, to sharing data for research. However, the health sector lags significantly in harnessing the potential of data and transforming services for the 21st Century – particularly investments in human and technical capacity, given the increasing inequalities and digital divides within and between countries.

At the national level, often-intertwined challenges to digital transformation of health systems include interoperability, fragmentation, lack of end-user focus, and regulatory barriers or gaps. All economies face these challenges, as evidenced in OECD country reviews of health systems.[1] Despite the similarities, access to technology (and limited capacity to make use of it) often divides developed and developing countries, limiting the potential for joint solutions.

Data and digital technologies present opportunities and new policy challenges

The main reason health data cannot work together is a lack of interoperability when information systems are developed without common standards, preventing data from being exchanged or making it difficult to interpret or integrate with other data (OECD, 2021[1]). In addition, health information systems should be interoperable with other national data systems (such as for social protection), with strong data governance and regulatory frameworks that enable secure exchange (OECD, forthcoming[2]). Fragmented healthcare provision presents another challenge for national governments, increasing costs and co-ordination difficulties. The OECD's forthcoming report on the Netherlands' health system shows that efforts to overcome fragmented (project-by-project or locality-by-locality) approaches are critical for an information system that meets the needs of all stakeholders and maximises the use of data for direct care or secondary purposes. For developing countries, these systems must also be consistent with country capacity to operate and manage data if they are to improve financial and programmatic decision making, as exemplified by the oversupply of donor-driven health data initiatives in Papua New Guinea (Hetzel, 2020[3]).

Further, in countries where health systems are over-stretched and underfunded, health information systems must be efficient, with effective buy-in from users and other stakeholders. Health data can have many uses and users: from individuals monitoring and improving their own health; to providers delivering personalised care; to managers ensuring safety, quality and performance; to scientists developing and evaluating treatments; to IT developers creating new digital tools, devices and apps. Effective health systems need data that is widely

usable and takes country context into account.

Finally, lack of alignment and common interpretation of regulations also challenge the digital transformation of health systems. Overcoming these will require governance and regulatory systems that enable access to data for those who need them while keeping data secure and maintaining individuals' rights to privacy. In countries where poor digital and health infrastructure might prevent interoperability between data systems and the safe use of patient data, an appropriate governance framework can protect individuals and ensure that healthcare is tailored to the characteristics and values of the target communities (Wyber et al., 2015[4]). Advancing people-centred care also requires transparency about the data collected, and allows individuals to express preferences about data sharing and access their own health data.

At the international level, the case for health data as a global public good (through unrestricted sharing across borders) must be strengthened, highlighting the benefits of health data exchange to support response and preparedness. For example, it can enable multi-country medical and scientific research, foster industry innovations and allow healthcare organisations to adopt new technologies in line with global advances. In parallel, these efforts must protect health data from loss and misuse, and provide governance and oversight of the data to ensure safe use.

Despite efforts to accelerate data sharing between health systems globally in the wake of the COVID-19 crisis, most countries still struggle with a range of challenges. These include low data interoperability due to a lack of standardised data formats, siloed technology and data collection systems, and variations in national protocols to link records. These must be considered in addition to the overarching responsibility of ensuring that data can be safely accessed when and where authorised. The difficulty in agreeing a globally accepted COVID-19 vaccination passport underscores both the complexity of the problem and the importance of identifying a solution for international mobility in the future.

Integrated health information systems deliver gains and protect against risks

Digital technologies already provide solutions to these challenges across developed, emerging and developing country contexts (Gunasekeran et al., 2021[5]; Scales, 2021[6]; OECD, 2020[7]).[2] If access to the Internet and other technologies can be resolved, an integrated health information system can strengthen healthcare delivery in many contexts so that health data can be accessed by a range of users, starting with patients and their healthcare providers.

Such systems should also enable secondary data use, including for:

- health system performance management on national, regional and network levels
- public health monitoring and management, including for the COVID-19 pandemic
- new digital services such as e-prescriptions and telehealth consultations, payments and reimbursements
- biomedical research and development
- innovation such as big-data analytics and artificial intelligence (AI) to enhance knowledge-based decisions for patient care and health system governance.

One national-level example of secondary use is France's Health Data Hub launched in 2019 to support research and innovation in healthcare. The hub provides a single entry point for secure and privacy-protected data services, and access to health microdata for research that contributes to the public interest while respecting patient rights and ensuring transparency for civil society. In addition to facilitating data exchange, the Health Data Hub also provides educational tools for citizens to understand the data and learn how to use it.

While at an early stage in many developing countries, big data and predictive analytics are helping prevent outbreaks of disease and save lives by enabling the pre-positioning

of emergency relief finance, supplies and personnel (Hernandez and Roberts, 2020[8]). For example, these technologies have been used to help address a cholera outbreak in Yemen with the support of the United Kingdom, UNICEF and partners (United Kingdom Department for International Development, 2018[9]). The health sector also had some success with the provision of digital public goods: 73 countries have adopted the District Health Information Software 2 (DHIS2) to collect and manage health data, which some used as the basis to issue vaccine certificates during COVID-19 (see Chapter 26). However, the quality of data sources and availability of digital devices in clinics and hospitals remain an issue, along with the absence of some of the most vulnerable groups from the data collection process.

As global interdependence in health security increases, co-operation between countries on knowledge sharing around digital health is accelerating (OECD, 2019[10]). In addition, international and regional organisations increasingly help countries leverage tools such as digital surveillance to exchange timely health system information (Kostkova et al., 2021[11]). The African Union's Centre for Disease Control and Prevention is helping six countries build capacity to leverage digital tools for tracking infectious diseases, including COVID-19, and use that information to target public health efforts (Africa CDC, n.d.[12]).

Furthermore, health systems can leverage data and digital technologies to become more efficient, reliable and financially sustainable. OECD countries use data to identify low-value services that could be discontinued because they are either unprofitable, not treating enough people, failing to achieve desired outcomes, or a combination of these (OECD, 2019[10]). Similarly, in developing countries, information feedback systems can move healthcare towards results-based practice and improve the use of resources (Wyber et al., 2015[4]).

Beyond efforts to strengthen health information systems, national governments and development co-operation providers use digital technologies to reinforce health policy objectives – for example mobile messaging and social media to promote vaccination in all age groups, including in low- and middle-income countries (COVID-19 Global Evaluation Coalition, 2020[13]).

Digital capacity determined preparedness to cope with COVID-19

Countries with greater digital capacity were better prepared to meet demands on their health information systems due to COVID-19 and broader challenges for global health security. Some had systems in place to integrate health data, a scientific community to translate data into knowledge, and IT infrastructure and communications channels to provide trusted information and digital tools to patients and the public. For example, tele-medicine and AI for health research and diagnosis were successfully deployed in many countries to address the shortage of medical personnel.

But there is a gap in uptake of these technologies between low- and high-income countries, and some found themselves totally unprepared to use health data and digital technology to manage the pandemic. The COVID-19 crisis accentuated weaknesses in health systems in both OECD countries and developing countries, which stem from a range of poor policy and technology choices. These include: failed electronic health-record system deployments; fragmented and unstandardised health data; legislation that prevented data development and sharing; policies and practices (such as biased AI algorithm deployments) that lost public trust (Oliveira Hashiguchi, Slawomirski and Oderkirk, 2021[14]); commodification and sale of personal data without consent (Murgia and Harlow, 2019[15]); and data breaches due to poor safeguards (European Union Agency for Cybersecurity, 2021[16]).

Similarly, there is a gap in uptake of digital payment and reimbursement systems. Nevertheless, success stories around the use of these systems in some developing

country contexts demonstrate benefits for global health security. For example, digitised payments to Ebola health workers were also implemented for COVID response (Better Than Cash Alliance, 2016[17]; Better Than Cash Alliance, 2020[18]; Better Than Cash Alliance, 2021[19]).

Next steps for development co-operation to expand digital health tools

Expanding the digital transformation of health to developing countries will require national strategies that are inclusive of all stakeholders while expanding work with development co-operation partners.[3] Three objectives were identified for national digital health strategies in all countries (OECD, 2019[20]):

1. Achieve a mature health information system with high-quality data across the continuum of care that can be linked with one another and with contextual and outcome data.
2. Develop a standardised, coherent and accessible Electronic Health Record (EHR) system that breaks down clinical data silos and can show health care trajectories and outcomes.
3. Create comprehensive health data governance, with legislation and policies that allow data to be linked and accessed for uses in the public interest, including cross-border collaboration.

The OECD Digital Health portal[4] is a useful starting point for information about best practices and lessons learned, including on health data development, new technologies and data governance. The OECD Recommendation on Health Data Governance provides a comprehensive framework for all countries looking to develop a national digital health strategy and roadmap (OECD, 2019[20]). It sets out principles to support health data development, use and sharing within and across borders, while protecting individuals' privacy and data security. These principles also provide a valuable framework for development co-operation, taking context as the starting point and ensuring consistency with national development objectives and development effectiveness. Information on adherence to the OECD recommendation and other resources is available at the OECD Legal Instruments portal.[5]

Tele-medicine and AI for health research and diagnosis were successfully deployed in many countries to address the shortage of medical personnel

Meanwhile, development-specific efforts help low- and middle-income countries collect better public health data. During the COVID-19 pandemic, Bloomberg Philanthropies provided technical assistance to help 32 national governments improve their use of data and gain a better understanding of the disease's impact. (Bloomberg Philanthropies, 2021[21]). The MEASURE Evaluation project, funded by USAID, aims to enable countries to improve lives by strengthening their capacity to generate and use high-quality health information to make evidence-informed, strategic decisions at local, subregional and national levels in low-resource settings.[6] In addition to these efforts, development co-operation providers – including vertical funds such Gavi, UNAIDS, the Vaccines Alliance, and the Global Fund to Fight AIDS, Tuberculosis and Malaria – are joining forces to strengthen digital health information systems nationally and globally.

As this transformation expands, health and digital policy makers have a role in supporting developing-country governments while ensuring that the design of international systems for cross-border data sharing and surveillance take developing country contexts and capacity challenges into account.

REFERENCES

Africa CDC (n.d.), *Programmes - Digital Disease Surveillance (webpage)*, Africa Centres for Disease Control and Prevention (CDC), African Union Commission, Addis Ababa, https://africacdc.org/programme/surveillance-disease-intelligence/digital-disease-surveillance/ (accessed on 19 November 2021). [12]

Better Than Cash Alliance (2021), *Improving Humanitarian Payments Through Digital Innovation: Challenges and Opportunities*, Better Than Cash Alliance, New York, https://www.betterthancash.org/alliance-reports/improving-humanitarian-payments-through-digital-innovation-challenges-and-opportunities. [19]

Better Than Cash Alliance (2020), *Digital Payments in Ebola Response: Lessons for the COVID-19 crisis (webinar)*, https://www.betterthancash.org/videos/bKUrlwIN_wU. [18]

Better Than Cash Alliance (2016), *Saving Money, Saving Lives: A Case Study on the Benefits of Digitizing Payments to Ebola Response Workers in Sierra Leone*, https://www.betterthancash.org/alliance-reports/saving-money-saving-lives-a-case-study-on-the-benefits-of-digitizing-payments-to-ebola-response-workers-in-sierra-leone (accessed on 19 November 2021). [17]

Bloomberg Philanthropies (2021), *Data for Health (database)*, https://www.bloomberg.org/public-health/strengthening-health-data/data-for-health/ (accessed on 2 December 2021). [21]

COVID-19 Global Evaluation Coalition (2020), , https://www.covid19-evaluation-coalition.org/ (accessed on 7 December 2021). [13]

European Union Agency for Cybersecurity (2021), *ENISA Threat Landscape 2021*, https://www.enisa.europa.eu/publications/enisa-threat-landscape-2021. [16]

Gunasekeran, D. et al. (2021), "Applications of digital health for public health responses to COVID-19: A systematic scoping review of artificial intelligence, telehealth and related technologies", *npj Digital Medicine*, Vol. 4/1, pp. 1-6, http://dx.doi.org/10.1038/s41746-021-00412-9. [5]

Hernandez, K. and T. Roberts (2020), *Predictive Analytics in Humanitarian Action: A Preliminary Mapping and Analysis*, Institute of Development Studies, Brighton, UK, https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/15455/EIR33_Humanitarian_Predictive_Analytics.pdf. [8]

Hetzel, M. (2020), "PNG's health data: Too much of a good thing – part two", *DevPolicy Blog*, https://devpolicy.org/pngs-health-data-too-much-of-a-good-thing-part-two-20200611/ (accessed on 19 November 2021). [3]

Kostkova, P. et al. (2021), "Data and digital solutions to support surveillance strategies in the context of the COVID-19 pandemic", *Frontiers in Digital Health*, Vol. 3, p. 707902, http://dx.doi.org/10.3389/FDGTH.2021.707902. [11]

Murgia, M. and M. Harlow (2019), *How top health websites are sharing sensitive data with advertisers*, https://www.ft.com/content/0fbf4d8e-022b-11ea-be59-e49b2a136b8d. [15]

OECD (2021), *Creditor Reporting System*, https://stats.oecd.org/Index.aspx?DataSetCode=crs1 (accessed on 19 November 2021). [22]

OECD (2021), "Laying the foundations for artificial intelligence in health", in *OECD Health Working Papers*, OECD Publishing, Paris, https://www.oecd-ilibrary.org/social-issues-migration-health/laying-the-foundations-for-artificial-intelligence-in-health_3f62817d-en (accessed on 19 November 2021). [1]

OECD (2020), *Trustworthy AI in Health*, OECD Publishing, Paris, https://www.oecd.org/health/trustworthy-artificial-intelligence-in-health.pdf (accessed on 25 November 2021). [7]

OECD (2019), *Health in the 21st Century: Putting Data to Work for Stronger Health Systems*, OECD Health Policy Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/e3b23f8e-en. [10]

OECD (2019), *Recommendation of the Council on Health Data Governance*, OECD/LEGAL/0433, https://www.oecd.org/health/health-systems/Recommendation-of-OECD-Council-on-Health-Data-Governance-Booklet.pdf (accessed on 25 November 2021). [20]

OECD (forthcoming), *Towards an Integrated Health Information System in the Netherlands*, OECD Publishing, Paris. [2]

Oliveira Hashiguchi, T., L. Slawomirski and J. Oderkirk (2021), "Laying the foundations for artificial intelligence in health", *OECD Health Working Papers*, No. 128, OECD Publishing, Paris, https://doi.org/10.1787/3f62817d-en. [14]

Scales, I. (2021), "How COVID-19 accelerated digital healthcare", *MyITU*, https://www.itu.int/en/myitu/News/2021/04/07/07/25/COVID-accelerating-digital-healthcare (accessed on 19 November 2021). [6]

United Kingdom Department for International Development (2018), "World first as UK aid brings together experts to predict where cholera will strike next", *ReliefWeb*, https://www.gov.uk/government/news/world-first-as-uk-aid-brings-together-experts-to-predict-where-cholera-will-strike-next. [9]

Wyber, R. et al. (2015), "Big data in global health: Improving health in low- and middle-income countries", *Bulletin of the World Health Organization*, Vol. 93/3, p. 203, http://dx.doi.org/10.2471/BLT.14.139022. [4]

NOTES

1. See: https://www.oecd.org/els/health-systems/reviews-health-systems.htm
2. See: https://www.oecd.org/health/trustworthy-artificial-intelligence-in-health.pdf
3. Financing for digital health projects from development co-operation providers increased at an estimated total of USD 786.8 million in the period 2015-2019, in line with an overall increase in health sector financing since 2017. Source: Authors' calculations based on OECD Creditor Reporting System (OECD, 2021[22]).
4. See: https://www.oecd.org/health/digital-health.htm.
5. See: https://www.oecd.org/legal/legal-instruments.htm.
6. See: https://www.measureevaluation.org.

RESHAPING SOCIAL MEDIA: FROM PERSUASIVE TECHNOLOGY TO COLLECTIVE INTELLIGENCE

32

Benjamin Kumpf, Development Co-operation Directorate, OECD
Angela Hanson, Governance Directorate, OECD

ABSTRACT

The business models of the most ubiquitous social media platforms – where Internet users spend a large part of their time – rely on gathering and leveraging personal data to predict and shape behaviour. Societies are now facing up to the negative effects of so-called 'persuasive technologies' and their influence on people's beliefs and actions, including misinformation and political polarisation. In low-income countries, the potential misuse of persuasive technologies is of special concern given the low levels of digital literacy and skills, and mistrust of institutions. Development institutions can deliver multiparty efforts that support local entrepreneurship and innovation, including the use of collective intelligence tools, to reshape prevailing social media dynamics.

The authors would like to acknowledge the support provided by Parnika Jhunjhunwala in the preparation of this piece for publication.

Key messages

- Social media platforms, characterised as 'persuasive technologies' designed to change the attitudes or behaviour of users, account for more than one-third of users' total Internet time.
- Governments and development actors should support local entrepreneurship and innovation that can test and scale alternative business models for social media with the goal of using these platforms and persuasive technology to promote social cohesion and public benefits.
- Because the negative impacts of persuasive technologies are compounded in contexts with low digital skills and literacy, global networks to facilitate regulation and stimulate alternatives should systematically include low- and middle-income countries.

Development co-operation providers should support collective intelligence approaches to designing and using digital systems that foster inclusivity and accountability in policy making and government. The use of persuasive technology, which seeks to capture, retain and shaper users' attention and behaviour, is of increasing concern worldwide. Evidence is mounting that the business model of major social media platforms may push users towards extremist content, amplify misinformation and disinformation, and exacerbate political and social polarisation. Low- and middle-income countries are likely more vulnerable to these negative consequences due to lower levels of digital literacy. While the share of the population that actively use social media is comparatively small in these countries today, it is growing rapidly. This suggests an opportunity to harness persuasive technologies for social good. Development actors have an important role in promoting mutual learning partnerships that build on good practices and in supporting innovation that produces new social media business models that strengthen rather than divide societies.

The rise and fall of tech giants

Imagine it is the year 2035. For almost three decades, persuasive-technology-based social media platforms designed to influence users' attitudes and behaviours dominated global markets. But now, the fall of established tech giants is in full swing.

Some emerging competitors run on open-source software; others are proprietary. Most platforms are designed for domestic or regional markets, but a few have global reach. All are powered by new business models, some commercial – including those based on free and open-source software – others not. The entrepreneurs and technologists pioneering these rising digital tools are deeply aware of the unintended consequences their products and services might have for societies. In this hypothetical future, people and governments around the world had demanded change after experiencing the negative effects of persuasive technologies in many ways (IJsselsteijn et al., 2006[1]). In low- and middle-income countries in particular, governments support digital pioneers to test and scale business models and persuasive technologies designed to advance human well-being and social cohesion, and that are also commercially viable. State institutions and development organisations work across countries and regions to shape digital futures. Development organisations play a crucial role bringing together regulators, policy makers, technologists, designers, entrepreneurs and others across the global North and South to gather evidence of the effects of persuasive technologies on individuals, societies, regulation and markets.

This is a plausible, if not yet a probable, scenario. Dominance of the technology industry by a few players currently monopolises much thinking. However, after a period of ossification, the global social media platform market is indeed shifting. OECD member states and China seem to

be entering a new phase, with second- and third-place firms in customer penetration competing vigorously against incumbents (The Economist, 2021[2]). And in the global South, still-low social media penetration rates offer governments and development organisations opportunities to shape how these markets evolve.

Business models unleash social media's unintended consequences

In recent years, investigative journalism, technology pundits and popular culture such as the Netflix docudrama *The Social Dilemma* introduced mainstream audiences to the concept of persuasive tech (Naughton, 2020[3]). This field emerged at the turn of the millennium (Fogg, Danielson and Cuellar, 2007[4]) and encompasses persuasive product and technology design. Persuasive technology includes digital tools that allow content to be tailored to individual users to influence attitudes and drive behavioural change. While persuasive design and algorithmic content suggestion are important for understanding both the harmful and useful potential of digital technology, the underlying business models of platforms play important roles and must be discussed alongside persuasive design.

Most of today's tech monopolies started without a clear business model. Persuasive technologies found success in the late 1990s with the Tamagotchi and Pocket Pikachu digital pets that users had to "feed", "bathe" and otherwise care for. Initially, their priority was to grow the user base and later figure out how to monetise the offer. The social responses to digital products charted the way for testing and applying an ever increasing variety of persuasion techniques, including normative influence, commitment and consistency, recognition, social comparison (Fogg, 2002[5]) and scarcity (Inman, Peter and Raghubir, 1997[6]; Cialdini, 2001[7]).

Google pioneered today's dominant business model, using user data to sell targeted advertisement placement. The commodification of user data for profit and influence is at the heart of this model. Bulk data sold to third parties can be used to determine religious beliefs, sexual orientation, political leanings and ethnicity, among other attributes. Facebook, for example, collects a gigantic amount of user data and generates recommendations by analysing these data through artificial intelligence, creating micro-targetable profiling of individuals (Amnesty International, 2019[8]). Facebook monetises the data by selling users' attention to advertisers both inside and outside Facebook – leading in part to the company's long history of privacy scandals (Dance, LaForgia and Confessore, 2018[9]).

The commodification of user data for profit and influence is at the heart of this model. Bulk data sold to third parties can be used to determine religious beliefs, sexual orientation, political leanings and ethnicity, among other attributes.

Time on site is a key success indicator for social media platforms with advertisement-based business models. The business model of major social media sites today relies on maximising scroll time by leveraging individual users' data to push highly personalised content. Facebook, for instance, uses algorithms to keep users on the app for as long as possible, showing them content induced from their alleged preferences. Algorithms are gatekeepers of the content users see, and about three-quarters of Facebook users are unaware that the site estimates their interests (Hitlin and Rainie, 2019[10]). YouTube's recommendation

algorithm 'autoplays' or generates choices of additional videos to keep viewers on the site by suggesting more incendiary versions of whatever they just watched. Tufekci (2018[11]) argues that this tends to drive viewers towards extremist content. At least one former YouTube engineer who says he worked on the recommendation algorithm concurs (Chaslot, 2019[12]).

In their recent review of literature on the role of social media in political polarisation, Kubin and von Sikorski (2021[13]) conclude that engagement on social media platforms exacerbates polarisation. However, the authors also note that most findings stem from analyses of Twitter and American samples, and that research exploring ways social media can contribute to depolarisation is lacking. Studies also find that organising social media platforms around influencers further drives polarisation. Centola (2020[14]) writes that in centralised networks, "biased influencers have a disproportionate impact on their community – enabling small rumours and suppositions to become amplified into widespread misconceptions and false beliefs". The social implications of these platforms' practices play out globally, making them relevant to organisations that advocate for open societies, human rights, social cohesion and inclusive economies. And yet, most research on the social effects of platform design is conducted by companies and not public.

The negative effects of major social media platforms are increasingly acknowledged and discussed. Legislative hearings on their ill effects on teenagers' mental health, the spread of misinformation, societal polarisation, human trafficking and election meddling led to efforts in North America, the European Union and other regions to mitigate such social media by-products through regulation. Little evidence is available about the effects of social media usage in low- and middle-income countries on individual and social development dynamics. Yet these effects could be significant given that, on average, digital skills are lower among populations in these countries, suggesting that persuasive tactics potentially have even greater impacts on attitudes and behaviour as social media use increases.

Furthermore, the negative effects of digital platforms on individuals and societies are not limited to persuasive technologies and advertisement-based business models. The spread of misinformation, disinformation and radicalisation also happens on smaller, non-profit platforms that do not feature algorithmic interference. Many of the world's deadliest mass shootings of recent years were carried out by men whose far-right views "were apparently incubated on small forums" such as 8chan (the Christchurch, New Zealand mosque shooting); 4chan and Gab (shootings at an Oregon community college and Pittsburgh synagogue, respectively, in the United States); and white supremacist sites including Stormfront, a 23-year-old hate site blamed for inspiring dozens of murders, including the 2011 mass shooting at a Norwegian political party gathering (Robertson, 2020[15]).

Collective intelligence systems can work to counter the negative effects of persuasive technology

But there is also immense potential to harness digital technologies, including persuasive technologies, for social good, and the field of digital collective intelligence can provide inspiration and models. To date, however, no single government has leveraged the opportunities of digital technologies to foster collective problem-solving and strengthen social cohesion. The global North and South face similar challenges in this regard. There is an evidence gap regarding adequate policy choices to foster innovation ecosystems and advance digital technologies for social good. Innovation ecosystems are complex, consisting of government policies, regulatory frameworks and infrastructure, human capital, social networks, and funding

and finance. These are further influenced by local and global markets.

Development providers can make an important contribution by promoting collaborative approaches to addressing these challenges. A vision of international co-operation on the issue of shaping markets for alternative digital platforms, for instance, could transform development activity from resource transfer models to genuine global co-operation based on mutual learning and partnerships, with funders playing context-appropriate roles, including as facilitators of learning mechanisms.

The field of digital collective intelligence offers examples of good practice, as some applications have persuasive design features to advance social good. The concept of collective intelligence describes the learning, decision-making, sense-making and problem-solving capabilities of social groups and societies in general. Collective intelligence emerges when contributions from individuals combine to become more than the sum of their parts. Such processes have been a hallmark of societies for centuries, with knowledge shared to improve farming practices, manage diseases and much more (Peach et al., 2021[16]). With the advent of digital technologies, social media platforms became a field of collective intelligence. For example, PetaBencana, Indonesia's alert system for flooding and other hazards allows the country's 17.55 million Twitter users[1] to contribute to the platform to share updates on emerging disasters such as earthquakes, forest fires, smog, strong winds and volcanic activity. Authorities now use PetaBencana to identify where emergency support is needed in real time (Timmerman, 2021[17]).

Digital technologies enable organisations and societies to think and act together at scale, and facilitate more inclusive and participatory decision-making processes. As noted by Saunders and Mulgan (2017[18]), collective intelligence helps governments to:

- better understand facts and experiences, mainly through analysis of crowdsourced data generated and shared proactively, which can range from road traffic conditions to incidents of sexual harassment
- develop better and more inclusive ideas and actions, ranging from consulting residents on urban planning to engaging specific expertise such as the creative potential of local coders
- provide better oversight by using open data and digital tools to increase accountability and transparency, with activities that can range from monitoring corruption to scrutinising budgets.

However, regulatory frameworks need to reflect the evolving landscape of persuasive technologies and collective intelligence. Social media platforms and digital tools increase the potential for holding government accountable – one of the key functions of collective intelligence systems. The experience of Nigeria illustrates that regulating them can be challenging: In response to criticism from the public, the state attempted to regulate digital platforms, notably social media, through legislation such as the 2019 Protection from Internet Falsehood and Manipulation Bill and the National Communication for the Prohibition of Hate Speech Bill, which limits what regular citizens can do with their private social media accounts (Olaniyan and Akpojivi, 2020[19]). This in turn sparked criticism from many civil society groups about censorship.

The most successful models combine public engagement in the offline world with digital technologies whose design can inform future persuasive technologies, even potentially commercial technologies, with fewer negative impacts. An example is vTaiwan,[2] which emerged from a movement of civic hackers, and helps citizens vote on questions posed by the government and influence what questions are put to the public in the first place. Initially, vTaiwan was used to facilitate discussions about technology regulation – such as whether Uber and other car-sharing services should be allowed to operate in Taiwan – and whether online alcohol purchases should be legalised. Designed as

a neutral platform to produce outputs that help the government design new policies (Nesta, 2021[20]), the system includes a digital component in the form of an app that re-engineered persuasive features prominent on major social media platforms. To address the problem of echo chambers, the designers developed an attitudes map that shows users the relationship of their opinions to the opinions of others. Thus, rather than highlighting the most polarising and divisive statements, vTaiwan provides visibility to the most consensual ones. The country's Digital Minister praised the system, noting that while social media "mostly divides people… the same technology can also be designed in a way that allows people to converge and form a polity" (Miller, 2019[21]).

Persuasive technologies also play positive roles in helping children, adolescents and adults learn (IJsselsteijn et al., 2006[1]). For example, the computer-based adaptive learning platform Mindspark[3] shows positive results for secondary school students in urban India. A randomised control trial of the programme that aimed to measure the impact of customised learning technology found that it increased test scores across all students and was cost-effective compared to traditional schooling models (Muralidharan, Singh and Ganimian, 2019[22]).

A for-profit example of technology design that has potential for social good is Clubhouse, which suggests opportunities for political expression and genuine discussion on controversial topics such as gender, human rights and political reform.[4] The Indian state of Kerala used Clubhouse during COVID-19 lockdowns for community connection on everyday topics and public meetings involving local politicians (Praveen, 2021[23]). Its live, audio-based nature makes hate speech and trolling more difficult because vocal embodiment (and the lack of tools for text-based attacks) incentivises pluralistic discussion. Users must provide their real name and phone numbers, making anonymous participation more difficult (although this may make crackdowns more likely). Further, hosting of audio discussions in many languages suggests that Clubhouse may allow for more locally oriented and moderated discussions, as opposed to Twitter or Facebook where content moderation and hate speech prevention tools are English-language-oriented (Singh and Campbell, 2020[24]).

vTaiwan provides visibility to the most consensual ones. The country's Digital Minister praised the system, noting that while social media "mostly divides people… the same technology can also be designed in a way that allows people to converge and form a polity"

(Miller, 2019[21]).

Such examples, which advance collective intelligence and public discourse while discouraging us-versus-them interactions can inform the design of future social media platforms and persuasive technologies.

An opportunity to reshape market dynamics

From a regulatory, market-shaping or technology-shaping perspective, governments and public interest organisations face a quandary: The impacts of a technology cannot be predicted until the technology is developed and widely used. At the same time, control or change is difficult once the technology is entrenched in a society or economic system. This pacing

problem is known as the Collingridge dilemma (Collingridge, 1982[25]).

Media platforms designed primarily for social interaction such as Facebook, Twitter, Instagram, Snapchat and Tiktok dominate the global platform market. As of 2020, the world's 4.5 billion Internet users spend an average of almost 2.5 hours every day using social media, accounting for more than one-third of total Internet time. However, the rate of active social media use varies widely between regions: 67% in northern Europe compared to 27% in southern Asia, 22% in central Asia, 13% in western Africa, in central Asia, 8% in eastern Africa and 6% in middle Africa. Social media use is growing in northern Europe by 3.3% annually, slower than in the other regions where annual growth is 9-38% annually.

So, while most dominant social media technology companies seem entrenched, this growth in social media use in areas that are still relatively untouched presents an opportunity for development organisations and governments in low- and middle-income countries. Investment in mutual learning and co-operation could focus on two distinct aspects of digital development: (1) regulating emerging digital technologies, especially persuasive technologies, without stifling innovation and (2) supporting local entrepreneurs to design, test and scale social media platforms and underlying business models that deliberately mitigate the negative effects of persuasive technology platforms and serve local needs and interests.

There are examples of lessons being shared between countries. In 2013, Facebook launched Internet.org, a non-profit providing Internet to people who cannot access or afford it (Goel, 2013[26]). Two years later, it was rebranded as Free Basics (Hempel, 2015[27]) and offered free-of-charge data usage – but with a twist: Facebook chooses the sites a user can access and sometimes also gives local carriers a say in the selection. Technologists, civil society activists and other groups in India campaigned to counter Facebook's marketing, arguing that Free Basics violates net neutrality and is nothing more than a customer acquisition initiative. Internet.org was banned in India when regulators determined that Free Basics would create a two-tier system, giving start-ups buying into Facebook's restricted Internet privileged access to users and disadvantaging others (Bhatia, 2016[28]). Indian regulators shared their experiences with other government agencies from the global South, inspiring pushback against Free Basics in several countries (Singh, 2018[29]; Hatmaker, 2018[30]).

Exchanges across countries about regulation and stimulating tech entrepreneurship help policy makers unlock the potential of technology while safeguarding public interest. Networks to facilitate exchanges already exist: the OECD Regulatory Policy Committee and the Network of Economic Regulators have a joint programme of work to address challenges related to emerging technologies, including persuasive technologies. But low- and middle-income countries are not systematically included in these networks even though negative impacts of persuasive technologies on individuals and societies are likely to be higher in contexts with lower digital skills. A study of first-time smartphone users in Kenya by the Mozilla Foundation's Digital Skills Observatory found that "without a mental framework of the open nature of the Internet, people are more vulnerable to fraud, scams, or unfavourable situations when exposed to information on the web or apps in the Play Store" (Mozilla Foundation, 2016[31]).

Given their focus on the most vulnerable populations, development organisations must help partners from low- and middle-income countries find a seat at the table. Development organisations can play a greater role in investing in dedicated state capacities. Importantly, they can also connect partners from the global South to relevant networks and exchanges about innovation to test and scale platforms and business

models, regulation of persuasive and other technologies, and strengthening digital skills among citizens.

The future remains unwritten

Governments regulate what is and shape what can be, and thus have a critical role in advancing digital technologies and leveraging the potential of persuasive technologies for well-being and social good. Today, a small number of homegrown corporations control relevant parts of the digital infrastructure in Africa, Latin America and Europe. The large majority of operating systems working at scale, as well as search engines and social networking platforms have not been developed regionally. To change this situation, investments in local innovation ecosystems, entrepreneurs, and research and development are necessary. The underlying business models are important for market shaping and tech support, particularly for social networking platforms.

However, there is no best practice in this field. New business models are emerging but lack evidence on their dynamic relationship with persuasive design and impact on individuals and societies. It is therefore not clear which pathways governments should support. The current focus on advertisement-based business models, particularly on the part of United States companies, is being challenged across Asia, where people started using the Internet through mobile devices, not desktops. This mobile Internet foundation enabled digital payment services to flourish and be integrated from the start. Consequently, Asian platforms rely on diversified business models with revenue from advertisements, gaming, financial services, membership and/or subscription fees, and in-app purchases (Humenansky, 2019[32]). Tencent, one of China's market leaders, derives less than 20% of its revenues from advertising; by comparison, advertising accounts for 99% of Facebook's revenues (Chan, 2019[33]). Alternative and emergent business models, such as subscription-based models, so-called 'freemium', virtual goods, contributions for content and token economics can, in theory, incentivise content producers.

These models too have the potential to produce negative unintended consequences for individuals and societies. When seeking to shape markets and help select winners, providers of public funding and other support must consider the potential for harm from a particular business model. Both private and public sector initiatives are working to help technologists and governments better understand possible future effects. The Omidyar Network, a Silicon Valley impact investment firm, and the Institute for the Future have launched an Ethical Operating System[6] to help tech entrepreneurs and others "get out in front of problems before they happen", or as its slogan says, "How not to regret the things you build" (The Omidyar Network; Institute for the Future (IFTF), 2020[34]). On the government side, Sweden's Committee for Technological Innovation and Ethics helps the government identify policy challenges, reduce uncertainty surrounding existing regulations, and accelerate policy development linked to emerging technologies and their impact on society.[7]

Options for development co-operation

Technologists, regulators and government officials across countries face similar challenges regarding how to contend with the influence of persuasive technologies and social media platforms. The challenges are daunting for any single government. Development co-operation providers can play a role to facilitate collective approaches:

- **Focus on technology capabilities overall**. Development providers can play a greater role in investing in dedicated state capacities. Players from low- and middle-income countries face multiple disadvantages in building digital tools that benefit people and societies. Regulatory capacities are low, funding is scarce, and populations require support to acquire digital skills. Development

co-operation actors should continue to work with partner governments on issues related to digital infrastructure, digital skills and regulation.

- **Insist that developing countries have input**. All too often, knowledge exchange on tech regulation and on shaping digital markets happens across high- and middle-income countries, with insufficient inclusion of partners from the global South. Efforts to regulate technology must reflect the emergent landscape of persuasive technologies and collective intelligence systems, as well as global South perspectives. Development organisations can enhance the scope of what is done today by enabling collaboration and mutual learning between partners, notably governments, technologists and academia from low-, middle- and high-income countries alike.
- **Gather intelligence on the impacts of persuasive tech**. More research, evidence, insights and learning are needed about the positive and negative potential of persuasive technology in different country contexts. It is also needed across development fields such as education, health, climate change, gender equality and others. Development actors can promote learning by investing in global South research institutions, cross-country research, and the design of programmes that generate evidence to understand the impact of dominant and emerging tech platform business models.
- **Transform learning into action**. Development actors can shape markets by using evidence and lessons about the actual or potential impacts of persuasive technology. They can orient technology to the service of local needs and interests by investing in incubators and accelerators that help local entrepreneurs design, test and scale social media platforms and business models that deliberately mitigate the negative effects of persuasive technology platforms.
- **Invest in systems that serve the public interest**. Development organisations can invest in efforts to advance the use of collective intelligence systems in low- and middle-income countries to facilitate more inclusive and participatory decision-making processes and to solve challenges identified by local communities.

REFERENCES

Amnesty International (2019), *Surveillance Giants: How The Business Model Of Google And Facebook Threatens Human Rights*, Amnesty International, https://www.amnesty.org/en/documents/pol30/1404/2019/en/ (accessed on 22 November 2021). [8]

Bhatia, R. (2016), *The inside story of Facebook's biggest setback*, https://www.theguardian.com/technology/2016/may/12/facebook-free-basics-india-zuckerberg (accessed on 22 November 2021). [28]

Centola, D. (2020), *Why social media makes us more polarized and how to fix it*, https://www.scientificamerican.com/article/why-social-media-makes-us-more-polarized-and-how-to-fix-it/. [14]

Chan, C. (2019), "Outgrowing advertising: Multimodal business models as a product strategy", *Andreessen Horowitz*, https://a16z.com/2018/12/07/when-advertising-isnt-enough-multimodal-business-models-product-strategy/ (accessed on 22 November 2021). [33]

Chaslot, G. (2019), "Opinion: The Toxic Potential of YouTube's Feedback Loop", *WIRED*, https://www.wired.com/story/the-toxic-potential-of-youtubes-feedback-loop/ (accessed on 24 November 2021). [12]

Cialdini, R. (2001), "The Science of Persuasion", *Scientific American*, Vol. 284/2, pp. 76-81, https://www.jstor.org/stable/26059056 (accessed on 22 November 2021). [7]

Collingridge, D. (1982), *The Social Control of Technology*. [25]

Dance, G., M. LaForgia and N. Confessore (2018), *As Facebook Raised a Privacy Wall, It Carved an Opening for Tech Giants*, https://www.nytimes.com/2018/12/18/technology/facebook-privacy.html (accessed on 22 November 2021). [9]

Fogg, B. (2002), "Persuasive technology", *Ubiquity*, Vol. 2002, p. 2, http://dx.doi.org/10.1145/764008.763957. [5]

Fogg, B., D. Danielson and G. Cuellar (2007), "Motivating, Influencing, and persuading users", in *The Human-Computer Interaction Handbook*, CRC Press, Boca Raton, FL, http://dx.doi.org/10.1201/9781410615862.ch7. [4]

Goel, V. (2013), *Facebook Leads an Effort to Lower Barriers to Internet Access*, https://www.nytimes.com/2013/08/21/technology/facebook-leads-an-effort-to-lower-barriers-to-internet-access.html (accessed on 22 November 2021). [26]

Hatmaker, T. (2018), *Facebook's Free Basics program ended quietly in Myanmar last year*, https://techcrunch.com/2018/05/01/facebook-free-basics-ending-myanmar-internet-org/?guccounter=1 (accessed on 22 November 2021). [30]

Hempel, J. (2015), *Facebook Renames Its Controversial Internet.org App*, https://www.wired.com/2015/09/facebook-renames-controversial-internet-org-app/ (accessed on 22 November 2021). [27]

Hitlin, P. and L. Rainie (2019), *Facebook Algorithms and Personal Data*, Pew Research Center, https://www.pewresearch.org/internet/2019/01/16/facebook-algorithms-and-personal-data/ (accessed on 24 November 2021). [10]

Humenansky, J. (2019), "Rethinking the Internet: A new model (Part 1)", *Dorm Room Fund*, https://dormroomfund.medium.com/rethinking-the-internet-a-new-model-part-1-22fa9ee56ff (accessed on 22 November 2021). [32]

IJsselsteijn, W. et al. (2006), "Persuasive technology for human well-being: Setting the scene", in IJsselsteijn, W. et al. (eds.), *Persuasive Technology, Lecture Notes in Computer Science*, Springer, Berlin/Heidelberg, http://dx.doi.org/10.1007/11755494_1. [1]

Inman, J., A. Peter and P. Raghubir (1997), "Framing the deal: The role of restrictions in accentuating deal value", *Journal of Consumer Research*, Vol. 24/1, pp. 68-79, http://dx.doi.org/10.1086/209494. [6]

Kubin, E. and C. von Sikorski (2021), "The role of (social) media in political polarization: A systematic review", *Annals of the International Communication Association*, Vol. 45/3, pp. 188-206, http://dx.doi.org/10.1080/23808985.2021.1976070. [13]

Miller, C. (2019), *Taiwan is making democracy work again. It's time we paid attention*, https://www.wired.co.uk/article/taiwan-democracy-social-media (accessed on 22 November 2021). [21]

Mozilla Foundation (2016), *Stepping into Digital Life*, https://d20x8vt12bnfa2.cloudfront.net/reports/Stepping+Into+Digital+Life+-+Digital+Skills+Observatory+Research+Report.pdf (accessed on 22 November 2021). [31]

Muralidharan, K., A. Singh and A. Ganimian (2019), "Disrupting education? Experimental evidence on technology-aided instruction in India", *American Economic Review*, Vol. 109/4, pp. 1426-1460, http://dx.doi.org/10.1257/aer.20171112. [22]

Naughton, J. (2020), *Opinion: The Social Dilemma: A wake-up call for a world drunk on dopamine?*, https://www.theguardian.com/commentisfree/2020/sep/19/the-social-dilemma-a-wake-up-call-for-a-world-drunk-on-dopamine (accessed on 24 November 2021). [3]

Nesta (2021), *Six pioneers in digital democrac:y: vTaiwan*, https://www.nesta.org.uk/feature/six-pioneers-digital-democracy/vtaiwan/. [20]

Olaniyan, A. and U. Akpojivi (2020), "Transforming communication, social media, counter-hegemony and the struggle for the soul of Nigeria", *Information, Communication & Society*, Vol. 24/3, pp. 422-437, http://dx.doi.org/10.1080/1369118x.2020.1804983. [19]

Peach, K. et al. (2021), *Collective Intelligence for Sustainable Development: Getting Smarter Together*, United Nations Development Programme Accelerator Labs, New York, https://smartertogether.earth/download-report. [16]

Praveen, S. (2021), *Clubhouse takes Kerala by storm*, https://www.thehindu.com/news/national/kerala/get-set-to-join-the-chatter-on-clubhouse/article34675146.ece (accessed on 23 November 2021). [23]

Robertson, A. (2020), *Movie Review: Telling people to delete Facebook won't fix the internet - The Social Dilemma is a clever but simplistic drama-documentary*, https://www.theverge.com/2020/9/4/21419993/the-social-dilemma-jeff-orlowski-netflix-movie-review-social-media-algorithms (accessed on 22 November 2021). [15]

Saunders, T. and G. Mulgan (2017), *Governing with Collective Intelligence*, Nesta, London, https://media.nesta.org.uk/documents/governing_with_collective_intelligence.pdf (accessed on 22 November 2021). [18]

Singh, M. (2018), *After harsh criticism, Facebook quietly pulls services from developing countries*, https://theoutline.com/post/4383/facebook-quietly-ended-free-basics-in-myanmar-and-other-countries?zd=2&zi=cc57hcsw (accessed on 22 November 2021). [29]

Singh, S. and E. Campbell (2020), "The flaws in the content moderation system: The Middle East case study", *New America blog*, https://www.newamerica.org/oti/blog/flaws-content-moderation-system-middle-east-case-study/ (accessed on 22 November 2021). [24]

The Economist (2021), *The new rules of competition in the technology industry*, https://www.economist.com/business/2021/02/27/the-new-rules-of-competition-in-the-technology-industry (accessed on 22 November 2021). [2]

The Omidyar Network; Institute for the Future (IFTF) (2020), *Ethical OS Toolkit (webpage)*, https://ethicalos.org/ (accessed on 22 November 2021). [34]

Timmerman, A. (2021), *Hi, I'm Disaster Bot: An Indonesian mapping platform is turning social media chatter into life-saving information during natural disasters*, https://restofworld.org/2021/hi-im-disaster-bot/ (accessed on 22 November 2021). [17]

Tufekci, Z. (2018), "Opinion: YouTube, the Great Radicalizer", *New York Times*, https://www.nytimes.com/2018/03/10/opinion/sunday/youtube-politics-radical.html (accessed on 24 November 2021). [11]

NOTES

1. Country-by-country data on the number of Twitter users as of October 2021 are available at: https://www.statista.com/statistics/242606/number-of-active-twitter-users-in-selected-countries/.
2. For more information, see: https://vtaiwan.tw/.
3. For more information, see: https://mindspark.in/.
4. For a hopeful but ultimately critical view of a Middle East human rights agenda based on the success of the Clubhouse app, see: https://dawnmena.org/is-clubhouse-really-a-harbinger-of-free-speech-in-the-middle-east/.
5. These data are available at: https://wearesocial.com/uk/blog/2020/01/digital-2020-3-8-billion-people-use-social-media/.
6. For more information, see: https://ethicalos.org/.
7. For more information, see: https://www.kometinfo.se/in-english/about-us.


PRO
BEAUTY
AUTO
STICKERS
CONTINUOUS

Part IV
Development co-operation strategies and financing approaches

33 A SNAPSHOT OF BILATERAL DIGITAL DEVELOPMENT STRATEGIES

Ida Mc Donnell, Development Co-operation Directorate, OECD
Marc Cortadellas Mancini, Development Co-operation Directorate, OECD

ABSTRACT

Among the OECD's members and its Development Assistance Committee (DAC), digital development strategies are evolving towards wider collaboration to shape a fair and inclusive digital transformation. This chapter provides a snapshot of strategic priorities for a sub-set of DAC members that have dedicated digitalisation strategies. Drawing on the case studies in this report, it also explores the implications of digitalisation for members' governance and civil society strategies, and concludes with considerations for effective and sustainable digital co-operation.

The authors would like to acknowledge contributions to this chapter by Catherine Anderson and Marilyn Bachmann.

Key messages

- Digitalisation is an explicit strategic priority for 12 Development Assistance Committee members that have dedicated strategies. A further six members refer to the importance of digitalisation in their overarching development co-operation policies.
- International development co-operation on digitalisation would benefit from applying best practices, notably via aligning with country priorities, stronger co-ordination, building the evidence base and learning from it.

At the 2020 ministerial meeting of the Development Assistance Committee (DAC), members highlighted the importance of harnessing technology and digitalisation[1] based on proven standards, building on established methods in development co-operation, including human rights-based approaches, addressing inequalities, leaving no one behind, and supporting education and skills. Leaders stressed the importance of identifying opportunities and risks stemming from digital-led growth, data-driven technologies and digital public goods for development (OECD, 2020[1]).

The UN Secretary-General Guterres' Roadmap on Digital Cooperation provided a new orientation towards more holistic strategies for all stakeholders – including development co-operation actors – focused on the enablers of digital transformation and collaboration, with a call to build a more effective architecture for global digital co-operation (UN, 2020[2]). The Roadmap's eight objectives include: (1) achieving global connectivity by 2030; (2) promoting digital public goods to create a more equitable world; (3) ensuring digital inclusion for all, including the most vulnerable; (4) strengthening digital capacity building; (5) ensuring the protection of human rights in the digital era; (6) supporting global cooperation on artificial intelligence; (7) promoting trust and security in the digital environment; and (8) building a more effective architecture for digital global co-operation. Achieving these broad objectives everywhere will be challenging, not least for development co-operation actors seeking to accompany low- and middle-income countries on their digital transformation journeys.

While fewer than half of DAC members have explicit digital-for-development strategies, countries investing in digitalisation appear to be shifting towards more holistic approaches.[2] There is also a push for more joined-up support as shown by the European Union's (EU) new Digital for Development Hub (D4D) (Box 33.1) and alliances such as the Digital Impact Alliance (DIAL, n.d.[3]) which aims to accelerate national digital transformation; build global cooperation; and connect, support and scale proven solutions in line with the Principles for Digital Development (n.d.[4]).[3]

State of play with digital development strategies

Development actors have been increasing their investments in digital-related activities (see Chapter 40). However, as this snapshot shows, digitalisation is not an explicit priority for most DAC members. Just 12, which are also among the largest financers of digital-related development co-operation, have explicit strategies. The latest strategies[4] (since 2019) recognise the interlinkages between foundational enablers of digital transformations (such as universal and affordable access to the Internet, digital public infrastructure, policy and regulatory environment, and digital skills) and the use of digital technologies for service delivery and across sectors (Table 33.1).

Three aspects of digital transformation are covered in the strategies with a high degree of consistency across countries: (1) expanding Internet access and affordability and

BOX 33.1. DIGITAL FOR DEVELOPMENT HUB: PARTNERSHIPS FOR A SINGLE EUROPEAN UNION DIGITAL STRATEGY

BY THE EU D4D HUB TEAM

The Digital for Development (D4D) Hub was launched in December 2020 by European Commission President Ursula Von der Leyen together with high-level representatives of its founding European Union (EU) Member states. It is a multi-stakeholder platform for joint interventions to co-ordinate support for digital transformation in EU partner countries and leverage the expertise, resources and strengths of the private sector, civil society organisations, financial institutions and other stakeholders. The D4D Hub operationalises the Team Europe approach (EU, 2021[5]) in digital-for-development, building on the experience of Team Europe's global response to the COVID-19 pandemic and about a decade of joint programming in EU development policy (European Commission, 2021[6]).

The D4D Hub is an instrument for external policy aligned to the EU Communication "Digital Compass: The European Way for the Digital Decade" (European Commission, 2018[7]). Through the D4D Hub, EU members aim to build partnerships and scale up digital investment while promoting a human-centric model focused on addressing digital divides and risks that can accompany accelerated digital transformation, such as exclusion, injustice and inequality (D4D Hub, 2020[8]). This approach draws from the experience of the EU Digital Single Market and is grounded in EU standards and values emphasising human rights and data protection, net neutrality, privacy by design, and ethical use of technology. D4D Hub initiatives include:

- **Direct emergency response and building resilience:** The D4D Hub contributed to the design and implementation of a package of digital projects, part of the Team Europe Global Response to COVID-19. For instance, through the Smart Development Hackathon project, D4D Hub members and more than 50 partners produced more than 1 000 digital solutions to tackle COVID-19 challenges related to health, economy and society. Projects include the CallvsCorona hotline, which provides prevention information in local languages to more than 200 000 people in Madagascar, and the Digital Enquirer Kit, which helps journalists and others in several African countries identify and navigate misinformation (European Commission, 2020[9]).
- **Multi-stakeholder workshops for sharing good practices and identifying challenges and opportunities:** European and Senegalese stakeholders shared experiences and good practices in the areas of digital training and skills development, digital trust and cybersecurity, e-governance, and digital services in the agricultural sector. In May 2021, more than 100 representatives of government agencies and authorities in Senegal and EU members, and from the private sector participated in discussions that helped identify possible joint, co-funded interventions in line with Senegal's 2016-25 digital strategy (Ministère des Postes et des Télécommunications de Sénégal, 2016[10]). Similar workshops were held in Kenya and Niger, and many more are in the pipeline for the coming year.

In addition to the Global D4D Hub, which is in charge of Team Europe co-ordination, the hub relies on regional branches to foster strategic partnerships between European and local stakeholders in partner countries. These take an "among equals" approach to development. While the initial focus of the D4D hub work was on Africa, other regions of the world are now gaining attention. The D4D Hub branch for Latin America and the Caribbean is being launched in December 2021 at a high-level event under the Slovenian Presidency of the Council of the EU (D4D Hub, 2021[11]). It is likely that connectivity projects will catalyse more interest and resources in line with the EU's ambitious Global Gateway connectivity strategy (European Commission, 2021[12]) and the needs expressed by partner countries. While the D4D Hub achieved a great deal in less than a year, some challenges remain. Among these are members' divergent programming cycles and budgeting rules, which can complicate the design and implementation of joint projects and alignment of timelines and procedures.

Note: The EU and its member states act as Team Europe by enhancing co-ordination efforts and resources to magnify the impact of joint interventions. The Hub is open to all EU members. Belgium, Estonia, France, Germany and Luxembourg were the founding members and to date, 11 members joined by signing a letter of intent to co-operate under the D4D Hub towards a single European digital development strategy. Countries joining the Hub since its founding include Finland, Lithuania, Netherlands, Portugal, Spain and Sweden.

Table 33.1. Snapshot of digital development objectives and priorities of 12 DAC members with published digital development strategies

Country	Objectives and priorities
Belgium	The strategic policy note on Digital for Development for Belgian development co-operation was published in 2018. It focuses on the promotion of digital technologies for greater economic and financial inclusion, particularly by using big or open data. Belgium's priorities include: ▮ Better use of (big) data ▮ Digital for inclusive societies – democratically, financially and economically – and access to basic services ▮ Digital for inclusive and sustainable growth Belgium adheres to the Principles for Digital Development and is a member of the EU D4D Hub. See findings from the 2021 evaluation (Castella et al., 2021[20]) *'Digital for Development' (D4D), Etude complémentaire quels sont les développements liés au contexte de la Covid-19?*
Denmark	The Techvelopment: Approach and Narrative on Tech and Digitalisation in Danish Development Cooperation was published in 2019. It focuses on technological diplomacy (TechPlomacy) as part of its foreign and security policy to promote innovation and technology as a development tool. Denmark's priorities include: ▮ Addressing the digital gender divide ▮ Promoting digital skills, inclusive and sustainable economic growth, and decent work, especially for youth ▮ Promoting digital solutions in good governance and human rights ▮ Strengthening the humanitarian response and development effort Denmark adheres to the Principles for Digital Development.
EU	The EU Digital for Development framework was published in 2017. To better mainstream digital solutions in development, it focuses on digital mainstreaming and EU-Africa co-operation grounded in values of openness, ingenuity, innovation, empowering citizens by making ICT more accessible and affordable, promoting ICT as enablers of growth. The EU aims to develop: ▮ Access to affordable and secure broadband connectivity and digital infrastructure, including the necessary regulatory reform ▮ Digital literacy and skills ▮ Digital entrepreneurship and job creation ▮ Digital technologies as an enabler for sustainable development The EU adheres to the Principles for Digital Development and co-launched the D4D Hub principles.
France	In 2021, the Agence française de développement (AFD) published the Digital transition Strategy 2021-2025. It also prioritises support for political, social and civic issues by promoting digital public goods, a human centric approach, and protection of personal data and the environment. AFD's priorities include: ▮ Universal internet access and digital technologies ▮ Pro-environment investments through green tech ▮ Support for entrepreneurial dynamics with investments in the digital economy ▮ Support for digital technologies in all the transitions of the AFD Group ▮ Support of digital transformation of municipalities and the urban transport sector in Latin America ▮ Strengthening partnerships between local institutions and private companies AFD adheres to the Principles for Digital Development and inter-donor co-operation. France is a co-founder of the EU D4D Hub.

Table 33.1. Snapshot of digital development objectives and priorities of 12 DAC members with published digital development strategies (Continued)

Country	Objectives and priorities
Germany	The Federal Ministry of Economic Cooperation and Development (BMZ) published The Digital for Development Strategy in 2019. It promotes digital technology to support democratic processes, safeguard human rights, help displaced persons and address the future of jobs and data for development. Germany's digital priorities include: ▮ Work and employment ▮ Local innovations ▮ Equal opportunities including in education and health care ▮ Sustaining democracy and human rights, and improving the rule of law ▮ Data for development Germany adheres to the Principles for Digital Development. It is a co-founder of the EU D4D Hub. See also Germany's case study in Chapter 39.
Japan	The Japan International Cooperation Agency (JICA) established the Digital Transformation Task Force in 2019. The taskforce focuses on how JICA can use digital technologies to enhance the effectiveness and impact of development co-operation to achieve the SDGs (Murigande, 2019[21]; Sawaji, 2021[22]). JICA's approach is also shaped by Japan's domestic policy and plans outlined in the 5th Science and Technology Basic Plan (2016[23]) and Guidelines for Promoting Digital Transformation by the Japanese Ministry of Economy, Trade and Industry (2018[24]) with a focus on cutting edge technologies such as the Internet of Things, Artificial Intelligence and Big Data to realise a Society 5.0 model. These reforms are also shaping a new approach by JICA. JICA focuses on creating an enabling environment including ICT infrastructure, digital skills, business and cybersecurity, promoting innovative ecosystems across all SDG sectors (Sawaji, 2021[22]). JICA adheres to Principles for Digital Development.
Korea	The Digital ODA Business Strategy of the Korea Cooperation Agency (KOICA) was published in 2021. KOICA's dual approach involves a Digital Mainstreaming Strategy which includes a digital component across all sectors, combined with a Digital Transition Programme enabling the digital transformation of partner countries. KOICA's priorities include: ▮ Digital government ▮ Digital accessibility ▮ Digital economy ▮ Digital safety KOICA's approach is guided by six principles: usability, scalability, inclusiveness, data-basis, openness, and information security. See also KOICA's case study in Chapter 36.
Netherlands	The Digital Agenda for Foreign Trade and Development Cooperation of the Dutch Ministry of Foreign Affairs was published in 2019. It focuses on promoting trade and development in different SDG sectors and digital security and freedom online. The Netherland's digital priorities include: ▮ Improving the position of women and girls ▮ Larger roles for the private sector and knowledge institutions ▮ Interconnected and rapid innovation at a national level The Netherlands adheres to the Principles for Digital Development. It is a co-founder of the EU D4D Hub. See also the Netherlands case study in Chapter 35.

Table 33.1. Snapshot of digital development objectives and priorities of 12 DAC members with published digital development strategies (Continued)

Country	Objectives and priorities
Norway	The white paper on Digital transformation and development policy of the Norwegian Ministry of Foreign Affairs was published in 2019. Norway's strategic priorities include: ▮ Access to the Internet ▮ Regulation ▮ Digital competence (ICT literacy) ▮ Inclusion of marginalised groups Norway's approach is guided by international frameworks such as the Principles for Digital Development. See also Norway's case study in Chapter 37.
Sweden	Sweden has supported ICT since the 1990s. In 2008, the Swedish International Development Agency (SIDA) published a designated Information and Communications Technologies (ICT) for Development strategy. In addition, its overall development co-operation strategy 2018-2022 focuses on: ▮ Access to ICT ▮ Digital infrastructure ▮ The private sector, skills and financial services Sweden adheres to the Principles for Digital Development. Sweden is as co-founder of the EU D4D Hub.
United Kingdom	The Foreign, Commonwealth and Development Office's has been outlining its Digital Development approach in 2021, with an emphasis on promoting an inclusive, transformational and responsible digital development strategy to reduce poverty and inequality, and the promotion of mutual prosperity, safety and security. The UK's objectives include: ▮ Digital inclusion: inclusive and affordable connectivity, basic digital literacy and skills, and locally-relevant digital content or /services for underserved communities. ▮ Digital transformation: support the broad processes of digital transformation of government, the economy and society in partner countries. ▮ Digital responsibility: ensure safety and security of digital technologies for populations in partner countries, and build capacity to manage the cyber space. ▮ Digital sustainability: reduce environmental costs of digital technologies and infrastructure, and leverage digitalisation to strengthen local capacity for climate change resilience and adaptation. The UK promotes international frameworks such as the Principles for Digital Development. See also the UK's case study in Chapter 38.

Table 33.1. Snapshot of digital development objectives and priorities of 12 DAC members with published digital development strategies (Continued)

Country	Objectives and priorities
United States	The 'Digital Strategy 2020-2024' (2020) of the United States Agency for International Development (USAID) aims to promote individual rights, freedom of expression and democratic norms, and to ensure open, secure and inclusive digital ecosystems that contribute to broad-based, measurable development and humanitarian assistance outcomes. USAID's Digital Ecosystem Framework and Digital Ecosystem Country Assessment tool and diagnostics are published along with other relevant strategies. USAID's priorities include: ▮ Economic empowerment and country self-reliance ▮ Governance, transparency and accountability ▮ Digital ecosystems that preserve and protect the rights and agency of individuals USAID adheres to the Principles for Digital Development. See also the US case study in Chapter 34.

Note: Authors compilation based on desk research of publicly available strategies, consultations with member countries conducted for this report, and case studies prepared by countries and published in this report. In addition to consultations, the desk review of all DAC members found that twelve had published strategies on digitalisation. The authors recognise that the snapshot is not exhaustive and that other DAC members and agencies of countries included in the sample may have strategies.

Sources:

AFD (2021[25]), Digital transition - Strategy 2021-2025, https://www.afd.fr/en/ressources/digital-transition-2021-2025-strategy.

BMZ (2019[26]), Digital technologies for development, https://toolkit-digitalisierung.de/app/uploads/2021/07/BMZ-Strategy-Digital-Technologies-for-Development-1.pdf.

Danida (2019[13]), TechVelopment: Approaches and Digitalisation. Tech and Digitalisation in Danish Development Cooperation in 2019, https://um.dk/en/~/media/um/danish-site/documents/danida/techvelopment%20-%20approach%20and%20narrative.pdf.

DFID (2018[27]), Digital Strategy 2018-2020: Doing Development in a Digital World, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/701443/DFID-Digital-Strategy-23-01-18a.pdf.

Dutch Ministry of Foreign Affairs (2019[28]), Digital Agenda for Foreign Trade and Development Cooperation (BHOS), https://www.government.nl/documents/policy-notes/2019/07/31/digital-agenda-for-foreign-trade-and-development-cooperation-bhos.

European Commission (2017[29]), Digital4Development: mainstreaming digital technologies and services into EU, https://futurium.ec.europa.eu/en/Digital4Development/library/digital4development-mainstreaming-digital-technologies-and-services-eu-development-policy.

FPA Foreign Affairs (2016[15]), Strategic Policy Note: 'Digital for Development' (D4D) for the Belgian development cooperation, https://www.enabel.be/sites/default/files/strategienota_d4d_0.pdf.

KOICA (2021[30]), KOICA Digital ODA Business Promotion Strategy, https://www.koica.go.kr/koica_kr/7889/subview.do.

Norwegian MFA (2019[31]), Digital transformation and development policy, https://www.regjeringen.no/en/dokumenter/meldst11_summary/id2699502/?ch=1.

Swedish Ministry for Foreign Affairs (2018[14]), Strategy for Sweden's global development cooperation in sustainable economic development 2018-2022, https://www.government.se/4940d6/contentassets/2636cd52742a4a29827b936e118a5331/strategy-for-swedens-global-development-cooperation-in-sustainable-economic-development-2018-2022.pdf.

USAID (2020[32]), Digital Strategy 2020-2024, https://www.usaid.gov/usaid-digital-strategy.

Sawji (2021[22]), Digital Transformation for Development: Japan's Contribution, https://www.japanjournal.jp/diplomacy/international-cooperation/pt20201124142044.html.

enhancing digital services; (2) supporting enabling environments to harness digitalisation as a whole-of-government-and-society process; (3) mainstreaming digitalisation – or digital-by-default – across all sectoral investments an evidence-based way. Issues of privacy and security, transparency and open standards are recurring concerns across strategies.

Some countries refer to increasing equity and inclusion by providing access to services previously out of reach to marginalised groups such as girls and women and people with disabilities (see Chapters 35, 37 and 38). In two of its digital development priorities, Denmark emphasises the need to focus on and promote women, girls and youth in the digital transformation (Danida, 2019[13]). The Swedish International Development Cooperation Agency focuses on information and communication technologies in the areas of democratic governance and social development (Swedish Ministry for Foreign Affairs, 2018[14]). The Netherlands puts local ownership and co-design at the centre of its engagement with civil society and strives to ensure that digital technology serves the public good.

There is strong awareness that access to public infrastructure such as electricity and digital communications is a prerequisite for digital transformation. AFD's strategy emphasises the importance of *la décarbonisation du numérique,* where

investing in the twin transitions (digital and energy) is an explicit priority. There appears to be less emphasis in strategies and digital-related finance (see Chapter 40) on the use of advanced technologies (e.g. artificial intelligence and blockchain), despite the growing importance of these tools in the digital economy and government. Belgium stands out for its focus on specific digital technologies for greater economic and financial inclusion, and on big and open data (FPS Foreign Affairs, 2016[15]).

Several strategies stress the importance of multi-stakeholder partnerships for greater impact and an inclusive digital economy, with most countries in Table 33.1 adhering to the Principles for Digital Development (n.d.[4]). At the regional level, eleven EU members signed a Letter of Intent to co-operate under the D4D Hub (2020[16]).

Several other DAC countries flag the importance of digitalisation in their development co-operation policy.[5] For example, Finland's strategy focuses on gender, education and climate issues with digitalisation and connectivity at its core (Finnish Government, 2021[17]; Saldinger, 2021[18]). Other OECD members such as Estonia encourage a user-centred approach, based on its own experience with e-government, and share expertise with countries in South Eastern Europe, Central Asia and Sub-Saharan Africa (Estonia, 2021[19]) (see Chapter 12).

Spotlight: Governance and civic engagement to counter digital threats and exclusion

Digitalisation can undermine governance in contexts where it was already weak. Development co-operation strategies on governance and civil society can play a complementary role to digital development strategies in shaping an inclusive digital future. For development co-operation to shape digital transformation, strategies and activities on governance and civil society will need to anticipate unintended consequences – and potential harms – of digital transformation for societies and human rights. Development partners are thus exploring the impacts of digital transformation on civil society, civic spaces, democratic governance, development progress and stability in fragile states.

The international governance community, including members of the DAC's Governance Network, is grappling with how to support digitalisation and digital transformation and the governance of these issues in development. Initial research in *Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste* (2018[33]), suggests that ODA is likely best oriented towards consolidating analogue capabilities, enabling access to digital solutions through education and ICT literacy, and supporting safe and consensual digitalisation of public records (Box 33.2).

Civil society strategies can also mitigate some digital risks. Civil society can help countries improve digital governance, human rights and inclusiveness to overcome the risks of digitalisation. This includes strengthening digital laws to comply with international human rights law, building the capacity of officials and civil society in digital rights, reviewing risks for civic spaces, and engaging with digitally-operating civil society actors such as social movements (OECD, 2020[39]). According to the Netherlands, civil society has a role in ensuring that digital technology serves the public good, as a watchdog and as a partner in the design and implementation of emerging technology (Chapter 35). Engaging in multi-stakeholder dialogues on development, regulation and responsible use of digital technology remains pivotal. The US focuses on digital initiatives to deploy using a system-oriented approach to expand digital-related programming while recognising the increasing digital threats to the civic space (USAID, 2020[40]).

International development agencies support civil society organisations (CSOs) in building digital capacities and countering power

BOX 33.2. APPLYING A GOVERNANCE LENS SO THAT DIGITALISATION ENABLES DEVELOPMENT

Country contexts shape digital transformation. Digitalisation can lower the costs and improve the quality of public services by enabling citizen feedback to service providers (Haldrup, 2018[34]), but it cannot resolve pre-existing institutional weaknesses. Further, introducing digital technology into fractured political contexts can heighten risks to stability. For example, digitalisation in the form of citizen IDs, digital public services, and data use and management can as readily bring about development as it can fragment and divide society and stymie or even destabilise governments. The extent to which the proliferation of e-service platforms translates into broader, deeper or more inclusive participation and public accountability is also unclear (Dener et al., 2021[35]).

Considerations for digitalisation in governance strategies

- **The relationship between institutional and digital capabilities is not linear.** Digital transitions are often disordered, uneven and subject to reversals in developing countries – notably fragile states and least developed countries (Pathways for Prosperity Commission, 2019[36]; World Bank, 2016[37]). An OECD study of digital transformation in Portuguese-speaking African countries and Timor-Leste found that, while ODA supports data centres that host, store and manage information from across government, poor interoperability between the digital systems and limited use of data to create more equitable development outcomes lowered its impact (OECD, 2018[33]).
- **Complementary investments in digital and analogue systems can reinforce governance and the social contract.** In fragile or transition contexts, neither digital technology nor analogue systems alone are equipped to enable development. Taken together, however, they can support safe and consensual digitalisation of public records, and enhance government capacity to deliver public services, innovate and set national priorities. They can also strengthen citizen trust in government and enable participation by marginalised constituencies. For example, in supporting West African countries' response to Ebola, humanitarian and development actors used messaging applications to inform hundreds of thousands of subscribers about case numbers, locations, and public health response rates, reinforcing citizen trust in the government's management of the outbreak.
- **Data must be protected from misuse.** ODA is widely deployed to provide digital solutions to administrative management challenges, including salary and wage payments, human resources management and social services delivery. In some contexts, such data can become the subject of misuse. Development actors could consistently work to safeguard and protect individual freedom, for example by taking greater responsibility for protecting individual rights and freedoms in data collation and management, ensuring free, prior and informed consent, and building data privacy into biometric and digital identification.
- **Policy coherence for development can shape a fair digital transformation**. Autocratic governments and militant factions are actively soliciting or co-opting licenses and software by commercial firms (many of which are domiciled in OECD countries) to use in oppressing citizens (Shahbaz and Funk, 2021[38]). Development agencies and actors can raise awareness of these risks in domestic mechanisms for policy coherence for development and in fora setting global rules on surveillance technologies and digital disinformation.

Source: OECD secretariat to the DAC Governance Network.

asymmetries. For instance, Denmark supports CSOs' digital resilience programmes (Danida, 2021[41]) and USAID supports training for at-risk journalists and activists, facilitates campaigns to sensitise individuals to the threats they face as Internet users, and finances civil-society-led policy and advocacy projects that promote Internet Freedom (USAID, 2021[42]; USAID, 2021[43]). The Netherlands, EU, Sweden and UK collaborate in supporting CSOs, such as via the Association for Progressive Communications, an international network promoting digital

inclusion, human rights online, and Internet governance as a global public good. Such initiatives draw attention to digital support and other development-assistance programmes against activities that harm civil society, civic space and freedoms (CHRGJ, ISER & Unwanted Witness, 2021[44]). Belgium's Ministry of Foreign Relations and Development Cooperation organised a Claiming Back Civic Space conference in 2019 at which civic space in the digital era was addressed.

At the same time, civil society organisations such as Privacy International suggest that digital development co-operation investments and projects must anticipate, assess and manage the potential harms and unintended consequences of digitalisation (Privacy International, 2020[45]). Privacy International emphasises the risk of "extensive support for surveillance in countries" or "security units equipped and trained to use controversial surveillance tools" that enhance digital authoritarianism.

With the adoption of the DAC Recommendation on Enabling Civil Society in Development Co-operation and Humanitarian Assistance in July 2021, DAC members recognise that more must be done to enable civil society actors to maximise their contributions to the 2030 Agenda, to leave no one behind, and to protect and strengthen democracy and civic space, including in this age of digitalisation. For instance, DAC members' civil society teams have yet to explore partnerships with non-profit civic tech companies, especially those who can ensure that business practices adhere to human rights principles with strengthened safeguards for civil society and civic freedoms/spaces online. Through closer co-operation with non-traditional technology companies, development actors can also promote the development of "civic technologies" – including through open-source software – whose transparency fosters the protection of rights and values. For example, Votem (n.d.[46]) is a mobile voting system that supports both voter registration and voting by using end-to-end blockchain-based encryption. Companies like Kialo (n.d.[47]) support online debate-style communication through a deliberative discourse platform designed to present hundreds of supporting and opposing arguments in a dynamic argument tree.

Going forward, civil society needs to engage digital policy-making initiatives at international and national levels to contribute perspectives for the regulatory sphere and responsible use of digital technology. Denmark's Tech for Democracy initiative brings together representatives from governments, multilateral organisations, tech industry and civil society.

Addressing effectiveness challenges

Translating digital transformation commitments and strategies into sustainable digital ecosystems and tangible change is a work-in-progress for all international development actors. Just as partners' demand for digital co-operation increases (see Chapters 6 and 7), ODA budgets are under pressure to respond to other development challenges accentuated by the COVID-19 crisis, inequalities, conflict and climate change (Ahmad and Carey, 2021[48]; OECD, n.d.[49]). Digital-for-development strategies that focus on inclusiveness, upholding democratic freedoms and using digital solutions to accelerate progress face the same challenges to being effective as other areas of development co-operation (GPEDC, 2020[50]; OECD, 2019[51]). As set out in the Busan Partnership for Effective Development Co-operation, success relies on being evidence-based and context-specific, taking a system-wide focus and aligning with country priorities and focusing on results (OECD, 2011[52]).[6] International development co-operation on digitalisation can also become more accountable for applying effectiveness best practices (Miyamoto, 2020[53]; Castella et al., 2021[20]; Waugaman, 2016[54]).

The following excerpt from the report *From Principle to Practice: Implementing the*

Principles for Digital Development (Waugaman, 2016[54]) sets out the challenges:

Transferrable insights and lessons also emerge from experience with digital health, which appears to have made progress in identifying effectiveness challenges and good practices with broad-based support. For example the Principles of Donor Alignment for Digital Health (Digital Investment Principles, 2018[55]), WHO Recommendations on Digital Health Systems (2019[56]), WHO Global Strategy on Digital Health (2019[57]), and similar documents issued by UNICEF (2018[58]), PAHO (n.d.[59]) and the Asian Development Bank (2018[60]) underpin the progress of the ongoing digital health debate.

A comparative analysis of development co-operation case studies and other contributions by providers to this report uncovers strategic and operational commonalities in line with the international agenda for development effectiveness. These are:

- **Leadership buy-in, institutional capacity and guidance are critical for designing and delivering holistic digital strategies.** The Norway and UK cases highlight the importance of raising awareness among leadership and policy teams and overseas networks about the role of digital technologies in enabling economic and social development. They show that building their organisations' in-house advisory capability dedicated to digital development is crucial. The ambition should be to grow a network of digital development champions, advisers and policy/programme managers that help the development ministry or agency to better mainstream digital approaches.
- **Digital development strategies should manage for the risk of reinforcing exclusion.** Sectoral projects using digital components exclude people who do not have access to mobile phones or cannot afford to pay for mobile data (Castella et al., 2021[20]). Moreover, during Internet shutdowns, digital programmes stall, which should be factored into programme and project design (ibid). South Korea stresses the importance of being familiar with countries' regulatory environment before deploying digital projects (see Chapter 36).

"While the potential is clear, the success of thousands of projects that have sprung up using technology to close access gaps is less so. Pilots have failed to move into scalable and sustainable programmes. Solutions too often reinvent the wheel rather than build on robust platforms, infrastructure, and shared services. Applications and services designed thousands of miles from their use environment failed to meet user needs. The creation of duplicative tools and systems has made data difficult to access and use for decision-making. [...] we must do better, both to fulfil our own mandates and, critically, to deliver to the best of our ability for the people we serve."

- **Commit to system-wide interoperability.** Digital projects tend to fail to translate into scalable and sustainable programmes especially when they duplicate themselves instead of building on robust platforms, infrastructure and shared services (Waugaman, 2016[54]). Fragmented and incompatible digital systems lead to inefficiencies, disruptions, and significant costs to society. The international development community needs to move away from investing in siloed systems and work to overcome barriers by finding alignment between partner country priorities and international development funding (see Chapter 34). Transparency issues include difficulty accessing basic information about existing partner-country digital systems and capacity to manage the high transaction costs of co-ordination (USAID, 2020[40]).
- **Peer-to-peer knowledge sharing is in demand, and it works**. Working with digital transformation requires dedication to capacity building to enable sustainable technology-driven change (see Chapter 12). Colombia and the UK report that identifying, building and leveraging strategic policy and knowledge partnerships is key for supporting digital transformation. Leveraging its knowledge and experience in international co-operation, JICA partners with Japanese technology companies, offering proven digital solutions to partners (Sawaji, 2021[22]).
- **Join up for diagnostics and use existing tools better**. Several bilateral providers, multilateral organisations and other bodies conduct digital diagnostics, finance, and use knowledge platforms and indices. Sharing evidence and support for multilateral diagnostics can mitigate the risk of proliferation and duplication.
- **Step up co-ordination and prioritise local ownership**. An evaluation of Belgium's digital-for-development strategy flagged the risk that the oversupply of digital projects fragments activities. The demand projects put on target audiences can decrease both the visibility and effectiveness of programmes and projects (Castella et al., 2021[20]). The Netherlands' case study highlights the value of local ownership and co-design with users to meet their needs. Waugaman (2016[54]) identified the need for in-country technical working groups to ensure coherent policies and actions across development sectors that leverage standards and have flexible programme designs. The same report found that the absence of dedicated policies or staff expertise on digital and data privacy and cybersecurity was a barrier to inter-donor collaboration.
- **Long-term funding**. Structural challenges include the short nature of funding cycles relative to the entrenched nature of the challenges that development funding seeks to address (Waugaman, 2016[54]). According to AFD, development co-operation should create funding models that build and strengthen the digital commons so that access to information and tools are sustainable over the long term.

REFERENCES

ADB (2018), *Guidance for Investing in Digital Health*, https://dx.doi.org/10.22617/WPS179150-2 (accessed on 8 December 2021). [60]

AFD (2021), *Digital transition - Strategy 2021-2025*, https://www.afd.fr/en/ressources/digital-transition-2021-2025-strategy. [25]

Ahmad, Y. and E. Carey (2021), *Development co-operation during the COVID-19 pandemic: An analysis of 2020 figures and 2021 trends to watch*, OECD Publishing, https://www.oecd-ilibrary.org/sites/2dcf1367-en/1/3/1/1/index.html?itemId=/content/publication/2dcf1367-en&_csp_=177392f5df53d89c9678d0628e39a2c2&itemIGO=oecd&itemContentType=book. [48]

BMZ (2019), *Digital technologies for development*, Federal Ministry for Economic Cooperation and Development, https://toolkit-digitalisierung.de/app/uploads/2021/07/BMZ-Strategy-Digital-Technologies-for-Development-1.pdf. [26]

CAO (2016), *The 5th Science and Technology Basic Plan*, http://wwwa.cao.go.jp/notice/20191101notice.html (accessed on 8 December 2016). [23]

Castella, C. et al. (2021), *'Digital for Development' (D4D), Etude complémentaire quels sont les développements liés au contexte de la Covid-19 ?*, https://diplomatie.belgium.be/sites/default/files/ey_etude_d4d_covid19_rapport_final_complet_20210927.pdf. [20]

CHRGJ, ISER & Unwanted Witness (2021), *Chased Away and Left to Die*, Center for Human Rights and Global Justice, New York, https://chrgj.org/wp-content/uploads/2021/06/CHRGJ-Report-Chased-Away-and-Left-to-Die.pdf. [44]

D4D Hub (2021), *Launch of D4D Hub Latin America and the Caribbean*, https://d4dhub.eu/lac-event (accessed on 9 December 2021). [11]

D4D Hub (2020), *EU D4D Hub website*, https://d4dhub.eu/. [8]

Danida (2021), *The Tech for Democracy initiative*, https://um.dk/en/foreign-policy/tech-for-democracy-2021/. [41]

Danida (2019), *TechVelopment: Approaches and Digitalisation. Tech and Digitalisation in Danish Development Cooperation in 2019*, https://um.dk/en/~/media/um/danish-site/documents/danida/techvelopment%20-%20approach%20and%20narrative.pdf. [13]

Dener, C. et al. (2021), *GovTech Maturity Index*, Washington, DC: World Bank, http://dx.doi.org/10.1596/978-1-4648-1765-6. [35]

DFID (2018), *Digital Strategy 2018-2020: Doing Development in a Digital World*, Deparrtment for International Development (UKAID), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/701443/DFID-Digital-Strategy-23-01-18a.pdf. [27]

DIAL (n.d.), *Our Vision and Mission. Accelerate national digital transformation to reach everyone, everywhere*, https://digitalimpactalliance.org/home/who-we-are/vision-mission/ (accessed on 9 December 2021). [3]

Digital Investment Principles (2018), *The Principles of Donor Alignment for Digital Health*, https://digitalinvestmentprinciples.org/ (accessed on 1 December 2021). [55]

Dutch Ministry of Foreign Affairs (2019), *Digital Agenda for Foreign Trade and Development Cooperation (BHOS)*, https://www.government.nl/documents/policy-notes/2019/07/31/digital-agenda-for-foreign-trade-and-development-cooperation-bhos. [28]

Estonia (2021), *Overview of Estonian development cooperation*, https://vm.ee/en/overview-estonian-development-cooperation. [19]

EU (2021), *Team Europe*, https://op.europa.eu/s/vbxy (accessed on 10 December 2021). [5]

European Commission (2021), *Global Gateway: up to €300 billion for the European Union's strategy to boost sustainable links around the world*, https://ec.europa.eu/commission/presscorner/detail/en/ip_21_6433 (accessed on 9 December 2021). [12]

European Commission (2021), *Joint programming of development cooperation*, https://ec.europa.eu/info/aid-development-cooperation-fundamental-rights/human-rights-non-eu-countries/ensuring-aid-effectiveness/joint-programming-development-cooperation_en (accessed on 8 December 2021). [6]

European Commission (2020), "#SmartDevelopmentHack announces nine winning solutions", *International Partnerships*, https://ec.europa.eu/international-partnerships/news/smartdevelopmenthack-announces-nine-winning-solutions_en (accessed on 10 December 2021). [9]

European Commission (2020), *Team Europe: Digital4Development Hub launched to help shape a fair digital future across the globe*, https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2321 (accessed on 4 November 2021). [16]

European Commission (2018), *2030 Digital Compass: the European way for the Digital Decade*, https://eur-lex.europa.eu/resource.html?uri=cellar:12e835e2-81af-11eb-9ac9-01aa75ed71a1.0001.02/DOC_1&format=PDF (accessed on 4 December 2021). [7]

European Commission (2017), *Digital4Development: mainstreaming digital technologies and services into EU*, http://dx.doi.org/file://main.oecd.org/Homedir1/cortadellasmancini_m/DCR/Digital%20Strategies_Matrix/3.%20Research/Strategies/EU.pdf. [29]

Finnish Government (2021), *Report on Development Policy Extending Across Parliamentary Terms*, https://julkaisut.valtioneuvosto.fi/handle/10024/163218. [17]

FPS Foreign Affairs (2016), *Strategic Policy Note: 'Digital for Development' (D4D) for the Belgian development cooperation*, https://diplomatie.belgium.be/sites/default/files/downloads/strategy_policy_note_d4d.pdf. [15]

GPEDC (2020), *Enhancing Effectiveness to Accelerate Sustainable Development. Accelerate Sustainable Development*, https://www.effectivecooperation.org/system/files/2020-06/Global-Compendium-of-Good-Practices-Document.pdf. [50]

Haldrup, S. (2018), *Digitising public service delivery: opportunities and limitations*, https://www.opml.co.uk/blog/digitising-public-service-delivery-opportunities-and-limitations (accessed on 10 November 2021). [34]

Kialo (n.d.), *Kialo Website*, https://www.kialo.com (accessed on 3 December 2021). [47]

KOICA (2021), *KOICA Digital ODA Business Promotion Strategy*, https://www.koica.go.kr/koica_kr/7889/subview.do. [30]

METI (2018), *Guidelines for Promotion of Digital Transformations Formulated*, https://www.meti.go.jp/english/press/2018/1212_003.html (accessed on 8 December 2021). [24]

Ministère des Postes et des Télécommunications de Sénégal (2016), *Stratégie Sénégal Numérique 2016-2025*, https://www.sec.gouv.sn/sites/default/files/Strat%C3%A9gie%20S%C3%A9n%C3%A9gal%20Num%C3%A9rique%202016-2025.pdf. [10]

Miyamoto, K. (2020), *Overview of digital transformation and how development co-operation contributes so far*, OECD, Paris. [53]

Murigande, C. (2019), *A Transition to Innovation will Transform Africa*, https://www.jica.go.jp/english/publications/j-world/c8h0vm0000f4ng2q-att/1907_08.pdf (accessed on 4 December 2021). [21]

Norwegian MFA (2019), *Digital transformation and development policy*, https://www.regjeringen.no/en/dokumenter/meldst11_summary/id2699502/?ch=1. [31]

OECD (2020), "Digital transformation and the futures of civic space to 2030", *OECD Development Policy Papers*, No. 29, OECD Publishing, Paris, https://dx.doi.org/10.1787/79b34d37-en. [39]

OECD (2020), *Summary Record of the 52nd DAC High Level Meeting - 1082nd DAC Meeting held on 9 and 10 November 2020*, https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DCD/DAC/M(2020)10/FINAL&docLanguage=En. [1]

OECD (2019), *Development Co-operation Report 2019: A Fairer, Greener, Safer Tomorrow*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9a58c83f-en. [51]

OECD (2018), *Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste*, OECD Publishing, https://doi.org/10.1787/9789264307131-en. [33]

OECD (2011), *Busan Partnership for Effective Development Co-operation: Fourth High Level Forum on Aid Effectiveness, Busan, Republic of Korea, 29 November - 1 December 2011*, OECD Publishing, https://doi.org/10.1787/54de7baa-en. [52]

OECD (n.d.), *Development Co-operation Report*, OECD Publishing, Paris, https://dx.doi.org/10.1787/20747721. [49]

PAHO (n.d.), *8 Principles for Digital Transformation of Public Health*, https://www.paho.org/en/ish/8-principles (accessed on 9 December 2021). [59]

Pathways for Prosperity Commission (2019), *The Digital Roadmap: How developing countries can get ahead. Final report of the Pathways for Prosperity Commission*, https://www.bsg.ox.ac.uk/sites/default/files/2019-11/The_Digital_Roadmap.pdf. [36]

Principles for Digital Development (n.d.), *About*, https://digitalprinciples.org/about/ (accessed on 8 December 2021). [4]

Privacy International (2020), *Surveillance Disclosures Show Urgent Need for Reforms to EU Aid Programmes*, https://privacyinternational.org/long-read/4291/surveillance-disclosures-show-urgent-need-reforms-eu-aid-programmes (accessed on 1 December 2021). [45]

Saldinger, A. (2021), *Q&A: Finland's new focus on digitalization in development*, https://www.devex.com/news/q-a-finland-s-new-focus-on-digitalization-in-development-100327. [18]

Sawaji, O. (2021), *Digital Transformation for Development: Japan's Contribution*, https://www.japanjournal.jp/diplomacy/international-cooperation/pt20201124142044.html (accessed on 8 December 2021). [22]

Shahbaz, A. and A. Funk (2021), *Freedom on the Net 2021: The Global Drive to Control Big Tech*, Freedom House, https://freedomhouse.org/report/freedom-net/2021/global-drive-control-big-tech#Regulation (accessed on 10 November 2021). [38]

Swedish Ministry for Foreign Affairs (2018), *Strategy for Sweden's global development cooperation in sustainable economic development 2018-2022*, https://www.government.se/4940d6/contentassets/2636cd52742a4a29827b936e118a5331/strategy-for-swedens-global-development-cooperation-in-sustainable-economic-development-2018-2022.pdf. [14]

UN (2020), *High-level Panel on Digital Cooperation*, https://www.un.org/en/sg-digital-cooperation-panel (accessed on 28 November 2021). [2]

UNICEF (2018), *UNICEF's Approach to Digital Health*, https://www.unicef.org/innovation/media/506/file/UNICEF's%20Approach%20to%20Digital%20Health%E2%80%8B%E2%80%8B.pdf (accessed on 8 December 2021). [58]

USAID (2021), *Accounting for risks: A need for safeguarding in digital ecosystems*, https://www.usaid.gov/usaid-digital-strategy/02-accounting-for-risks (accessed on 8 December 2021). [43]

USAID (2021), *Supporting Vibrant Civil Society & Independent Media*, https://www.usaid.gov/democracy/supporting-vibrant-civil-society-independent-media. [42]

USAID (2020), *A Vision for Action in Digital Health*, https://www.usaid.gov/sites/default/files/documents/USAID-A-Digital-Health-Vision-for-Action-v10.28_FINAL_508.pdf. [40]

USAID (2020), *Digital Strategy 2020-2024*, https://www.usaid.gov/usaid-digital-strategy. [32]

Votem (n.d.), *Votem Website*, https://votem.com/ (accessed on 3 December 2021). [46]

Waugaman, A. (2016), *From Principle to Pratice: Implementing the Principles for Digital Development. Perspectives and Recommendations from the Practitioner Community*, https://digitalprinciples.org/wp-content/uploads/From_Principle_to_Practice_v5.pdf. [54]

WHO (2019), *WHO Global Strategy on Health*, https://www.who.int/docs/default-source/documents/gs4dhdaa2a9f352b0445bafbc79ca799dce4d.pdf. [57]

WHO (2019), *WHO Guideline: Recommendations on digital interventions for health system strengthening*, https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1. [56]

World Bank (2016), *World Development Report 2016: Digital Dividends*, https://www.worldbank.org/en/publication/wdr2016 (accessed on 10 November 2021). [37]

NOTES

1. See Reader's guide for definitions.
2. For more details on how development co-operation strategies are evolving see the case studies in Chapters 34-39 in this report.

3. The Principles for Digital Development were endorsed by 288 development actors since 2012 and offer a framework that can be applied to development programming to maximise efficiency, effectiveness and sustainability of investments in digital solutions. See: https://digitalprinciples.org/.
4. JICA is included in this count because it is currently updating its digital development strategy.
5. Six DAC members – Australia, Canada, Finland, Luxembourg, Slovenia, and Switzerland – refer to digitalisation in their overall policy.
6. For an overview of the Busan Principles for Development Effectiveness and the how the Global Partnership for Effective Development Co-operation maximise the effectiveness of all forms of development co-operation to the benefit of people, planet, prosperity and peace, see: https://www.effectivecooperation.org/.

34 CASE STUDY: USAID PROMOTES CO-ORDINATED INVESTMENTS IN DIGITAL SYSTEMS FOR BETTER HEALTH OUTCOMES

Adele Waugaman, United States Agency for International Development

ABSTRACT

The United States Agency for International Development (USAID) recognises the need for a new strategic approach oriented towards strengthening the digitalisation of partner country health systems, promoting more interoperable and co-ordinated digital systems. This case study highlights the work of USAID, in line with its *Digital Health Vision*, in funding and implementing initiatives to achieve better co-ordination of investments in interoperable and scalable digital health systems.

The author expresses her appreciation to colleagues who commented on this draft including Sherri Haas, Dr. Folake Olayinka, Irena Sargasyan, and Rebecca Saxton-Fox at USAID, and Karin Kallendar at UNICEF.

Key messages

- COVID-19 revealed that a lack of co-ordination (rather than a lack of digital technology and systems) is one of the greatest problems in the digital transformation of health systems.
- The digitalisation of health systems presents a critical opportunity for countries to become more nimble and agile in detecting, responding to, managing, and recovering from health threats.
- To facilitate the move to interoperable health systems, countries need to move away from investing in siloed systems and work to overcome barriers by finding alignment between partner country priorities and international development funding.

Challenge

Digital connectivity, as a channel for the delivery of data, information, and services, is a critical health commodity. Indeed, a recent Lancet and Financial Times Commission report posits that digital transformation is a new determinant of health (Kickbusch et al., 2021[1]).

During the COVID-19 pandemic, as with the Ebola epidemic of 2013-2016 (USAID, 2016[2]), efforts to meet the urgent need for accurate information in a rapidly changing environment are hampered by fragmented digital systems (i.e. not interoperable). Digital health systems that are siloed by disease or health promotion area are common and they impede data exchange and use. By making it harder to access, analyse and triangulate health data, the silos obscure health trends and nuance, undermining scope for more targeted health information sharing and service delivery.

This issue is particularly critical in low-income and lower middle-income countries where health system digitalisation often depends on assistance from international partners who have a history of investing in digital systems that are siloed, reflecting their own institutional structures, expertise and technological capacity. COVID-19 (and Ebola (USAID, 2016[2]) before it) revealed that the lack of co-ordination (rather than a lack of digital technology and systems) is one of the greatest problems in the digital transformation of health systems. International development agencies and organisations urgently need a new strategic approach oriented toward strengthening the digital transformation of partner country health systems, promoting more interoperable and co-ordinated digital systems.

Approach

The United States Agency for International Development (USAID) recently published a Digital Strategy (2021[3]) and a sector-specific Digital Health Vision (2020[4]) that highlight the importance of assessing and strengthening the country ecosystems in which digital systems are used. Moreover, other countries, India (Government of India, 2020[5]) and United Republic of Tanzania (The United Republic of Tanzania, Ministry of Health, Community Development, Gender, Elderly and Children, 2019[6]) being interesting examples, have begun publishing national strategies for health sector digital transformation, creating a powerful opportunity for funder co-ordination. Several multilateral organisations and development co-operation partners have recommended adopting a similar, systems-level approach to planning for, and investing in, digitalisation. In the health sector, organisations call for strengthening national digital health governance, strategy, policies, and architecture through, for example, the 2018 World Health Assembly Digital Health Resolution (World Health Organization, 2018[7]), the 2020 WHO Global Strategy on Digital Health (2021[8]), and related materials issued by UNICEF ([9]), the **Pan American Health O**rganization ([10]), and the **Asian Development Bank** (2018[11]).

To strengthen co-ordination, USAID is undertaking a variety of co-investment and co-ordination activities described below.

USAID also supports the periodic assessment of country health system digitalisation, enabling funders to align around existing tools and address identified gaps. In the context of fast-moving disease outbreaks like COVID-19, investing in the reuse (Principles for Digital Development[12]) and strengthening of **existing** digital systems (Digital Square[13]) - already a core part of a country's health system - is an efficient way to meet urgent needs prior to investing in something completely new or parallel.

Results

In line with its Digital Strategy and in collaboration with other bilateral development agencies and multilateral organisations, USAID is supporting initiatives that facilitate co-ordinated investments in interoperable and scalable digital health systems. These include, for example:

- A community of practice made up of endorsers of the Digital Investment Principles ([14]). The community meets regularly to identify and address opportunities to maximise co-ordinated investments.
- The UNICEF-WHO Digital Health Center of Excellence, a new, multilateral technical assistance facility on digital health ([15]). It is designed to respond to COVID-19 needs using a co-ordinated, systems-strengthening approach.
- New centralised and WHO-administered platforms addressing barriers to information. These include the Digital Health Atlas (World Health Organization[16]), which captures information about the deployment of country-level digital systems, and the Digital Clearinghouse which connects ministries of health and their partners to vetted digital solutions.
- The expansion of Digital Square ([17]) ([18]), a funding mechanism designed by the USAID to pool funder investments and align them to priority software systems and country technical assistance requests.

Lessons learnt

- The digitalisation of health systems presents a critical opportunity for countries to become more nimble and agile in detecting, responding to, managing, and recovering from health threats. These benefits will only accrue, however, if the **global community fully implements and learns from well-documented lessons**.
- Despite the clear benefits of moving to interoperable health systems, there are **many barriers to finding alignment between country priorities and international development funding**. These include a lack of commonly accessible basic information about existing country digital systems and capacity, the complex delivery architectures of funding institutions, the high transaction costs involved in co-ordinating or harmonising projects between multiple funding partners, and the current lack of visibility about past, ongoing, and planned digital health investments by funding organisations.
- **Open, secure, inclusive, rights-respecting and standards-based digital health systems are critical to the delivery of public services**. Many international development co-operation partners are calling for increased consideration of digital public goods (Digital Public Goods Alliance, 2021[19]) that can work across disparate geographical regions and health sectors, building on country assets.
- **Investments in digital health systems require parallel investment in "analogue" components**, such as strengthening the human and institutional environments in which digital systems and data are used, to advance progress towards outcomes of equity, quality, and resource optimisation (see p.38 in (USAID[20])).
- To understand how best to direct funding, **it is essential to conduct periodic assessments of country digital systems**

and digital capacity readiness. With the advent of the Digital Health Atlas, there is now a home for information about country digital systems. A similar hub is needed for information about country digital capacity readiness, including data sets such as those published on the Global Digital Health Index.

This case study is also published on the OECD's virtual peer learning platform Development Co-operation TIPs • Tools Insights Practices as part of its *In Practice* series. The series presents real life responses to a diverse range of development co-operation challenges, with a focus on results and lessons learnt.

FURTHER INFORMATION

Digital Square, *Electronic Immunization Registries in Low- and Middle-Income Countries*, https://digitalsquare.org/resourcesrepository/eirlandscape.

REFERENCES

Asian Development Bank (2018), *Guidance for Investing in Digital Health*, https://dx.doi.org/10.22617/WPS179150-2 (accessed on 24 November 2021). [11]

Digital Health Center of Excellence (n.d.), *Digital Health Center of Excellence*, https://www.digitalhealthcoe.org/ (accessed on 24 November 2021). [15]

Digital Investment Principles (n.d.), *The Principles of Donor Alignment for Digital Health*, https://digitalinvestmentprinciples.org/ (accessed on 24 November 2021). [14]

Digital Public Goods Alliance (2021), *Understanding the Relationship between Digital Public Goods and Global Goods in the Context of Digital Health*, https://digitalpublicgoods.net/blog/understanding-the-relationship-between-digital-public-goods-and-global-goods-in-the-context-of-digital-health/ (accessed on 24 November 2021). [19]

Digital Square (2021), *Digital Square recommits to advancing health equity through digital transformation*, https://digitalsquare.org/blog/2021/8/27/digital-square-recommits-to-advancing-health-equity-through-digital-transformation (accessed on 24 November 2021). [18]

Digital Square (n.d.), *COVID-19 Map & Match*, https://digitalsquare.org/covid19-map-match (accessed on 24 November 2021). [13]

Digital Square (n.d.), *Digital Square*, https://digitalsquare.org/ (accessed on 24 November 2021). [17]

Government of India (2020), "National Digital Health Mission", *Strategy Overview*, https://abdm.gov.in/documents/ndhm_strategy_overview (accessed on 2 December 2021). [5]

Kickbusch, I. et al. (2021), "The Lancet and Financial Times Commission on governing health futures 2030: growing up in a digital world", *The Lancet*, https://doi.org/10.1016/S0140-6736(21)01824-9. [1]

PAHO (n.d.), *8 Principles for Digital Transformation of Public Health*, https://www.paho.org/en/ish/8-principles (accessed on 24 November 2021). [10]

Principles for Digital Development (n.d.), *Reuse and Improve*, https://digitalprinciples.org/principle/reuse-and-improve (accessed on 24 November 2021). [12]

The United Republic of Tanzania, Ministry of Health, Community Development, Gender, Elderly and Children (2019), *Digital Health Strategy July 2019 - June 2024*, https://www.healthdatacollaborative.org/fileadmin/uploads/hdc/Documents/Country_documents/Tanzania/Tanzania_Digital_Health_Strategy_2019_-2024.pdf (accessed on 2 December 2021). [6]

UNICEF (n.d.), *UNICEF's Approach toDigital Health*, https://www.unicef.org/innovation/media/506/file/UNICEF%27s%20Approach%20to%20Digital%20Health%E2%80%8B%E2%80%8B.pdf (accessed on 24 November 2021). [9]

USAID (2021), *USAID's Digital Strategy Overview*, https://www.usaid.gov/usaid-digital-strategy (accessed on 24 November 2021). [3]

USAID (2020), *A Vision for Action in Digital Health*, https://www.usaid.gov/digital-health-vision (accessed on 24 November 2021). [4]

USAID (2016), *Fighting Ebola with Information*, https://www.usaid.gov/sites/default/files/documents/15396/FightingEbolaWithInformation.pdf. [2]

USAID (n.d.), *USAID vision for health system strengthening 2030*, https://www.usaid.gov/sites/default/files/documents/USAID_OHS_VISION_Report_FINAL_single_5082.pdf (accessed on 24 November 2021). [20]

World Health Organization (2021), *Global strategy on digital health 2020-25*, https://www.who.int/docs/default-source/documents/gs4dhdaa2a9f352b0445bafbc79ca799dce4d.pdf (accessed on 24 November 2021). [8]

World Health Organization (2018), *Digital health. Draft resolution proposed by Algeria, Australia, Brazil, Estonia, Ethiopia, Germany, India, Indonesia, Israel, Italy, Luxembourg, Mauritius, Morocco, Panama, Philippines and South Africa*, https://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_ACONF1-en.pdf. [7]

World Health Organization (n.d.), *Digital Health Atlas*, https://digitalhealthatlas.org/en/-/ (accessed on 24 November 2021). [16]

CASE STUDY: THE NETHERLANDS' INCLUSIVE AND HUMAN RIGHTS-BASED APPROACH WITH CIVIL SOCIETY

35

Civil Society & Education Division, Ministry of Foreign Affairs of the Netherlands

ABSTRACT

As digital technology creates both opportunities and risks for inclusive development, ways of working to enhance civic space and strengthen civil society need to be adapted. This case study outlines how the Netherlands is supporting an inclusive and human rights-based approach to technology and the protection of civic space online by encouraging digital safety and digital inclusion of civil society, and the protection of human rights online.

Key messages

- Civil society has proven flexible and agile in adapting to a fast-changing digital world. However, as innovation and technology accelerate, civil society is faced with challenges to keep up with its societal impacts and misuse.
- Civil society has a critical role to play in ensuring that digital technology serves the public good, as a watchdog and as equal partners in the design and implementation of emerging technology.
- The Netherlands supports its civil society partners through learning sessions and guidelines on adapting and responding to the changing digital landscape and anticipating the opportunities and risks of technology.

Challenge

Digital technology has transformed civic space and democracy, offering the potential to accelerate efforts to achieve the sustainable development goals and to empower individuals and groups. It provides virtual spaces for individuals and civil society to access information, connect, mobilise around socio-political themes and engage in decision making.

Civil society has proven flexible and agile in adapting to a fast-changing digital world. Activism and advocacy have moved primarily online due to COVID-19 restrictions. However, as innovation and technology accelerate, civil society is faced with challenges to keep up with its societal impacts and misuse. In the context of COVID-19 this has been further exacerbated where adverse practices have increased, including through the use of facial recognition technology used to track human rights defenders or identify protesters; the fast spread of disinformation fuelling polarisation; censorship curtailing freedoms of expression online and a growing digital divide affecting particularly women and girls, the elderly and those living in rural areas where access to digital technologies and online spaces is limited. These digital threats restrict the space for civil society and individuals to safely operate and exercise their rights online.

The Netherlands view inclusive and open civic space online as vital to maximising civil society's contributions to the 2030 Agenda and its pledge to leave no one behind, and the protection of human rights and fundamental freedoms.

Approach

The Netherlands takes a dual approach to enhancing civic space and strengthening civil society, through its development co-operation policies and programmes, and its diplomatic efforts.

In 2021, the Netherlands started the 5-year implementation of the policy framework Strengthening Civil Society (Government of the Netherlands, 2019[1]), consisting of 42 strategic partnerships with civil society organisations to lobby and advocate for inclusive development. Civil society partners are supported through learning sessions and guidelines on adapting and responding to the changing digital landscape and anticipating the opportunities and risks of technology. Three priorities are stressed:

- **Digital safety**: Civil society actors need to be able to operate safely online. This includes strengthening the digital resilience of civil society, employing strategies to recognise and respond to digital threats, creating support networks and ensuring that there is zero risk involved for all parties in the collection of personal data.
- **Digital inclusion**: When applying digital solutions for lobbying and advocacy goals, local civil society and individuals should participate in the design of the technology to ensure digital tools are accessible, safe and suit the needs of the users.
- **Human rights online**: Civil society actors have a critical role to play in ensuring an inclusive and human rights-based approach in the development and use of technology, online platforms and policy, and protecting

human rights and fundamental freedoms online and offline.

These initiatives are complemented by diplomatic efforts. For example, as co-chair of the Development Assistance Committee's (DAC) Community of Practice on Civil Society, the Netherlands played a key role in driving forward the drafting and supporting the adoption of the DAC Recommendation on Enabling Civil Society (OECD, 2021[2]). This is the first international standard focusing on the actions of providers to advance policies and practices directed at civil society actors. It covers issues pertaining to digitalisation, for example, supporting greater and more inclusive civil society participation in public policy through the use of digital technologies; as well as exploring and addressing challenges, risks, and systemic inequalities associated with digital technologies that restrict civil society actors. The Netherlands continues to support the implementation and monitoring of the recommendation, including its provisions related to digitalisation.

Results

The Netherlands' dual approach has improved the digital-enabling environment for civil society in several ways:

- **Investments have been made in digital resilience of civil society** to ensure maximum safety and inclusion. Partnerships working on politically sensitive topics offer extensive training in digital safety for civil society and human rights defenders, for example, by working with the Digital Defenders Partnership (n.d.[3]).
- **Citizen-generated data and social media are increasingly being used** to advocate for the rights and priorities of marginalised communities. Examples include the digital story telling by indigenous communities for greater climate justice (Hivos[4]) and the use of technology to advocate for indigenous land rights (Digital Democracy, 2021[5]).
- **Strengthening of open and human rights respecting online spaces and technology,** with the help of the International Center for Not-For-Profit Law (ICNL) (n.d.[6]) and through membership of the Freedom Online Coalition (n.d.[7]). The ICNL ensures that the protection and promotion of civic freedoms are key considerations in the development of technology and policy.

Lessons learnt

- **Civil society has a critical role to play in ensuring that digital technology serves the public good** as a watchdog and as equal partners in the design and implementation of emerging technology. As digital threats and use of technology by repressive actors continue to increase and civil society participation has been further limited in the context of COVID-19, the need for inclusive processes for civil society to meaningfully engage in multi-stakeholder dialogues on development, regulation and responsible use of digital technology remains pivotal.
- **Civil society at all levels needs the expertise and capacity to assess and communicate their needs** on the use of technology and data. As much of the decision-making power on data lies with international non-governmental organisations, attention is needed to overcome the digital divide within civil society, ensuring that the values of local ownership and co-designing with the users are front and centre.

This case study is also published on the OECD's virtual peer learning platform Development Co-operation TIPs • Tools Insights Practices as part of its *In Practice* series. The series presents real life responses to a diverse range of development co-operation challenges, with a focus on results and lessons learnt.

FURTHER INFORMATION

Government of the Netherlands (2019), *33 Showcases - Digitalisation and Development - Inspiration from Dutch development cooperation*, https://www.government.nl/documents/publications/2019/10/15/33-showcases---digitalisation-and-development---inspiration-from-dutch-development-cooperation.
Government of the Netherlands (2019), *Digital Agenda for Foreign Trade and Development Cooperation (BHOS)*, https://www.government.nl/documents/policy-notes/2019/07/31/digital-agenda-for-foreign-trade-and-development-cooperation-bhos.
OECD (2020), "Digital transformation and the futures of civic space to 2030", *OECD Development Policy Papers*, No. 29, OECD Publishing, Paris, https://doi.org/10.1787/79b34d37-en.
OECD (2017), OECD Development Co-operation Peer Reviews: The Netherlands 2017, OECD Development Co-operation Peer Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264278363-en.
OECD, *Civil Society Engagement in Development Co-operation*, https://www.oecd.org/dac/civil-society-engagement-in-development-co-operation.htm.
For further information please contact dso-mo@minbuza.nl.

REFERENCES

Digital Defenders Partnership (n.d.), *Digital Defenders Partnership*, https://www.digitaldefenders.org (accessed on 25 November 2021). [3]

Digital Democracy (2021), *Mapping Ogiek ancestral lands in Kenya using Mapeo, during a pandemic*, https://wp.digital-democracy.org/mapping-ogiek-ancestral-lands-in-kenya-using-mapeo-during-a-pandemic/ (accessed on 3 December 2021). [5]

Freedom Online Coalition (n.d.), *Freedom Online Coalition*, https://freedomonlinecoalition.com (accessed on 25 November 2021). [7]

Government of the Netherlands (2019), *Policy Framework Strengthening Civil Society*, https://www.government.nl/documents/policy-notes/2019/11/28/policy-framework-strengthening-civil-society (accessed on 25 November 2021). [1]

Hivos (n.d.), *Voices for just climate action*, https://hivos.org/program/voices-for-just-climate-action (accessed on 25 November 2021). [4]

International Center for Not-For-Profit-Law (n.d.), *International Center for Not-For-Profit-Law*, https://www.icnl.org (accessed on 25 November 2021). [6]

OECD (2021), *DAC Recommendation on Enabling Civil Society in Development Co-operation and Humanitarian Assistance*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-5021 (accessed on 5 November 2021). [2]

CASE STUDY: KOICA'S DUAL APPROACH TO DIGITALISATION

36

Shinyoung Pyeon, Korea International Cooperation Agency

ABSTRACT

The Korea International Cooperation Agency (KOICA) recently introduced a dual strategic approach to address the imperative for digital transformation in partner countries. The approach involves a Digital Mainstreaming Strategy which aims to include a digital component across all sectors, combined with a Digital Transition Programme enabling the digital transformation of partner countries.

Key messages

- Korea's strategy highlights four pillars for official development assistance (ODA) to support the digital transformation of partner countries: Digital Government, Digital Accessibility, Digital Economy and Digital Safety.
- KOICA's digital projects to date have demonstrated high levels of performance. According to a recent internal analysis of 29 completed digital projects, 52% were classified as "successful" and 38% as "very successful".
- Evaluators highlighted the challenge of harmonising the supported digital projects with the broader regulatory environment in partner countries.

Challenge

The 2030 Agenda relies heavily on science, technology, and innovation (STI) as mechanisms for the implementation of the Sustainable Development Goals (SDGs). Digital technology can accelerate progress towards the SDGs and is a prerequisite for the development of a digital economy. However, without an inclusive approach, technology can further widen the inequality gaps of income and gender, and urban and rural populations. The Korea International Cooperation Agency (KOICA) has developed a strategy that allows it to contribute to accelerating progress towards the SDGs, providing a path through the fourth industrial revolution and bridging the digital divide between and within countries, in particular for the more vulnerable groups of society.

Approach

The core focus of Korea's dual strategic approach to digital transformation is on enabling policy and whole of government engagement, drawing on Korea's comparative advantage. To complement this upstream focus, the strategy stresses mainstreaming the use of digital technology throughout all projects to increase efficiency and achieve better results.

The Digital Transition Programme (KOICA, 2021[1]) is dedicated to enabling the digital transformation of partner countries. It continues Korea's long-standing support of e-government projects in partner countries capitalising on its own experience and knowledge. For example, the OECD Digital Government Index (2020[2]) demonstrated the extent to which Korea has advanced in e-government, with estimates on funding for digital-related projects, based on the OECD Creditor Reporting System ([3]), showing that Korea allocates a high share of its bilateral funding to digitalisation (see Chapter 40).

KOICA's Digital Mainstreaming Strategy (2021[4]) aims to include a digital component across all sectors of activity to maximise project impact due to the universal nature of digital technology. It defines the guiding principles, actions and goals for incorporating digital technology into the mid-term sectoral strategies for education, health, public governance, rural development and STI (KOICA, 2021[5]).

Korea's strategy highlights four pillars for official development assistance (ODA) to support the digital transformation of partner countries:

1. Digital Government: reinforcing effectiveness, efficiency, transparency, and accountability
2. Digital Accessibility: supporting digital Social Overhead Capital (i.e. public infrastructure, communications and utilities) and literacy
3. Digital Economy: supporting digital industry and an enabling environment
4. Digital Safety: protecting privacy and security in digital society.

The strategy also includes the following guiding principles:

- User-friendly design to drive usage
- Inclusive approach for the marginalised
- Transparent and open systems
- Future scalability and interoperability

- Data-driven decision making
- Cybersecurity.

Results

KOICA's digital projects to date have demonstrated high levels of performance. According to a recent internal analysis of 29 completed digital projects, 52% were classified as "successful" and 38% as "very successful". For example, the project in Asunción, Paraguay, for improving the traffic management system (KOICA, 2017[6]) directly contributed to a reduction in the number of traffic accidents from 373 in 2011 to 165 in 2015. It also decreased the average commute time from 42 minutes to 33 minutes.

KOICA plans to aggregate results of the Digital Transition Programme by following a logical framework including:

- **Goals**: improving the governance of partner countries, the digital Social Overhead Capital (SOC) and accessibility, using digital technology
- **Links to SDGs**: SDG4, SDG9, SDG16, SDG17
- **Outcome indicators**: the proportion of the population satisfied with their latest public service experience (SDG 16.6.2); the number of digital services experienced or overall use of digital services
- **Major outputs**: for digital government, an established system or regulatory policy, trained staff and users, etc.; for digital accessibility and SOC, an established infrastructure, developed digital training policies or curricula, trained staff and users, etc.

Lessons learnt

- Evaluators highlighted the challenge of **harmonising the supported digital projects with the broader regulatory environment** in partner countries. A change in culture, embracing digital transformation, is a critical success factor.
- **Recommendations for the design phase** of future projects include identifying legal and institutional enablers, in-depth consultation with relevant stakeholders and early user involvement at the prototype stage to ensure user-friendly systems.
- **Recommendations for the operational and maintenance phases** of future projects include ensuring sufficient budget for maintenance and time for pilot testing, local IT company involvement, if possible, from the design and development phase, and building both technical capacity and data management capability.

This case study is also published on the OECD's virtual peer learning platform Development Co-operation TIPs • Tools Insights Practices as part of its *In Practice* series. The series presents real life responses to a diverse range of development co-operation challenges, with a focus on results and lessons learnt.

REFERENCES

KOICA (2021), *Digital Mainstreaming Stategy*, https://tmslib.koica.go.kr/bbs/content/5_4715?pn=3& (accessed on 1 December 2021). [4]

KOICA (2021), *KOICA's Sectoral Mid-Term Strategy 2021-2025*, https://koica.go.kr/bbs/koica_kr/2058/332080/download.do (accessed on 1 December 2021). [5]

KOICA (2021), *Korea Digital Transition Programme*, https://tmslib.koica.go.kr/bbs/content/5_4756?pn=3& (accessed on 1 December 2021). [1]

KOICA (2017), *Paraguay Asuncion advanced traffic management system construction project end evaluation report*, https://lib.koica.go.kr/search/detail/CATTOT000000040855?mainLink=/search/tot&briefLink=/search/tot/result?type=local_A_commandType=advanced_A_si=TOTAL_A_st=KWRD_A_lmtsn=000000000001_A_lmtst=OR_A_oi=DISP06_A_os=DESC_A_lmt0=TOTAL_A_p1=91_A_q=%EC%95%84%EC. [6]

OECD (2020), "Digital Government Index: 2019 results", *OECD Public Governance Policy Papers*, No. 03, OECD Publishing, Paris, https://dx.doi.org/10.1787/4de9f5bb-en. [2]

OECD (n.d.), *Creditor Reporting System (CRS)*, https://stats.oecd.org/Index.aspx?DataSetCode=crs1 (accessed on 26 November 2021). [3]

CASE STUDY: NORWAY'S STRATEGIC PROCESS TO CAPITALISE ON THE POTENTIAL OF NEW TECHNOLOGY

37

Ole-Martin Martinsen, Ministry of Foreign Affairs of Norway

ABSTRACT

Norway realised that its development co-operation was not fully capitalising on the potential of new technologies, due to a fragmented, uncoordinated approach to digitalisation. To deliver sustainable results in the long term and beyond the scope of individual projects, Norway set out to develop a strategy for digital transformation in development policy. This case study highlights the key phases and outputs of Norway's strategy development process.

Key messages

- Having clearly defined goals has made it easier for Norway to monitor progress, contributing to a stronger organisational understanding of the potential of new technologies and their importance for the Sustainable Development Goals.
- The new strategic approach to digital transformation in development policy has led to a better co-ordination of efforts, resulting in less fragmentation and greater impact.
- Norway learnt that facilitating digital transformation requires a different approach, including the early involvement of all stakeholders, strengthening the understanding and acceptance of the risks and uncertainties by all partners and within the relevant ministries.

Challenge

The adoption of technological advances and digital innovations is critical to achieving the United Nations' Sustainable Development Goals (SDGs) by 2030. Reflecting strategically on this opportunity for development, Norway realised that its development projects were not fully exploiting the opportunities of new technology or unleashing its full potential. In 2018, Norway set out to develop a strategy for digital transformation in development policy that built on lessons learnt and aimed to deliver results beyond the scope of individual projects. The ad hoc projectised approach meant that the digital component was often fragmented or uncoordinated. Projects typically piloted single technologies and solutions, aimed only at end users with a short time horizon and without plans for scalability and reuse. Norway's initiatives also lacked overall goals and a unified methodological approach that facilitated digital transformation.

Approach

Norway's Ministry of Foreign Affairs set up a small project team consisting of 2-4 people exclusively dedicated to working on digital transformation and development policy.

Following consultation with academia and private and public sector actors, a set of eleven guidelines targeting Norway's own administration were developed and included in the digital strategy for Norwegian development policy (Ministry of Foreign Affairs of Norway, 2018[1]). These guidelines are designed to help integrate established best practices into all programmes. The strategy also outlines how to make digitalisation a part of Norway's thematic priorities (Ministry of Foreign Affairs of Norway, 2018[2]), where a broader, more elaborate and politically inclusive approach is needed.

The Ministry of Foreign Affairs presented the "Digital transformation and development policy" white paper (Ministry of Foreign Affairs of Norway, 2020[3]) to parliament, which defined the greatest barriers to digitalisation (i.e. access, regulation, digital competence and inclusion of marginalised groups), along with opportunities and risks in certain focus areas. The ministry would be accountable for a total of 72 measurable goals and action points outlined in the paper.

Each of the steps in the policy-making process was accompanied by communications activities to inform internal and external stakeholders of progress, to ensure buy-in across the ministry and raise awareness and understanding of the role of digitalisation in Norway's development co-operation.

Results

- Having clearly defined goals has made it easier to monitor progress and ensure that projects follow a methodological approach, better facilitating digital transformation in partner countries. This has contributed to a stronger organisational understanding of the potential of new technologies and their importance for the SDGs.
- Digital innovations and new technologies are now considered early on in the strategy development and project planning process,

with opportunities and potential barriers considered and addressed. There has been a better co-ordination of efforts, resulting in less fragmentation and greater impact.

- Norway is also fronting the agenda of digitalisation in development policy in international fora and organisations. It has participated in the establishment of the Digital Public Goods Alliance (n.d.[4]), a multi-stakeholder initiative with a mission to accelerate the attainment of the sustainable development goals in low-and middle-income countries by facilitating the discovery, development, use of, and investment in digital public goods.

Lessons learnt

- **Facilitating digital transformation is a new expert area for most development actors and requires a different approach**. Creating awareness, including an understanding and acceptance of the risks and uncertainties by all partners and within the relevant ministries is crucial to its success.
- **It's not just about the technology**. It is easy to overestimate the impact of technology in the short term and underestimate its effect in the long run. Working with digital transformation requires dedication to capacity building to enable sustainable technology-driven change.
- Advancing digital transformation requires **establishing new forms of partnerships and challenging established ways of working**. Development organisations and partners need time to learn and adapt. However, early involvement by all is strongly recommended.
- **Defining clear measurable goals** has made it is easier to monitor, evaluate and learn.

This case study is also published on the OECD's virtual peer learning platform Development Co-operation TIPs • Tools Insights Practices as part of its *In Practice* series. The series presents real life responses to a diverse range of development co-operation challenges, with a focus on results and lessons learnt.

REFERENCES

Digital Public Goods Alliance (n.d.), *Digital Public Goods Alliance*, https://digitalpublicgoods.net/ (accessed on 24 November 2021). [4]

Ministry of Foreign Affairs of Norway (2020), "Digital transformation and development policy", *Meld. St. 11 (2019–2020) Report to the Storting (white paper), Summary*, https://www.regjeringen.no/en/dokumenter/meldst11_summary/id2699502. [3]

Ministry of Foreign Affairs of Norway (2018), "2.1 The Government's thematic priorities", *Digital strategy for Norwegian development policy*, https://www.regjeringen.no/en/historical-archive/solbergs-government/andre-dokumenter/ud/2018/digital-strategy/id2608197/#:~:text=2.1%20The%20Government%E2%80%99s%20thematic%20priorities. [2]

Ministry of Foreign Affairs of Norway (2018), *Digital strategy for Norwegian development policy*, https://www.regjeringen.no/en/historical-archive/solbergs-government/andre-dokumenter/ud/2018/digital-strategy/id2608197. [1]

38 CASE STUDY: LEAVING NO ONE BEHIND IN A DIGITAL WORLD: THE UNITED KINGDOM'S DIGITAL ACCESS PROGRAMME

Alessandra Lustrati, Foreign, Commonwealth & Development Office, United Kingdom

ABSTRACT

United Kingdom's Digital Access Programme (DAP) works to promote the digital inclusion of underserved communities and excluded groups in partner countries. This case study looks at DAP's holistic and agile approach to catalysing affordable, safe and secure digital connectivity, promoting digital literacy and skills, locally relevant digital content and services, and supporting the inclusive growth of the local digital ecosystem and economy.

Key messages

- Through testing and demonstration of 73 scalable models for inclusive, safe and secure digital access across five partner countries, the DAP reached over 2.3 million people in 286 underserved communities, enhancing their connectivity, digital skills and access to locally relevant digital content and services in 2020-21.
- The DAP's hybrid and flexible delivery model allowed it to rapidly pivot and leverage digital inclusion as a key enabler of COVID-19 response and mitigation.

Challenge

Prior to 2016, the United Kingdom had a predominantly sectoral approach to promoting digital technologies in international development programmes, focusing on digital financial inclusion, digital health, ed-tech, agri-tech, etc. While these interventions yielded useful results, their scalability and sustainability were constrained by lack of connectivity, digital skills, digital content and services for underserved communities, safety and security in the cyber space, and support for local digital enterprises.

The World Bank's 2016 Digital Dividends World Development Report (2016[1]) marked a turning point in international thinking on digital development. It highlighted the importance of resolving fundamental barriers such as the connectivity gap, while also working on the analogue complements – such as regulatory frameworks and digital skills - for the adoption of digital technologies. Following its publication, the UK's former Department for International Development (DfID) and the Foreign & Commonwealth Office (FCO) (merged since September 2020 to form the Foreign, Commonwealth & Development Office or FCDO), along with the Digital, Culture, Media & Sports Department (DCMS) joined forces to promote digital transformation as a cross-cutting issue. The joint challenge was to design, develop and roll-out a cross-government initiative that would leverage the expertise needed to promote digital development in an integrated, holistic manner and support inclusive, responsible and sustainable digital transformation in partner countries.

Approach

The Digital Access Programme (DAP) started in 2018. Its current phase is expected to continue until March 2023. The following steps were taken to address the challenges linked to setting up a complex, cross-government programme:

- **Raising awareness across government** on the need for a cross-cutting view of digitalisation as a key enabler of inclusion and transformation. The DfID's Digital Strategy for 2018-2020, "Doing Development in a Digital World" (DFID, 2018[2]) helped raise this awareness, but a dedicated programme was needed to demonstrate a cross-government, holistic approach to digital development in practice.
- **Developing a joint programme** using the technical expertise and programme design and delivery skills from each department. The programme was developed as part of the cross-government Prosperity Fund portfolio and was focused on middle-income countries, which typically display a significant digital divide, whilst having the basic infrastructure and institutional capacity needed for digital adoption.
- **Assembling a cross-departmental (DfID-FCO-DCMS) team with expertise** in digital inclusion, cybersecurity, digital entrepreneurship and programme delivery. The team conducted five in-depth digital access country diagnostics in Kenya, Nigeria, South Africa, Brazil and Indonesia over nine months, to consult with key stakeholders and assess the needs and potential strategic direction for a holistic intervention on digital development. Preparation for the diagnostic

missions included detailed desk reviews of available evidence and questionnaire design.

- **Using the digital access country diagnostic reports to design a country-specific programme business case** and advocate for support from senior leaders and ministers for this innovative and yet untested type of programme.
- **Delivering pilots in two partner countries to reinforce buy-in,** rapidly demonstrating the programme's potential by providing evidence and visibility with minimum investment. The pilots were used to refine the programme's **adaptive delivery model**. The latter included outsourcing the cybersecurity capacity building; working with embassy-based "tech hubs" to support digital entrepreneurship; and using a hybrid model of in-house, direct and outsourced delivery for the more complex and larger component focused on digital inclusion (i.e. connectivity, digital skills, content and services for underserved communities).
- **Obtaining ministerial approval for the DAP and its rollout in the five partner countries**. After the initial diagnostic and piloting phase, the implementation phase started in July 2019. This included building specialist programme teams in embassies or high commissions, engaging directly with key stakeholders in-country (e.g. telecommunications regulators and information communication technologies [ICT] authorities) and co-designing projects with a range of local and international partners.

Results

- According to its official 2021 Annual Review (FCDO, 2021[3]), the DAP scored A+ for exceeding delivery expectations and strengthening digital ecosystems. It scored A in the 2019 (FCDO, 2020[4]) and 2020 (FCDO, 2020[5]) reviews.
- Through testing and demonstration of 73 scalable models for inclusive, safe and secure digital access across five partner countries, the DAP reached over 2.3 million people in 286 underserved communities enhancing their connectivity, digital skills and access to locally relevant digital content and services in 2020-21.
- The DAP has enabled the development of 18 national plans, policies, strategies and regulations, including for example the National ICT plan (ICT Authority of Kenya, 2020[6]) and TV White Space regulations (Communications Authority of Kenya, 2020[7]) for last-mile connectivity and shared spectrum framework in Kenya (Communications Authority of Kenya, 2021[8]), a community networks policy framework in Brazil, the National Broadband Plan in Nigeria (Nigerian Communications Commission, 2020[9]) and the Digital Inclusion in Telemedicine Strategy in Indonesia.
- In Indonesia, successful DAP initiatives include an online safety website in Bahasa Indonesia language and a project to raise awareness of online gender-based violence with Indonesian NGO SAFEnet.
- In Nigeria, the DAP trained over 6 000 individuals from over 3 000 small and medium-sized enterprises in cyber security essentials, and a successful cyber hygiene awareness campaign reached over 46 million people through social media and radio.
- The Government of Kenya and the DAP Tech Hub launched the Business Regulatory Toolkit (Kenya National Chamber of Commerce & Industry, 2021[10]) to enhance local digital entrepreneurs' access to clear, user-friendly information on the regulatory environment. The online toolkit had over 300 000 hits in the first three months and over one million by June 2021.

Lessons learnt

- **The digital access country diagnostics proved useful for building new evidence** for a novel area such as digital development through context-specific interventions.
- The laborious approval procedures needed for innovative programmes required the

team to **break down the process into diagnostic, piloting and implementation phases.** Check-in moments throughout the evolution of the programme and demonstrable impact of the pilot projects were key to winning support from senior leadership and ministers.

- **An adaptive and innovative delivery model was needed** to respond to the rapid changes in the digital space. This was achieved by combining outsourcing to specialist organisations with novel ways of using cross-government digital development, cybersecurity and tech expertise as well as by co-designing specific projects directly with local stakeholders and implementing partners.
- **Central programme management** was important to ensure coherence (across countries, components and policies) and provide advisory and strategic steer, facilitate cross-country learning and enable participation in the global dialogue on digital development. However, it was also essential to set up country teams in embassies to ensure contextual knowledge, close monitoring of projects and day-to-day contact with key stakeholders.
- **The DAP's hybrid and flexible delivery model** allowed it to rapidly pivot and leverage digital inclusion as a key enabler of the COVID-19 response and mitigation, by quickly designing and deploying short-term projects on inclusive connectivity, digital literacy, cyber hygiene skills, telemedicine and distance learning, which greatly helped many underserved or remote communities during the pandemic.

This case study, alongside its companion on the UK's digital development strategy and policy framework, is also published on the OECD's virtual peer learning platform Development Co-operation TIPs • Tools Insights Practices as part of its *In Practice* series. The series presents real life responses to a diverse range of development co-operation challenges, with a focus on results and lessons learnt.

FURTHER INFORMATION

FCDO, Digital Access Programme (DAP) Development Tracker, https://devtracker.fcdo.gov.uk/projects/GB-1-204963/documents.

REFERENCES

Communications Authority of Kenya (2021), *Licensing and Shared Spectrum Framework for Community Networks*, http://ca.go.ke/wp-content/uploads/2021/05/Licensing-and-Shared-Spectrum-Framework-for-Community-Networks-May-2021.docx.pdf (accessed on 29 November 2021). [8]

Communications Authority of Kenya (2020), "Authorisation of the Use of TV White Spaces", *Dynamic Spectrum Access Framework*, https://www.ca.go.ke/wp-content/uploads/2020/03/Authorisation-of-the-use-of-TV-White-Spaces.pdf (accessed on 29 November 2021). [7]

DFID (2018), *DFID Digital Strategy 2018 to 2020: Doing Development in a Digital World*, https://www.gov.uk/government/publications/dfid-digital-strategy-2018-to-2020-doing-development-in-a-digital-world (accessed on 29 November 2021). [2]

FCDO (2021), "Digital Access Programme (DAP) Annual review 2021", *DAP Development Tracker*, https://devtracker.fcdo.gov.uk/projects/GB-1-204963/documents (accessed on 29 November 2021). [3]

FCDO (2020), "Digital Access Programme (DAP) Annual review 2019", *DAP Development Tracker*, https://iati.fcdo.gov.uk/iati_documents/54173438.odt (accessed on 29 November 2021). [4]

FCDO (2020), "Digital Access Programme (DAP) Annual review 2020", *DAP Development Tracker*, https://iati.fcdo.gov.uk/iati_documents/56521351.odt (accessed on 29 November 2021). [5]

ICT Authority of Kenya (2020), *ICT Authority Strategic Plan 2020-2024*, https://icta.go.ke/pdf/ICTAStrategicPlan.pdf (accessed on 29 November 2021). [6]

Kenya National Chamber of Commerce & Industry (2021), *Kenya, UK Launch Business Regulatory Guide*, https://www.kenyachamber.or.ke/2021/03/22/kenya-uk-launch-business-regulatory-guide/ (accessed on 29 November 2021). [10]

Nigerian Communications Commission (2020), *Nigerian National Broadband Plan 2020 – 2025*, https://www.ncc.gov.ng/documents/880-nigerian-national-broadband-plan-2020-2025/file (accessed on 29 November 2021). [9]

The World Bank (2016), *World Development Report 2016: Digital Dividends*, https://www.worldbank.org/en/publication/wdr2016 (accessed on 29 November 2021). [1]

CASE STUDY: DIGITAL-BY-DEFAULT: A NEW CONCEPT IN GERMANY'S DEVELOPMENT CO-OPERATION

39

Division on Digital Technologies in Development Cooperation, BMZ
(Federal Ministry for Economic Cooperation and Development), Germany

ABSTRACT

Challenges created by the pandemic and climate change require bold moves in development co-operation to fully tap into the potential of digital solutions. This case study introduces Germany's new "Digital by Default" strategy developed with an objective to maximise opportunities for digital solutions in development co-operation.

Key messages

- Germany's Digital by Default approach amplifies digital transformation in partner countries and mitigates its inherent challenges, by supporting the establishment and maintenance of structures that enable the sustainability of digital public goods and ensure access to digital opportunities.
- With Digital by Default as the new guiding principle, Germany is committed to learning from its own experiences. It is expected that the new approach will support quick development of efficient digital solutions to scale, creating more best practices within its projects.

Challenge

Current global challenges such as the pandemic and climate change are requiring nations and people to join forces and use the full range of opportunities digitalisation provides to rapidly scale successful solutions. However, most development co-operation stakeholders supporting digital transformation have the tendency to follow their own agendas and often work in silos, meaning that resources and expertise are not fully exploited. Germany also recognised the need to maximise opportunities for digitalisation in its own development co-operation, where tailor-made, successful digital solutions often remain in their local contexts, or familiar analogue approaches are chosen over possible digital solutions. As such, Germany looked for new ways to tap into the potential of digitalisation in its development programmes.

Approach

Germany's Federal Ministry for Economic Cooperation and Development (BMZ) entered a new phase in its development co-operation with its Digital by Default (Toolkit Digitalisierung, 2021[1]) concept. This approach is grounded in a simple principle: digital solutions must be the default position for projects to meet their objectives within German development co-operation. To ensure broad implementation of this strategy, projects must identify and justify their reasons for not employing digital components. As a result, opportunities for digital technologies are consistently being considered by our implementation partners in the review process of any new or follow-up projects and then employed if they bring valuable advantages.

The Digital by Default approach ensures both the technical and methodological quality of the proposed solutions. It also aims to enable societies to make digitalisation sustainable. The focus is always on the practical benefits: which specific digital solutions can help make a project more effective, more efficient, or more innovative. Furthermore, successful projects under this strategy are scaled up in partner countries.

Results

In practice, the Digital by Default approach amplifies digital transformation in partner countries and mitigates its inherent challenges, by supporting the establishment and maintenance of structures that enable the sustainability of digital public goods and ensure access to digital opportunities. Germany will continue to assess and develop new projects toward this goal. Results already achieved include:

- **The digital learning platform *atingi*** (2021[2]) which provides free access to high-quality digital learning, anytime and anywhere. The platform has already reached more than one million people with its innovative learning offerings, with plans to reach 20 million by the end of 2023. To achieve this goal, *atingi* needs to become the standard tool for digital learning opportunities in German development co-operation.
- Germany, along with Estonia, the Digital Impact Alliance (DIAL), and the International Telecommunication Union, is supporting partners to enable the delivery of digital

public goods within the **international e-government initiative *GovStack*** (2021[3]). The next phase will involve creating a model digital government services platform – building on DIAL's existing Catalog of Digital Solutions (Digital Impact Alliance[4])– which will demonstrate scaling opportunities across services and sectors.

- An internal survey demonstrated that **most project owners within BMZ now want to use digital tools and approaches** in their work to increase their projects' effectiveness and reach. However, the survey also identified an ongoing need to further develop expertise on digital technologies within the BMZ.

Lessons learnt

- **There is no "one size fits all" solution**. Digital solutions need to be tailored to the local context in which they will be embedded, considering local circumstances and ecosystems. Open-source solutions play a crucial role with their availability and accessibility making them a strong tool for scaling digital solutions to different contexts.
- **Ongoing learning and investment in further capacity building**. With Digital by Default as the new guiding principle, Germany is committed to learning from its own experiences and spearheading digitalisation in a way that adds value. It is expected that the Digital by Default approach will support quick development of efficient digital solutions to scale, creating more best practices within its projects. Furthermore, Germany recognises the need to invest in capacity building, both within its development co-operation and in partner countries.
- **International partnerships are crucial to mainstreaming the vision of a fair digital future.** Joint action is vital to tackling global challenges. The BMZ already relies on its strong network of partners to exchange best practices and aims. In direct collaboration with its partner countries, Germany is ready to take a strong role in shaping a human-centred and green digital transformation.

This case study is also published on the OECD's virtual peer learning platform Development Co-operation TIPs • Tools Insights Practices as part of its *In Practice* series. The series presents real life responses to a diverse range of development co-operation challenges, with a focus on results and lessons learnt.

REFERENCES

atingi (2021), *atingi*, https://www.atingi.org/ (accessed on 26 November 2021). [2]

Digital Impact Alliance (n.d.), *Catalog of Digital Solutions*, https://solutions.dial.community/products (accessed on 26 November 2021). [4]

GovStack (2021), *Accelerating the digital transformation of government services*, https://www.govstack.global/ (accessed on 26 November 2021). [3]

Toolkit Digitalisierung (2021), Digital Strategy - Digital by Default, https://toolkit-digitalisierung.de/en/digital-strategy/digitalisation-as-a-quality-feature/digital-by-default/ (accessed on 26 November 2021). [1]

40 MEASURING OFFICIAL DEVELOPMENT FINANCE FOR DIGITALISATION

Giorgio Gualberti, Development Co-operation Directorate, OECD
Jonas Wilcks, Development Co-operation Directorate, OECD

ABSTRACT

Reflecting the cross-sectoral nature of digitalisation and digital transformation, development finance supports a range of activities and investments in digital infrastructure. However, the absence of explicit reporting guidance or a policy marker in the OECD Creditor Reporting System makes measuring and tracking official development finance for digitalisation more difficult. This chapter provides the first estimates of multilateral, bilateral and philanthropic development finance for digitalisation from 2015 to 2019, based on a methodology that combines relevant sector codes, keyword searches and Sustainable Development Goal tagging. The database suggests that this type of finance increased dramatically in recent years, though a few providers constitute the bulk of finance for digitalisation. The chapter discusses options for increasing the transparency of finance for digitalisation through better reporting guidance and statistical measures.

Key messages

- While some DAC members are developing markers to help track development finance in support of digitalisation, an agreed statistical method would be needed to better measure, co-ordinate and account for these investments.
- Development finance for digital activities more than tripled between 2015 and 2019, with providers investing a total of USD 18.6 billion and mobilising another USD 4.2 billion in private finance, according to initial estimates based on the Creditor Reporting System.
- Finance for digitalisation is increasing in volume, accounting for 1% of bilateral development finance, 2.7% of multilateral development finance and 4.6% of philanthropic development finance in 2018-19.

Measuring development finance for digitalisation is important to track the overall level of financial investment in digital transformation,[1] to map and understand the different roles financing actors play, and to assess whether financing aligns with stated development objectives. With this information and insight, development co-operation providers will be better placed to strategically target finance for digital needs and gaps that impact development results, and to tailor their financing to the digital readiness of partner countries.

The gaps in financing for digitalisation in low- and middle-income countries affect all aspects of the digital transformation from capital and infrastructure investments to enable access, to digitalising government, services, the economy and industry, to equipping people and users with the right digital skills and literacy and many other areas as identified in chapters throughout this report. There is scope for much more transparency of finance for digital transformation by all relevant actors – public and private, domestic and international. There are also definitional and technical aspects to resolve, notably on how to measure funding for such a cross-sectoral phenomenon. This chapter offers initial answers and reflections on next steps. The first section describes the methodology the authors used to compile a dataset extracted from the OECD Creditor Reporting System (CRS) that estimates trends in development finance for digitalisation and discusses general measurement challenges. These estimates, presented in the second section, cover 2015-19 for several bilateral, multilateral and philanthropic providers, and look at geographic and sectoral trends. The last section examines options to improve measurement and tracking of development finance in this space.

Methodology: Estimating finance for digitalisation

The OECD Development Assistance Committee statistical system does not have specific guidance or markers for reporting and tracking finance for digitalisation. To estimate development finance for digitalisation and digital transformation, this report used the same method as for other themes and issues where guidance does not exist. While the findings are robust, the process of analysing the CRS database to calculate the level of financing for digital transformation nevertheless raises methodological and analytical questions. For more accurate tracking and transparency, DAC members and other development finance actors should consider examining and agreeing on the most appropriate methods.

Measuring cross-sectoral digitalisation finance is a challenge

Accurately tracking financing for digitalisation is challenging. First, there is no standardised, general definition. Digitalisation is the adoption of new digital technologies,

and its economic and societal impacts (see Reader's Guide). This financing can take many forms and support a range of activities: introducing digital infrastructure such as networks, computing and communication tools; developing (through training, education etc.) the broad set of skills and technical abilities required to take advantage of digital technologies; and implementing organisational changes that take advantage of new technologies and enable new activities based on digital technologies.

Second, apart from the clear-cut investments in hard digital infrastructure that appear to be reported under the information and communication technology (ICT) sector code,[2] most support for digitalisation and digital transformation is cross-sectoral. Related activities might well be in any sector – education (e.g. curricula development), health (telemedicine and diagnostic tools), banking (mobile banking), government (digitalisation of public institutions and e-government), and energy (smart grids and distributed renewable energies), among others. Furthermore, it is difficult to identify spending on digital capacity and skills-building, and support for digital policy reform, accountability and knowledge sharing, as they are not necessarily large budget expenditures and tend to be integrated within larger programmes.

Finally, CRS data collection does not include a specific tool to track financing for digitalisation. While some activities could be isolated through a series of sector codes (notably in the communication sector), activities that support digitalisation in other sectors can be identified only through a series of tailored techniques. These include looking at digitalisation-related Sustainable Development Goal (SDG) targets and at the descriptive information of activities by text-mining keywords, complemented by manual screening.

In 2020, the European Union (EU) developed a marker to track investment in digitalisation (Box 40.1). This marker identified a yearly average of USD 340 million in digitalisation-related commitments from EU institutions for 2020-21. The methodology used by in this report identified USD 205 million in digitalisation-related support by EU institutions for 2018-19. While they cover different time periods and are not directly comparable, the results of the two methodologies are quite similar. This suggests that the method developed to track DAC digitalisation support does not overestimate digitalisation-related finance and that the estimates presented in this chapter are robust.

Sources and methodology used to estimate digitalisation finance

The data informing the estimates provided in this chapter were selected from commitments reported in the CRS by bilateral and multilateral providers and private philanthropic institutions. The CRS activity-level data were supplemented by aggregated data on private finance mobilised by official interventions, to obtain a broader picture of the finance that supports digitalisation.

The following criteria were used to identify the data:

- sector codes in communications (communications policy and administrative management, and telecommunications and ICT)
- keywords in the title or description of the activity reported (e-governance, e-health, telemedicine, blockchain, artificial intelligence, machine learning, digital, Internet, electron, ICT, online, telecom, software, e-commerce)
- SDG targets (2.a, 5.b, 8.2, 8.3, 9.b, 9.c, 17.6, 17.7, 17.8).

Activities that matched at least one of these criteria were included in the dataset without double-counting activities that corresponded to multiple criteria. Manual screening of the largest activities selected (accounting for 88% of total development finance) was used to exclude activities not related to digitalisation.

BOX 40.1. THE EU DIGITALISATION MARKER: A DEDICATED TOOL TO TRACK DIGITALISATION SUPPORT

BY AUTHORS WITH INPUT FROM EU COLLEAGUES

The European Commission developed a marker to track digitalisation activities and began implementing it with 2020 data. It was presented at the 2020 meeting of the Working Party on Development Finance Statistics (WP-STAT) (OECD, 2020[1]). The internal EU marker is designed to track actions that promote the following digital transformation objectives:

- governance, policy and regulatory frameworks relevant to digitalisation and the digital economy
- access to affordable and secure broadband connectivity, and digital infrastructures
- digital literacy and skills
- digital entrepreneurship and job creation
- use of digital technologies as enablers for sustainable development (e.g. digital and e-services, including e-governance).

The EU policy marker uses the same three-value scoring system as DAC policy markers (OECD, 2020[2]). An activity can be scored as "2" when digitalisation is its principal (or primary) objective, as "1" when digitalisation is a significant (or secondary) objective among others and as "0" when the activity is evaluated as unrelated to digitalisation.

The methodology developed also outlines three steps to determine if an action should be considered related to digitalisation:

1. Analyse the digitalisation context to facilitate identification and articulation of the action's digital component and inform future steps.
2. Identify the existence of a digitalisation context, specific objective or result.
3. Disaggregate indicators and data by sex, age, socio-economic status and region, where appropriate and applicable.

Figure 40.1 illustrates the steps taken to select the data. Figure 40.2 shows the share of activities matching each criteria.

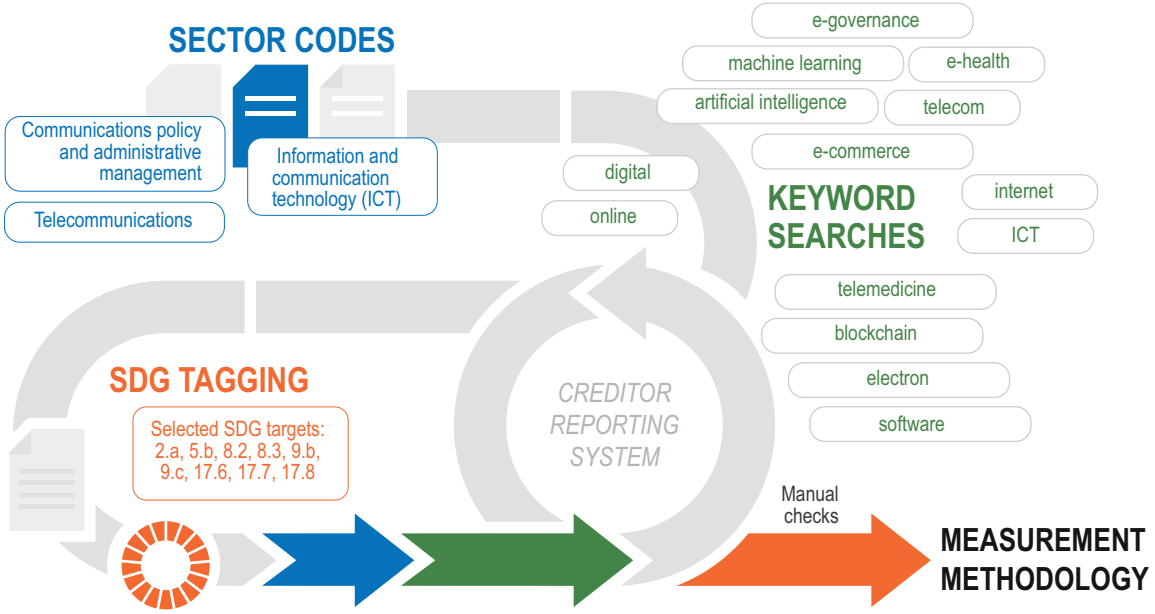
Caveats about data sources

The authors tested various combinations of keywords and SDGs to complement data selected through a set of purpose codes in the communication sector. This empirical approach also led to the elimination of some keywords in building the final sample. For example, keywords such as technology and communication, were tested in the manual search but not included for estimating development financing for digitalisation because the results showed a high number of activities unrelated to digitalisation. Including them risked inflating the results. For the same reason, only activities exclusively marked with SDG targets of interest were included as data sources.[3] Activities marked with multiple SDGs showed activities with weaker and/or limited digitalisation focus.

Finally, the largest activities in terms of budget were manually checked to ensure they invested in digitalisation. Slightly more than 1 100 records were checked, representing about 88% (in value terms) of the activities identified by sectors, keywords and SDGs. Activities accounting for about 8% of the finance considered were excluded through manual screening because they were not closely related to digitalisation.

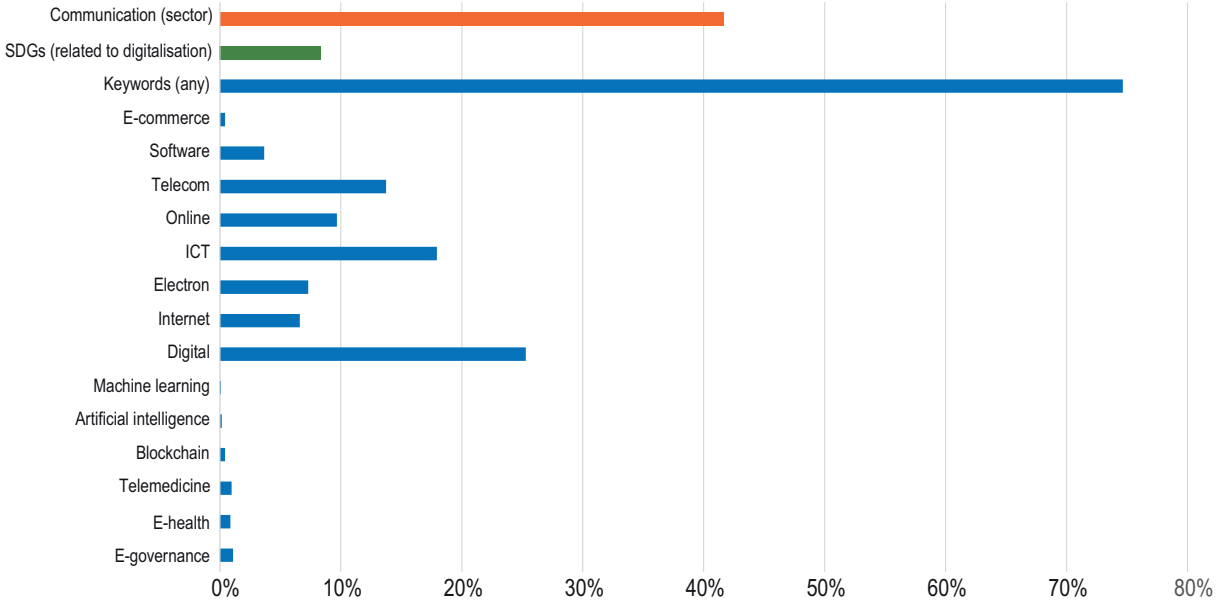
The data on private finance mobilised by official interventions are partially confidential and thus treated separately. The manual screening of this dimension was limited to activities reported by some bilateral donors

Figure 40.1. Sector codes, keywords and targets to identify digitalisation activity



Source: Authors' illustration.

Figure 40.2. Share of digitalisation-related development finance by activity and volume



Note: A single activity can be identified by more than one criterion. Thus, the sum of shares indicated by all the bars exceeds 100%. Keywords are in blue, SDGs in green and the communication sector in orange for clarity.
Source: Authors' estimates based on data available in the CRS database.

that publicly disclose mobilisation data in the CRS database. Some of the mobilisation data were obtained in aggregated form by sector codes alone.

Overview of the dataset

Approximately 15 000 digitalisation-related development finance activities are included in the estimates for 2015-19. Of

these, bilateral providers reported about 10 766 activities (totalling USD 6.3 billion), multilateral providers reported 2 457 activities (totalling USD 10.3 billion), and philanthropic institutions reported 1 903 (totalling USD 1.2 billion). These figures exclude private finance mobilised. While records in the CRS database do not necessarily correspond to projects, the data indicate that multilateral organisations report larger programmes than bilateral providers, which is to be expected.

Of the three criteria used to create the estimates, keywords identified the largest proportion (75%) of digitalisation-related financing. The three that tagged most financing were digital, ICT and telecom, while other keywords on newer digital technologies that are promoted as potential accelerators for developing countries, such as blockchain or (Sirimanne and Freire, 2021[3]; Deshmukh, 2020[4]), receive far smaller shares. Communication and ICT as a sector accounted for 42% of bilateral development finance for digitalisation.

Development finance for digitalisation grew significantly over 2015-19

Development finance for digitalisation grew significantly over 2015-19. Using this methodology, the data indicate that development co-operation providers and philanthropic institutions have been investing increasing volumes of development finance in activities related to digitalisation and digital transformation.[4]

Over the five-year period, the authors estimate digital-related official development finance from bilateral and multilateral donors and philanthropic foundations totalled USD 18.6 billion. Bilateral and multilateral organisations mobilised more than USD 4.2 billion in additional private finance.

Bilateral and multilateral development finance and finance from philanthropic institutions more than tripled over 2015-19, increasing from USD 2 billion in 2015 to USD 6.8 billion in 2019 (Figure 40.3). The volume in the latest two years taken into consideration – 2018-19[5] – represents 1.8% of the total bilateral, multilateral and philanthropic commitments. To put these figures in perspective, these institutions' financing for digitalisation in 2019 is of the same order of magnitude as their commitments to the industry sector (USD 7.0 billion) and to renewable energy sources (USD 7.7 billion).

Development finance for digitalisation from multilateral institutions alone more than quadrupled, rising from USD 1.0 billion in 2015 to USD 4.2 billion in 2019. Multilateral institutions represented 62% of the total committed by multilateral and bilateral providers and philanthropic institutions in 2019.

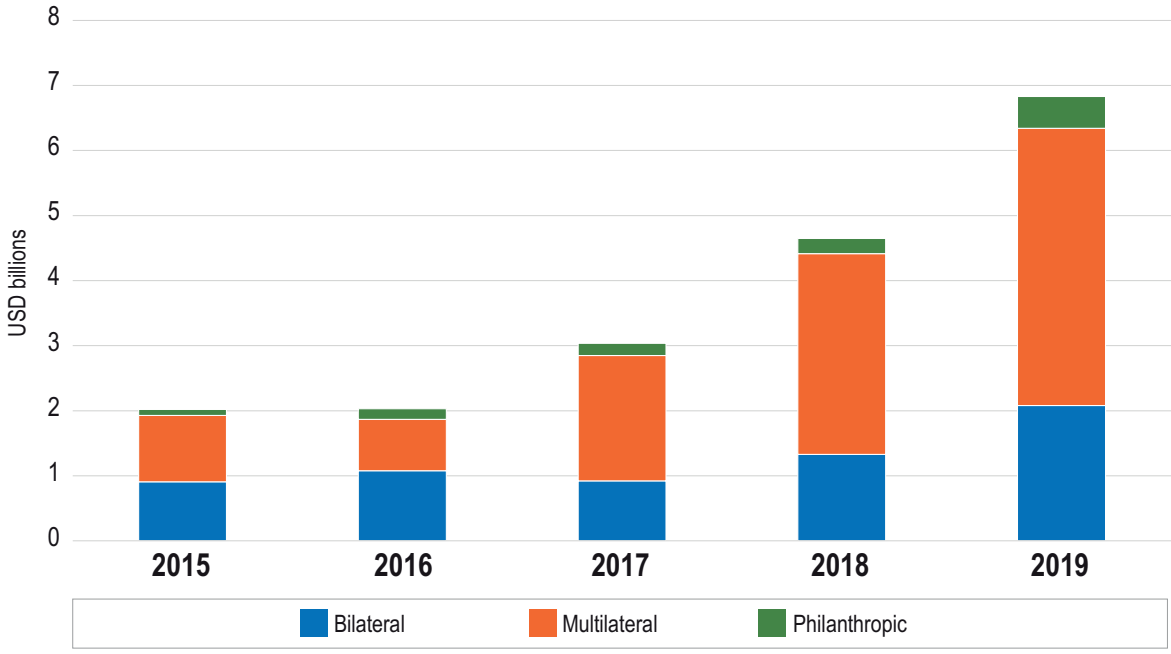
Bilateral providers' commitments to digitalisation-related activities also increased over the period analysed, more than doubling from USD 908 million in 2015 to USD 2.1 billion in 2019. DAC members account for 96.5% of the bilateral finance covered by this analysis.

Private philanthropic institutions' support to digitalisation also grew, reaching USD 491 million in 2019, doubling the value recorded in 2017. Data collected from philanthropic institutions grew in recent years, so values prior to 2017 are surely underestimated.

In relative terms, philanthropic institutions devote a greater share of their investments to support digitalisation than do bilateral and multilateral providers. Digitalisation-related activities accounted for 4.6% of the 2018-19[6] portfolio of philanthropic institutions, compared to 2.7% for multilateral institutions and 1% for bilateral providers (Figure 40.4).

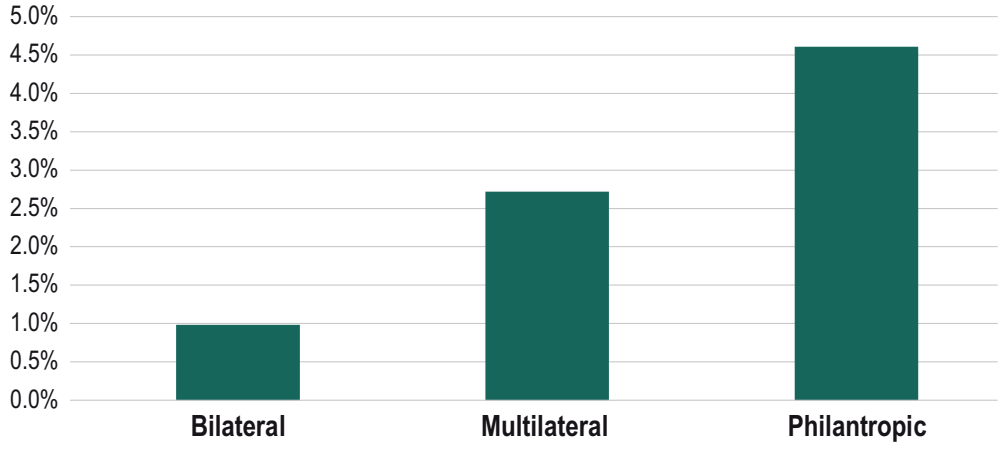
According to the data, bilateral and multilateral institutions also mobilised additional private finance in the amount of USD 700 million in 2019, divided roughly equally between the two (Figure 40.5). With a large share benefiting the financial sector, such activities can foster innovative banking services, including through digitalisation. However, confidentiality restrictions on multilateral development banks' data on mobilisation prevent more granular analysis.

Figure 40.3. Development finance for digitalisation more than tripled from 2015-19



Source: Authors' estimates based on the data available in the CRS database.

Figure 40.4. Private philanthropic institutions focus more of their portfolios on digitalisation

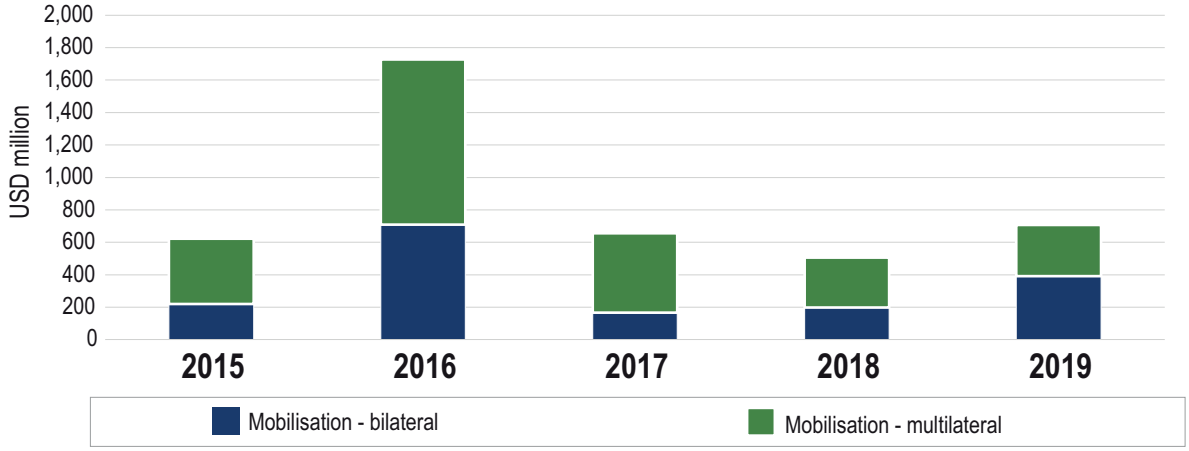


Source: Authors' estimates based on the data available in the CRS database.

A few providers account for a large share of finance for digitalisation

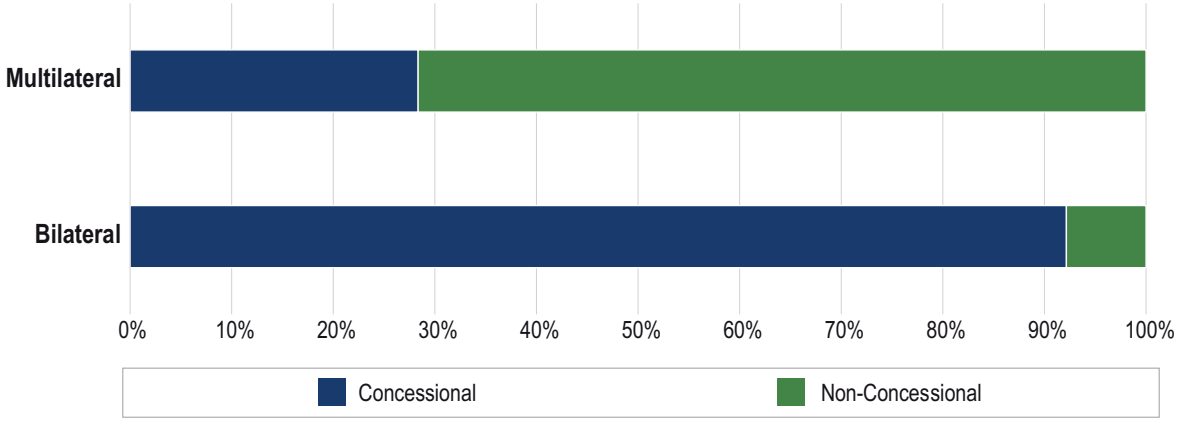
The data analysed reflect activities related to digitalisation reported by more than 100 bilateral, multilateral and philanthropic institutions over 2015-19. However, just ten providers account for 68% of the total estimated digital-related development finance over the period. Multilateral organisations finance was primarily (72%) non-concessional. Bilateral providers, mainly members of the DAC, provided 92% of concessional flows, or official development assistance (ODA), provided between 2015 and 2019. Philanthropic finance is exclusively grant based. Figure 40.6 breaks down the

Figure 40.5. Private finance mobilised by official interventions reached USD 700 million in 2019



Note: Amounts are in current USD. Data from 2017 to 2019 are provided by a smaller set of reporters than in 2015-16.
Source: Authors' estimates based on the data available in the CRS database and on data submitted confidentially to the OECD.

Figure 40.6. Concessionality of development finance for digitalisation, 2015-19



Note: Concessional finance refers to grants, soft loans (provided with more favourable conditions than market terms) and other funding options. Non-concessional loans are provided at or near market terms.
Source: Authors' estimates based on the data available in the CRS database.

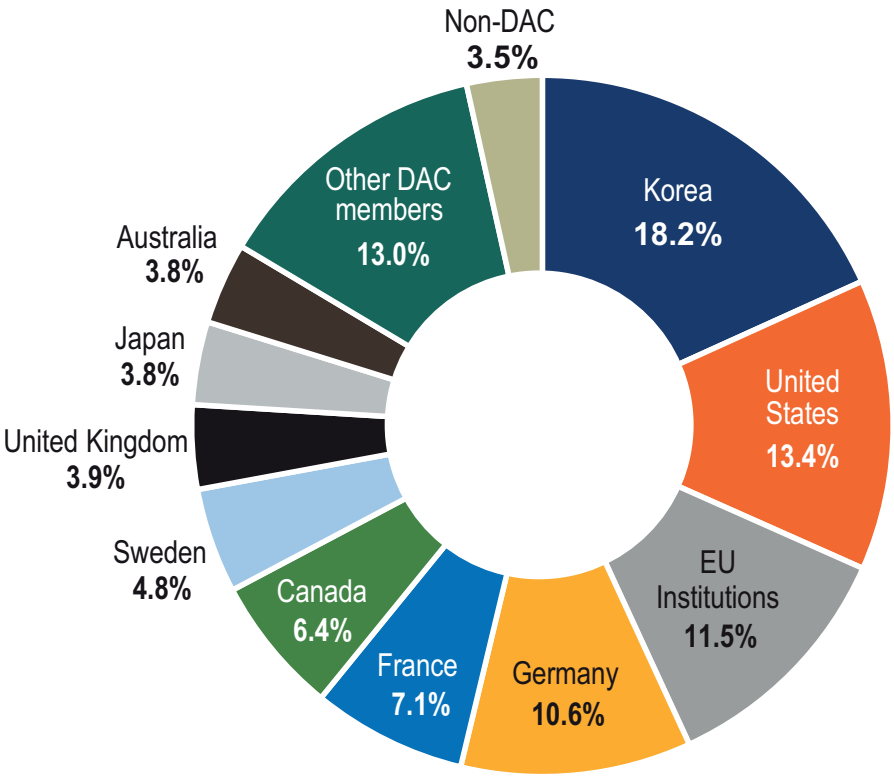
concessionality of multilateral and bilateral development finance for digitalisation.

Estimates indicate that, of the 40 bilateral providers in the dataset (30 DAC members plus ten other countries reporting their development finance to the CRS), five – EU Institutions, France, Germany, Korea and the United States – collectively provided over 60% of total bilateral development finance for digitalisation over 2015-19 (Figure 40.7). Three bilateral providers are estimated to having committed 10% or more of their portfolio to activities in support of digitalisation: Kazakhstan (17%), Estonia (15%) and Korea (10%).

The same trend can be seen among multilateral providers. Collectively, the estimates show that five institutions accounted for 78% (USD 8.6 billion) of the USD 11.1 billion committed by multilateral organisations over the five years, as reported to the CRS. In descending order, these are the Inter-American Development Bank (IADB), the International Development Association, the International Bank for Reconstruction and Development, the Asian Development Bank,

Figure 40.7. The main bilateral providers of digital-related concessional finance

Share of total bilateral finance commitments in support of digitalisation (2015-19)



Source: Authors' estimates based on the data available in the CRS database.

and the International Finance Corporation (Figure 40.8). Among multilateral institutions, the IADB is estimated to have the highest share of digitalisation-related commitments in its portfolio (10%), followed by the Inter-American Investment Corporation (7%), an affiliate of the IADB, and the World Tourism Organization (7%).

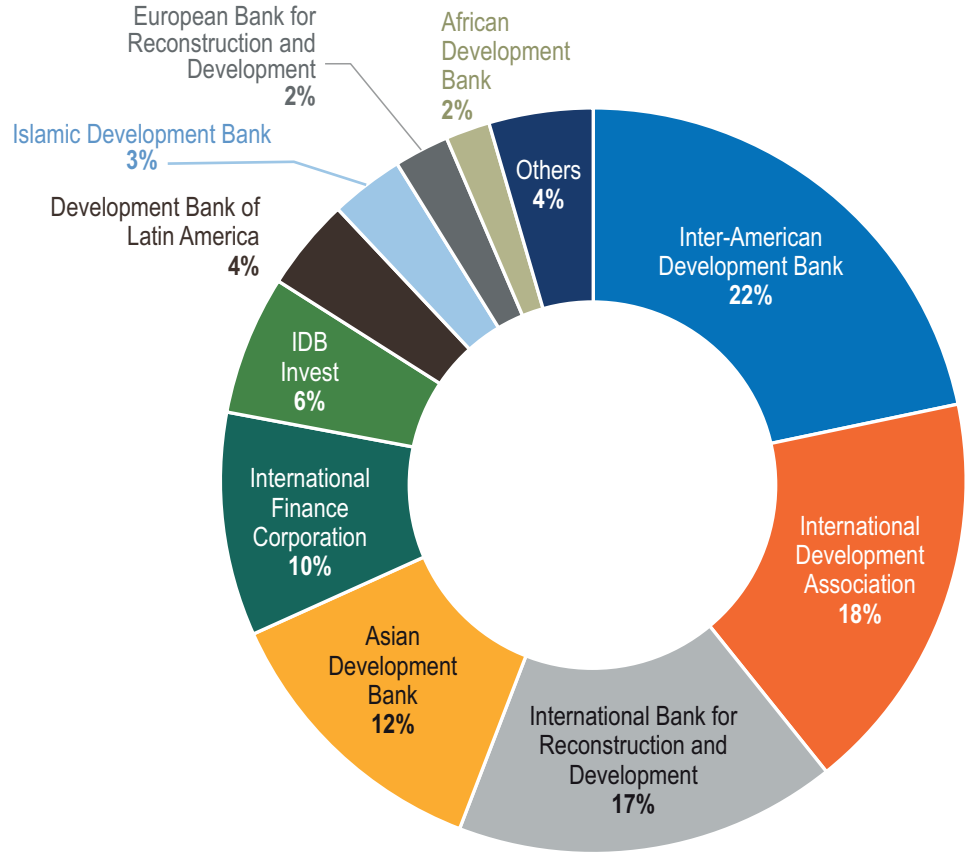
Development finance for digitalisation is also concentrated among a few philanthropic institutions. In absolute terms, the Bill & Melinda Gates Foundation is estimated to be the largest philanthropic provider of digital-related finance, committing 4% of investment, or USD 556 million, over 2015-19. The MasterCard Foundation was the second largest philanthropic provider, committing 19% of its portfolio, or USD 161.7 million, to digital projects over the period, and the Wellcome Trust was third with over USD 80 million, or 10% of its portfolio. In relative terms, some foundations provide a very large share of their total commitments to digitalisation-related activities: La Caixa Banking Foundation, 37%; Fondation Botnar, 27%; MasterCard Foundation, 19%; and MetLife Foundation, 17%, according to the estimates.

Africa and the Americas received the most digitalisation-related finance

Africa received the most bilateral development finance for digitalisation of any region (37.9%), with sub-Saharan countries alone receiving 27.5% of the total (USD 1.7 billion) in 2015-2019. Asia received 25.0% of bilateral development finance for digitalisation activities and the Americas, Europe, the Middle East and Oceania each received around 5%. The breakdown is different for multilateral development finance. The Americas received the biggest share of total

Figure 40.8. Main multilateral providers of development finance for digitalisation

Share of total multilateral finance commitments in support of digitalisation (2015-19)



Source: Authors' estimates based on the data available in the CRS database.

multilateral finance for digitalisation – 36.6%, or USD 4.1 billion Figure 40.9. This is due to investments by the IADB, which emerged in the estimates as the largest provider of digitalisation-related development finance. Bilateral providers appear to be investing more in digital projects in Africa, followed by Asia.

Development finance activities reported to the CRS database are categorised under various social and economic sectors. Finance for digitalisation is concentrated in the communications sector, which in the CRS taxonomy includes activities in information and communication technology, telecommunications, and related policy interventions. This sector accounted for 42% of all bilateral development finance activities and 65% of multilateral activities related to digitalisation. Bilateral providers also focus on the government and civil society and education sectors, while the banking and financial services sector appears to be an important focus area for multilateral providers (Figure 40.10).

Options to improve measurement and tracking of financing for digitalisation

There are several limitations and challenges to the methodology used to estimate support for digital transformation, and scope to define a clearer method.[7] Ex-ante identification is more reliable than the ex-post identification system used based on data submitted to the CRS. As data providers have in-depth knowledge of their operations, they could produce information about a project from the design to approval phase, when data disclosure is required.

Figure 40.9. Regional distribution of digitalisation-related development finance by bilateral and multilateral institutions

Concessional and non-concessional finance (2015-19)

	Share of **bilateral finance** provided to the **region**	**Total** bilateral share	Share of **multilateral finance** provided to the **region**	**Total** multilateral share
Africa	5.5%		1.0%	
North of Sahara	4.9%	37.9%	8.9%	25.2%
South of Sahara	27.5%		15.2%	
America	0.3%		0.8%	
Caribbean and Central America	2.0%	5.5%	5.8%	36.6%
South America	3.2%		30.1%	
Asia	1.7%		0.3%	
Far East Asia	7.3%	25.0%	7.2%	30.1%
South and Central Asia	15.9%		22.6%	
Europe	5.1%		3.5%	
Middle East	4.7%		2.6%	
Oceania	4.8%		1.8%	
Developing countries unspecified	16.9%		0.3%	

Source: Authors' estimates based on the data available in the CRS database.

If the international development focus on digitalisation increases, so will the need for transparency and accountability. The statistical method for tracking this finance would need to be agreed. Given that fewer than half of DAC members explicitly focus on digital transformation in their strategies (see Chapter 33), a pragmatic, comprehensive and feasible approach to tracking official development finance for digitalisation could be the voluntary reporting of agreed digitalisation keywords complemented by analysis of reported activities through machine learning.

Create a DAC policy marker for digital transformation.

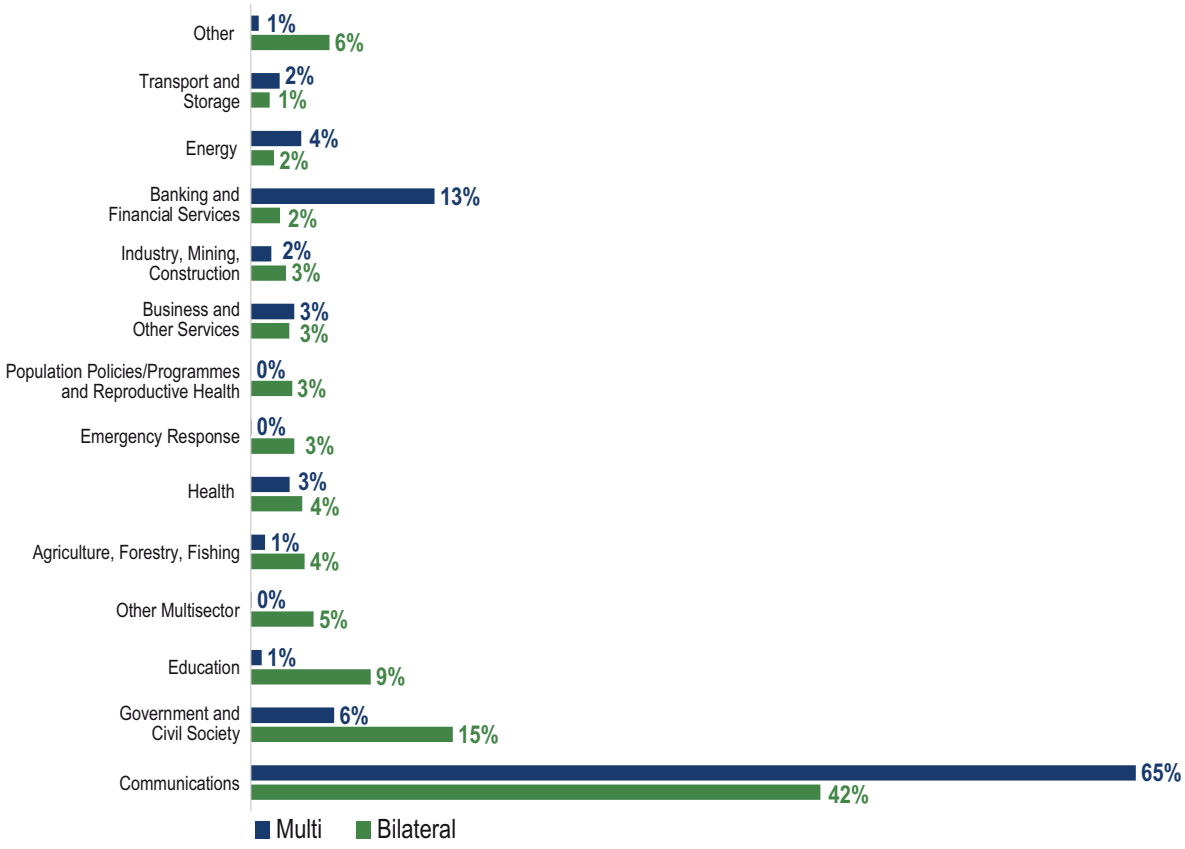
Policy markers are precise tools to track if reported activities promote a policy objective and, if so, to what extent. Policy markers are agreed by consensus in the DAC WP-STAT. They tend to be lengthy to negotiate and implement, and require adding a new data field and making changes in data collection and reporting processes of data providers and at the OECD. The OECD DAC statistical reporting template already contains many fields, and members might be unwilling to add further complexity. Some members expressed concerns about their capacity to provide additional dimensions to CRS reporting (OECD, 2020[5]); the newest fields in the CRS reporting template (SDGs and the policy markers on nutrition and disability) were added as voluntary fields. A recent review of the OECD policy marker system found that, generally, markers work better when the policy objective is truly cross-sectorial and when the topic is of great policy interest, eventually linked to an international agreement or a strong stakeholder community (OECD, 2020[5]).

Apply agreed, digital-specific keywords to programmes and projects

In 2020, DAC members decided to track support to COVID-19 response and recovery

Figure 40.10. Development finance for digitalisation focuses on the communications sector

Share of bilateral and multilateral digitalisation-related commitments by sector (2015-19)



Source: Authors' estimates based on the data available in the CRS database.

through a new keyword. A keyword field was created in the CRS to allow members to flag with #COVID19 all activities that contributed to these objectives using a common definition. Some members expressed a willingness to expand the use of the keyword field for other topics.

WP-STAT is discussing the modalities for introducing this keyword approach to reporting for other cross-cutting themes. Digitalisation could be a strong candidate.

Introducing a digitalisation keyword would not necessitate adding a new field and changing data processing structures, pending agreement on keyword governance. Reporting keywords is also voluntary; reporting entities could also use different keywords to highlight different digitalisation aspects or other innovations in development co-operation.

Use machine learning tools to mine the development finance database for digital-related investments

Machine learning tools can extract information from large bodies of text and are increasingly used for data analysis and to check data quality. They are, however, complex to set up and fine tune and depend on the quality of reporting and details provided in the programme and project descriptions. Developing appropriate machine learning tools is another possible option to track digitalisation-related development finance. The OECD Secretariat is working on machine learning exercises for both purpose codes and the SDGs. These tools have the capacity to analyse large amounts of information but need appropriate resources to be developed and trained.

REFERENCES

Deshmukh, S. (2020), "3 ways blockchain can accelerate sustainable development", *World Economic Forum Agenda blog*, https://www.weforum.org/agenda/2020/09/3-ways-blockchain-can-contribute-to-sustainable-development/ (accessed on 19 October 2021). [4]

OECD (2020), "Assessing the policy objectives of development co-operation activities: Review of the reporting status, use and relevance of Rio and policy markers", DAC Working Party on Development Finance Statistics, https://one.oecd.org/document/DCD/DAC/STAT(2020)27/en/pdf (accessed on 22 November 2021). [5]

OECD (2020), *Converged Statistical Reporting Directives for the Creditor Reporting System (CRS) and the Annual DAC Questionnaire: Annexes - Modules D & E*, DAC Working Party on Development Finance Statistics, https://one.oecd.org/document/DCD/DAC/STAT(2020)44/ADD2/FINAL/en/pdf (accessed on 10 November 2021). [2]

OECD (2020), "Guidelines on the European Commission International Digitalisation Marker", *DAC Working Party on Development Finance Statistics*, https://one.oecd.org/document/DCD/DAC/STAT/RD(2020)2/en/pdf (accessed on 10 November 2021). [1]

Sirimanne, S. and C. Freire (2021), *How Blockchain Can Power Sustainable Development*, United Nations Conference on Trade and Development, Geneva, https://unctad.org/news/how-blockchain-can-power-sustainable-development (accessed on 19 October 2021). [3]

NOTES

1. Digitalisation is understood as the use of digital technologies and data that results in new activities or changes to existing activities. Digitisation is the conversion of analogue data and processes into a machine-readable format. Digital transformation refers to the economic and societal effects of digitalisation and digitisation.
2. The database code for the communication sector includes activities for financing digital infrastructure such as large networks as well as ICT tools and related activities.
3. To avoid inflating the results, activities that were reported with several SDGs but only partially matched the list of digitalisation-related SDGs were not included as data sources unless the activity was also identified by other criteria such as keywords or sector codes.
4. Bilateral, multilateral and philanthropic finance is expressed in constant USD 2019 prices. Data on private finance mobilised by official intervention are only available at current prices and have some further limitations.
5. A restriction to 2018-19 data for this share was made to ensure coherent reporting for philanthropic institutions, which are more limited for previous years, and smooth any year-to-year fluctuation
6. See note 5.
7. For example, while keyword searches can be tested for robustness, keywords can be arbitrary. If providers do not consider these keywords when submitting project descriptions to the database, a keyword search would likely miss the projects. Another example concerns the communication sector code, which can include activities that do not strictly promote digitalisation. The same is true for the SDGs focus field. Furthermore, manual checking of activities based on their descriptions is difficult and time-consuming.

FINANCING OPTIONS FOR THE FUTURE OF DIGITAL

Mark Williams, Digital Development Global Practice, World Bank
Oualid Bachiri, Digital Development Global Practice, World Bank

ABSTRACT

Access to the internet remains unattainable for many – the combined result of coverage and usage gaps. Mobilising finance to address both gaps is a challenge for countries who pursue digital transformation. While private capital is the main source of funding for digital transformation, the public sector has a role using both direct and indirect measures. International organisations can scale funding for a range of priority areas, leverage the organisations' convening power at global and country levels, and maximise co-ordinated action to achieve impact at scale.

Key messages

- Universal broadband coverage of a minimum quality will require USD 428 billion, with significantly more needed for 5G universal coverage.
- Policy leaders in low- and middle-income countries should focus on creating a climate that maximises private investment in different aspects of the digital ecosystem.
- Public funds, complemented by concessional finance and other financial support, can provide additional resources or incentives to cover areas or groups with limited commercial viability.
- Governments and DFIs have an essential role in nurturing the digital ecosystem by convening, co-ordinating and scaling an array of multi-party and cross-sectoral efforts.

Access to the internet remains unattainable for many – the combined result of coverage and usage gaps. The 'coverage gap' refers to the significant proportion of the population, especially in the poorest countries, who live out of reach of communication networks. But even though nine out of ten people are covered by 3G networks, half of the world's population is still not online (UN Broadband Commission for Sustainable Development, 2021[1]). The 'usage gap', therefore, describes individuals who do live within the reach of such networks, but do not use them.

Mobilising finance to address both gaps is a challenge for countries that pursue digital transformation. While private capital is the main source of funding, the public also sector has a role. On the infrastructure side, direct mechanisms such as public expenditure on infrastructure rollout or specific obligations placed on contracting firms deliver technology to underserved regions and populations where economic incentives are weak. Indirect mechanisms, such as licensing terms and regulatory fees, can affect the costs of a project and further bring down barriers to investment.

Governments should prioritise policies and regulations that attract private capital and encourage it to be invested in the most effective way. Initially, this should focus on maximising investment in communication infrastructure. Meanwhile, public funds and development finance institutions (DFIs) should target areas or groups that offer limited commercial viability (Development Committee, 2017[2]). Government and DFIs can optimise the use of scarce public resources by allocating concessional finance to mitigate investment risk and mobilise private capital. DFIs also play a role in orchestrating regional collaboration and devising innovative financial products, such as loss-guarantee schemes, that mitigate financial and political risks for public and private investors alike.

Digital infrastructure is only the beginning

The coverage gap arises because it can be costly to deploy and maintain communications networks in low-population-density areas often characterised by challenging geography and scarce infrastructure for power and transportation. These areas are also usually characterised by low household incomes, further reducing the financial incentives.

The usage gap arises because of many factors. The price of services or end-user devices might be beyond the purchasing power of households and firms. The skill level of individuals and workers might be insufficient to make effective use of digital technologies. The range of applications that potential users might find useful may be too limited to induce uptake. Concerns about online safety and privacy might discourage online participation. All these difficulties can

be further compounded by market failures such as a lack of consumer financing that allows people to buy end-user devices on credit.

Affordability is critical for digital adoption. In high-income countries, handset subsidies and financing as part of data plans drive mobile broadband (OECD, 2013[3]). In developing countries, this is more difficult because of predominant pre-pay retail models, underdeveloped consumer credit markets and low purchasing power. Moreover, as markets transition from mobile voice to mobile broadband, the cost of end-user devices increases. The average selling price of a smartphone is 3 to 18 times that of a feature phone (Chen, 2021[4]). While competition in manufacturing these devices is driving prices down, they remain unaffordable for many. A 2021 study of 187 countries found the global average cost of a smartphone to be around 26% of average monthly income. In the least-developed countries (LDCs), the average person would have to spend over half of their monthly income to buy a smartphone (A4AI, 2021[5]).

Finally, digital literacy and skills are essential to enhance the public's capacity to use digital technologies. Surveys find that lack of digital literacy is the most frequently cited reason in developing countries for not using the internet. Solutions for low-skilled users would respond to the needs of individuals and firms in the most vulnerable groups. Overcoming this challenge requires mobilising significant financial resources over an extended period. The International Development Association's 2019 Commitments (IDA, 2020[6]) emphasised support for digital skills and specified that at least 60% of IDA19 financing operations for digital skills development must support women's access to higher-productivity jobs, including online work (World Bank, 2021[7]).

The International Telecommunication Union (ITU) estimates that USD 428 billion is needed to close the coverage gap with universal broadband of a minimum quality (International Telecommunication Union (ITU), 2020[8]), and significantly more for 5G rollout (World Bank, forthcoming[9]). But financing is also required to close the usage gap through measures that promote uptake of digital services for productive uses (Digital Development Partnership, 2021[10]), including improving affordability, promoting digital literacy and content development. Digital transformation therefore requires investment and policy initiatives across the foundations of the digital economy: infrastructure, financial services, public platforms, innovation and entrepreneurship, and literacy and skills.

Direct measures enhance technology and complementary infrastructure, and consumer uptake

Much attention on financing digital transformation focuses on infrastructure deployment and maintenance. Of the USD 428 billion required for universal broadband coverage, close to 60% is capital expenditure, with most of the rest required to operate and maintain the network (International Telecommunication Union (ITU), 2020[8]). The private sector is expected to finance around 75% of the total (International Telecommunication Union (ITU), 2020[8]). This would be consistent with historical trends: globally, network operators invested more than USD 2 trillion in each of the past three decades (Shabelnikova, 2020[11]). But governments also directly influence their country's communication networks by supporting rollout in underserved areas, co-financing infrastructure deployment and/or imposing specific obligations on firms.

For example, Universal Service Funds (USFs) are designed to extend network coverage into marginal areas. Their funding comes primarily from the private sector through levies on telecom companies (which are ultimately billed to the consumers). Expenditure from the funds is determined by governments,

which can also supplement the funds through general taxation (World Bank, 2018[12]). However, the track-record of these is mixed. Many countries experienced incomplete or non-transparent allocation of the resources earmarked for infrastructure investment (UN Broadband Commission for Sustainable Development, 2019[13]). Closing the coverage gap may therefore require improvements to USF functioning and alternative approaches to both financing and implementation. Pay-for-play schemes that facilitate implementation by operators and co-investments by operators are possible alternatives.

In terrestrial networks, public funds encourage high-capacity, long-haul connectivity in areas that would otherwise be commercially unviable. But in doing so, the public sector should not crowd out private financing and distort competition. In Malawi, the deployment of long-haul terrestrial optical fibre networks, part of the World Bank's Regional Communications Infrastructure Program (RCIP), aggregated government bandwidth demand into a single competitive tender (Hub, 2018[14]). In response, the winning company, SimbaNet, built a nearly 900 km network of overhead fibre optic cable, connecting internationally via Tanzania and Zambia. Telecom operators and internet service providers connect to the SimbaNet network on an open-access basis and enjoy reduced costs for wholesale bandwidth. The contract anchors other private sector investment, enabling the company to launch new services at lower costs.

Public-private partnerships (PPPs) can contribute to the development of digital networks in specific situations. Submarine cables are predominantly developed and financed by the private sector, but PPPs are used selectively to extend their reach into low-income countries, for example in East and West Africa (World Bank, 2018[12]).

Furthermore, financing bottlenecks can arise in complementary areas of infrastructure, such as power supply, that affect investment decisions (World Bank, forthcoming[15]). While data centres and cloud services are generally financed by the private sector, public-sector financing to strengthen power supplies could stimulate further private investment in the digital sector.

Of the USD 428 billion required for universal broadband coverage, close to 60% is capital expenditure, with most of the rest required to operate and maintain the network. The private sector is expected to finance around 75% of the total.

Finally, to close the broadband usage gap, a range of initiatives is needed, including risk-sharing credit guarantees to facilitate more asset-financing schemes, and other programmes such as direct subsidies to lower costs for consumers. Asset-financing schemes are limited in developing countries. The public sector could intervene by subsidising the cost of consumer loans for devices, and possibly also connectivity. Argentina's Plan Mobile Internet Access channels subsidies to either direct beneficiaries or third-party operators (GSMA, 2017[16]). In the private sector, mobile operators can partner with financial intermediaries to improve affordability by expanding their retail options and offering consumers loans to pay for the devices along with connectivity services. In Pakistan, Warid Telecom collaborates with Bank Alfalah to offer an instalment plan for purchasing handsets (GSMA, 2017[16]). Such initiatives do not necessarily lower the cost of devices to customers but they do enhance affordability by spreading payments out over time.

Indirect measures use regulatory reform to lower costs for suppliers

Governments influence the financing of the telecommunications sector indirectly through regulatory rules on issues such as spectrum licenses and infrastructure sharing. Regulatory reform can reduce deployment and operational costs, and allow for coverage expansion to be financed by the private sector.

For example, competitive auctions to set licensing fees are the most common way to assign spectrum licenses. The terms governing coverage, quality of service and technical specifications impact the costs that telecom operators sustain and thus their maximum bid to obtain the licenses. The reduction in revenues that governments see from spectrum auctions represents an indirect form of finance for coverage gaps. Other regulatory fees paid by operators can also influence the amount they spend on building and operating networks. Governments and regulators must therefore weigh the benefits of additional revenue from regulatory fees against the impact on the sector.

Other regulatory decisions also impact the costs of network rollout and, therefore, the financing requirements. Urban planning policies and regulatory rules that reduce the cost of property on which to build sites impact the economics of network rollout and operation, particularly in marginal areas. Regulatory rules can be used to encourage network sharing, a common way for operators to reduce costs. But the cost savings must be weighed against the risk of operators co-ordinating to soften competition. This risk is generally lower in the case of passive infrastructure (non-electronic components like ducts, cabinets, air conditioning plant, security, etc.) than for active infrastructure (electronic components like antennas, switches, servers, databases, radio access nodes, and transmission equipment).

Development finance institutions can leverage their power to convene diverse players and scale funding

DFIs are expanding their role in financing information and communications technology investment in developing countries. This role traditionally focuses on digital infrastructure, with financing channelled directly to private sector partners and indirectly via national governments. Furthermore, in developing countries, especially fragile and conflict-affected states, DFIs support investment through development financing, guarantees and political risk insurance. DFIs also facilitate knowledge sharing and capacity building for policy design and implementation of needed regulatory reforms.

For example, the World Bank's Identification for Development (ID4D) initiative is channelling more than USD 1.5 billion in financing to over 40 developing countries to build digital ID and civil registration systems. Digital ID is a foundational element of digital transformation, given the need for secure and accurate authentication. But an estimated one billion people lack official ID ((World Bank, 2018[17]) and an additional 3.5 billion might have ID that is not digitally enabled (McKinsey Global Institute, 2019[18]), representing more than half the world population. In low-income economies, more than one in three people aged 15 and over lack an official ID, and 44% of women do not have an ID, compared to 28% of men (World Bank, 2018[17]). Enabled by infrastructure that brings people and organisations online, digital ID systems can be leveraged by government and commercial platforms to facilitate transactions and service delivery.

Partnerships managed by international organisations can scale funding for a range of priority areas, leverage the organisations' convening power at global and country levels, and maximise co-ordinated action to achieve impact at scale. The Digital Development Partnership (DDP) administered by the World Bank lets public- and private-sector

partners drive inclusive and secure digital transformation in developing countries. DDP support remains critical to facilitate deployment of digital infrastructure and adoption of technologies to expand connectivity, coverage and quality of service, while safeguarding data privacy, governance and online security. DDP has adopted an ecosystem approach to digital transformation, focusing both on the foundational elements of the digital economy – including digital infrastructure, digital platforms, digital skills – and digital applications across critical sectors while ensuring protection of personal data, mitigating cybersecurity risks and aiming for a truly inclusive digital economy for all.

Over the past five years, DDP saw its portfolio grow to more than 100 programmes spanning 80 countries. For clients and DDP partners alike, World Bank lending maximises the impact of seed funding provided through DDP grants. In 2021, DDP lending leverage reached USD 9 billion, representing USD 950 lent for every dollar of donor funding.

Going forward, DDP will continue to focus its work on improving integration of technology into development solutions in the context of green, resilient and inclusive COVID-19 recovery (World Bank, 2021[7]). The crisis highlighted the need to go beyond digital access toward digital adoption by facilitating innovative approaches and business models for increased internet usage, tackling barriers around affordability, inclusion, digital skills and relevant online content. Other strategic priorities include digital and climate change, data ecosystems, the digital gender divide and mainstreaming digital applications across sectors.

In 2021, DDP lending leverage reached USD 9 billion, representing USD 950 lent for every dollar of donor funding.

Mobilising financing and knowledge from both public and private partners will remain critical for operationalising the digital agenda. A co-ordinated, collaborative approach is needed – one that includes governments, businesses and development institutions working together to support countries in taking advantage of the benefits of digital transformation while mitigating the risks.

REFERENCES

A4AI (2021), *"How expensive is a smartphone in different countries?"*, https://a4ai.org/how-expensive-is-a-smartphone-in-different-countries/ (accessed on 23 November 2021). [5]

Chen, R. (2021), *"A Demand-Side View of Mobile Internet Adoption in the Global South"*, World Bank Group, Washington, DC, http://dx.doi.org/10.1596/1813-9450-9590. [4]

Development Committee (2017), *"Maximizing Finance for Development: Leveraging the Private Sector for Growth and Sustainable Development"*, World Bank Group, Washington, DC,, https://www.devcommittee.org/sites/dc/files/download/Documentation/DC2017-0009_Maximizing_8-19.pdf (accessed on 23 November 2021). [2]

Digital Development Partnership (2021), *"Annual Review 2021:On the Path to Recovery"*, World Bank Group, Washington, DC,, https://indd.adobe.com/view/2d9bd205-6961-45e3-b6a6-c1518de37e92 (accessed on 23 November 2021). [10]

GSMA (2017), *Accelerating affordable smartphone ownership in emerging markets*, GSM Association London, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/08/Accelerating-affordable-smartphone-ownership-in-emerging-markets-2017_we.pdf (accessed on 23 November 2021). [16]

Hub, G. (2018), *Regional Communications Infrastructure Program (RCIP)*, Malawi, https://content.gihub.org/uat/media/1537/regional-communications-infrastructure-program-rcip.pdf (accessed on 23 November 2021). [14]

IDA (2020), "Development Association", in *IDA19:Ten Years to 2030 : Growth, People, Resilience*, World Bank Group, Washington, DC,, https://documents1.worldbank.org/curated/en/459531582153485508/pdf/Additions-to-IDA-Resources-Nineteenth-Replenishment-Ten-Years-to-2030-Growth-People-Resilience.pdf (accessed on 23 November 2021). [6]

International Telecommunication Union (ITU) (2020), *Connecting Humanity: Assessing investment needs of connecting humanity to the Internet by 2030*, https://www.itu.int/en/myitu/Publications/2020/08/31/08/38/Connecting-Humanity (accessed on 13 October 2021). [8]

London, G. (ed.) (2020), *"2025 Capex outlook (2020 update): The $1 trillion investment*, GSMA Intelligence, https://data.gsmaintelligence.com/research/research/research-2020/2025-capex-outlook-2020-update-the-1-trillion-investment (accessed on 23 November 2021). [11]

McKinsey Global Institute (2019), *Digital identification: A key to inclusive growth*, McKinsey & Company, https://www.mckinsey.com/~/media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/digital%20identification%20a%20key%20to%20inclusive%20growth/mgi-digital-identification-report.pdf. [18]

OECD (2013), "Mobile Handset Acquisition Models"*, OECD Digital Economy Papers*, No. 224, OECD Publishing, Paris, https://dx.doi.org/10.1787/5k43n203mlbr-en. [3]

UN Broadband Commission for Sustainable Development (2021), *The State of Broadband: People-Centred Approaches for Universal Broadband*, https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-BROADBAND.23-2021-PDF-E.pdf (accessed on 23 November 2021). [1]

UN Broadband Commission for Sustainable Development (2019), *Connecting Africa Through Broadband: A strategy for doubling connectivity by 2021 and reaching universal access by 2030*, https://www.broadbandcommission.org/publication/connecting-africa-through-broadband/ (accessed on 23 November 2021). [13]

World Bank (2021), *Strategy Document: Green, Resilient, and Inclusive Development*, World Bank Group, Washington, DC, https://openknowledge.worldbank.org/handle/10986/36322 (accessed on 23 November 2021). [7]

World Bank (2018), *Global ID4D Dataset (database)*, https://id4d.worldbank.org/global-dataset. [17]

World Bank (2018), *Innovative Business Models for Expanding Fiber-Optic Networks and Closing the Access Gaps*, World Bank Group, Washington, DC, http://dx.doi.org/10.1596/31072. [12]

World Bank (forthcoming), *Global Cloud and Data Infrastructure*, World Bank, Washington, DC. [15]

World Bank (forthcoming), *The Path to 5G in the Developing World: Planning Ahead for a Smooth Transition*, World Bank Group, Washington, DC. [9]

42 CASE STUDY: INSIGHTS FROM CDC ON CATALYSING COMMERCIAL INVESTMENT

Abhinav Sinha, CDC group

ABSTRACT

Internet access is central to growing economies and delivering public services, but the financing need for digital infrastructure is not being met, leaving nearly half the world's population unconnected. Development finance institutions can catalyse and support investment in digital infrastructure that is needed for economic growth, but where investment levels are currently low. They can also support disruptive businesses whose novel methods are key to tackling development challenges, but whose experimental nature is too risky for traditional financing at first.

Note: CDC will change its name to British International Investment from 4 April 2022.

Key messages

- A lack of financing for digital technology leaves developing countries with inadequate or unaffordable Internet access.
- An estimated USD 100 billion investment will be required in Africa alone to achieve universal broadband Internet access by 2030. Development finance institutions can catalyse commercial investment with early-stage, social-impact-driven financing.
- Investment should distinguish digital infrastructure and business – which offer business cases and risk profiles familiar to commercial finance – from disruptive digital business – which tackles development challenges with new technologies that require a more risk-tolerant approach.
- Misconceptions can underestimate the need for impact investment, and a range of solutions should be considered, including concessional finance and technical assistance to bridge the financing gap in the highest-risk scenarios.

Access to affordable, good-quality Internet is central to development, both to strengthen the growth of businesses and local economies (Katz and Callorda, 2019[1]), and to increase access to education, healthcare, banking and government services. But nearly half the global population remains unconnected to the Internet and many more have expensive, low-quality connections. The financing need for digital infrastructure is not being met. An estimated USD 100 billion investment will be required in Africa alone to achieve universal broadband Internet access by 2030 (World Bank, 2021[2])

CDC Group, the UK Government's development finance institution (DFI), has investments of around USD 700 million in the digital technology sector, supporting over 100 companies across Africa and South Asia. More than two decades ago, CDC investment supported the growth of Celtel, an African mobile phone company, to 8 million customers in 13 African countries at a time when most thought the concept of mobile phones in Africa would not work. Today, the continent has over 100 mobile phone companies. While commercial investors considered the African market either unimportant or too difficult to navigate, Celtel created a new market with huge development impact.

This experience shows how support by a DFI can unlock investment required but lacking in emerging markets. Over the last five years, stepped-up investment taught CDC more about the financing needs of digital transformation to enable development. Based on these experiences, this article considers, first, the areas of the digital space that can benefit from DFI involvement and, second, the kinds of finance needed and the range of actors who can provide it.

Segmenting three areas for digital investment

CDC focuses on three areas for investment: digital infrastructure, digitally native and enabled companies, and disruptive digital business. Risk level is a distinguishing factor. It tends to be lower in digital infrastructure investment, and higher for businesses using digital technology. But there are nuances within this framework. Infrastructure and most digital businesses are appropriate for both equity and debt financing. But the experimental nature of disruptive digital businesses makes them typically appropriate only for equity investment. This section offers examples from all three.

Digital infrastructure

CDC investment in Liquid Telecom shows how building digital infrastructure catalyses investment from across the private sector.

Liquid Telecom, the largest independent fibre, data-centre and cloud technology provider in Africa, brings broadband to some of the most isolated and unconnected places across the continent. To date, it laid over 100 000 km of fibre network across the

African continent (Chandy, 2021[3]). Among the challenges Liquid Telecom faces, are geographic barriers in the countries where it operates. For example, Internet is more expensive in Kinshasa, Democratic Republic of the Congo (DRC), than in neighbouring Brazzaville, Congo, despite them being just 4.8 km apart. This is due to their separation by the Congo River, the second-fastest and deepest in the world, which makes it difficult to cross with fibre cable. Liquid Telecom used innovative optical technology to complete this connection, expected to bring down the cost of broadband access for millions of people (Chandy, 2021[3]).

CDC investment accelerates Liquid Telecom's ambition to connect 'Cape Town to Cairo' by fibre network and expand infrastructure into central and western Africa. This includes places like DRC that lack affordable and reliable broadband. In 2020, additional investment supported the company's plan to expand its pan-African data-centre business, aiming to boost economic activity by reducing costs and offering affordable data storage for companies.

This investment also helps mobilise new sources of capital. Thanks to Liquid Telecom's successful development, it is the leading African partner for global technology firms, including Microsoft, Google and Facebook. A recent bond refinancing and debt issue raised nearly USD 800 million for Liquid Telecom at some of the best rates seen in emerging markets.

Digitally native and enabled companies

Investment in digital transformation beyond technological infrastructure helps developing countries accelerate economic growth and connect people to jobs and services.

'Digitally enabled' companies use digital technology to make their business more efficient and accessible. This cuts across many sectors, from commerce to logistics, financial inclusion, education and healthcare, among others. In India, Loadshare (2021[4])uses digital technology to bring small- and medium-sized logistics companies together into a nationwide network. That network provides smaller firms with better market access, boosting their growth and creating jobs.

'Digitally native' businesses, in contrast, have digital technology at their core; without the Internet, their operations would shut down. iMerit is an artificial intelligence (AI) firm that employs 3 000 people in India and Bhutan. iMerit's data labelling services train AI algorithms, which are in turn used in everything from medical imaging to flood-risk mitigation. iMerit brings people from marginalised backgrounds into the digital workforce. The average age of employees is only 24, more than half are women, and around 80% come from under-resourced communities (iMerit, 2021[5]).

Disruptive digital businesses

Disruptive businesses use digital technology to directly tackle development challenges, such as improving farmers' access to finance and climate resilience tools.

Risks from unpredictable weather patterns make climate resilience particularly important in the food and agriculture sector. CropIn, an India-based specialist in software for agribusiness takes a pioneering approach to improving smallholder farmers' resilience to climate change. CropIn uses technology such as satellite images, AI and machine learning to monitor crop health, generate weather analytics, make yield predictions and pass these insights to farmers. Armed with the right information, farmers can better deal with the effects of climate change. Studies show that climate resilience increases on average for 92% of farmers in the first year of using CropIn's technology (CDC Group, 2021[6]).

Businesses like CropIn are innately high-risk and predominantly founded by entrepreneurs who require external capital to scale up. CDC invests in CropIn through

its Catalyst Strategies portfolio, which takes a risk-tolerant approach in exchange for transformational impact. That flexibility allows CDC to support new business models with early-stage investment to develop nascent or previously failed markets.

A vibrant entrepreneurial ecosystem in developing markets is critical for generating and scaling innovation solutions to development challenges. CDC therefore also supports the venture investing ecosystem, which often provides the first institutional capital to business founders. That means investing in local venture capital funds and co-investing with these funds into promising early-stage companies.

Impact investors should focus on financing gaps in the digital sector

From large-scale digital infrastructure to early-stage businesses, investment across the digital sector can make a difference in people's lives by finding digital solutions to intractable development challenges. But a gap in financing the sector makes it crucial for a range of actors to play a role, from institutional investors to multilateral development entities. The scale of the financing gap means that development finance must work in concert with other mechanisms, including impact investment, concessional finance and technical assistance.

Commercial investors prefer well-proven models and established firms. However, developing economies often need new models to address challenges and a lack of infrastructure such as electricity. In east Africa, *poa!* Internet uses Wi-Fi to provide low-cost broadband and connectivity in low-income neighbourhoods that fibre networks and other technologies cannot reach. While DFIs can play a role in backing new business models like *poa!*, reluctance from commercial investors means there is a considerable financing gap across most emerging economies.

Impact investors can play a greater role in the larger equity investments needed in digital technology. Impact investors invest to generate measurable social and environmental benefits alongside a financial return and could help to fill this funding gap. But the Global Impact Investing Network estimates that only 3% of impact investments in emerging markets are in the ICT sector (Hand et al., 2020[7]). Concessional or grant finance is also important, and can be provided by a range of institutions, including DFIs and philanthropic foundations, to support businesses trialling digital solutions with the potential for significant impact.

Misconceptions hold back investment in infrastructure

Investors assume that digital infrastructure is not as important as sectors like energy and financial services in driving economic development. On the contrary, however, digital infrastructure offers opportunities for high-impact investment. It is a fundamental building block of a modern economy and a proven driver of business growth.

Investors also often believe that digital infrastructure does not need impact capital as it can be fully funded by private capital. But young, independent businesses play a significant role in the sector and need early-stage capital that, in emerging markets, often comes from impact investors.

A final misconception is that impact investors do not usually make the large, equity investments required for digital infrastructure. In reality, digital infrastructure investments have a conservative risk-return profile which is more like traditional infrastructure investment rather than typical growth equity investments.

Concessional finance and technical assistance can lead the way

Concessional or grant finance also can be appropriate in situations that have potential

for large social impact but are high risk, unproven and without the likelihood of financial returns that would attract venture capital. Concessional finance or grants play a role across all three areas – digital infrastructure, digitally native and enabled business, and disruptive business – to maximise development impact. Examples include piloting a new digital technology or supporting a traditional business to initiate a digital model and reach previously underserved customers. CDC supports these efforts through CDC Plus, its technical assistance arm that identifies and creates impact opportunities beyond the scope of returnable capital.

The COVID-19 pandemic created a particular need for this kind of finance given digitalisation's even more critical role. For example, in the healthcare sector, digitalisation provides self-diagnostic tools and access to telemedicine necessary when human contact has been restricted. CDC uses technical assistance to support a healthcare company in India to accelerate the roll-out of a platform for remote medical appointments and to launch a new app to assess COVID-19 symptoms.

the Global Impact Investing Network estimates that only 3% of impact investments in emerging markets are in the ICT sector

There is huge potential to make a real difference to people's lives through investments across the digital spectrum, from large-scale digital infrastructure to early-stage businesses devising digital solutions to intractable development challenges. The size of the financing gap and the different types of financing required makes it crucial for a range of actors to play their parts in financing the sector.

REFERENCES

CDC Group (2021), *"The tech firm helping farmers weather a changing climate"*, http://dx.doi.org/hhttps://www.loadshare/net (accessed on 22 November 2021). [6]

Chandy, A. (2021), *Liquid Intelligent Technologies achieves 100,000 km of fibre, making them the largest independent network provider in Africa and other emerging markets*, Liquid Intelligent Technologies, https://www.liquid.tech/about-us/news/Liquid_Intelligent_Technologies_achieves_100,000km_of_fibre_making_them_the_largest_independent_network_provider_in_Africa_and_other_emerging_markets (accessed on 25 November 2021). [3]

Hand, D. et al. (2020), *Annual Impact Investor Survey 2020*, Glonal Impact Investing Network, https://thegiin.org/assets/GIIN%20Annual%20Impact%20Investor%20Survey%202020.pdf (accessed on 22 November 2021). [7]

iMerit (2021), *iMerit website*, https://imerit.net/ (accessed on 22 November 2021). [5]

Katz, R. and F. Callorda (2019), *The economic contribution of broadband, digitization and ICT regulation Econometric modelling for the Asia-Pacific region*, International Telecommunication Union Publications, https://digitalregulation.org/wp-content/uploads/D-PREF-EF.BDT_AP-2019-PDF-E.pdf (accessed on 22 November 2021). [1]

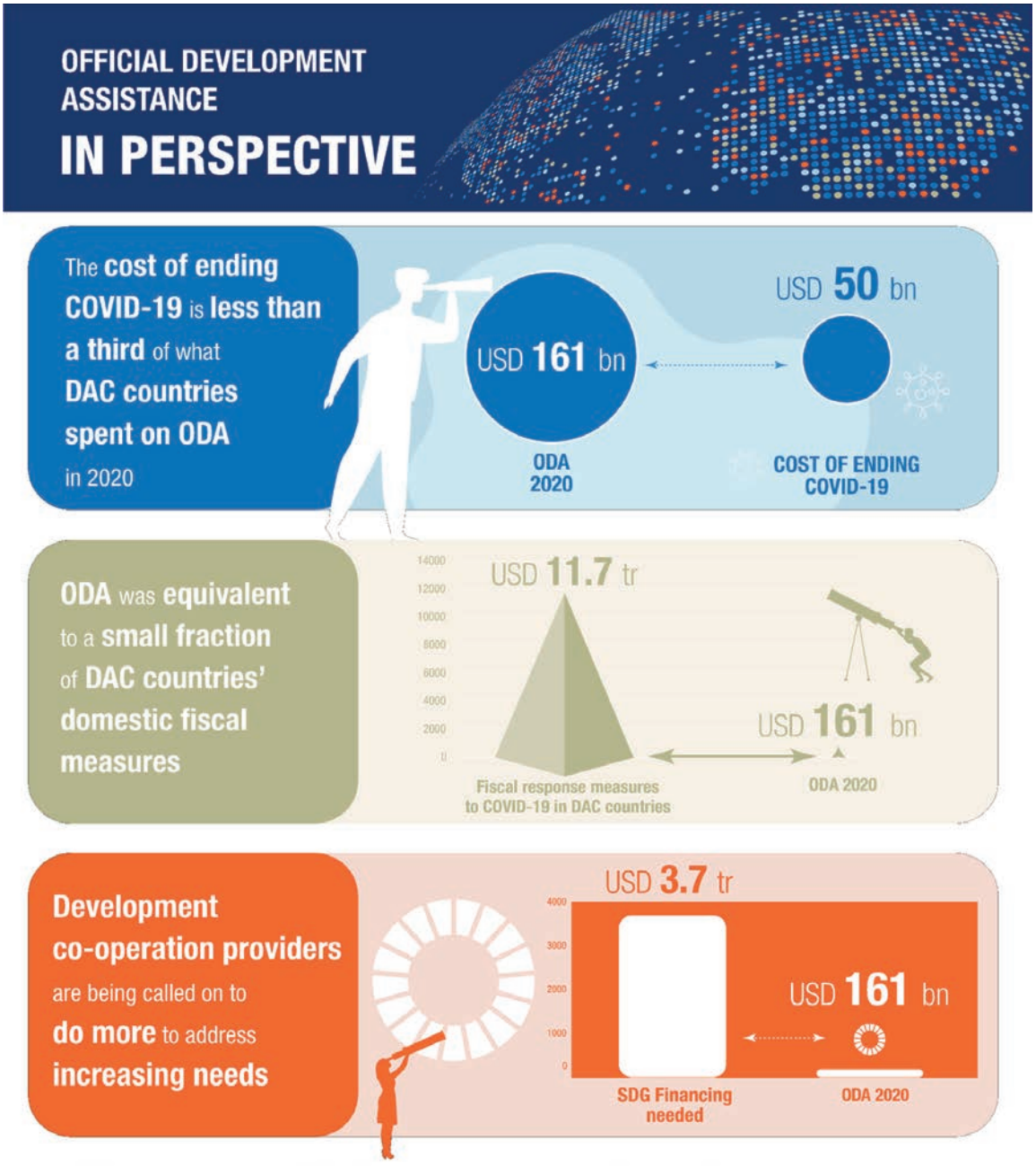
Loadshare (2021), *Loadshare Networks*, https://www.loadshare.net/ (accessed on 22 November 2021). [4]

World Bank (2021), World Development Report 2021: Data for Better Lives, World Bank Group, https://www.worldbank.org/en/publication/wdr2021 (accessed on 3 November 2021). [2]



Part V
Development co-operation providers at a glance

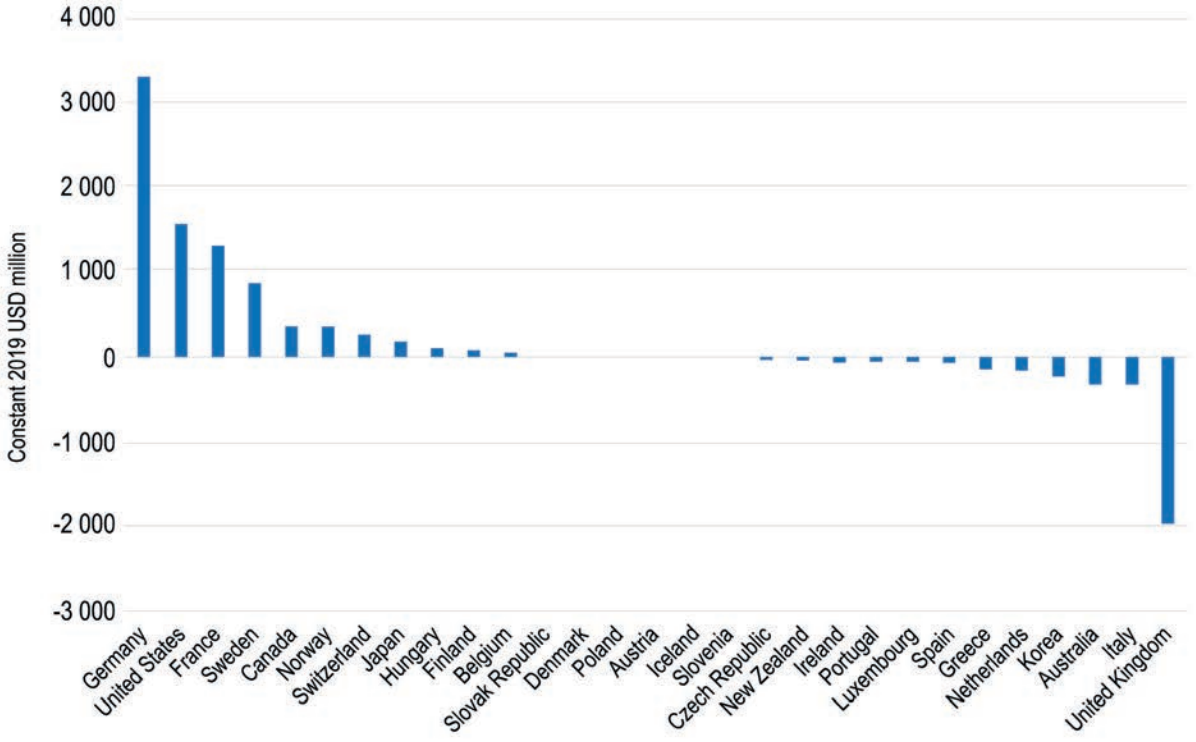
DEVELOPMENT CO-OPERATION FINANCING TRENDS



Note: USD 11.7 trillion fiscal response measures to COVID-19 in DAC countries refers to "above the line measures" and "liquidity support" of DAC countries as reported by the IMF in January 2021. The total figure for fiscal measures in response to COVID-19 for all countries reported by the IMF in April 2021 was USD 16 trillion.

ELEMENTS OF OFFICIAL DEVELOPMENT ASSISTANCE, 2000-20

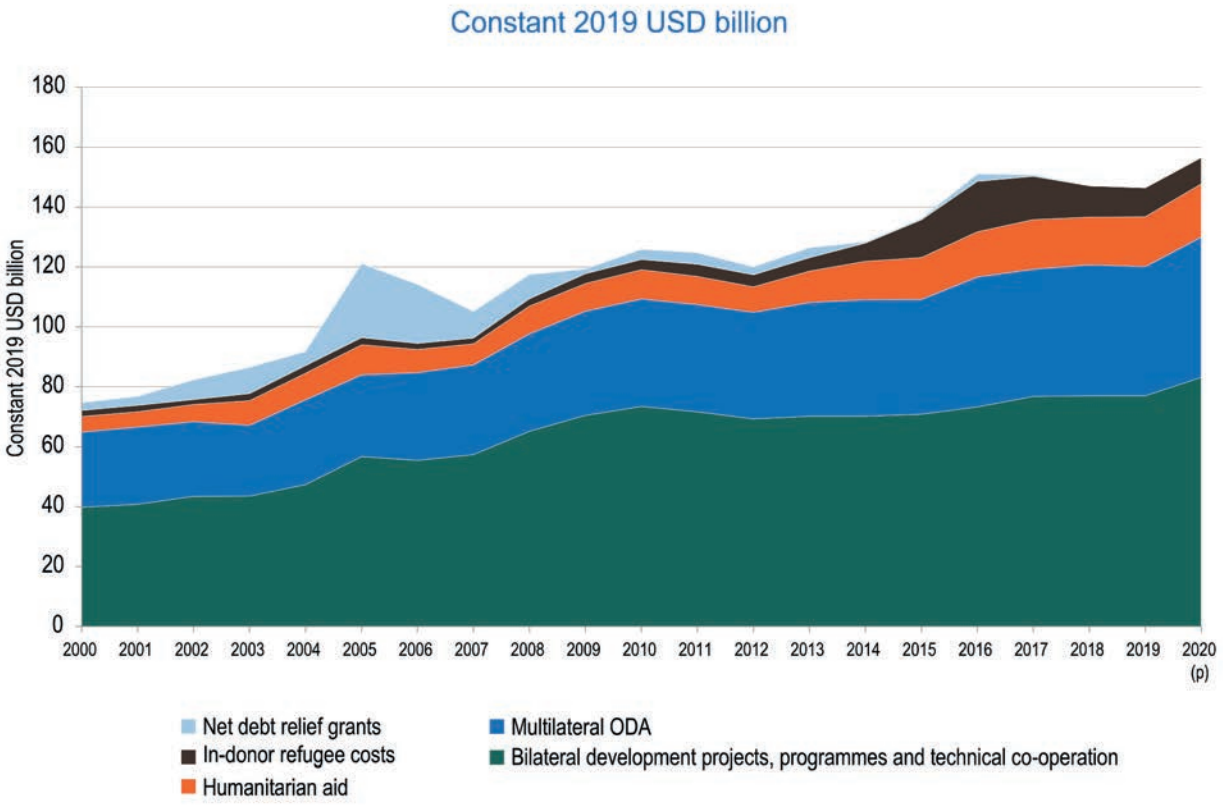
Year-on-year ODA volume changes in constant USD million, 2019-20



Source: OECD

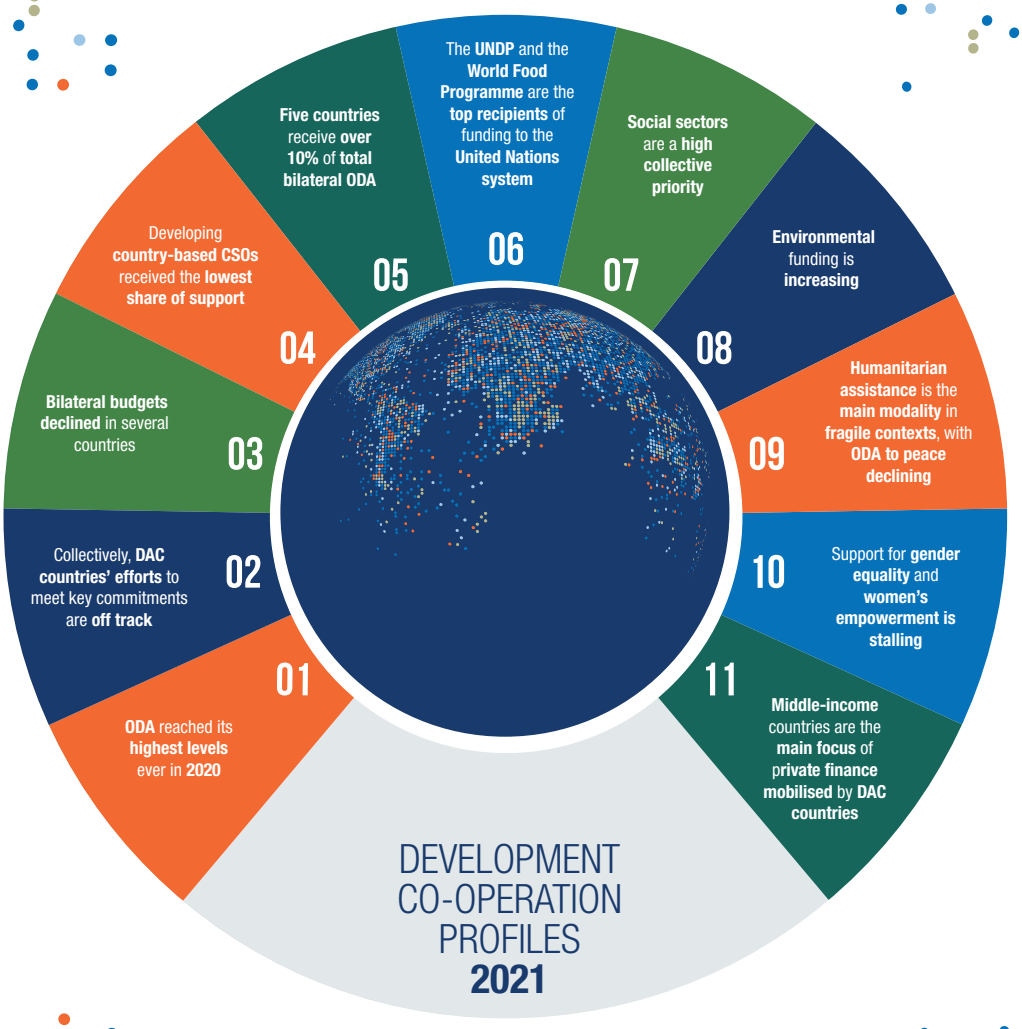
RAISING ODA IN SOME DAC COUNTRIES OFFSET FALLING ODA IN OTHERS

ODA IN OTHERS



Source: OECD

ELEVEN KEY HIGHLIGHTS



OFFICIAL PROVIDERS REPORTING AT THE ACTIVITY LEVEL TO THE OECD

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
AUSTRALIA

LATEST POLICY

Australia's policy "Partnerships for Recovery: Australia's COVID-19 Development Response" (2020) and the 2017 Foreign Policy White Paper guide its development co-operation, which has pivoted to health security, stability and economic recovery in the wake of COVID-19, with a continued focus on the Indo-Pacific region.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **2.6** USD BILLION

77% BILATERAL

23% MULTILATERAL CORE

-10.6% ODA CHANGE FROM 2019 in real terms

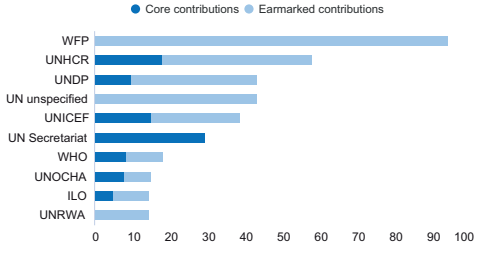
0.19% → 0.7% TARGET

2020* ODA AS A SHARE OF GNI

0.05% → 0.15-0.2% TARGET

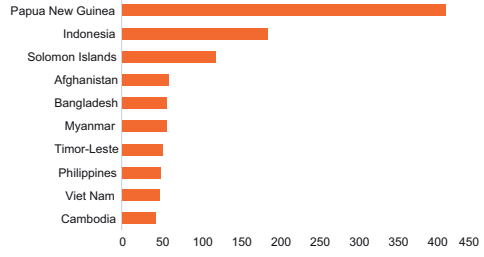
2019 ODA to least developed countries AS A SHARE OF GNI

Australia - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices

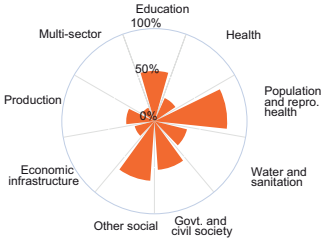


The UN system received 34.6% of total (core and earmarked) multilateral contributions, or USD 405.3 million.

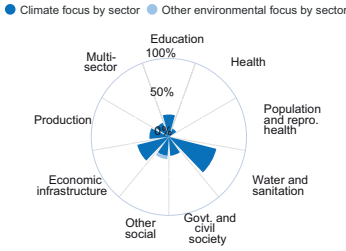
Australia - Top 10 recipients 2019
Gross disbursements, million USD, current prices



Australia - Gender focus by sector 2019
Bilateral allocable ODA, commitments, per cent

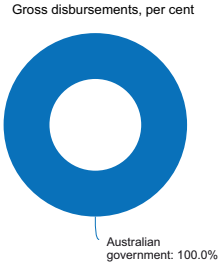


Australia - Climate and environmental focus by sector 2019
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Australia - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-australia.*
Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Australia reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
AUSTRIA

LATEST POLICY

Austria's main development co-operation objectives are poverty eradication, ensuring peace and human security, and preserving the environment as set out in the Three-year Programme for Austrian Development Policy (2019-21).

WHERE THE MONEY GOES

2020*

ODA grant equivalent **1.3** USD BILLION

37% BILATERAL

63% MULTILATERAL CORE

+0.6% ODA CHANGE FROM 2019 in real terms

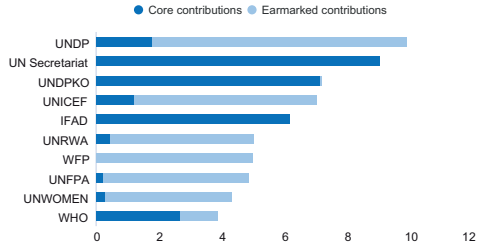
0.29% → 0.7% TARGET

2020* ODA AS A SHARE OF GNI

0.07% → 0.15-0.2% TARGET

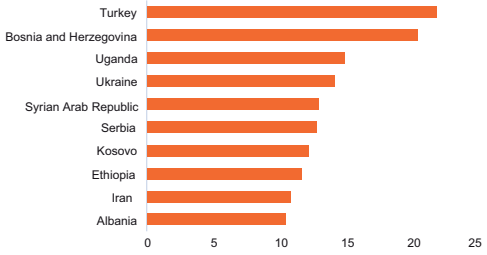
2019 ODA to least developed countries AS A SHARE OF GNI

Austria - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices

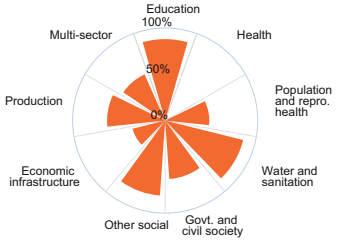


The UN system received 9.2% of total (core and earmarked) multilateral contributions, or USD 80.4 million.

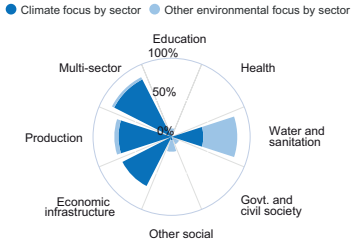
Austria - Top 10 recipients 2019
Gross disbursements, million USD, current prices



Austria - Gender focus by sector 2019
Bilateral allocable ODA, commitments, per cent

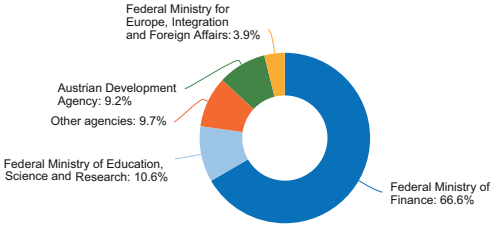


Austria - Climate and environmental focus by sector 2019
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Austria - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

63 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-austria.*
Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Austria reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
AZERBAIJAN

LATEST POLICY

The policy framework for Azerbaijan's development co-operation is derived from its international commitments. Bilateral co-operation leverages its expertise, such as public service delivery, education, healthcare, labour and social protection, youth empowerment, and mine action.

WHERE THE MONEY GOES

2019

ODA grant equivalent
26
USD MILLION

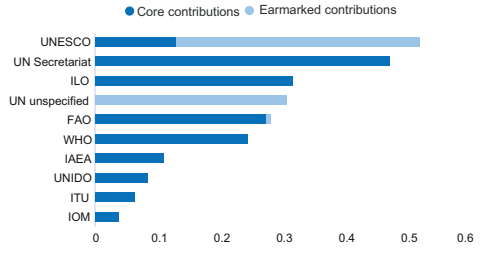
25%
BILATERAL

75%
MULTILATERAL CORE

-6.7%
ODA CHANGE FROM 2018
in real terms

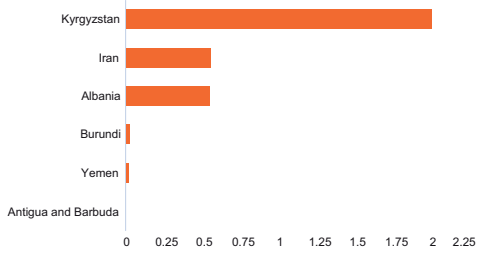
0.06%
2019*
ODA
AS A SHARE
OF GNI

Azerbaijan - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices



The UN system received 12% of total (core and earmarked) multilateral contributions, or USD 2.6 million.

Azerbaijan - Top 10 recipients 2019
Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-azerbaijan*

Note: Azerbaijan reports aggregate-level data to the OECD.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

BELGIUM

LATEST POLICY

Belgium's development co-operation policy is set out in the 2013 Law on Development Co-operation. The November 2020 Ministerial Policy Brief prioritises extreme poverty, inequality, climate change and biodiversity, stability, decent work, and private sector development.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **2.3** USD BILLION

52% BILATERAL

48% MULTILATERAL CORE

+2.8% ODA CHANGE FROM 2019 in real terms

0.47% → 0.7% TARGET

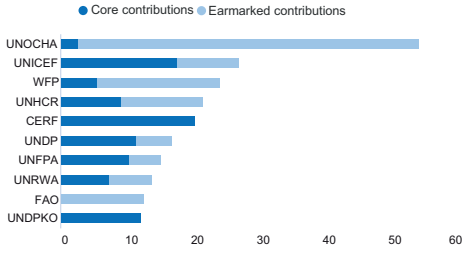
2020* ODA AS A SHARE OF GNI

0.14% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Belgium - Top 10 United Nations recipients 2019

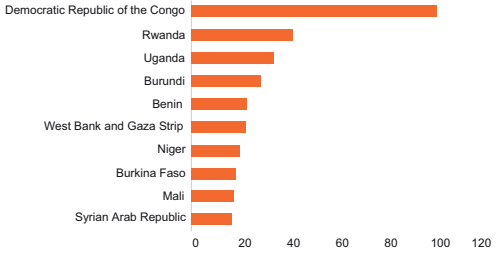
Gross disbursements, million USD, 2018 constant prices



The UN system received 21.6% of total (core and earmarked) multilateral contributions, or USD 262.9 million.

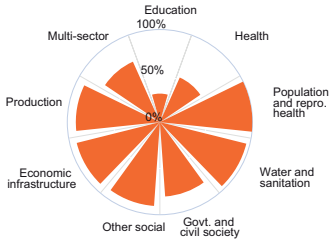
Belgium - Top 10 recipients 2019

Gross disbursements, million USD, current prices



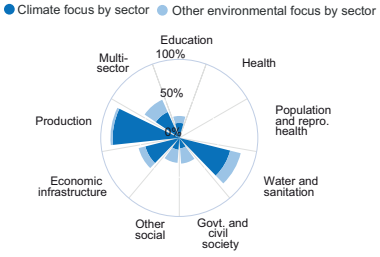
Belgium - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Belgium - Climate and environmental focus by sector 2019

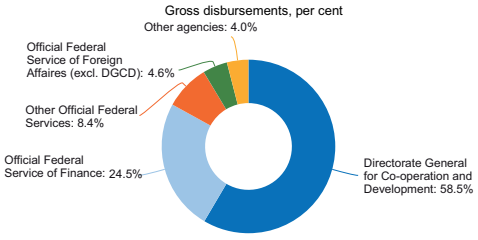
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Belgium - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

50 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-belgium*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

Note: *2020 data are preliminary. Belgium reports activity-level data to the OECD.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

CANADA

LATEST POLICY

Guided by its Feminist International Assistance Policy, Canada's six priority action areas include: 1) gender equality, which is critical to achieving the others; 2) human dignity; 3) growth that works for everyone; 4) environment and climate action; 5) inclusive governance; and 6) peace and security.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **5.03** USD BILLION

68% BILATERAL

32% MULTILATERAL CORE

+7.7% ODA CHANGE FROM 2019 in real terms

0.31% → 0.7% TARGET

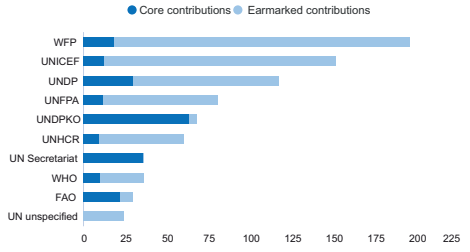
2020* ODA AS A SHARE OF GNI

0.09% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Canada - Top 10 United Nations recipients 2019

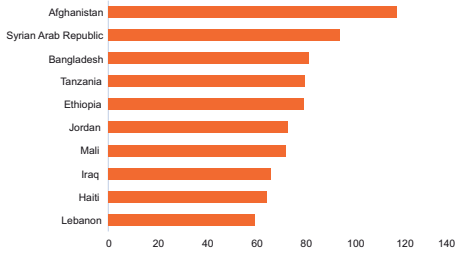
Gross disbursements, million USD, 2018 constant prices



The UN system received 37.1% of total (core and earmarked) multilateral contributions, or USD 965.9 million.

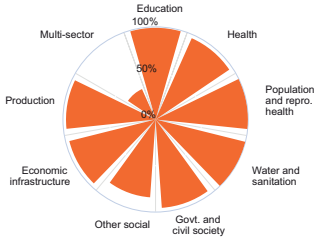
Canada - Top 10 recipients 2019

Gross disbursements, million USD, current prices



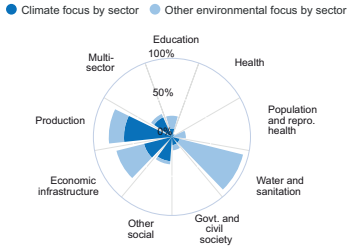
Canada - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Canada - Climate and environmental focus by sector 2019

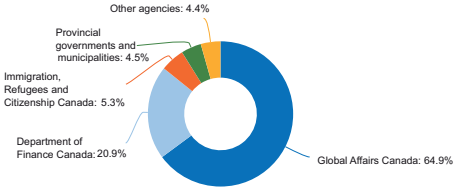
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Canada - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

16 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-canada.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

Note: *2020 data are preliminary. Canada reports activity-level data to the OECD.

Colombia

Introduction

Colombia is both a beneficiary of official development assistance and a provider of South-South and triangular co-operation. Colombian international development co-operation focuses on results and is guided by a focus on effective co-operation; alignment with national development priorities and crucial needs; diversification of modalities; strengthening national and local capacities; sustainability; and greater transparency.

Colombia and the United Nations recently signed the United Nations Sustainable Development Cooperation Framework, an instrument to organise co-operation received from agencies, funds and programmes from the United Nations system.

The Colombian government is committed to elevating South-South and triangular co-operation as a means to facilitate the implementation of the 2030 Agenda for Sustainable Development – as established at the Second High-level United Nations Conference on South-South Co-operation (BAPA+40).

Colombia joined the OECD in 2020. Colombia adheres to the OECD *Recommendation of the Council for Development Co-operation Actors on Managing the Risk of Corruption* and the OECD *Recommendation of the Council on Policy Coherence for Sustainable Development*. In 2019, Colombia participated in the LAC-DAC Dialogue on Development Co-operation and the DAC Senior-level Meeting.

Estimates of international development co-operation

According to OECD estimates, in 2019, Colombia's international development co-operation reached USD 45 million, of which USD 14.1 million corresponded to contributions to multilateral organisations, channelled mainly through the United Nations system.

Since 2015, Colombia has been using the "Quantification and Added Value Measurement Model". Beyond quantifying direct costs (financial), this model focuses on the added value of the knowledge contributed during an exchange (indirect costs). This approach considers the profile of those contributing the knowledge and measures results under value categories such as knowledge contribution, enhanced relations, differential approach, alignment with the Sustainable Development Goals and visibility of South-South co-operation.

FULL PROFILE

https://oe.cd/il/dev-coop-colombia

The OECD estimates the volume of Columbia's funding based on official government reports, complemented by contributions to UN agencies (excluding local resources) and web-based research (mainly on contributions to multilateral organisations) in an internationally comparable manner.

Costa Rica

Introduction

Costa Rica has a dual role in development co-operation, as a provider and a beneficiary. Costa Rica provides development co-operation only in the form of technical co-operation through bilateral and regional initiatives of triangular and South-South co-operation. For instance, Spain has a triangular co-operation fund to support Costa Rica in its triangular co-operation projects with other Central American and Caribbean countries (e.g. El Salvador, Guatemala and Honduras) in areas such as sustainable development, social cohesion, competitiveness and production, and participative democracy. Costa Rica also participates in projects of Germany's Regional Fund for Triangular Co-operation in Latin America and the Caribbean. Furthermore, Costa Rica is working on developing decentralised co-operation initiatives in line with the Sustainable Development Goals.

In its 2014-22 international co-operation policy, Costa Rica stresses the importance of solidarity and new co-operation modalities. The policy states that "concerning the recent tendencies in international co-operation, Costa Rica has developed capacities in areas such as health, education, sustainable development and environmental protection. Among others, these constitute a co-operation offer with which Costa Rica aims to position itself in the international scene as a country that stands in solidarity with others and promotes new co-operation modalities".

Costa Rica joined the OECD in May 2021. It regularly participates in the DAC Senior-level and High-Level Meetings and the LAC-DAC Dialogue on Development Co-operation.

Estimates of international development co-operation

According to OECD estimates, in 2019, Costa Rica's contributions to multilateral organisations totalled USD 4 million, up from USD 2.14 million in 2018. These contributions were channelled through the United Nations system and the World Bank Group. Bilateral co-operation figures of Costa Rica are based on its reporting to Total Official Support for Sustainable Development (TOSSD) on cross-border resources to developing countries.

In 2019, Costa Rica indicated that it had channelled in-kind (non-financial) co-operation of more than USD 6.2 million. This includes triangular, South-South, bilateral and multilateral co-operation and represents a considerable increase from 2018 efforts when it provided USD 4.5 million.

FULL PROFILE

https://oe.cd/il/dev-coop-costa-rica

The OECD estimates the volume of Costa Rica's funding based on official government reports, complemented by contributions to UN agencies (excluding local resources) and web-based research (mainly on contributions to multilateral organisations) in an internationally comparable manner.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
CROATIA

LATEST POLICY

Croatia's global development policy is determined by its size, capacities and challenges, and its post-war transition experience. The National Strategy for Development Cooperation 2017-21 sets out the core objectives of overcoming poverty and decreasing aid dependence.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
84.5
USD MILLION

28%
BILATERAL

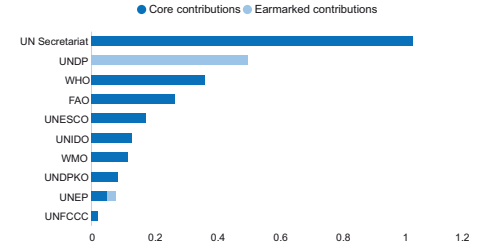
72%
MULTILATERAL CORE

+14.2%
ODA CHANGE FROM 2019
in real terms

0.15% → **0.33% TARGET****

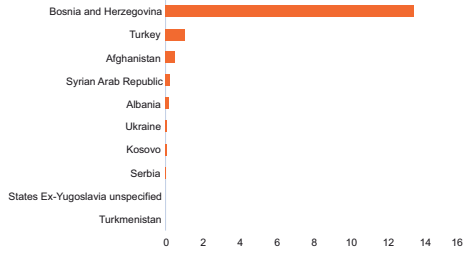
2020*
ODA
AS A SHARE OF GNI

Croatia - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices



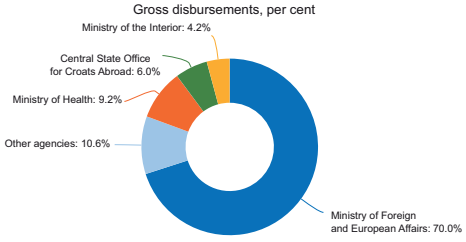
The UN system received 5.1% of total (core and earmarked) multilateral contributions, or USD 2.8 million.

Croatia - Top 10 recipients 2019
Gross disbursements, million USD, current prices



MAIN PUBLIC ACTORS

Croatia - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-croatia.*

Note: *2020 data are preliminary. Croatia reports activity-level data to the OECD.

**The government has committed at the European level to achieve a 0.33% ODA/GNI ratio by 2030.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

CYPRUS

LATEST POLICY

Cyprus's development co-operation is closely aligned with the goals and priorities of the European Union. It aims to share know-how in economic transition and provide technical co-operation in crucial areas where Cyprus has established expertise, including tourism management and forestry.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
20.5
USD MILLION

32%
BILATERAL

68%
MULTILATERAL CORE

-0.1%
ODA CHANGE FROM 2019
in real terms

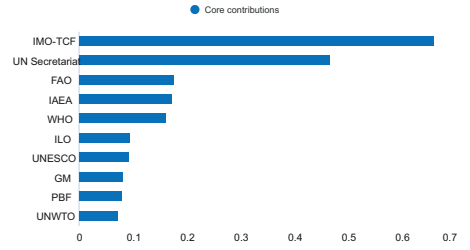
0.08%

0.33% TARGET**

2020*
ODA
AS A SHARE OF GNI

Cyprus - Top 10 United Nations recipients 2019

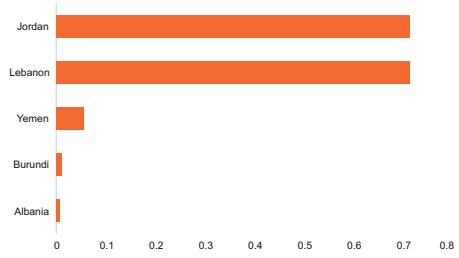
Gross disbursements, million USD, 2018 constant prices



The UN system received 14.6% of total (core and earmarked) multilateral contributions, or USD 2.7 million.

Cyprus - Top 10 recipients 2019

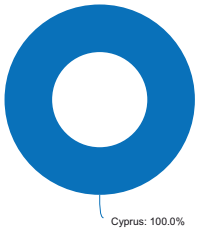
Gross disbursements, million USD, current prices



MAIN PUBLIC ACTORS

Cyprus - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-cyprus.*

Note:*2020 data are preliminary. Australia reports activity-level data to the OECD.

**The government has committed at the European level to achieve a 0.33% ODA/GNI ratio by 2030.

Note by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue". Note by all the European Union member states of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the government of the Republic of Cyprus.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
CZECH REPUBLIC

LATEST POLICY

The Czech Republic's 2018-2030 Development Cooperation Strategy sets out five areas of priority: 1) building stable and democratic institutions; 2) sustainable management of natural resources; 3) agriculture and rural development; 4) inclusive social development; and 5) economic growth.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **300.2** USD MILLION

31% BILATERAL

69% MULTILATERAL CORE

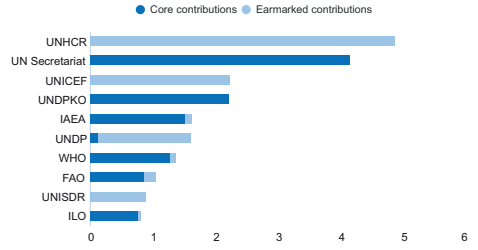
-5.2% ODA CHANGE FROM 2019 in real terms

0.13% — 0.33% TARGET** — 2020* ODA AS A SHARE OF GNI

0.03% — 0.15-0.2% TARGET — 2019 ODA to least developed countries AS A SHARE OF GNI

Czech Republic - Top 10 United Nations recipients 2019

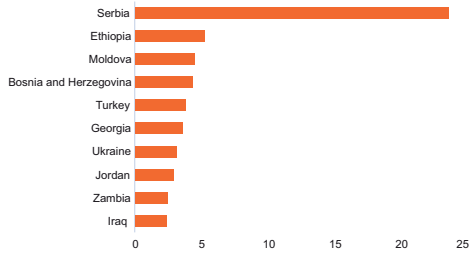
Gross disbursements, million USD, 2018 constant prices



The UN system received 10.4% of total (core and earmarked) multilateral contributions, or USD 23.8 million.

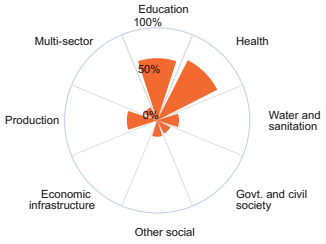
Czech Republic - Top 10 recipients 2019

Gross disbursements, million USD, current prices



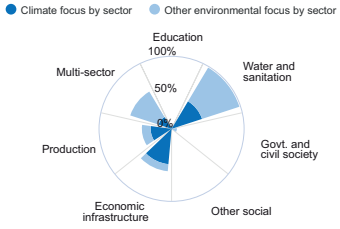
Czech Republic - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Czech Republic - Climate and environmental focus by sector 2019

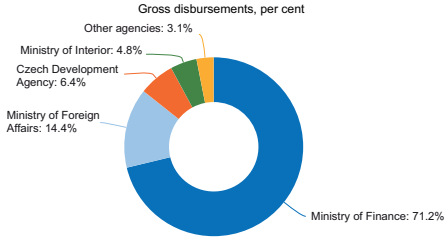
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Czech Republic - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

1.7 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-czech-republic*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Czech Republic reports activity-level data to the OECD.*

***The government has committed at the European level to achieve a 0.33% ODA/GNI ratio by 2030.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

DENMARK

LATEST POLICY

Denmark's strategy for development co-operation, "The World We Share", sets out two priorities: 1) prevent and fight poverty and inequality, conflict and displacement, irregular migration, and fragility; 2) lead the fight to stop climate change and restore balance to the planet.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **2.6** USD BILLION

70% BILATERAL

30% MULTILATERAL CORE

+0.5% ODA CHANGE FROM 2019 in real terms

0.73% → 0.7% TARGET

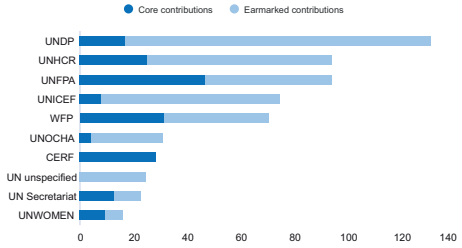
2020* ODA AS A SHARE OF GNI

0.22% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Denmark - Top 10 United Nations recipients 2019

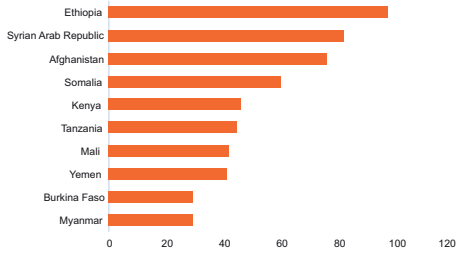
Gross disbursements, million USD, 2018 constant prices



The UN system received 46.4% of total (core and earmarked) multilateral contributions, or USD 680.9 million.

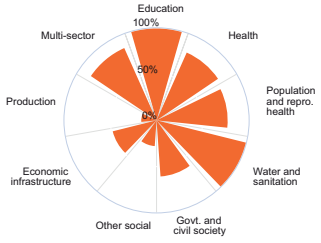
Denmark - Top 10 recipients 2019

Gross disbursements, million USD, current prices



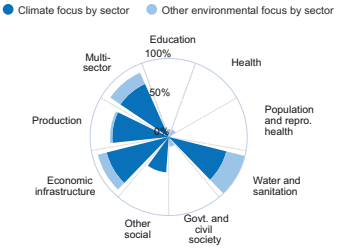
Denmark - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Denmark - Climate and environmental focus by sector 2019

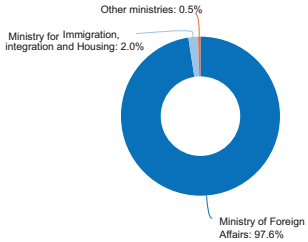
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Denmark - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

245 USD MILLION

Mobilised from the private sector by ODA in 2020

Full profile: *https:https://oe.cd/il/dev-coop-denmark.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Denmark reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
ESTONIA

LATEST POLICY

Estonia focuses on sharing its experience with transition countries, concentrating on health and education services, peace and stability, governance, human rights, economic development, environment, and sustainable development. Cross-cutting themes include digitalisation and gender equality.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **49.3** USD MILLION

35% BILATERAL

65% MULTILATERAL CORE

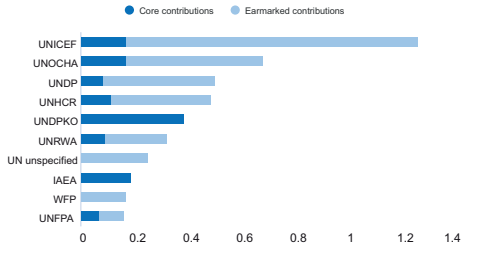
+1.2% ODA CHANGE FROM 2018 in real terms

0.16% → 0.33% TARGET**

2020* ODA AS A SHARE OF GNI

Estonia - Top 10 United Nations recipients 2019

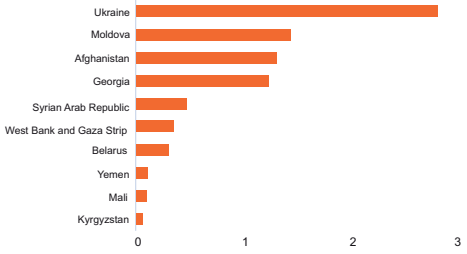
Gross disbursements, million USD, 2018 constant prices



The UN system received 14.6% of total (core and earmarked) multilateral contributions, or USD 5.3 million.

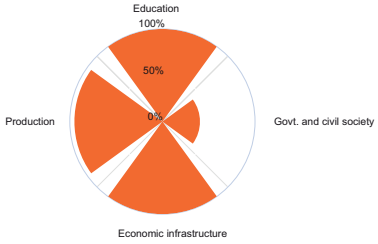
Estonia - Top 10 recipients 2019

Gross disbursements, million USD, current prices



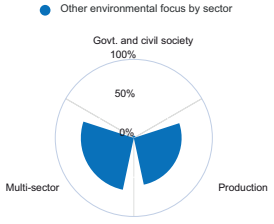
Estonia - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Estonia - Climate and environmental focus by sector 2019

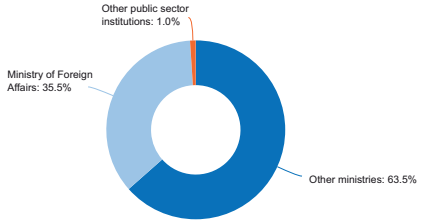
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Estonia - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

300 USD THOUSAND

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-estonia.*

*Note: *2020 data are preliminary. Estonia reports activity-level data to the OECD.*

***The government has committed at the European level to achieve a 0.33% ODA/GNI ratio by 2030.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

EUROPEAN UNION INSTITUTIONS

LATEST POLICY

In 2017, the European Union and its member states adopted the New European Consensus for Development as a common strategic vision. Co-operation priorities include partnerships with Africa and the European neighbourhood, the green deal, sustainable growth, migration, governance and promoting the humanitarian-development-peace nexus.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **19.4** USD BILLION

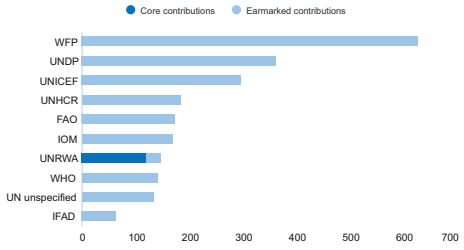
98% BILATERAL

2% MULTILATERAL CORE

+25.4% ODA CHANGE FROM 2019 in real terms

EU Institutions - Top 10 United Nations recipients 2019

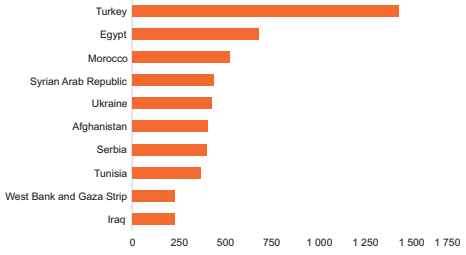
Gross disbursements, million USD, 2018 constant prices



The UN system received 60.8% of total (core and earmarked) multilateral contributions, or USD 2.57 billion.

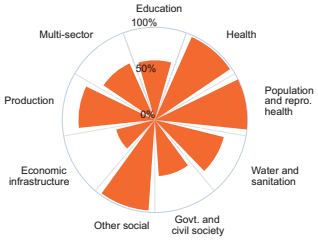
EU Institutions - Top 10 recipients 2019

Gross disbursements, million USD, current prices



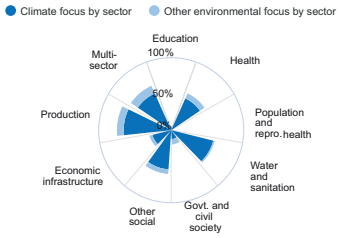
EU Institutions - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



EU Institutions - Climate and environmental focus by sector 2019

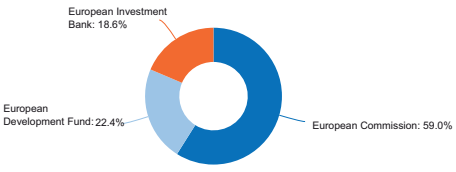
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

EU Institutions - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

3.7 USD BILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-eu.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. The EU institutions report activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

FINLAND

LATEST POLICY

The 2021 Government White Paper for Development Policy focuses on the rights of women and girls, good quality training and education, sustainable economy and decent work, democratic societies and climate change, biodiversity and sustainable use of natural resources.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
1.3
USD BILLION

52%
BILATERAL

48%
MULTILATERAL CORE

+8.1%
ODA CHANGE FROM 2019
in real terms

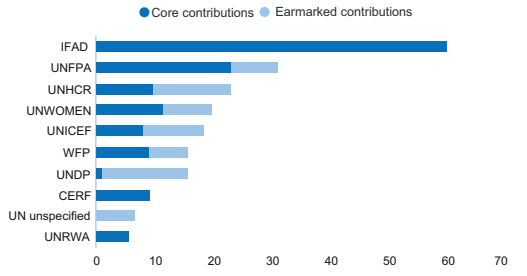
0.47%

0.7% TARGET

2020*
ODA
AS A SHARE OF GNI

Finland - Top 10 United Nations recipients 2019

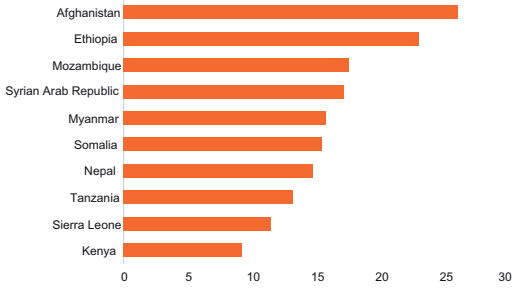
Gross disbursements, million USD, 2018 constant prices



The UN system received 33.7% of total (core and earmarked) multilateral contributions, or USD 250.6 million.

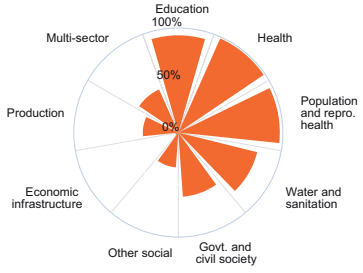
Finland - Top 10 recipients 2019

Gross disbursements, million USD, current prices



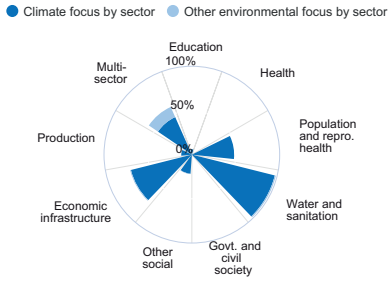
Finland - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Finland - Climate and environmental focus by sector 2019

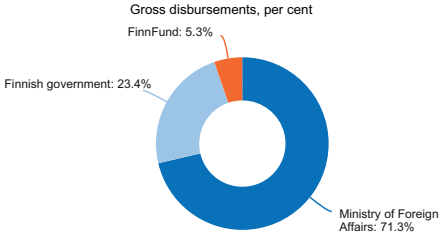
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Finland - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

22
USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-finland.*
Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. The EU institutions report activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

FRANCE

LATEST POLICY

The Law on Inclusive Development and the Fight against Global Inequalities identifies thematic priorities to fight poverty, global inequality and preserve global public goods: environment and climate, gender equality, crisis and fragilities, human rights, health, education, food security and water and sanitation.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **14.1** USD BILLION

66% BILATERAL

34% MULTILATERAL CORE

+10.9% ODA CHANGE FROM 2019 in real terms

0.53% → 0.7% TARGET

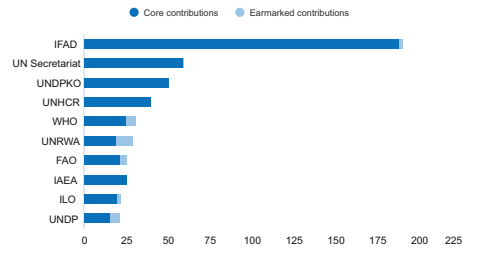
2020* ODA AS A SHARE OF GNI

0.11% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

France - Top 10 United Nations recipients 2019

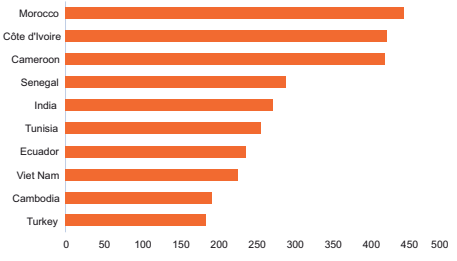
Gross disbursements, million USD, 2018 constant prices



The UN system received 11.5% of total (core and earmarked) multilateral contributions, or USD 593.6 million.

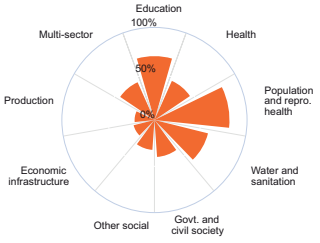
France - Top 10 recipients 2019

Gross disbursements, million USD, current prices



France - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



France - Climate and environmental focus by sector 2019

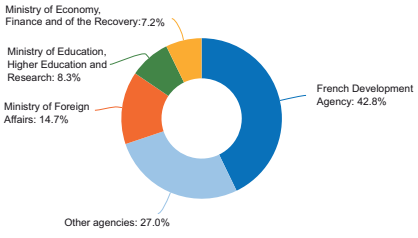
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

France - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

2.7 USD BILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-france*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. France reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
GERMANY

LATEST POLICY

Germany's Development Policy 2030 is centred on the 2030 Agenda and the Paris Agreement on climate change. The BMZ Strategy Paper operationalises the policy, allowing for a long-term focus on global public goods and German expertise, as well as shorter term political initiatives.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **28.4** USD BILLION

79% BILATERAL

21% MULTILATERAL CORE

+13.7% ODA CHANGE FROM 2019 in real terms

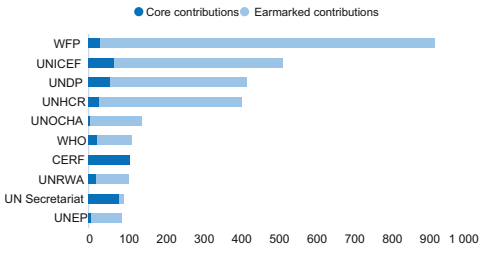
0.73% — 0.7% TARGET

2020* ODA AS A SHARE OF GNI

0.11% — 0.15-0.2% TARGET

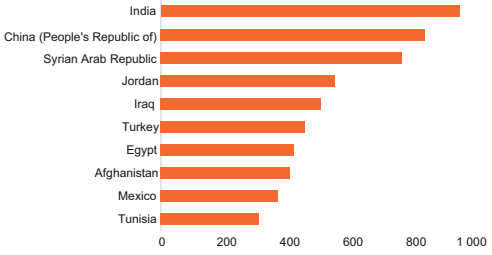
2019 ODA to least developed countries AS A SHARE OF GNI

Germany - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices

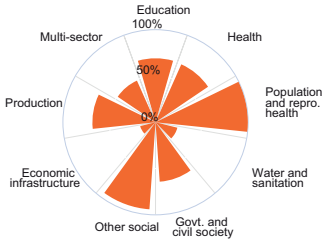


The UN system received 36.2% of total (core and earmarked) multilateral contributions, or USD 3.4 billion.

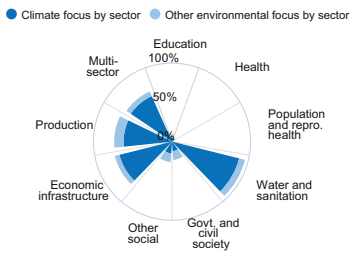
Germany - Top 10 recipients 2019
Gross disbursements, million USD, current prices



Germany - Gender focus by sector 2019
Bilateral allocable ODA, commitments, per cent

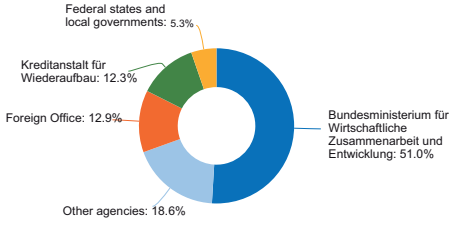


Germany - Climate and environmental focus by sector 2019
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Germany - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

957 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-germany.*
Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Germany reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

GREECE

LATEST POLICY

In Greece's National Strategy for Sustainability and Fair Development 2030, external co-operation focuses on partnerships with neighbouring countries in the Balkans and the south-east Mediterranean region. Greece expects to expand its development co-operation again once it has exited adjustment programmes.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **237.7** USD MILLION

39% BILATERAL

61% MULTILATERAL CORE

-36% ODA CHANGE FROM 2019 in real terms

0.13% → 0.7% TARGET

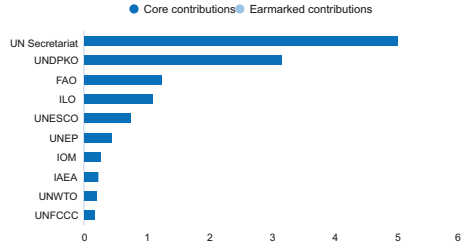
2020* ODA AS A SHARE OF GNI

0.02% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Greece - Top 10 United Nations recipients 2019

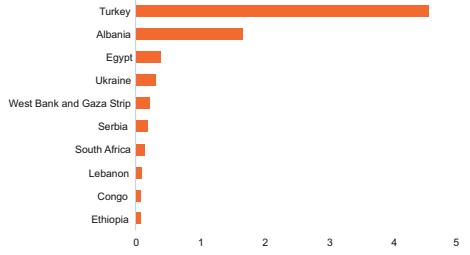
Gross disbursements, million USD, 2018 constant prices



The UN system received 5.3% of total (core and earmarked) multilateral contributions, or USD 12.3 million.

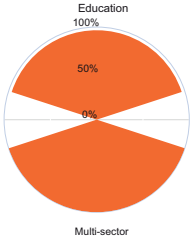
Greece - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Greece - Gender focus by sector 2019

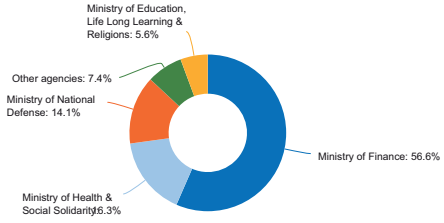
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Greece - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-greece.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Greece reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
HUNGARY

LATEST POLICY

In 2019, Hungary adopted the International Development Cooperation Strategy for the Period 2020-2025. The strategy is guided by two principles: 1) establishing long-lasting, mutually beneficial economic partnerships; and 2) addressing the root causes of migration.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **411.4** USD MILLION

51% BILATERAL

49% MULTILATERAL CORE

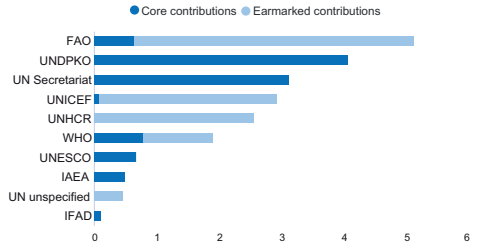
+35.8% ODA CHANGE FROM 2019 in real terms

0.27% — 0.33% TARGET** — 2020* ODA AS A SHARE OF GNI

0.04% — 0.15-0.2% TARGET — 2019 ODA to least developed countries AS A SHARE OF GNI

Hungary - Top 10 United Nations recipients 2019

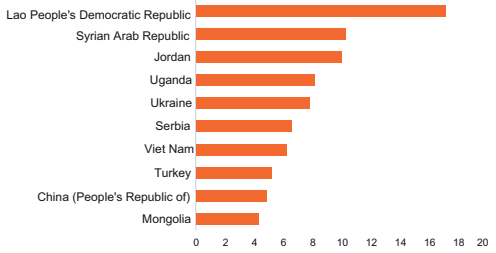
Gross disbursements, million USD, 2018 constant prices



The UN system received 12.6% of total (core and earmarked) multilateral contributions, or USD 21 million.

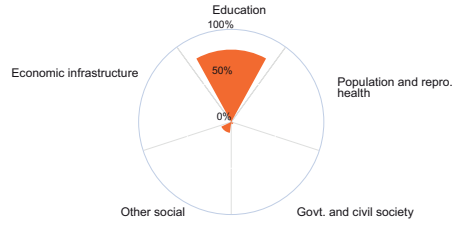
Hungary - Top 10 recipients 2019

Gross disbursements, million USD, current prices



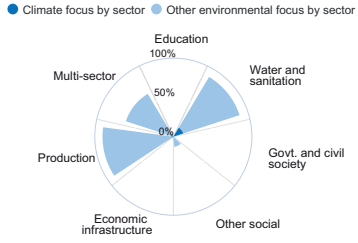
Hungary - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Hungary - Climate and environmental focus by sector 2019

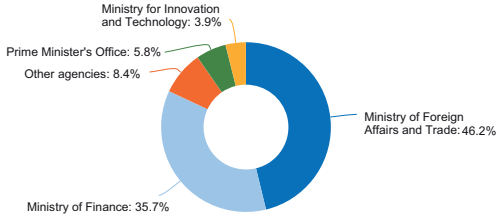
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Hungary - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-hungary.*
Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Notes: *2020 data are preliminary. Hungary reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

ICELAND

LATEST POLICY

Iceland's "Policy for International Development Co-operation 2019-2023" aims to reduce poverty and hunger and promote general well-being on the basis of human rights, gender equality and sustainable development through social infrastructure, peace efforts and the sustainable use of natural resources.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **62.2** USD MILLION

84% BILATERAL

16% MULTILATERAL CORE

+7.8% ODA CHANGE FROM 2019 in real terms

0.29% → 0.7% TARGET

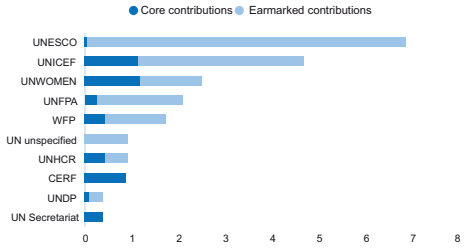
2020* ODA AS A SHARE OF GNI

0.10% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Iceland - Top 10 United Nations recipients 2019

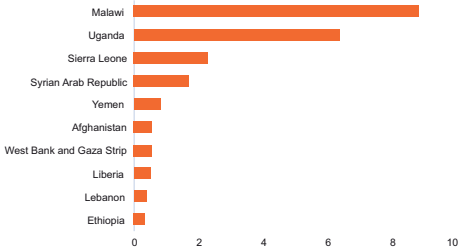
Gross disbursements, million USD, 2018 constant prices



The UN system received 71.1% of total (core and earmarked) multilateral contributions, or USD 21.6 million.

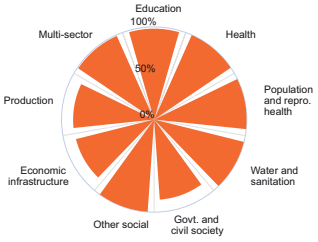
Iceland - Top 10 recipients 2019

Gross disbursements, million USD, current prices



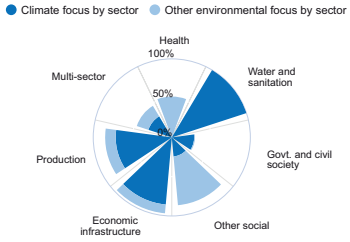
Iceland - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Iceland - Climate and environmental focus by sector 2019

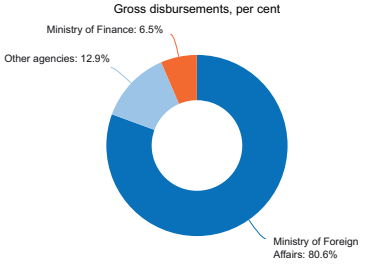
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Iceland - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-iceland.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Iceland reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

IRELAND

LATEST POLICY

Ireland's 2019 policy "A Better World" prioritises gender equality, humanitarian assistance, climate change and governance, combining values and self-interest. Aiming to reach the furthest behind first, Ireland focuses on least developed countries and fragile contexts.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **972** USD MILLION

58% BILATERAL

42% MULTILATERAL CORE

-4.1% ODA CHANGE FROM 2019 in real terms

0.31% — 0.7% TARGET

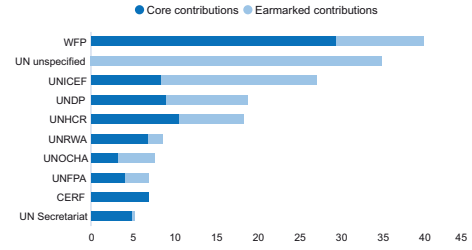
2020* ODA AS A SHARE OF GNI

0.12% — 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Ireland - Top 10 United Nations recipients 2019

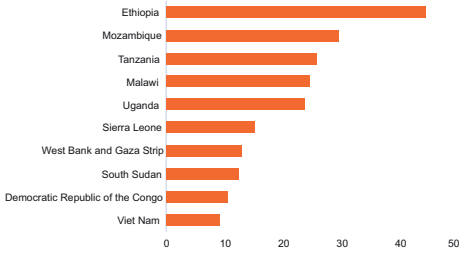
Gross disbursements, million USD, 2018 constant prices



The UN system received 37.9% of total (core and earmarked) multilateral contributions, or USD 204.7 million.

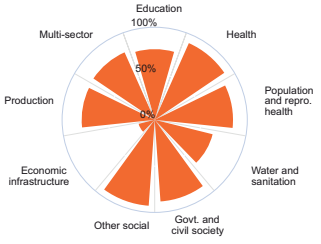
Ireland - Top 10 recipients 2019

Gross disbursements, million USD, current prices



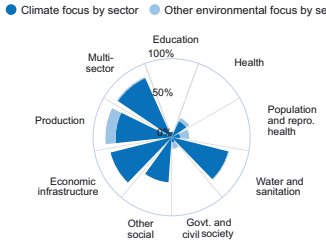
Ireland - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Ireland - Climate and environmental focus by sector 2019

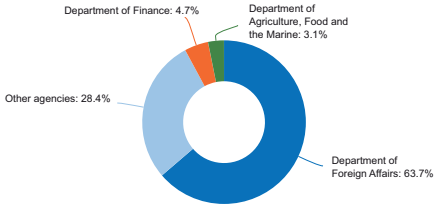
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Ireland - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

3.1 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-ireland.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Ireland reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

ISRAEL

LATEST POLICY

Israel's development policy is linked to and aligned with its foreign policy objectives, including its commitment to the 2030 Agenda. Israel prioritises agriculture, water and health, mainly in the Middle East and Asia. Israel has created an inter-ministerial committee for international development and is defining a new multi-stakeholder architecture approach.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
287.6
USD MILLION

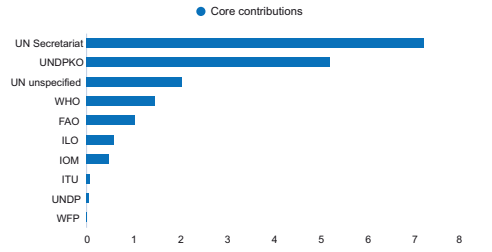
85%
BILATERAL

15%
MULTILATERAL CORE

-1.9%
ODA CHANGE FROM 2019
in real terms

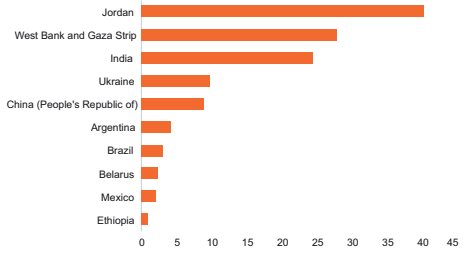
0.07%
2020*
ODA
AS A SHARE
OF GNI

Israel - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices



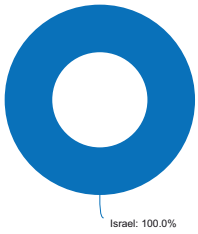
The UN system received 44.7% of total (core and earmarked) multilateral contributions, or USD 18.7 million.

Israel - Top 10 recipients 2019
Gross disbursements, million USD, current prices



MAIN PUBLIC ACTORS

Israel - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-israel.*

*Note: *2020 data are preliminary. Israel reports aggregate-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

ITALY

LATEST POLICY

Law 125/2014 sets out the primary objectives of Italian development co-operation: poverty eradication, reducing inequalities and sustainable development; human rights, including gender equality, democracy and the rule of law; and conflict prevention and peacebuilding.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **4.2** USD BILLION

32% BILATERAL

68% MULTILATERAL CORE

-7.9% ODA CHANGE FROM 2019 in real terms

0.22% → 0.7% TARGET

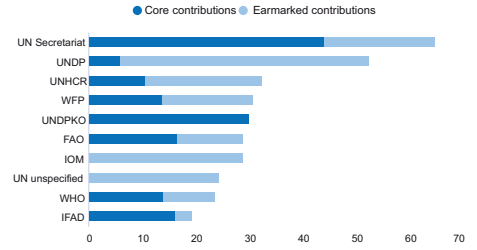
2020* ODA AS A SHARE OF GNI

0.06% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Italy - Top 10 United Nations recipients 2019

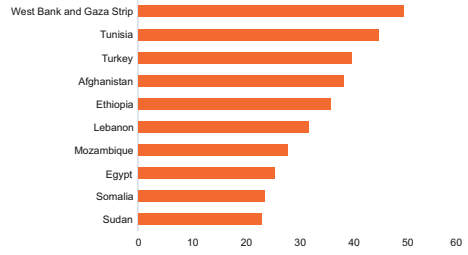
Gross disbursements, million USD, 2018 constant prices



The UN system received 13.4% of total (core and earmarked) multilateral contributions, or USD 444.5 million.

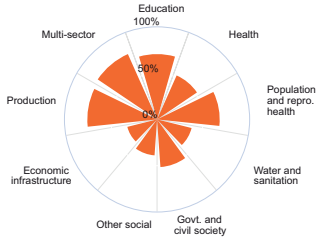
Italy - Top 10 recipients 2019

Gross disbursements, million USD, current prices



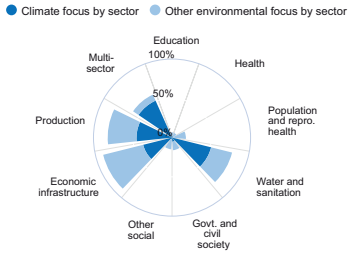
Italy - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Italy - Climate and environmental focus by sector 2019

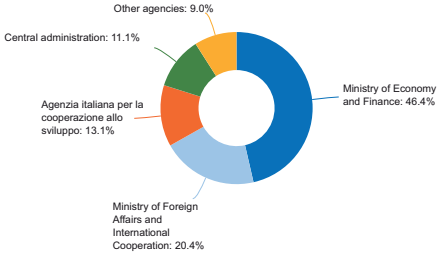
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Italy - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-italy.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Italy reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

JAPAN

LATEST POLICY

The 2015 Development Cooperation Charter underscores the mutual benefits of peace and security, and is aligned with the Sustainable Development Goals. Japan's approach is based on respect for country ownership and self-reliant development through technological and financial co-operation.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **16.3** USD BILLION

78% BILATERAL

22% MULTILATERAL CORE

+1.2% ODA CHANGE FROM 2019 in real terms

0.31% → 0.7% TARGET

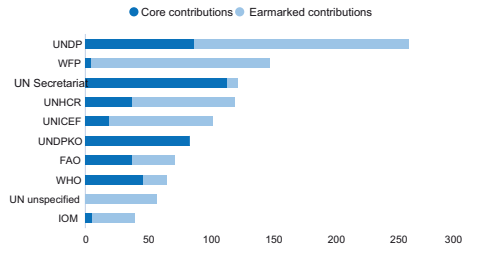
2020* ODA AS A SHARE OF GNI

0.10% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Japan - Top 10 United Nations recipients 2019

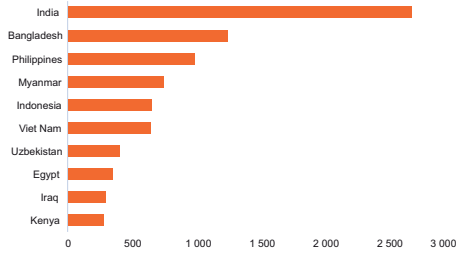
Gross disbursements, million USD, 2018 constant prices



The UN system received 26.1% of total (core and earmarked) multilateral contributions, or USD 1.4 billion.

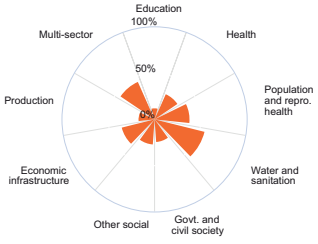
Japan - Top 10 recipients 2019

Gross disbursements, million USD, current prices



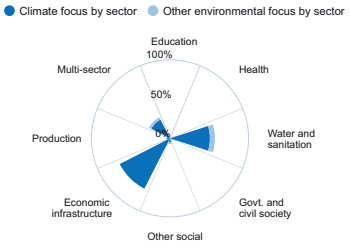
Japan - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Japan - Climate and environmental focus by sector 2019

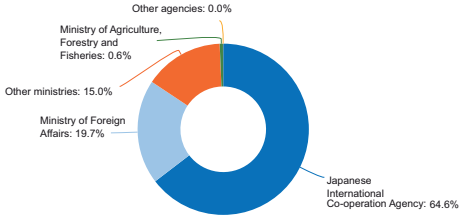
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Japan - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

128 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-japan.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Japan reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
KAZAKSTAN

LATEST POLICY

Development co-operation is an integral and increasingly important part of Kazakhstan's foreign policy. The 2014 ODA Law defines the main objectives, principles, competencies and sectoral priorities. Guided by the Foreign Policy Concept of Kazakhstan 2020-2030, most of its official development assistance is disbursed to countries in Central Asia.

WHERE THE MONEY GOES

2019*

ODA grant equivalent
34
USD MILLION

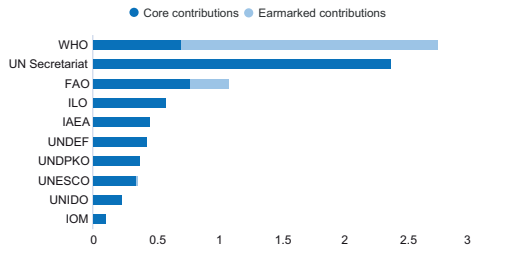
78%
BILATERAL

22%
MULTILATERAL CORE

-14%
ODA CHANGE FROM 2018
in real terms

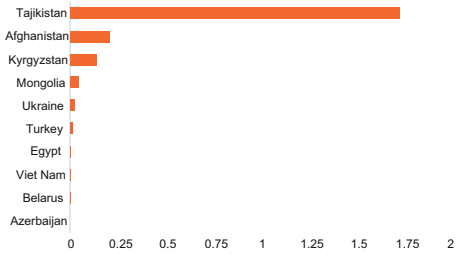
0.02%
2019
ODA AS A SHARE OF GNI

Kazakhstan - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices



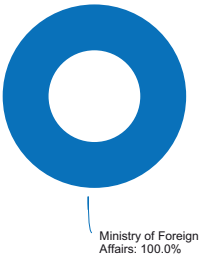
The UN system received 28.2% of total (core and earmarked) multilateral contributions, or USD 9 million.

Kazakhstan - Top 10 recipients 2019
Gross disbursements, million USD, current prices



MAIN PUBLIC ACTORS

Kazakhstan - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-kazakhstan.*

*Note:*2020 data are preliminary. Australia reports regularly to the OECD their development co-operation resource flows at the activity level.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

KOREA

LATEST POLICY

Korea revised the 2010 Framework Act and issued its 2021-2025 Comprehensive Basic Plan for International Co-operation, which focuses on "Inclusive, Win-Win and Innovative ODA". It prioritises health and support for vulnerable groups, infrastructure and the green transition, and science and technology.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **2.2** USD BILLION

76% BILATERAL

24% MULTILATERAL CORE

-8.6% ODA CHANGE FROM 2019 in real terms

0.14% → 0.7% TARGET

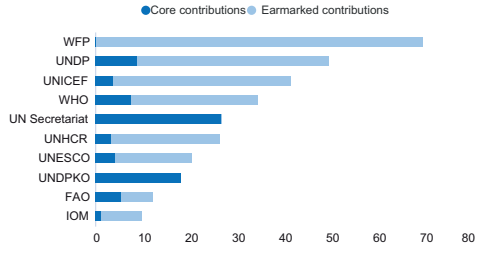
2020* ODA AS A SHARE OF GNI

0.06% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Korea - Top 10 United Nations recipients 2019

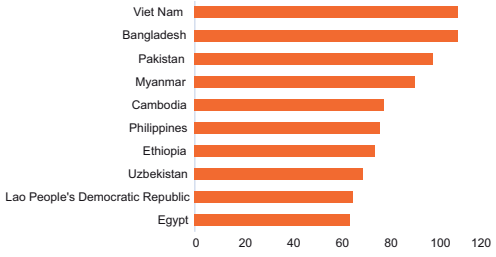
Gross disbursements, million USD, 2018 constant prices



The UN system received 38% of total (core and earmarked) multilateral contributions, or USD 364.6 million.

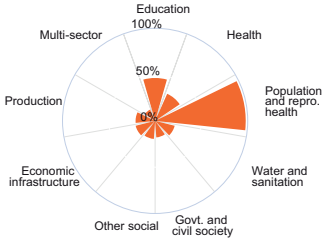
Korea - Top 10 recipients 2019

Gross disbursements, million USD, current prices



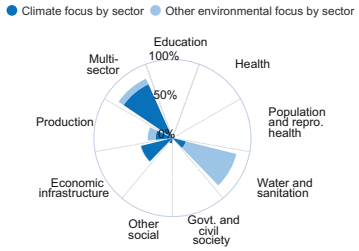
Korea - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Korea - Climate and environmental focus by sector 2019

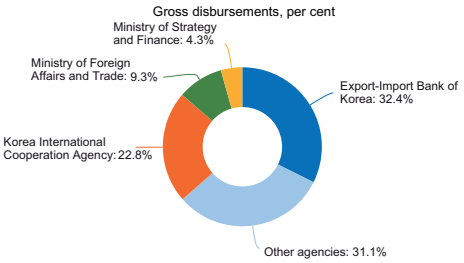
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Korea - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

21 USD MILLION

Mobilised from the private sector by ODA in 2020

Full profile: *https://oe.cd/il/dev-coop-korea.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Korea reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

KUWAIT

LATEST POLICY

Kuwait's policy framework is anchored in its commitment to the 2030 Agenda for Sustainable Development. Its activities mainly target sectors such as agriculture, electricity, irrigation, industry, transport, telecommunications, water and sanitation, health, and education.

WHERE THE MONEY GOES

2019

ODA grant equivalent
394
USD BILLION

99.9%
BILATERAL

0.1%
MULTILATERAL CORE

-52%
ODA CHANGE FROM 2018
in real terms

0.25%
0.7% TARGET

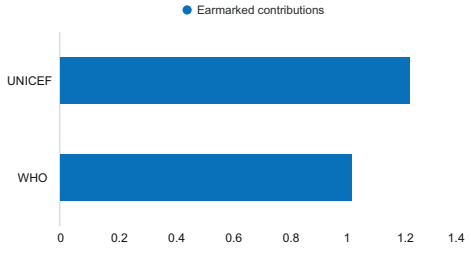
2019
ODA
AS A SHARE
OF GNI

0.04%
0.15-0.2% TARGET

2019
ODA to least developed countries
AS A SHARE
OF GNI

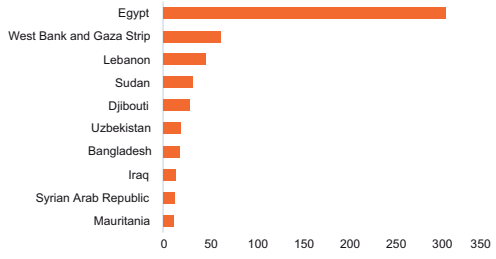
Kuwait - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



Kuwait - Top 10 recipients 2019

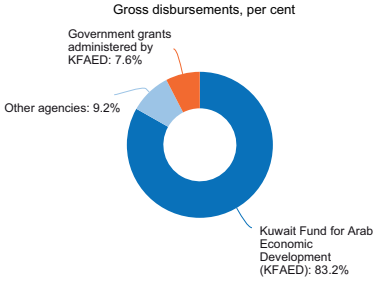
Gross disbursements, million USD, current prices



MAIN PUBLIC ACTORS

Kuwait - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-kuwait.*

Note: Kuwait reports activity-level data to the OECD.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

LATVIA

LATEST POLICY

The new Development Cooperation Policy Guidelines for 2021-2027 define the goals, principles and strategic direction of Latvia's development co-operation, with a focus on promoting sustainable development, the rule of law, good governance and eradicating poverty.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **40.2** USD MILLION

13% BILATERAL

87% MULTILATERAL CORE

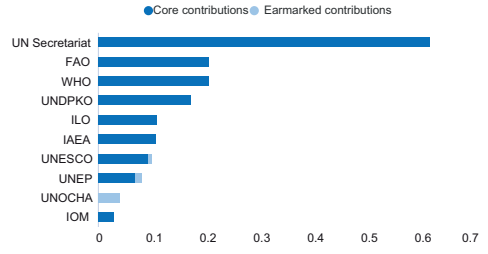
+14.8% ODA CHANGE FROM 2019 in real terms

0.12% — 0.33% TARGET** — 2020* ODA AS A SHARE OF GNI

0.02% — 0.15-0.2% TARGET — 2019 ODA to least developed countries AS A SHARE OF GNI

Latvia - Top 10 United Nations recipients 2019

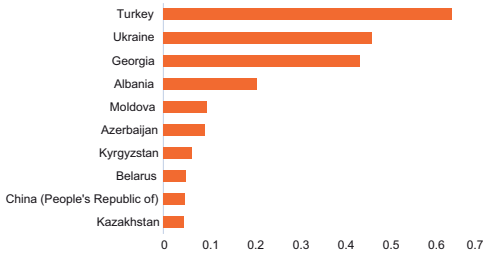
Gross disbursements, million USD, 2018 constant prices



The UN system received 5.4% of total (core and earmarked) multilateral contributions, or USD 1.7 million.

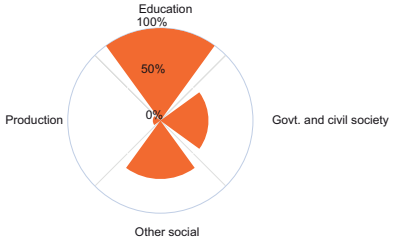
Latvia - Top 10 recipients 2019

Gross disbursements, million USD, current prices



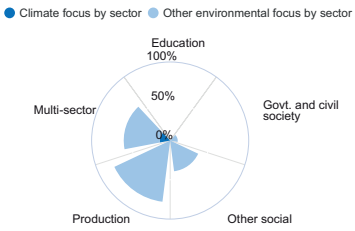
Latvia - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Latvia - Climate and environmental focus by sector 2019

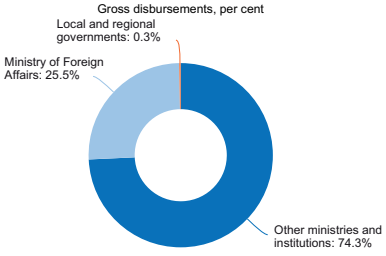
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Latvia - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-latvia.*

*Notes: *2020 data are preliminary. Latvia reports activity-level data to the OECD.*

***The government has committed at the European level to achieve a 0.33% ODA/GNI ratio by 2030.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
LITHUANIA

LATEST POLICY

The overarching goal of Lithuania's development co-operation framework is to contribute to the 2030 Agenda, with objectives to ensure peace, promote global economic growth and social stability, reduce global disparities, and integrate developing countries into the global economy.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
67
USD MILLION

18%
BILATERAL

82%
MULTILATERAL CORE

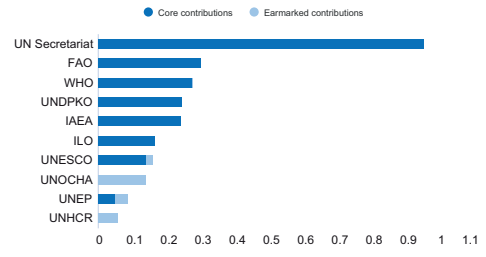
-3.8%
ODA CHANGE FROM 2019
in real terms

0.12%

0.33% TARGET**

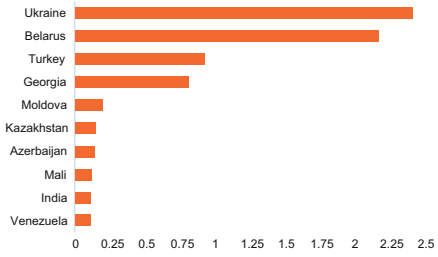
2020*
ODA
AS A SHARE OF GNI

Lithuania - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices

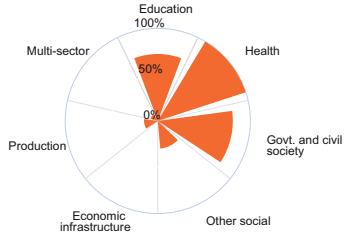


The UN system received 4.8% of total (core and earmarked) multilateral contributions, or USD 2.8 million.

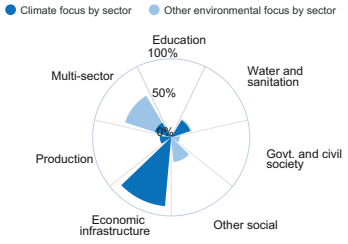
Lithuania - Top 10 recipients 2019
Gross disbursements, million USD, current prices



Lithuania - Gender focus by sector 2019
Bilateral allocable ODA, commitments, per cent

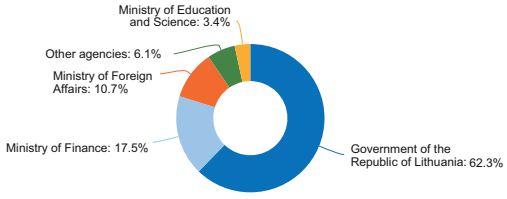


Lithuania - Climate and environmental focus by sector 2019
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Lithuania - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-lithuania.*

*Note: *2020 data are preliminary. Australia reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
LUXEMBOURG

LATEST POLICY

Luxembourg's development co-operation strategy, The Road to 2030, prioritises four themes: 1) access to quality basic social services; 2) socio-economic integration of women and youth; 3) inclusive and sustainable growth; and 4) inclusive governance.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **450** USD MILLION

77% BILATERAL

23% MULTILATERAL CORE

-9.2% ODA CHANGE FROM 2019 in real terms

1.02% — 0.7% TARGET

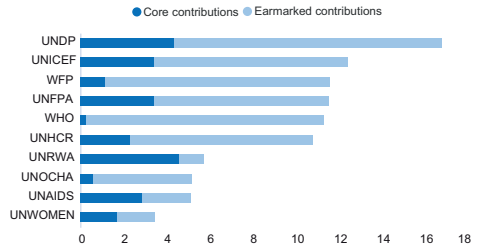
2020* ODA AS A SHARE OF GNI

0.47% — 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Luxembourg - Top 10 United Nations recipients 2019

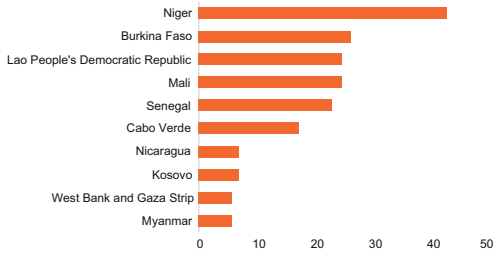
Gross disbursements, million USD, 2018 constant prices



The UN system received 49.3% of total (core and earmarked) multilateral contributions, or USD 106.7 million.

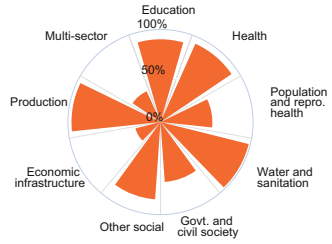
Luxembourg - Top 10 recipients 2019

Gross disbursements, million USD, current prices



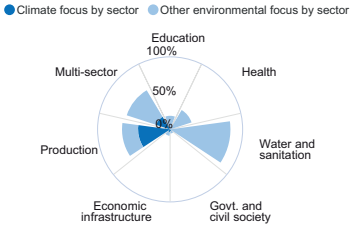
Luxembourg - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Luxembourg - Climate and environmental focus by sector 2019

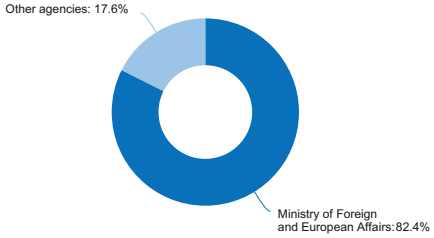
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Luxembourg - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

3.2 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-luxembourg.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Luxembourg reports activity-level data to the OECD.*

Mexico

Introduction

Mexico is committed to promoting international development co-operation and its effectiveness to achieve global and national goals, including the Sustainable Development Goals. The Mexican Agency for International Development Cooperation (AMEXCID) co-ordinates Mexico's international development co-operation activities and generates the necessary instruments and tools for the planning, monitoring and evaluation of result-oriented co-operation that is transparent and consistent with the Effectiveness Principles.

Mexico is engaged in multiple international co-operation modalities, delivered mainly through implementing South-South and triangular co-operation projects, to bring development and positive impact solutions, mostly to the Latin American and Caribbean regions. With the implementation of the 2030 Agenda in mind, Mexico contributes to the systematisation of South-South and triangular co-operation practices and to the adaptation of the internationally agreed Istanbul Principles on Development Effectiveness to the southern context.

Mexico joined the OECD in 1994. Mexico adheres to the OECD *Recommendation of the Council for Development Co-operation Actors on Managing the Risk of Corruption* and to the OECD *Recommendation of the Council on Policy Coherence for Sustainable Development*. In 2019, Mexico participated in the LAC-DAC Dialogue on Development Co-operation and the DAC Senior-level Meeting.

Estimates of international development co-operation

According to OECD estimates, using the OECD-DAC methodology, Mexico's contributions to multilateral organisations reached USD 72.8 million in 2019. For reference, total estimated development co-operation by Mexico totalled USD 57.6 million in 2018.

Mexico accounts for its development co-operation through a self-developed methodology (with the support of the OECD DAC), reflecting the specific characteristics of South-South co-operation and, more recently, adding triangular co-operation with multiple stakeholders. Using this methodology of valuing South-South co-operation, preliminary figures for Mexico's development co-operation totalled USD 140 million in 2018, down from USD 317.6 million in 2017. The 2018 Mexican co-operation figures will be released in 2021, and the 2019 quantification exercise is still ongoing.

FULL PROFILE

https://oe.cd/il/dev-coop-mexico

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

NETHERLANDS

LATEST POLICY

The Netherlands has integrated development, trade and investment agendas. Development co-operation focuses on the Sahel, the Horn of Africa, and the Middle East and North Africa. It prioritises security and the rule of law, water management, food security, and sexual and reproductive health and rights.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **5.4** USD BILLION

65% BILATERAL

35% MULTILATERAL CORE

-2.8% ODA CHANGE FROM 2018 in real terms

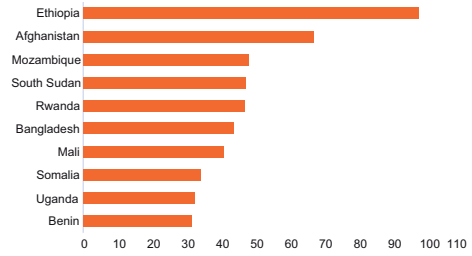
0.59% → 0.7% TARGET

2020* ODA AS A SHARE OF GNI

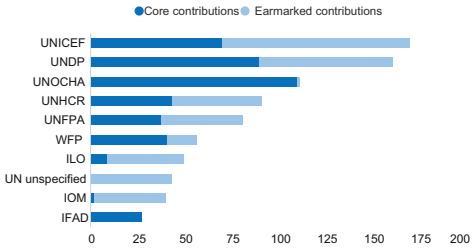
0.14% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Netherlands - Top 10 recipients 2019
Gross disbursements, million USD, current prices

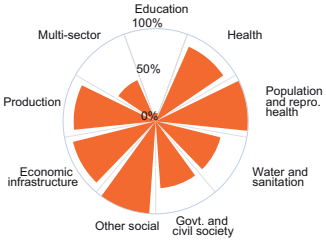


Netherlands - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices

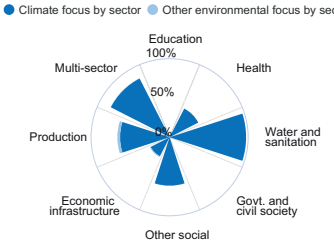


The UN system received 36.7 % of total (core and earmarked) multilateral contributions, or USD 967.5 million.

Netherlands - Gender focus by sector 2019
Bilateral allocable ODA, commitments, per cent

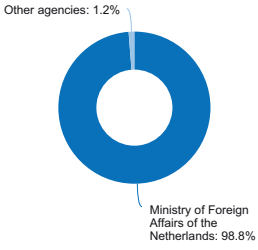


Netherlands - Climate and environmental focus by sector 2019
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Netherlands - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

589 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-netherlands.*
Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Netherlands reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
NEW ZEALAND

LATEST POLICY

New Zealand's official development assistance focuses on countries most in need, particularly small island developing states and least developed countries. Through its policy for International Cooperation for Effective Sustainable Development, it progresses the social, environmental, economic, and stability and governance pillars of sustainable development.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **530.8** USD MILLION

82% BILATERAL

18% MULTILATERAL CORE

-5.2% ODA CHANGE FROM 2019 in real terms

0.27% — 0.7% TARGET

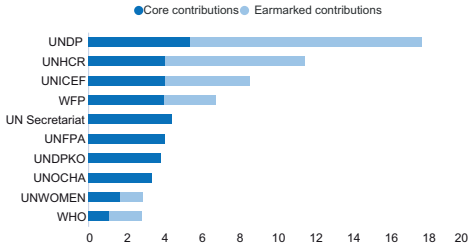
2020* ODA AS A SHARE OF GNI

0.07% — 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

New Zealand - Top 10 United Nations recipients 2019

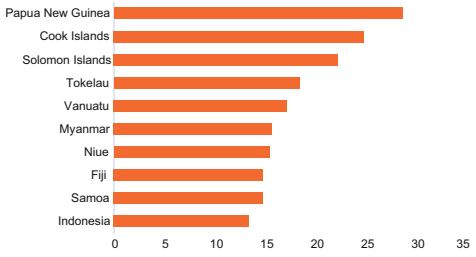
Gross disbursements, million USD, 2018 constant prices



The UN system received 47% of total (core and earmarked) multilateral contributions, or USD 81.9 million.

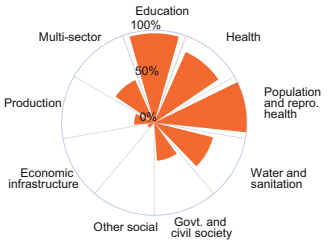
New Zealand - Top 10 recipients 2019

Gross disbursements, million USD, current prices



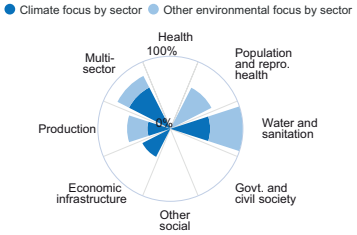
New Zealand - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



New Zealand - Climate and environmental focus by sector 2019

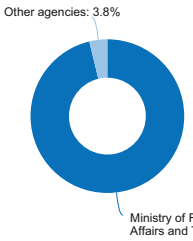
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

New Zealand - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-new-zealand.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. New Zealand reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
NORWAY

LATEST POLICY

Norway's development policy is based on the Sustainable Development Goals and outlined in regular thematic white papers. Priority is given to education, humanitarian assistance, health and vaccination, private sector development, climate change adaptation and mitigation, and human rights.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **4.2** USD BILLION

77% BILATERAL

23% MULTILATERAL CORE

+8.4% ODA CHANGE FROM 2019 in real terms

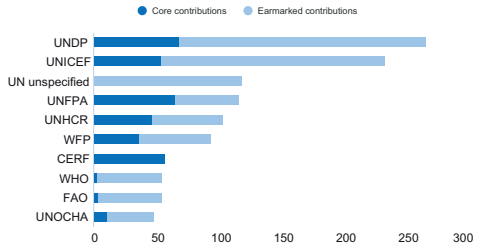
1.11% → 0.7% TARGET

2020* ODA AS A SHARE OF GNI

0.28% → 0.15-0.2% TARGET

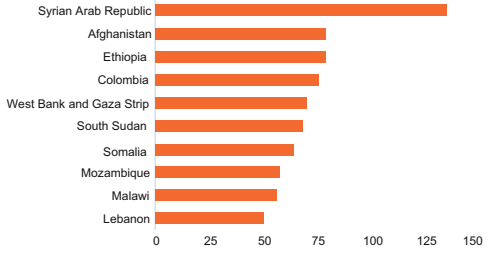
2019 ODA to least developed countries AS A SHARE OF GNI

Norway - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices

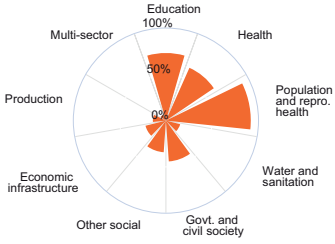


The UN system received 53.4% of total (core and earmarked) multilateral contributions, or USD 1.3 billion.

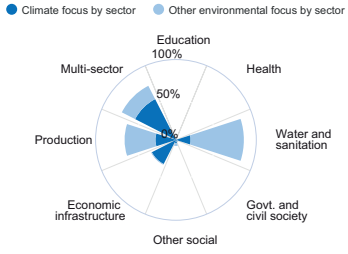
Norway - Top 10 recipients 2019
Gross disbursements, million USD, current prices



Norway - Gender focus by sector 2019
Bilateral allocable ODA, commitments, per cent

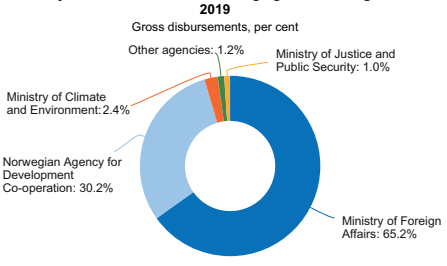


Norway - Climate and environmental focus by sector 2019
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Norway - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

51 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-norway*
Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Norway reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

POLAND

LATEST POLICY

Poland's Multiannual Programme for Development Cooperation for 2021-2030: Solidarity for Development focuses on its eastern neighbours and select partners in Africa and the Middle East. Its thematic focus is on peace, justice and strong institutions as well as equal opportunities, including in education and labour.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **802.9** USD MILLION

30% BILATERAL

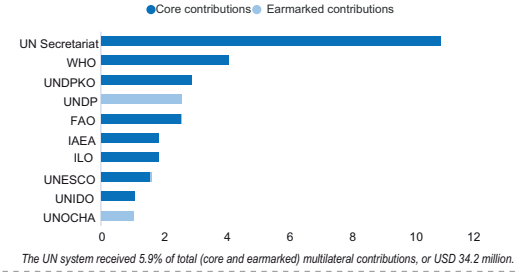
70% MULTILATERAL CORE

+1.1% ODA CHANGE FROM 2019 in real terms

0.14% — 0.33% TARGET** — 2020* ODA AS A SHARE OF GNI

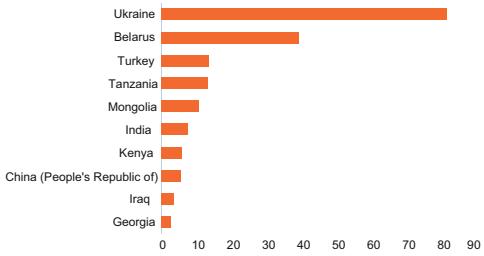
0.02% — 0.15-0.2% TARGET — 2019 ODA to least developed countries AS A SHARE OF GNI

Poland - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices

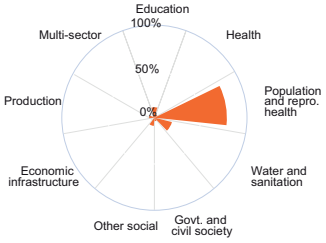


The UN system received 5.9% of total (core and earmarked) multilateral contributions, or USD 34.2 million.

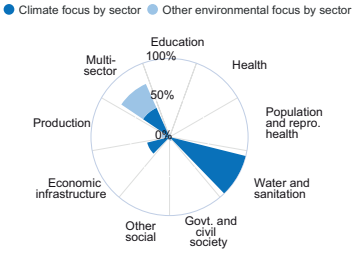
Poland - Top 10 recipients 2019
Gross disbursements, million USD, current prices



Poland - Gender focus by sector 2019
Bilateral allocable ODA, commitments, per cent

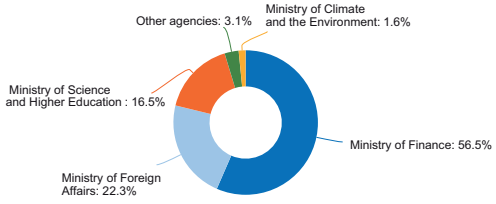


Poland - Climate and environmental focus by sector 2019
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Poland - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-poland*
Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews.*

*Note: *2020 data are preliminary. Poland reports activity-level data to the OECD.*

***The government has committed at the European level to achieve a 0.33% ODA/GNI ratio by 2030.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

PORTUGAL

LATEST POLICY

Portugal focuses on co-operation with Portuguese-speaking countries, building on its historical links. It concentrates on governance, rule of law and human rights, as well as human development, with the aim to eradicate poverty and promote sustainable development.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **384.7** USD MILLION

40% BILATERAL

60% MULTILATERAL CORE

-10.6% ODA CHANGE FROM 2019 in real terms

0.17% → 0.7% TARGET

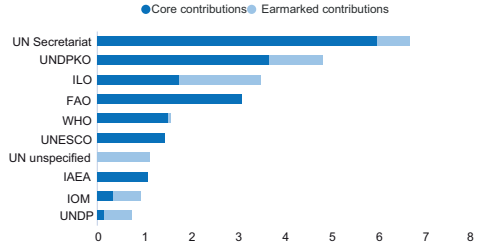
2020* ODA AS A SHARE OF GNI

0.05% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Portugal - Top 10 United Nations recipients 2019

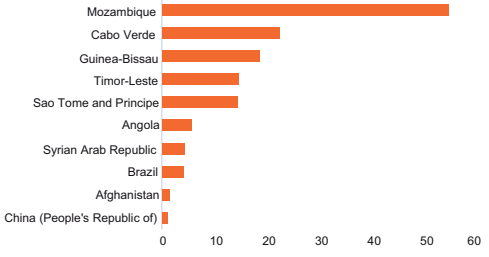
Gross disbursements, million USD, 2018 constant prices



The UN system received 9.4% of total (core and earmarked) multilateral contributions, or USD 26.3 million.

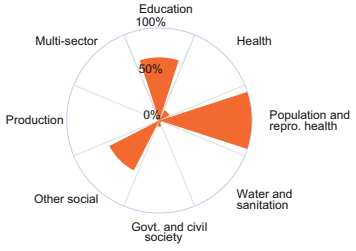
Portugal - Top 10 recipients 2019

Gross disbursements, million USD, current prices



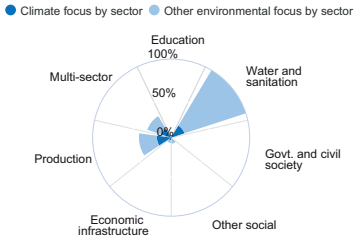
Portugal - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Portugal - Climate and environmental focus by sector 2019

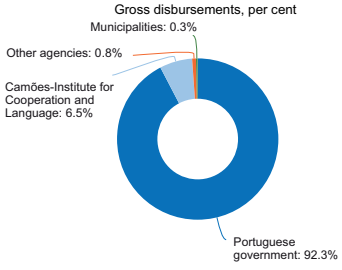
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Portugal - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

67 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-portugal.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Portugal reports regularly to the OECD their development co-operation resource flows at the activity level.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

QATAR

LATEST POLICY

Qatar engages in partnerships with multilateral agencies, bilateral providers and civil society organisations. It targets projects in multiple sectors promoting education, healthcare, social services, infrastructure and economic development for vulnerable people.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
533.6
USD MILLION

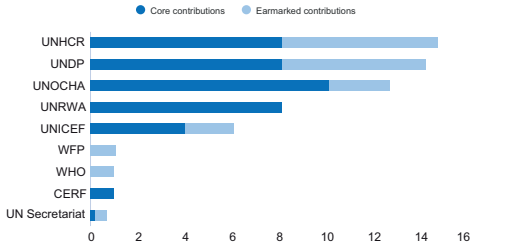
93%
BILATERAL

7%
MULTILATERAL CORE

-8.4%
ODA CHANGE FROM 2019
in real terms

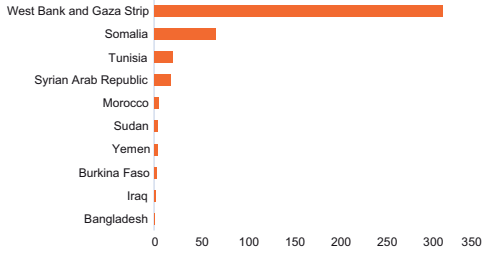
0.30%
2020*
ODA
AS A SHARE OF GNI

Qatar - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices



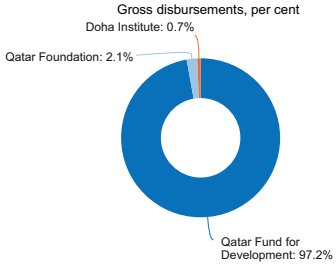
The UN system received 91.7% of total (core and earmarked) multilateral contributions, or USD 58.8 million.

Qatar - Top 10 recipients 2019
Gross disbursements, million USD, current prices



MAIN PUBLIC ACTORS

Qatar - Total ODA disbursed through government agencies 2019



Full profile: *https://oe.cd/il/dev-coop-qatar.*

*Note: *2020 data are preliminary. Qatar reports regularly to the OECD their development co-operation resource flows at the activity*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
ROMANIA

LATEST POLICY

Romania focuses on poverty and global security by promoting socio-economic sustainability and effectiveness. Romania's Law No. 213/2016 sets the strategic objectives, programmatic and institutional framework, and financing modalities of Romania's development co-operation.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
305.5
USD MILLION

25% BILATERAL

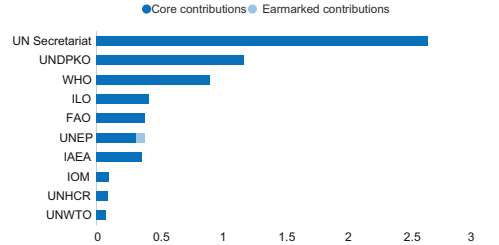
75% MULTILATERAL CORE

+17.1%
ODA CHANGE FROM 2019
in real terms

0.13% → 0.33% TARGET**

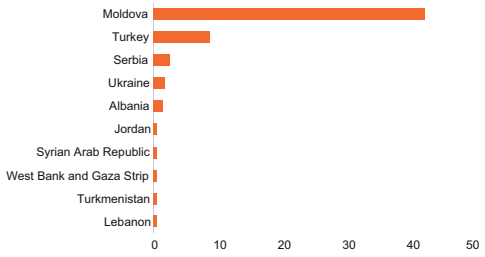
2020*
ODA
AS A SHARE OF GNI

Romania - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices

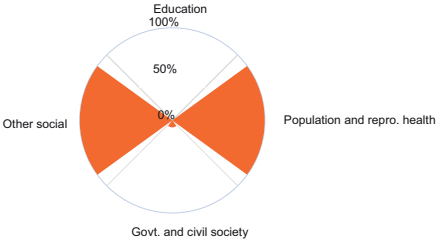


The UN system received 3.3% of total (core and earmarked) multilateral contributions, or USD 6.6 million.

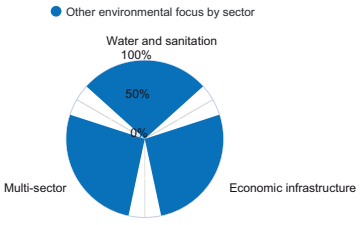
Romania - Top 10 recipients 2019
Gross disbursements, million USD, current prices



Romania - Gender focus by sector 2019
Bilateral allocable ODA, commitments, per cent

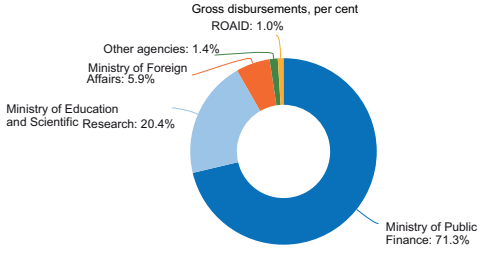


Romania - Climate and environmental focus by sector 2019
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Romania - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-romania.*

Note: 2020 data are preliminary. Romania reports regularly to the OECD their development co-operation resource flows at the activity level.

***The government has committed at the European level to achieve a 0.33% ODA/GNI ratio by 2030.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

SAUDI ARABIA

LATEST POLICY

Saudi Arabia is working on a new national development co-operation strategy, aligned with its Vision 2030 and the 2030 Agenda for Sustainable Development. Key Saudi development co-operation actors such as the Saudi Fund and the KSRelief provide development co-operation on a demand-driven basis.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **1.5** USD BILLION

98% BILATERAL

2% MULTILATERAL CORE

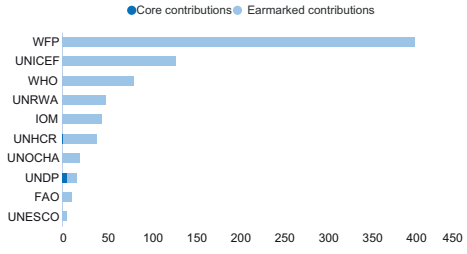
-25.3% ODA CHANGE FROM 2019 in real terms

0.19% → 0.7% TARGET

2020* ODA AS A SHARE OF GNI

Saudi Arabia - Top 10 United Nations recipients 2019

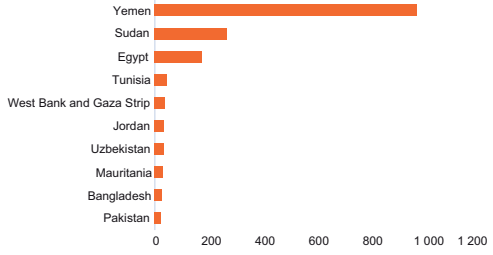
Gross disbursements, million USD, 2018 constant prices



The UN system received 92.4 % of total (core and earmarked) multilateral contributions, or USD 785 million.

Saudi Arabia - Top 10 recipients 2019

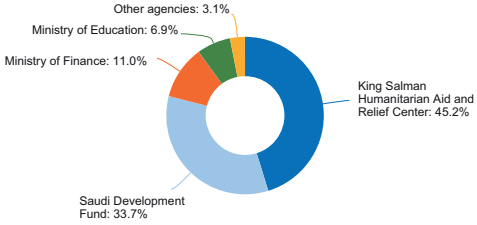
Gross disbursements, million USD, current prices



MAIN PUBLIC ACTORS

Saudi Arabia - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-saudi-arabia*

*Note: *2020 data are preliminary. Saudi Arabia reports activity-level data to the OECD. Saudi Arabia started reporting to the OECD at the activity level in 2018 and has so far provided partial data for 2015-18. Data shown in this profile should therefore not be considered as total development aid provided by Saudi Arabia. Notably, data on loans extended and grants from some Saudi entities are missing and the country is working towards completing the data.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
SLOVAK REPUBLIC

LATEST POLICY

The Medium-term Strategy for Development Co-operation 2019-23 identifies education, health, good governance and building civil society; food safety and agriculture; infrastructure and sustainable use of natural resources; and supporting the creation of market conditions as priorities.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **139.8** USD MILLION

19% BILATERAL

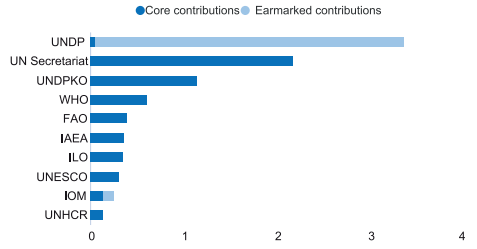
81% MULTILATERAL CORE

+16.3% ODA CHANGE FROM 2019 in real terms

0.14% → 0.33%** TARGET

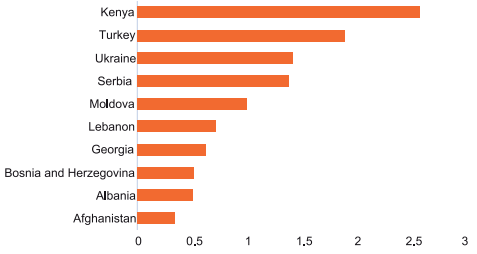
2020* ODA AS A SHARE OF GNI

Slovak Republic - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices

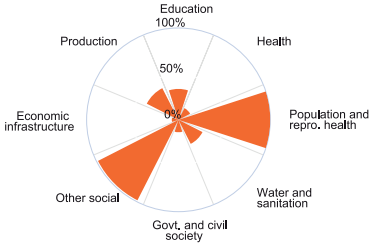


The UN system received 9.3% of total (core and earmarked) multilateral contributions, or USD 9.4 million.

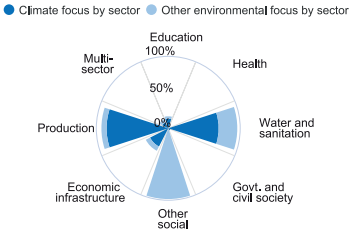
Slovak Republic - Top 10 recipients 2019
Gross disbursements, million USD, current prices



Slovak Republic - Gender focus by sector 2019
Bilateral allocable ODA, commitments, per cent

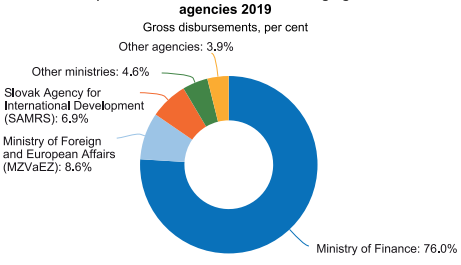


Slovak Republic - Climate and environmental focus by sector 2019
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Slovak Republic - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

30 USD THOUSAND

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-slovak-republic.*

*Note: *2020 data are preliminary. Slovak Republic reports activity-level data to the OECD.*

***The government has committed at the European level to achieve a 0.33% ODA/GNI ratio by 2030.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
SLOVENIA

LATEST POLICY

Slovenia is guided by its Development Cooperation and Humanitarian Aid Strategy up to 2030 and targets four Sustainable Development Goals: 1) decent work and economic growth; 2) sustainable consumption and production; 3) climate action; and 4) peaceful and inclusive societies.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **89.7** USD MILLION

35% BILATERAL

65% MULTILATERAL CORE

-1.7% ODA CHANGE FROM 2019 in real terms

0.17% — 0.33% TARGET

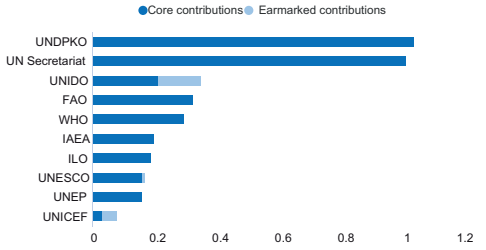
2020* ODA AS A SHARE OF GNI

0.02% — 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Slovenia - Top 10 United Nations recipients 2019

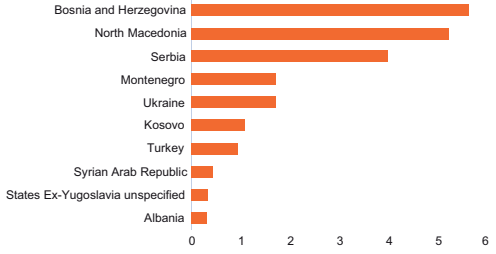
Gross disbursements, million USD, 2018 constant prices



The UN system received 6.7% of total (core and earmarked) multilateral contributions, or USD 4 million.

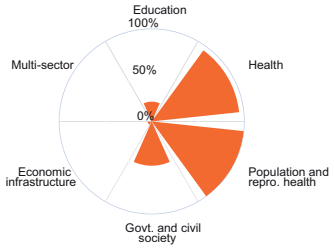
Slovenia - Top 10 recipients 2019

Gross disbursements, million USD, current prices



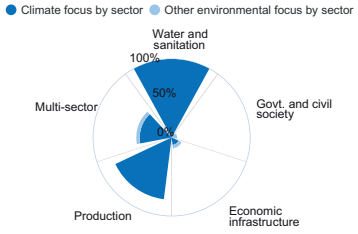
Slovenia - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Slovenia - Climate and environmental focus by sector 2019

Bilateral allocable ODA, commitments, per cent

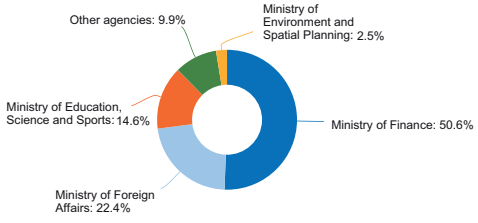


MAIN PUBLIC ACTORS

Slovenia - Total ODA disbursed through government agencies

2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

22 USD THOUSAND

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-slovenia.*

*Note: *2020 data are preliminary. Slovenia reports activity-level data to the OECD.*

***The government has committed at the European level to achieve a 0.33% ODA/GNI ratio by 2030.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

SPAIN

LATEST POLICY

The Master Plan for Spanish Co-operation 2018-2021 outlines Spain's development co-operation priorities: combating poverty and inequality, building resilience, and providing global public goods. Spain highlights four cross-cutting development principles: 1) human rights; 2) gender equality; 3) cultural diversity; and 4) environmental sustainability.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
3
USD BILLION

36%
BILATERAL

64%
MULTILATERAL CORE

-1.8%
ODA CHANGE FROM 2019
in real terms

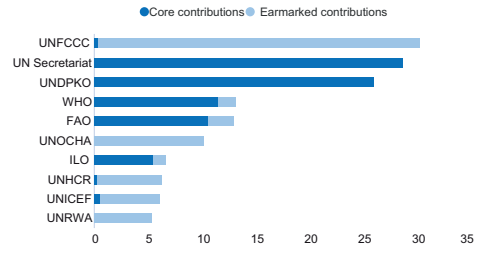


2020*
ODA
AS A SHARE
OF GNI



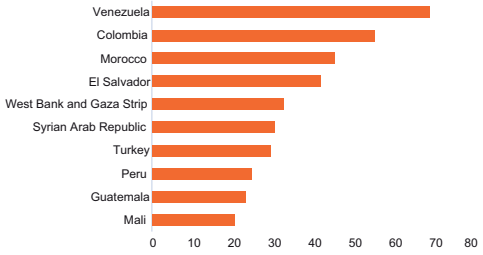
2019
ODA to least developed countries
AS A SHARE
OF GNI

Spain - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices

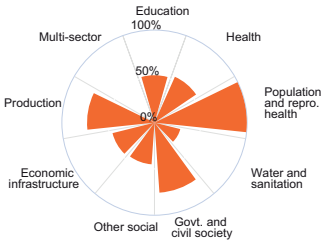


The UN system received 8.7% of total (core and earmarked) multilateral contributions, or USD 177.5 million.

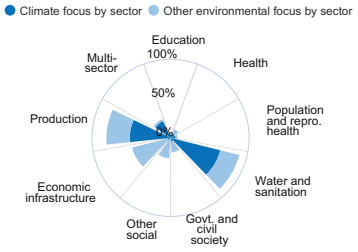
Spain - Top 10 recipients 2019
Gross disbursements, million USD, current prices



Spain - Gender focus by sector 2019
Bilateral allocable ODA, commitments, per cent

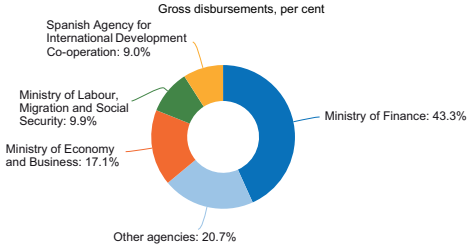


Spain - Climate and environmental focus by sector 2019
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Spain - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

63
USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-spain.*
Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Spain reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

SWEDEN

LATEST POLICY

Sweden's 2016 policy framework sets out five perspectives – poor people, rights, environment and climate, gender equality, and conflict – that provide a comprehensive foundation for Sweden's development co-operation and play to Sweden's comparative strengths.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **6.3** USD BILLION

67% BILATERAL

33% MULTILATERAL CORE

+17.1% ODA CHANGE FROM 2019 in real terms

1.14% → 0.7% TARGET

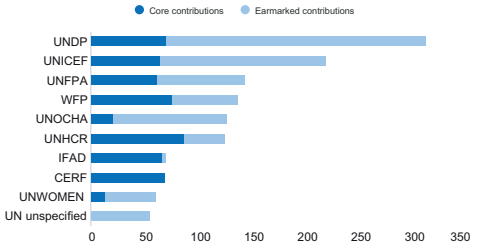
2020* ODA AS A SHARE OF GNI

0.32% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Sweden - Top 10 United Nations recipients 2019

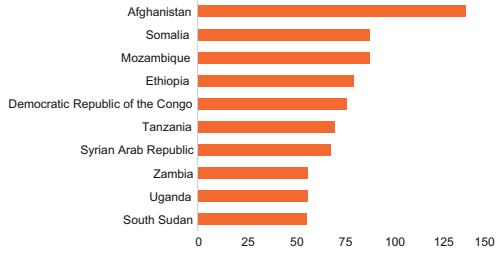
Gross disbursements, million USD, 2018 constant prices



The UN system received 54.2% of total (core and earmarked) multilateral contributions, or USD 1.7 billion.

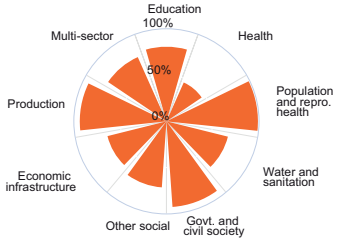
Sweden - Top 10 recipients 2019

Gross disbursements, million USD, current prices



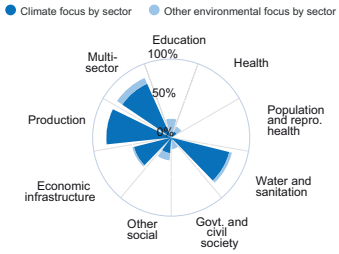
Sweden - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Sweden - Climate and environmental focus by sector 2019

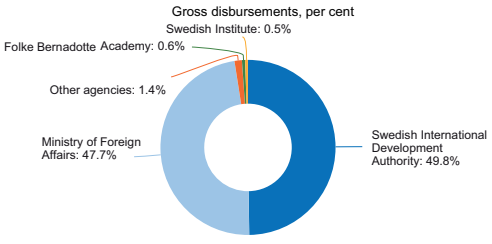
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Sweden - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

290 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-sweden.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Sweden reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

SWITZERLAND

LATEST POLICY

Switzerland's International Cooperation Strategy 2021-24 identifies four thematic priorities: 1) creating decent local jobs; 2) addressing climate change; 3) reducing the causes of forced and irregular migration; and 4) promoting the rule of law building on its extensive multilateral and humanitarian experience.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **3.6** USD BILLION

75% BILATERAL

25% MULTILATERAL CORE

+8.8% ODA CHANGE FROM 2019 in real terms

0.48% → 0.7% TARGET

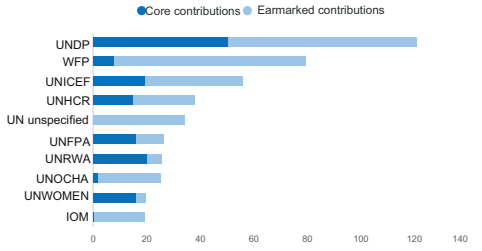
2020* ODA AS A SHARE OF GNI

0.13% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

Switzerland - Top 10 United Nations recipients 2019

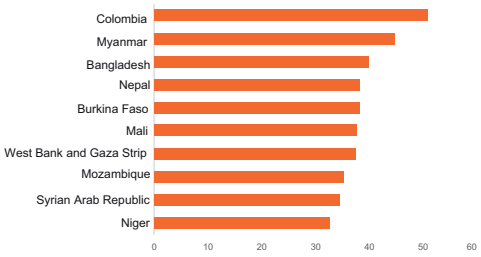
Gross disbursements, million USD, 2018 constant prices



The UN system received 43.4% of total (core and earmarked) multilateral contributions, or USD 622 million.

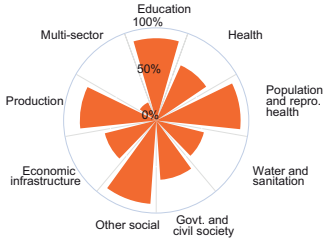
Switzerland - Top 10 recipients 2019

Gross disbursements, million USD, current prices



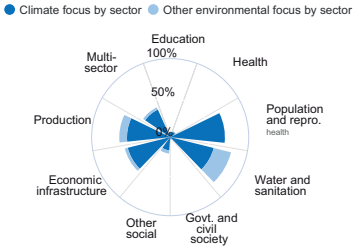
Switzerland - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



Switzerland - Climate and environmental focus by sector 2019

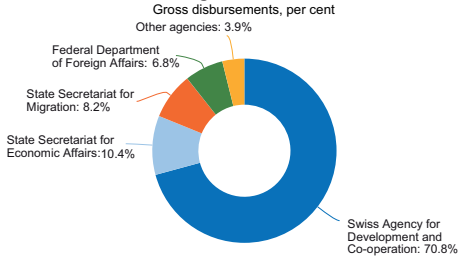
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

Switzerland - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

34 USD MILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-switzerland.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews*

*Note: *2020 data are preliminary. Switzerland reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

TURKEY

LATEST POLICY

Turkey focuses its development co-operation on promoting food security and nutrition, addressing unemployment, combating inequality, and advancing a development agenda conscious of the underlying role of peace, the rule of law and governance in achieving development goals.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
8
USD BILLION

98%
BILATERAL

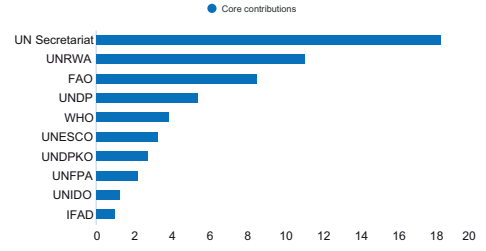
2%
MULTILATERAL CORE

+1.2%
ODA CHANGE FROM 2019
in real terms

1.12%
0.7% TARGET
2020* ODA AS A SHARE OF GNI

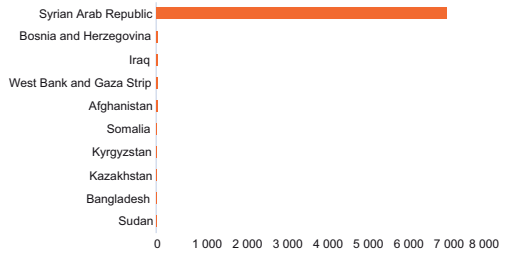
0.02%
0.15-0.2% TARGET
2019 ODA to least developed countries AS A SHARE OF GNI

Turkey - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices



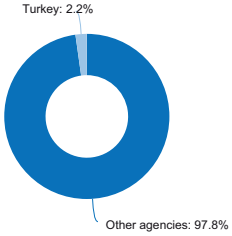
The UN system received 29.7% of total (core and earmarked) multilateral contributions, or USD 58.7 million.

Turkey - Top 10 recipients 2019
Gross disbursements, million USD, current prices



MAIN PUBLIC ACTORS

Turkey - Total ODA disbursed through government agencies
2019
Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-turkey.*

*Note: *2020 data are preliminary. Turkey reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

UNITED ARAB EMIRATES

LATEST POLICY

The United Arab Emirates' development co-operation is guided by a five-year foreign assistance policy launched in 2016. The policy focuses on transport and urban infrastructure, government effectiveness, empowerment, and women's protection.

WHERE THE MONEY GOES

2020*

ODA grant equivalent 1.7 USD BILLION

96% BILATERAL

4% MULTILATERAL CORE

-26% ODA CHANGE FROM 2020 in real terms

0.48% → 0.7% TARGET

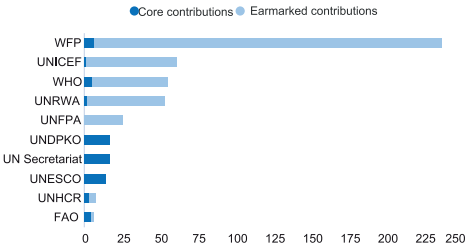
2020* ODA AS A SHARE OF GNI

0.32% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

United Arab Emirates - Top 10 United Nations recipients 2019

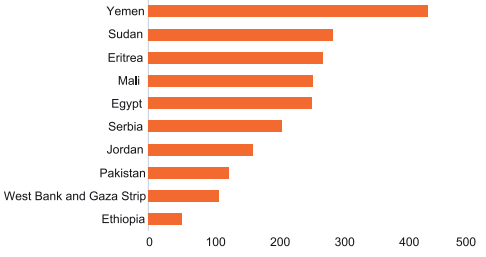
Gross disbursements, million USD, 2018 constant prices



The UN system received 94.6% of total (core and earmarked) multilateral contributions, or USD 517 million.

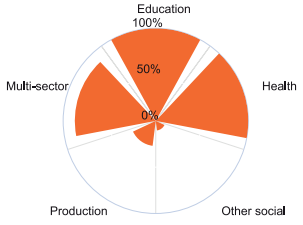
United Arab Emirates - Top 10 recipients 2019

Gross disbursements, million USD, current prices



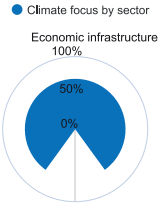
United Arab Emirates - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



United Arab Emirates - Climate and environmental focus by sector 2019

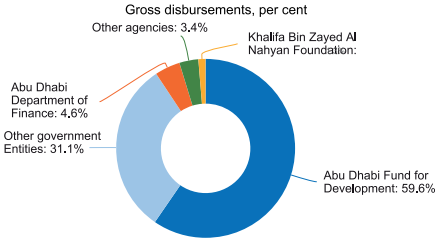
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

United Arab Emirates - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-uae.*

*Note: *2020 data are preliminary. Australia reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
UNITED KINGDOM

LATEST POLICY

The 2021 Integrated Review of security, defence, development and foreign policy describes the UK government's vision. Strategic priorities for 2021-22 include climate and biodiversity; global health security; open societies and conflict resolution; girls' education; humanitarian preparedness and response; science and technology; and trade and economic development.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **18.6** USD BILLION

68% BILATERAL

32% MULTILATERAL CORE

-10% ODA CHANGE FROM 2019 in real terms

0.70% → 0.7% TARGET

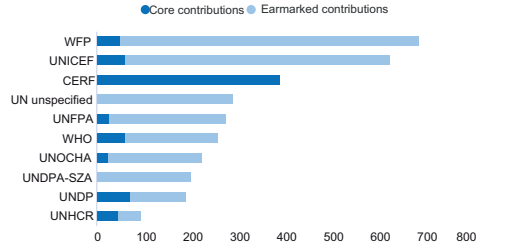
2020* ODA AS A SHARE OF GNI

0.21% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

United Kingdom - Top 10 United Nations recipients 2019

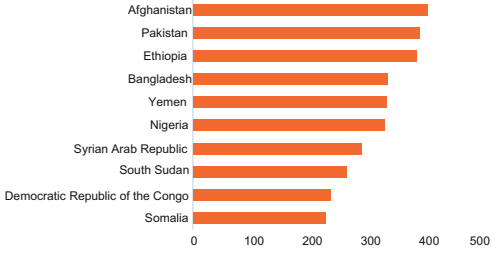
Gross disbursements, million USD, 2018 constant prices



The UN system received 35.8% of total (core and earmarked) multilateral contributions, or USD 3.7 billion.

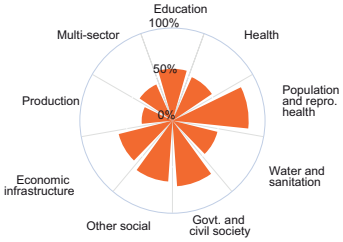
United Kingdom - Top 10 recipients 2019

Gross disbursements, million USD, current prices



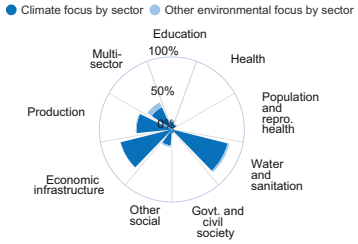
United Kingdom - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



United Kingdom - Climate and environmental focus by sector 2019

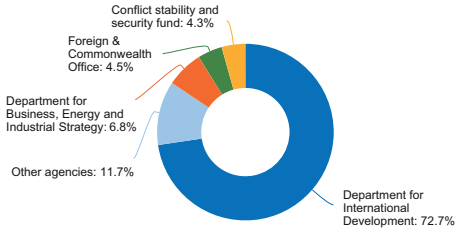
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

United Kingdom - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

1.4 USD BILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-uk.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews.*

*Note: *2020 data are preliminary. TheUnited Kingdom reports activity-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

UNITED STATES

LATEST POLICY

The US government's foreign assistance is guided by its Interim National Security Strategy. It prioritises issues such as global health and security; tackling the climate crisis; building back better economic foundations; revitalising democracy; and addressing discrimination, inequity and marginalisation.

WHERE THE MONEY GOES

2020*

ODA grant equivalent **35.5** USD BILLION

88% BILATERAL

12% MULTILATERAL CORE

+4.7% ODA CHANGE FROM 2019 in real terms

0.17% → 0.7% TARGET

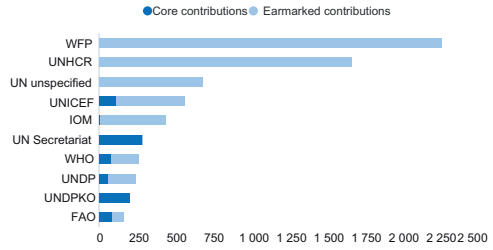
2020* ODA AS A SHARE OF GNI

0.05% → 0.15-0.2% TARGET

2019 ODA to least developed countries AS A SHARE OF GNI

United States - Top 10 United Nations recipients 2019

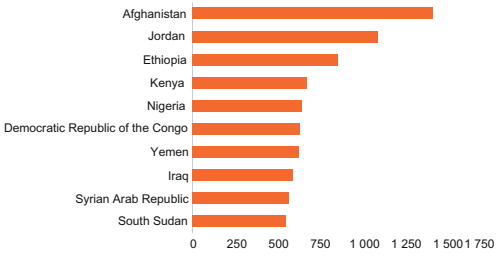
Gross disbursements, million USD, 2018 constant prices



The UN system received 64% of total (core and earmarked) multilateral contributions, or USD 7.4 billion.

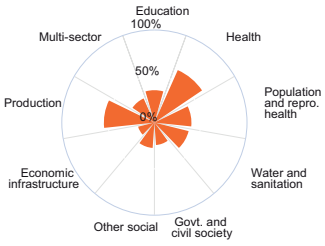
United States - Top 10 recipients 2019

Gross disbursements, million USD, current prices



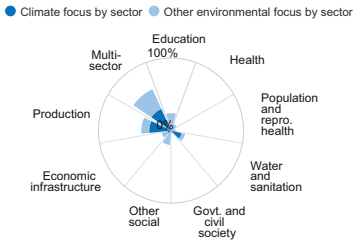
United States - Gender focus by sector 2019

Bilateral allocable ODA, commitments, per cent



United States - Climate and environmental focus by sector 2019

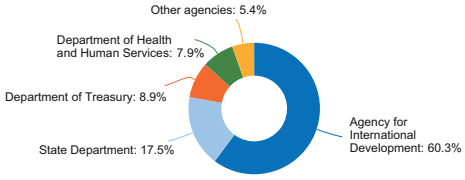
Bilateral allocable ODA, commitments, per cent



MAIN PUBLIC ACTORS

United States - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



MOBILISATION OF PRIVATE SECTOR

7.1 USD BILLION

Mobilised from the private sector by ODA in 2019

Full profile: *https://oe.cd/il/dev-coop-us.*

Latest DAC Peer Review: *https://oe.cd/dac-peer-reviews.*

*Note: *2020 data are preliminary. The United States reports activity-level data to the OECD.*

OTHER OFFICIAL PROVIDERS REPORTING AT THE AGGREGATE LEVEL TO THE OECD

This section includes information on the estimates volume and key features of development co-operation provided by six development co-operation providers that are not members of the OECD, but report regularly to the OECD their development co-operation resource flows in an aggregated or semi-aggregated manner.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
BULGARIA

LATEST POLICY

Bulgarian development co-operation supports partner countries in implementing the 2030 Agenda for Sustainable Development. Bulgaria supports multilateral commitments in development finance, development co-operation and humanitarian aid effectiveness, and climate change. Most of Bulgaria's development co-operation goes through multilateral channels, with a critical focus on environmental protection, education, health and the protection of cultural diversity.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
83.8
USD MILLION

14%
BILATERAL

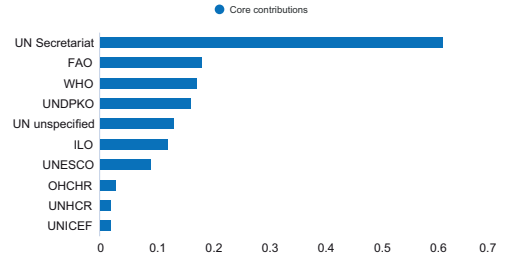
86%
MULTILATERAL CORE

+24.7%
ODA CHANGE FROM 2019
in real terms

0.13% → 0.33% TARGET**

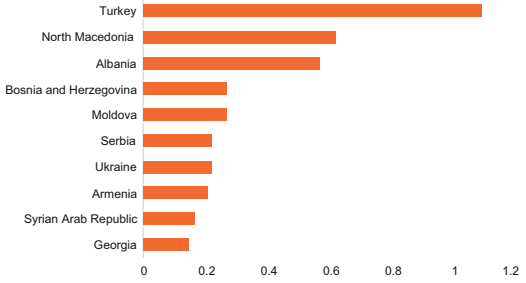
2020*
ODA
AS A SHARE OF GNI

Bulgaria - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices



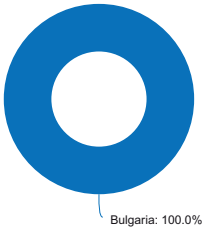
The UN system received 2.1% of total (core and earmarked) multilateral contributions, or USD 1.2 million.

Bulgaria - Top 10 recipients 2019
Gross disbursements, million USD, current prices



MAIN PUBLIC ACTORS

Bulgaria - Total ODA disbursed through government agencies 2019
Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-bulgaria.*

*Note: *2020 data are preliminary. Bulgaria reports aggregate-level data to the OECD.*

***The government has committed at the European level to achieve a 0.33% ODA/GNI ratio by 2030.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

LIECHTENSTEIN

LATEST POLICY

The 2015 Strategy of the Liechtenstein Development Service focuses on education and rural development as key sectors of Liechtenstein's development co-operation. Horizontally, Liechtenstein considers human rights, social justice, gender, climate, and the protection of the environment and resources as central themes. It partners with ten priority countries: Burkina Faso, the Plurinational State of Bolivia, Mali, Moldova, Mozambique, Niger, Peru, Senegal, Zambia and Zimbabwe.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
28
USD MILLION

76%
BILATERAL

24%
MULTILATERAL CORE

+7.2%
ODA CHANGE FROM 2019
in real terms

MAIN PUBLIC ACTORS

Liechtenstein - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-liechtenstein*

*Note: *2020 data are preliminary. Liechtenstein reports aggregate-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

MALTA

LATEST POLICY

The Official Development Assistance Policy and Framework for Humanitarian Assistance provides the overall strategic framework for Malta's development co-operation. In 2018, an Implementation Plan was launched in response to the adoption of the European level Consensus for implementing the 2030 Agenda for Sustainable Development. Malta's regional priorities are North Africa, sub-Saharan Africa and the Middle East. Malta's Implementation Plan has three main strands: 1) co-funding official development assistance projects; 2) capacity building and scholarships; and 3) humanitarian aid funding.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
58.3
USD MILLION

79%
BILATERAL

21%
MULTILATERAL CORE

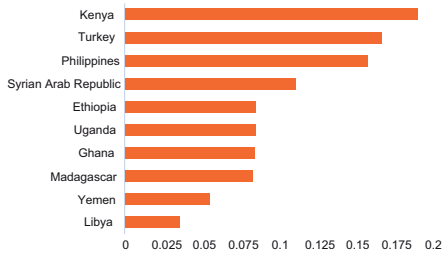
+38.3%
ODA CHANGE FROM 2019
in real terms

0.44%

0.33% TARGET**

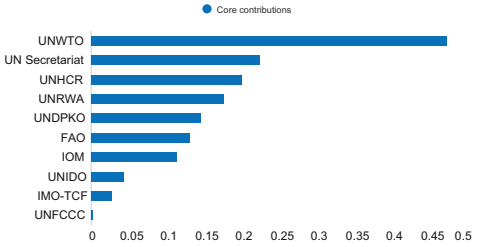
2020*
ODA AS A SHARE OF GNI

Malta - Top 10 recipients 2019
Gross disbursements, million USD, current prices



The UN system received 17.2% of total (core and earmarked) multilateral contributions, or USD 1.5 million.

Malta - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices



MAIN PUBLIC ACTORS

Malta - Total ODA disbursed through government agencies
2019
Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-malta*

*Note: *2020 data are preliminary. Malta reports aggregate-level data to the OECD.*

***The government has committed at the European level to achieve a 0.33% ODA/GNI ratio by 2030.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

RUSSIAN FEDERATION

LATEST POLICY

The Russian Federation's development co-operation is guided by the Concept of Russia's State Policy in the Field of International Development Assistance, aligning with its foreign policy, as well as with its commitments to the 2030 Agenda for Sustainable Development. The focus is mainly on bilateral aid programmes in health, poverty reduction, food security, education and science. Focus countries are those of the Commonwealth of Independent States, but also countries in sub-Saharan Africa, Asia-Pacific, the Middle East and the Caribbean.

WHERE THE MONEY GOES

2019

ODA grant equivalent **1.2** USD BILLION

56.5% BILATERAL

43.5% MULTILATERAL CORE

+22% ODA CHANGE FROM 2018 in real terms

0.07%

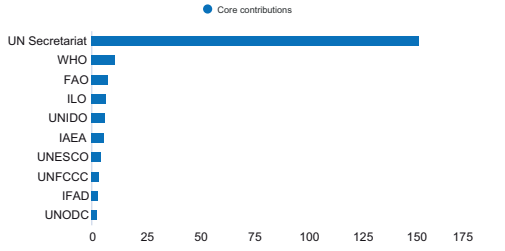
2019 **ODA** AS A SHARE OF GNI

0.00%

2019 **ODA to least developed countries** AS A SHARE OF GNI

Russian Federation - Top 10 United Nations recipients 2019

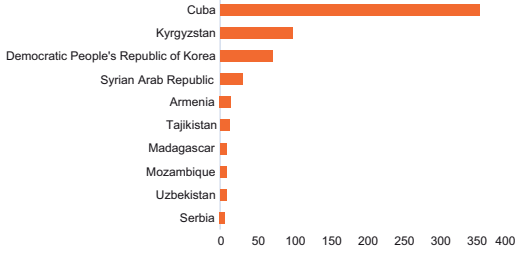
Gross disbursements, million USD, 2018 constant prices



The UN system received 41.6% of total (core and earmarked) multilateral contributions, or USD 222.4 million.

Russian Federation - Top 10 recipients 2019

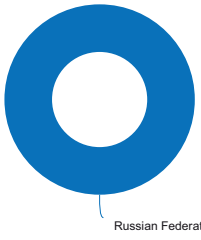
Gross disbursements, million USD, current prices



MAIN PUBLIC ACTORS

Russian Federation - Total ODA disbursed through government agencies 2019

Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-russia*

*Note: *2020 data are preliminary. The Russian Federation reports aggregate-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

TAIPEI

LATEST POLICY

Chinese Taipei's development co-operation is driven by the priorities of the 2009 White Paper on Foreign Aid Policy, placing partnerships for progress and sustainable development at the heart of the country's foreign policies. Priority sectors for the Taiwan International Co-operation and Development Fund's programming include the environment, agriculture, education, and information and communication technology.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
403
USD MILLION

80%
BILATERAL

20%
MULTILATERAL CORE

+25.8%
ODA CHANGE FROM 2019
in real terms

0.06%

2020*
ODA
AS A SHARE OF GNI

Full profile: *https://oe.cd/il/dev-coop-chinese-taipei.*

*Note: *2020 data are preliminary. Chinese Taipei reports aggregate-level data to the OECD.*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE
THAILAND

LATEST POLICY

Thailand's development co-operation is guided by its "Philosophy of Sufficiency Economy" for balanced and stable development. Through its development co-operation, Thailand aims to help strengthen the enabling environment for the economic and social development of its partners. Priority themes include economic development, climate change adaptation, public health, and agriculture and food security.

WHERE THE MONEY GOES

2020*

ODA grant equivalent
136
USD MILLION

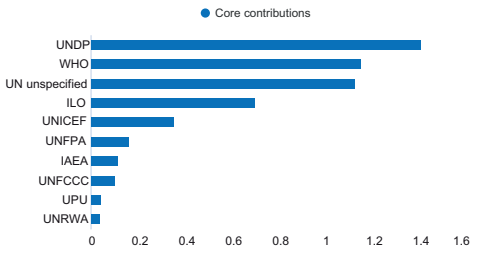
51%
BILATERAL

49%
MULTILATERAL CORE

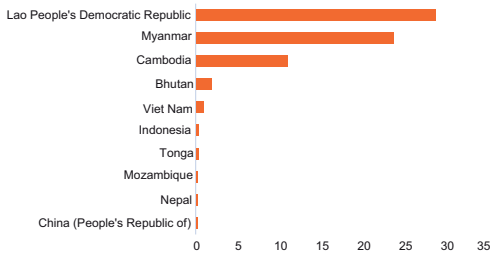
+7%
ODA CHANGE FROM 2019
in real terms

0.03%
2020*
ODA AS A SHARE OF GNI

Thailand - Top 10 United Nations recipients 2019
Gross disbursements, million USD, 2018 constant prices

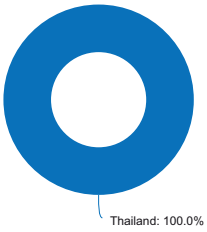


Thailand - Top 10 recipients 2019
Gross disbursements, million USD, current prices



MAIN PUBLIC ACTORS

Thailand - Total ODA disbursed through government agencies
2019
Gross disbursements, per cent



Full profile: *https://oe.cd/il/dev-coop-thailand*

*Note: *2020 data are preliminary. Thailand reports aggregate-level data to the OECD.*

OTHER OFFICIAL PROVIDERS NOT REPORTING TO THE OECD

This section includes information on the estimated volume and key features of development co-operation provided by five providers that are either on their way to becoming OECD member countries, are OECD key partners and/or that are important international partners in financing for development.

The OECD estimates the volume of their funding based on official government reports, complemented by contributions to UN agencies (excluding local resources) compiled by the United Nations Department of Economic and Social Affairs and web-based research (mainly on contributions to multilateral organisations) in an internationally comparable manner.

This section also includes information on volumes of development co-operation as per providers' own methodologies and information on their institutional set-up.

Brazil

Introduction

The scope of Brazilian South-South and trilateral co-operation has expanded and facilitated regional, sub-regional and interregional integration; provided innovative approaches for collective actions; and strengthened its contribution to sustainable development in its three dimensions (social, economic and environmental). Brazilian co-operation is implemented under principles that include respect for national sovereignty, non-interference in the internal affairs of other countries and non-conditionality. These principles were reiterated in 2019 at the Second United Nations High-Level Conference on South-South Cooperation (BAPA+40).

Brazilian South-South co-operation includes initiatives in agriculture, public health, food and nutritional security, social development, science and technology, education, energy, industry, trade, justice, environment, public safety and security, and employment. Brazil has developed projects in most Latin American and Caribbean countries; with the Community of Portuguese Language Countries and its members in Africa and Asia; as well as with countries in Africa, Asia and Eastern Europe.

Brazilian South-South co-operation operates under bilateral, trilateral and regional formats. It includes knowledge-sharing, capacity building, humanitarian co-operation, scholarships and technological development. For Brazil, trilateral co-operation is not a new modality, as it is well-established as a regular tool in its development co-operation.

Brazil is one of the five key partners of the OECD and has actively engaged with different OECD bodies and activities in the past two decades. Brazil adhered to the OECD *Recommendation of the Council for Development Co-operation Actors on Managing the Risk of Corruption* and the *OECD-DAC Recommendation on Good Pledging Practice* and participated in the 2019 DAC Senior-level Meeting and the LAC-DAC Dialogue on Development Co-operation.

Estimates of international development co-operation

According to OECD estimates, in 2019, Brazil's contributions to international organisations reached USD 148.4 million, down from USD 316 million in 2017. Most of these multilateral contributions were directed to the United Nations system. Brazil's 2019 bilateral co-operation figures were not yet available at the time of writing this profile.

According to the Brazilian Cooperation Agency, Brazil's international development co-operation reached a total of USD 2.1 billion in the 2017-18 biennium, advancing co-operation activities with 83 partner countries. Brazilian contributions to multilateral organisations totalled USD 274.5 million in 2018, USD 195.3 million in 2017 and USD 840.5 million in 2016 (IPEA and ABC, 2020).

References

IPEA and ABC (2020), *Relatório Cobradi: Dimensionamento de Gastos das Instituições da Administração Pública Federal na Cooperação Brasileira para o Desenvolvimento Internacional 2017-2018 [COBRADI Report: Scaling Spending of Federal Public Administration Institutions in Brazilian Cooperation for International Development 2017-2018]* (in Portuguese), Institute for Applied Economic Research and Brazilian Cooperation Agency, Brasilia, www.abc.gov.br/imprensa/mostrarConteudo/1602.

FULL PROFILE

https://oe.cd/il/dev-coop-brazil

Chile

Introduction

In 2020, the Chilean Agency for International Development Cooperation (AGCID) celebrated its 30th anniversary with a global portfolio of programmes that extends beyond Latin America and the Caribbean to countries in Africa and Asia.

Having graduated from the DAC list of eligible countries to receive official development assistance (ODA) in 2017, Chile is increasing its development co-operation partnerships in line with its new status as a high-income country by supporting inclusive and sustainable development in partner countries. At the same time, Chile has devised a strategy aiming to mitigate the effects domestically of graduation from ODA eligibility and is playing a prominent role in international debates, including on "Development in Transition", in partnership with countries in the region, the European Union, and the United Nations Economic Commission for Latin America and the Caribbean.

Overall, Chile's vision, policies and the 2015 International Development Co-operation Strategy are aligned with the 2030 Agenda on Sustainable Development and Chilean foreign policy. Given its dual role as a development co-operation provider and beneficiary country, Chile also aims to build new strategic partnerships while continuing to benefit from co-operation to address its own domestic development gaps.

Chile joined the OECD in 2010. Chile adheres to the OECD *Recommendation of the Council for Development Co-operation Actors on Managing the Risk of Corruption* and the OECD *Recommendation of the Council on Policy Coherence for Sustainable Development*. In 2019, Chile co-chaired the LAC-DAC Dialogue on Development Co-operation and participated in the DAC Senior-level Meeting.

Estimates of international development co-operation

According to OECD estimates, in 2019, Chile's international development co-operation reached USD 31 million, up from USD 26.7 million in 2018. Bilateral figures are based on Chile's reporting to Total Official Support for Sustainable Development (TOSSD) on its cross-border resources to developing countries. Of this, Chile's contributions to multilateral organisations totalled USD 24.1 million and were channelled through the United Nations system. Chile's bilateral co-operation reached USD 6.9 million in 2018.

According to AGCID, Chile's budget for outgoing co-operation was USD 7.1 million in 2019, of which 42.5% went to bilateral and triangular technical co-operation activities and 57.5% went to human capital development (e.g. scholarships).

FULL PROFILE

https://oe.cd/il/dev-coop-chile

China (People's Republic of)

Introduction

The establishment of the China International Development Co-operation Agency (CIDCA) in 2018 changed the domestic governance model of development co-operation in the People's Republic of China (hereafter "China"). This institutional evolution is also an acknowledgement that the country has become a major official provider of development co-operation. As a key national entity, CIDCA is in charge of formulating strategic aid guidelines, plans and policies for foreign aid; co-ordinating and offering advice on major foreign aid issues; advancing the country's reforms in matters related to foreign aid; and identifying and evaluating major programmes of development co-operation (Government of China, 2018). In April 2021, Mr. Zhaohui Luo was appointed as the new Head of CIDCA.

In January 2020, China launched a new foreign aid emblem, "China aid for shared future", which reflects a more active foreign policy for China in the field of foreign aid. The new emblem has been actively used during the COVID-19 pandemic to distribute medical equipment and medical supplies and dispatch medical experts. In January 2021, China's State Council published a new White Paper on International Development Cooperation in the New Era, which describes China's approach to development co-operation, stressing China's role as a developing country and its focus on South-South co-operation. It also provides some examples of aid projects.

China has been providing aid to developing countries since its foundation and for decades had followed theEight Principles for Economic Aid and Technical Assistance to Other Countries. Since 2012, the country has progressively stepped up its development co-operation, setting up specialised institutions, such as the South-South Cooperation Assistance Fund in 2015 and the new agency, CIDCA, in 2018.

Estimates of international development co-operation

According to OECD estimates, in 2019, China's international development co-operation reached USD 4.8 billion, up from USD 4.5 billion in 2018. Chinese contributions to multilateral organisations totalled USD 1.6 billion. These were primarily channelled through regional development banks (59.6%) – especially the Asian Infrastructure Investment Bank – and to the United Nations (35.5%).

References

Government of China (2020), *White Paper on Fighting COVID-19: China in Action*, State Council Information Office of the People's Republic of China, http://en.cidca.gov.cn/pdf/FullTextFightingCOVID-19ChinainAction.pdf.

Government of China (2018), "Administrative measures for foreign aid", China International Development Cooperation Agency, Beijing, consultation draft.

FULL PROFILE

https://oe.cd/il/dev-coop-china

India

Introduction

India's approach to development co-operation is embedded in its foreign policy and stresses solidarity with developing countries. The most fundamental principle in India's development co-operation is respecting its partners' priorities and showing solidarity with other developing countries. Depending on the priorities of its partner countries, India's development co-operation ranges from commerce to culture, energy to engineering, health to housing projects, information technology to infrastructure, sports to science, disaster relief and humanitarian assistance to restoration and preservation of cultural and heritage assets (MEA, 2021).

The focus of India's development assistance has been on countries in its immediate neighbourhood (under the slogan of "putting Neighbourhood first"). However, India is also expanding its development co-operation to countries in Africa, Asia-Pacific, and Latin America and the Caribbean. India's development co-operation is managed through the Development Partnership Administration within the Ministry of External Affairs and the Ministry of Finance manages multilateral assistance and exercises administrative oversight over the concessional loans and credit lines provided by the EXIM Bank.

India is also engaged in triangular co-operation, partnering with several international organisations and Development Assistance Committee members, such as Japan, Norway, the United Kingdom, the United States and others.

Estimates of international development co-operation

According to OECD estimates, India's international development co-operation reached USD 1.6 billion in 2019, up from USD 1.3 billion in 2018. India's contributions to multilateral organisations totalled USD 420.1 million. These were primarily channelled through regional development banks (66%) – mainly the Asian Infrastructure Investment Bank – as well as through the United Nations (19%) and the World Bank Group (10%).

References

MEA (2021), "Development partnerships", web page, Ministry of External Affairs, New Delhi, https://www.mea.gov.in/development-partnership.htm.

FULL PROFILE

https://oe.cd/il/dev-coop-india

Indonesia

Introduction

Indonesia has made development co-operation one of its priorities to advance sustainable development both at home and abroad, as well as to advance progress towards the achievement of the Sustainable Development Goals. In addition, strengthened development co-operation is seen as a means to optimise the country's foreign policy.

Indonesia's National Medium-Term Development Plan (NMTDP) 2020-2024 places emphasis on international development co-operation. Four strategies are envisaged to strengthen Indonesia's development co-operation: 1) increasing new financing sources and mechanisms; 2) creating an enabling environment for private sector engagement in development co-operation; 3) enhancing South-South and triangular co-operation for trade and investment; and 4) strengthening institutions for aid and international development co-operation. The three main themes of Indonesia's development co-operation are development, economic issues, and good governance and peacebuilding. They are implemented through technical co-operation programmes, training and workshops, seminars and knowledge-sharing.

Indonesia channels funds through multilateral organisations and collaborates with several bilateral donors, United Nations agencies and multilateral development banks under a triangular co-operation framework to provide technical assistance and knowledge transfer to developing countries. Indonesia also engages in triangular co-operation with Development Assistance Committee members. With the OECD, Indonesia engages in exchanges of experiences on strengthening ecosystems for development co-operation and the achievement of the 2030 Agenda through South-South and triangular co-operation.

Estimates of international development co-operation

According to OECD estimates, Indonesia's international development co-operation reached USD 157 million in 2019, up from USD 139 million in 2017. The OECD estimates include information that Indonesia provided to the OECD in 2019 for the pilot on Total Official Support for Sustainable Development (TOSSD). Indonesia's contributions to multilateral organisations totalled USD 141.4 million. These were primarily channelled through regional development banks (83%) – mainly the Asian Infrastructure Investment Bank – and through the United Nations (17%).

Indonesia estimates that between 2016 and 2019, its development co-operation financing reached a cumulative total of USD 989.27 million. The funds were channelled as capital contributions to multilateral organisations (77%), mainly the Asian Infrastructure Investment Bank, which received the largest share (83%); the Islamic Development Bank; the Islamic Corporation for the Development of the Private Sector; the International Fund for Agricultural Development; and the International Development Association. The remaining 23% was channelled through international organisations and South-South and triangular co-operation.

FULL PROFILE

https://oe.cd/il/dev-coop-indonesia

South Africa

Introduction

South Africa's Department of International Relations and Cooperation's (DIRCO) African Renaissance and International Cooperation Fund (ARF) Strategic Plan 2020-2025 emphasises co-operation with the African continent and strengthening South-South relations, focusing on conflict resolution and creating conditions in which socio-economic development can take place.

The priority sectors of its bilateral development co-operation are peace, security, post-conflict reconstruction, regional integration, governance and humanitarian assistance. South Africa provides its bilateral development co-operation mainly in the form of technical co-operation.

South Africa focuses its South-South and triangular co-operation on the Southern African Development Community member countries. South Africa engages in triangular co-operation, partnering with several Development Assistance Committee members, such as Canada, Germany, Ireland, Norway, Spain, Sweden and the United States, to support other African countries in areas such as governance, public security and post-conflict reconstruction.

South Africa adheres to the OECD *Recommendation of the Council for Development Co-operation Actors on Managing the Risk of Corruption*. Since 2007, South Africa has been one of the five Key Partners to the OECD, contributing to the OECD's work comprehensively, with active participation in different OECD activities.

Estimates of international development co-operation

According to OECD estimates, South Africa's international development co-operation reached USD 106 million in 2019, decreasing from USD 111 million in 2018. South Africa's contributions to multilateral organisations totalled USD 71.3 million. These were primarily channelled through the African Union (37%), the United Nations (24%) and regional development banks (32%).

According to the *African Renaissance and International Cooperation Fund Strategy Plan 2020-2025*, between 2015 and 2020, 49% of ARF allocations were directed to humanitarian assistance-related support, 9% to democracy and good governance, and 4% to conflict resolution. The plan for 2020-25 indicates a downward trend in fiscal allocations to various government departments, including the Department of International Relations and Cooperation, foreseeing the need to prioritise its allocations and maximise the impact of its interventions.

FULL PROFILE

https://oe.cd/il/dev-coop-south-africa

Tables

Table 1. Estimates of gross concessional flows for development co-operation, 2014-19

Million USD

Country	2014	2015	2016	2017	2018	2019	Source
Brazil	293	112	316	..	..	..	Institute of Applied Economic Research (IPEA) and Brazilian Cooperation Agency (ABC)
Chile	49	33	33	24	27	31	Ministry of Finance
China (People's Republic of)	3 401	3 113	3 615	4 792	4 474	4821	Fiscal Yearbook, Ministry of Finance
Colombia[4]	45	42	..	198	..	150	Strategic institutional plans, Presidential Agency of International Cooperation
Costa Rica[1]	24	10	9	8	3	4	Annual budget laws, Ministry of Finance
India[2]	1 398	1 772	1 695	2 394	1 280	1601	Annual budget figures, Ministry of Finance
Indonesia	56	..	144	223	139	157	Ministry of National Development Planning
Mexico[4]	169	207	220	340	..	..	Mexican Agency for International Development Cooperation (AMEXCID)
South Africa[3]	148	100	95	104	111	106	Estimates of public expenditures, National Treasury. Annual Reports. Department International Relations & Cooperation.

Note: 1. Bilateral figures for Costa Rica were provided by MIDEPLAN and include the cost of experts in charge of implementing South-South and Triangular Co-operation in 2017 and 2018, both for co-operation offered and received by Costa Rica; 2. Figures for India are based on their fiscal years. For example, 2012 data correspond to fiscal year 2012/13. For South Africa, the average ofo the 2017-2018 and 2018/2019 figures has been used for the last three exercises.; 3. Bilateral figures for 2018 development co-operation activities were not available for Brazil, Colombia and Mexico at the time when these estimates were produced.

Table 2. Estimated development-oriented contributions to and through multilateral organisations, 2019

Million USD, current prices

2019	Brazil		Chile		China		Colombia		Costa Rica		India		Indonesia		Mexico		South Africa	
Channel name	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core
United Nations																		
UN Department of Peacekeeping Operations (15%)	5.99	-	1.2	-	154.5	-	0.6	-	0.1	-	1.7	-	1.1	-	2.6	-	0.6	-
International Organization for Migration (100%)	1.9		0.2	3.1	3.9	0.1	0.2	36.5	0.0	0.02	0.4	-	-	-	0.7	0.3	0.2	0.0
United Nations Organization (18%)	52.2	0.2	7.2	0.4	212.5	3.8	5.1	0.1	1.1	0.004	14.8	0.8	9.6	0.2	22.9	0.1	4.8	0.0
World Health Organization (76%)	10.7	0.3	1.1	-	22.2	4.4	0.9	-	0.1	-	2.1	11.4	1.4	-	4.0	0.0	1.0	-
United Nations Relief and Works Agency for Palestine Refugees (100%)	-	3.5	0.01	-	-	1.0	-	-	-	-	5.0	-	1.2	-	0.8	-	-	-
Food and Agriculture Organization (51%)	15.1	1.7	2.7	0.1	30.9	3.0	1.3	-	0.2	-	2.9	-	2.0	-	5.7	5.2	2.2	-
United Nations Office on Drugs and Crime (100%)	-	-	-	-	0.3	1.6	-	68.1	-	-	0.1	-	0.1	0.0	-	2.3	-	-
UN Educational, Scientific and Cultural Organization (60%)	7.0	1.2	1.0	2.0	28.7	3.6	0.7	0.1	0.1	0.1	2.0	2.4	1.3	0.1	3.1	0.3	0.6	0.0
United Nations Children's Fund (100%)	1.8	-	0.1	-	1.8	13.0	-	-	0.02	-	0.9	1.7	0.3	-	0.2	-	-	-
International Labour Organization (60%)	10.2	0.5	1.1	-	21.2	0.4	0.9	-	0.1	-	2.0	-	1.3	-	3.8	-	1.0	-
World Food Programme (100%)	-	0.4	-	-	0.5	27.6	-	-	-	-	-	1.0	-	-	-	-	-	1.1
International Fund for Agricultural Development (100%)	3.9	-	-	-	26.9	5.0	-	-	-	-	28.4	-	3.0	-	-	-	-	-
UN Industrial Development Organization (100%)	4.9	-	0.5	-	10.1	5.0	0.4	0.1	0.1	-	0.9	0.7	0.6	0.0	1.8	-	0.5	1.9
UN Pan American Health Organisation (100%)	12.1	-	1.4	-	-	-	1.6	-	0.2	-	-	-	-	-	6.3	-	-	-
UN Development Programme (100%)	-	-	0.4	-	4.6	-	-	-	0.7	-	4.6	-	0.9	-	-	-	0.9	-
International Atomic Energy Agency (33%)	5.0	3.5	0.5	0.4	9.7	0.4	0.4	0.0	0.1	0.2	0.9	0.7	0.6	0.4	1.9	1.3	0.4	0.7
Inter-Agency Pooled Funds (excluding OCHA-CERF)	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 2. Estimated development-oriented contributions to and through multilateral organisations, 2018 (*Continued*)

2019	Brazil		Chile		China		Colombia		Costa Rica		India		Indonesia		Mexico		South Africa	
Channel name	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core
United Nations																		
United Nations Environment Programme (UNEP)	2.0	0.01	0.2	0.02	6.9	2.1	0.2	0.01	0.1	0.005	0.6	0.5	0.4	-	1.8	-	0.3	0.1
United Nations High Commissioner for Refugees (UNHCR)	-	1.1	-	-	-	1.9	-	0.1	0.01	-	-	-	0.1	-	0.1	-	-	0.02
United Nations Human Settlement Programme (UNHABITAT)	-	0.5	0.0	-	0.2	0.9	-	0.3	-	-	0.1	0.0	-	-	-	6.3	0.1	-
United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA)	-	-	-	-	-	0.1	-	0.0	-	-	-	-	-	-	-	-	-	-
United Nations Department of Economic and Social Affairs (UN-DESA)	-	0.0	-	-	-	4.3	-	(0.1)	-	-	-	-	-	-	-	0.1	-	-
United Nations Economic Commission for Latin America and the Caribbean (UN-ELAC)	-	-	-	0.2	-	-	-	0.2	-	0.1	-	-	-	-	-	0.3	-	-
United Nations Entity for Gender Equality and the Empowerment of Women (UN Women)	-	0.3	-	-	2.0	-	-	-	0.0	-	-	-	0.1	-	0.1	-	0.0	-
Office of the United Nations High Commissioner for Human Rights (UN-OHCHR)	-	-	-	0.0	-	0.8	-	-	-	0.0	-	0.3	-	-	-	0.2	-	-
United Nations Population Fund (UNFPA)	-	-	-	-	1.7	-	-	-	0.0	-	0.5	-	0.0	-	0.1	-	0.0	-
World Meteorological Organization (WMO)	0.4	-	0.0	-	0.8	0.0	0.0	-	0.0	-	0.1	-	0.0	-	0.1	-	0.0	-
Other United Nations	0.016	-	0.1	0.2	0.3	1.9	0.0	0.2	0.0	0.1	0.1	0.0	0.0	-	0.1	0.3	0.1	0.1
Total UN	133.2	13.2	17.8	6.3	539.9	80.9	12.2	105.7	3.0	0.5	67.9	19.6	24.1	0.7	56.0	16.8	12.9	4.0

Table 2. Estimated development-oriented contributions to and through multilateral organisations, 2018 (*Continued*)

2019	Brazil		Chile		China		Colombia		Costa Rica		India		Indonesia		Mexico		South Africa	
Channel name	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core	Core	Non-core
								United Nations										
Regional Development Banks																		
Islamic Development Bank (100%)	-	-	-	-	-	-	-	-	-	-	-	-	3.0	-	-	-	-	-
African Development Bank (100%)	2.0	-			0.9	4.5					1.7	0.5					22.6	-
Asian Infrastructure Investment Bank (85%)	-	-	-	-	1,012.5	-	-	-	-	-	284.5	-	114.3	-	-	-	-	-
Development Bank of Latin America (CAF) (100%)	-	-	-	-	-	-	0.0	-	0.04	-	-	-	-	-	-	-	-	-
Caribbean Development Bank (100%)						1.5		0.9	0.0									
Total Regional Development Banks	2.0	-	-	-	1,013.5	6.0	0.0	0.9	0.1	-	286.2	0.5	117.3	-	-	-	22.6	-
World Bank Group																		
World Bank	-		-		67.1		-		0.4		46.0		-		-		-	
IDA	-	-	-	-	1.3	-	-	-	-	-	4.1	-	366.7	-	-	-	0.1	-
Total WB Group	-	-	-	-	67.1	-	-	-	0.4	-	46.0	-	-	-	-	-	0.1	-
The Global Fund (100%)					18.0						20.0						5.0	
African Union (100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.9	-
TOTAL MULTILATERAL	135.2	13.2	17.8	6.3	1,638.4	86.9	12.2	106.5	3.5	0.5	420.1	20.1	141.4	0.7	56.0	16.8	67.4	4.0

Note: Data include only development-related contributions. DAC coefficients – the percentage of an organisation's core budget allocated to developmental purposes in developing countries (see first column in parenthesis) – are applied to core contributions. Lastly, local resources, financing from a country through multilateral organisations destined to programmes within that same country, are excluded. The information in this table is mainly based on data from the UN Department of Economic and Social Affairs (DESA), www.aidflows.org; and websites of other multilateral organisations and national publications of the countries involved. Not all data on contributions to multilateral organisations are made publicly available, so the presented information may not be complete.



PRIVATE PHILANTHROPIC PROVIDERS REPORTING TO THE OECD

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

ARCADIA FUND

INTRODUCTION

The Arcadia Fund supports work to preserve endangered cultural heritage, protect endangered ecosystems and promote access to knowledge. Its aim is to defend the complexity of human culture and the natural world, so that coming generations can build a vibrant, resilient and green future.

FINANCING

IN 2019

Gross private development finance

55

USD MILLION

100%

BILATERAL

0%

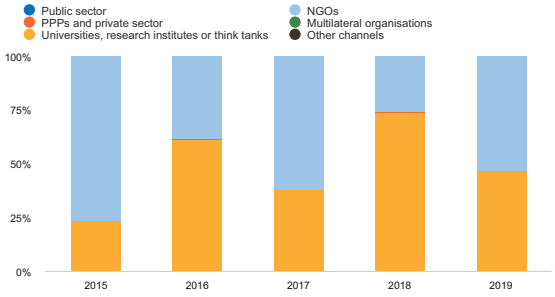
MULTILATERAL CORE

100% through grants

0% through programme-related investments

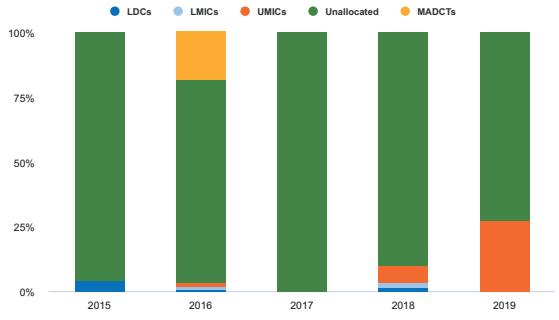
Arcadia Fund - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



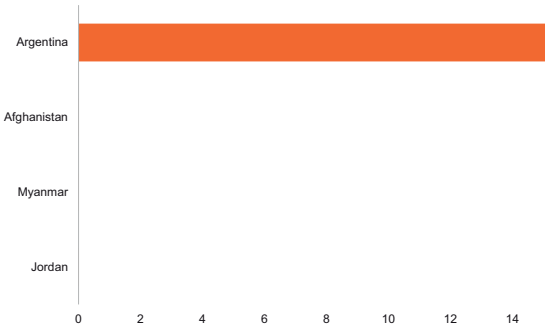
Arcadia Fund - Bilateral private development finance by income group

Gross disbursements, per cent



Arcadia Fund - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-arcadiafnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Arcadia Fund reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

ARCUS FOUNDATION

INTRODUCTION

The Arcus Foundation partners with experts and advocates for change that supports global human rights and conservation movements. International programmes serving developing countries include Social Justice and Great Apes & Gibbons.

FINANCING

IN 2019

Gross private development finance

15

USD MILLION

100%

BILATERAL

0%

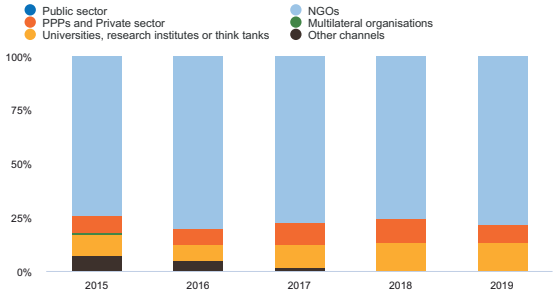
MULTILATERAL CORE

100% through grants

0% through programme-related investments

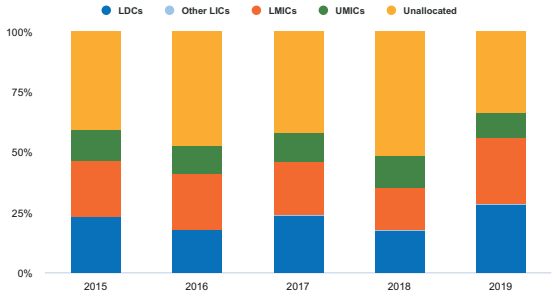
Arcus Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



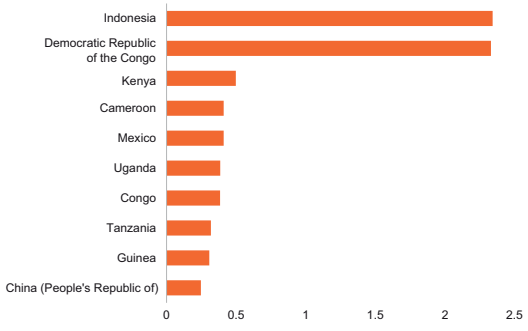
Arcus Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Arcus Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-arcusfnd*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Arcus Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

BBVA MICROFINANCE FOUNDATION

INTRODUCTION

The BBVA Microfinance Foundation's aim is to promote the sustainable development of people living in vulnerable conditions by using productive finance. This includes providing financial services, training and advice so that people in vulnerable conditions can progress through the net income derived from their productive activities.

FINANCING

IN 2019

Gross private development finance

1.3

USD BILLION

100%

BILATERAL

0%

MULTILATERAL CORE

0% through grants

100% through programme-related investments

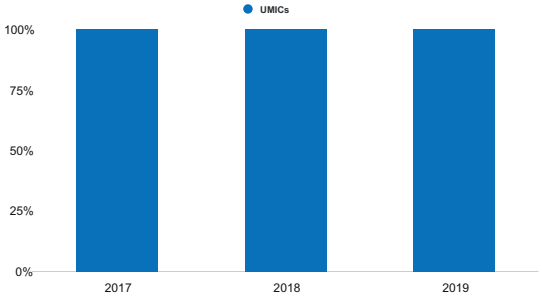
BBVA Microfinance Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



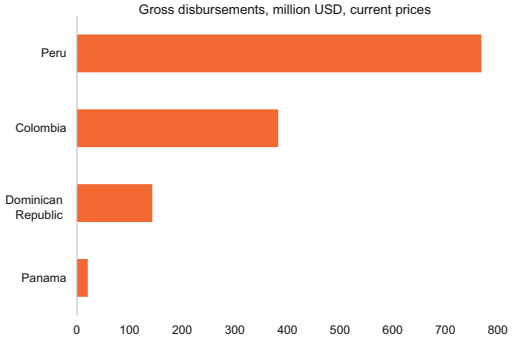
BBVA Microfinance Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



BBVA Microfinance Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-bbvamf.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Arcus Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

BERNARD VAN LEER FOUNDATION

INTRODUCTION

The Bernard van Leer Foundation works worldwide to inspire and inform large-scale action to improve the health and well-being of babies, toddlers and the people who care for them. It provides financial support and expertise to partners in government, civil society and business to help test and scale effective services for young children and families.

FINANCING

IN 2019

Gross private development finance

14

USD MILLION

100%

BILATERAL

0%

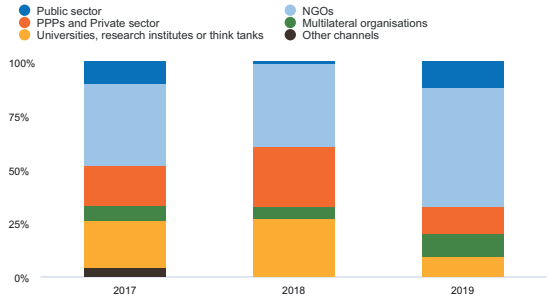
MULTILATERAL CORE

100% through grants

0% through programme-related investments

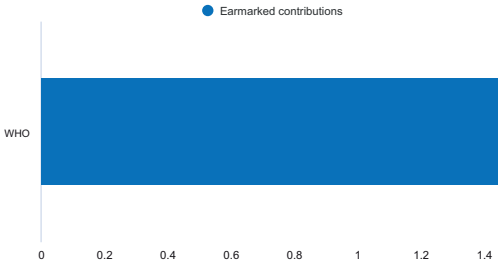
Bernard van Leer Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



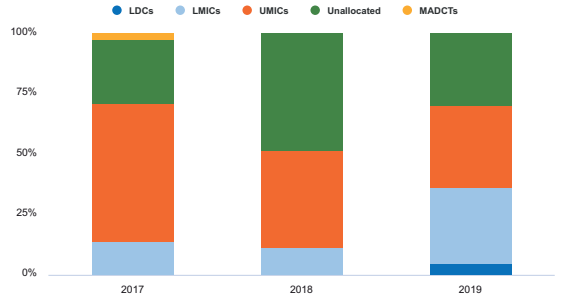
Bernard van Leer Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



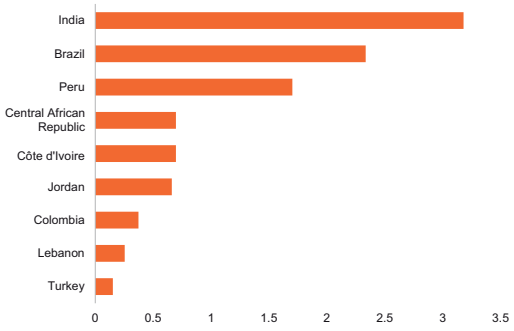
Bernard van Leer Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Bernard van Leer Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-bvanleerfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Bernard van Leer Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

BILL AND MELINDA GATES FOUNDATION

INTRODUCTION

The Bill & Melinda Gates Foundation is guided by the belief that every life has equal value. It works to help all people lead healthy, productive lives. In developing countries, the foundation focuses on improving people's health and giving them the chance to lift themselves out of hunger and extreme poverty. Its approach to grant making emphasises collaboration, innovation, risk-taking and results.

FINANCING

IN 2019

Gross private development finance

4.1

USD BILLION

100%

BILATERAL

0%

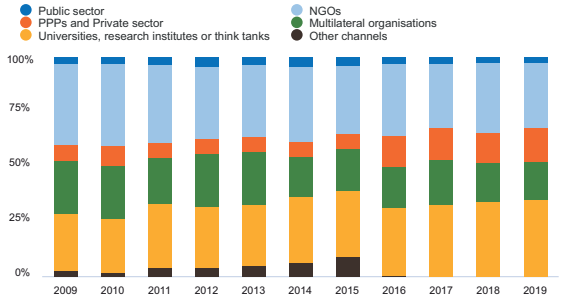
MULTILATERAL CORE

99.9% through grants

0.1% through programme-related investments

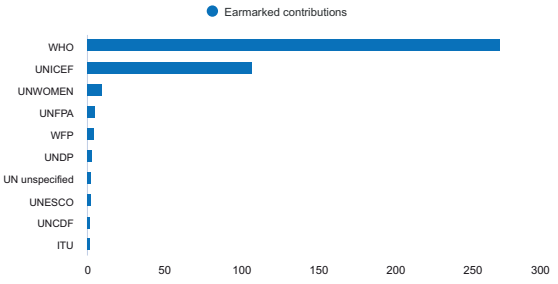
Bill & Melinda Gates Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



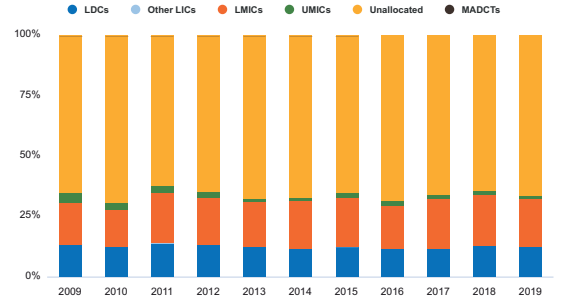
Bill & Melinda Gates Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



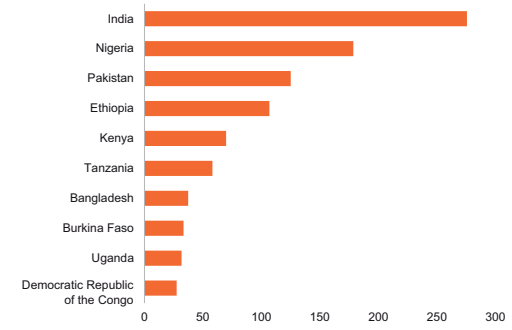
Bill & Melinda Gates Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Bill & Melinda Gates Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-bmgf.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Bill and Melinda Gates Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

CARNEGIE CORPORATION OF NEW YORK

INTRODUCTION

Guided by its funder's vision, the Carnegie Foundation has devoted unremitting effort toward international peace and the advancement of education and knowledge to support education activities across the United States, and later the world.

FINANCING

IN 2019

Gross private development finance

24

USD MILLION

100%

BILATERAL

0%

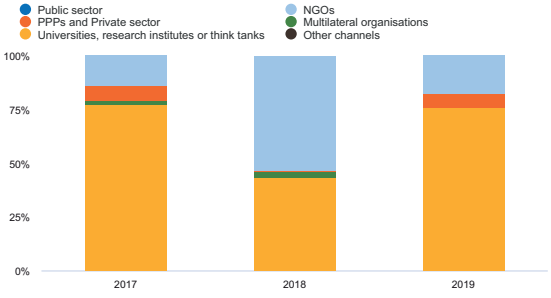
MULTILATERAL CORE

100% through grants

0% through programme-related investments

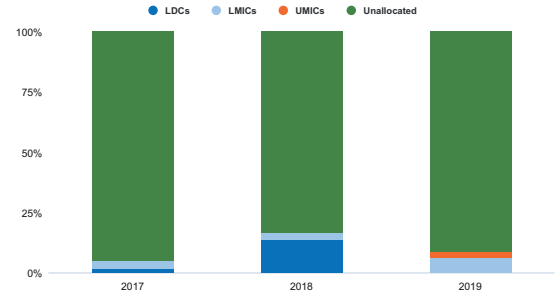
Carnegie Corporation of New York - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



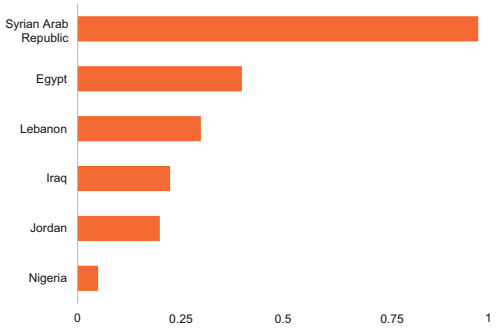
Carnegie Corporation of New York - Bilateral private development finance by income group

Gross disbursements, per cent



Carnegie Corporation of New York - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-carnegiecorp.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Carnegie Corporation of New York reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

CHARITY PROJECTS LTD (COMIC RELIEF)

INTRODUCTION

Comic Relief funds and invests in outstanding causes, focusing on the most vulnerable and marginalised affected by the following challenges facing society today: 1) helping children survive and thrive; 2) providing safe places to live; 3) supporting gender justice; and 4) promoting positive mental health.

FINANCING

IN 2019

Gross private development finance

46

USD MILLION

100%

BILATERAL

0%

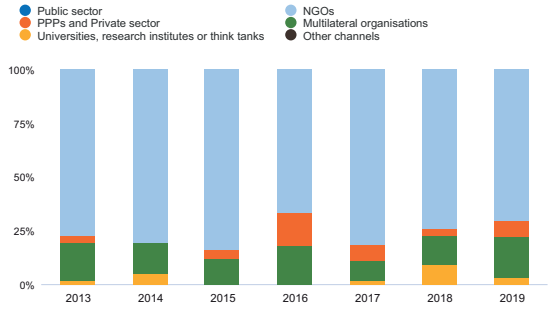
MULTILATERAL CORE

100% through grants

0% through programme-related investments

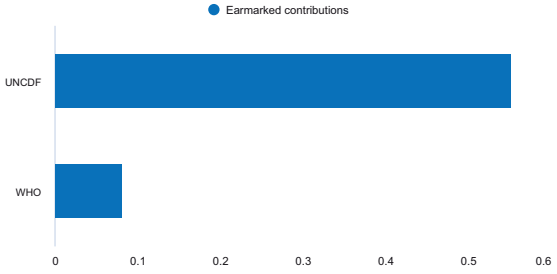
Charity Projects Ltd (Comic Relief) - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



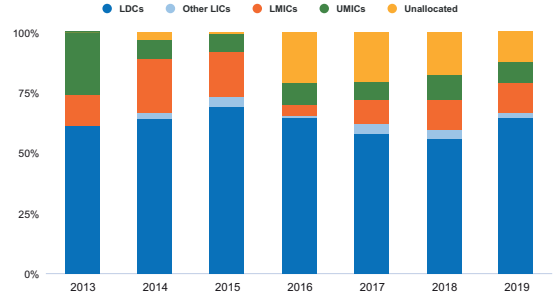
Charity Projects Ltd (Comic Relief) - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



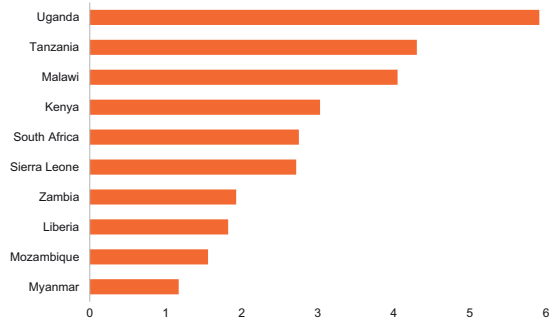
Charity Projects Ltd (Comic Relief) - Bilateral private development finance by income group

Gross disbursements, per cent



Charity Projects Ltd (Comic Relief) - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-charityprojects.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Charity Projects Ltd (Comic Relief) reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

CHILDREN'S INVESTMENT FUND FOUNDATION

INTRODUCTION

The Children's Investment Fund Foundation places significant emphasis on quality data and evidence, by working with partners to measure and evaluate their programmes to achieve large-scale and sustainable impact. Areas of the Children's Investment Fund Foundation's work include maternal and child health, adolescent sexual health, nutrition, education, deworming, tackling child slavery and exploitation, and supporting smart ways to slow down and stop climate change.

FINANCING

IN 2019

Gross private development finance

253

USD MILLION

100%

BILATERAL

0%

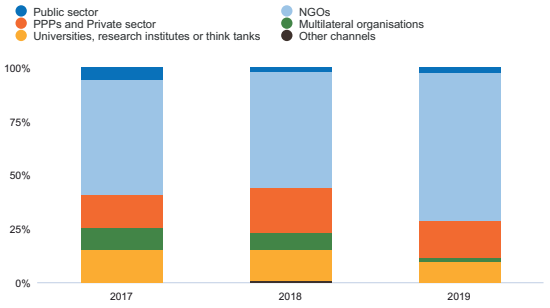
MULTILATERAL CORE

98.9% through grants

1.1% through programme-related investments

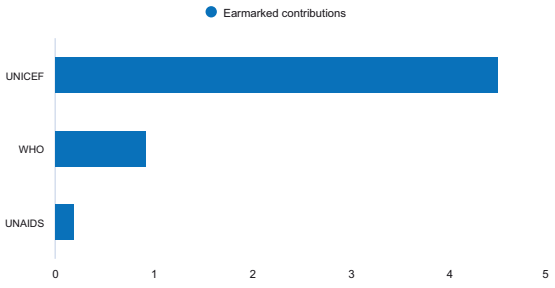
Children's Investment Fund Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



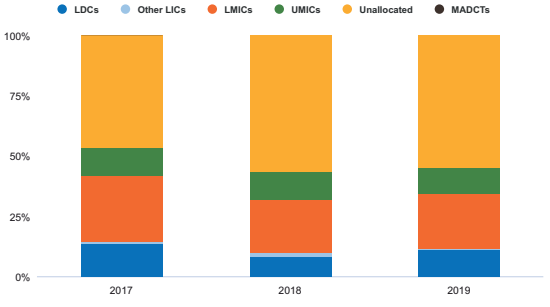
Children's Investment Fund Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



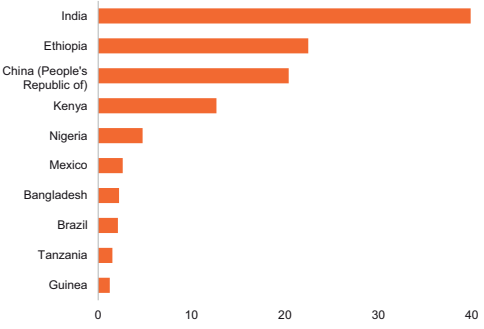
Children's Investment Fund Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Children's Investment Fund Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-fordfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Children's Investment Fund Foundation reports activity-level data to the OECD as a philanthropic provider

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

CITI FOUNDATION

INTRODUCTION

The Citi Foundation's purpose is to promote economic opportunity for low-income individuals and communities around the world. The foundation focuses on efforts that increase financial inclusion and economic opportunities for youth and on activities that create solutions for challenged communities. The Citi Foundation aims to strengthen and bring together local stakeholders. Its financial support is mainly directed towards civil society.

FINANCING

IN 2019

Gross private development finance

27

USD MILLION

100%

BILATERAL

0%

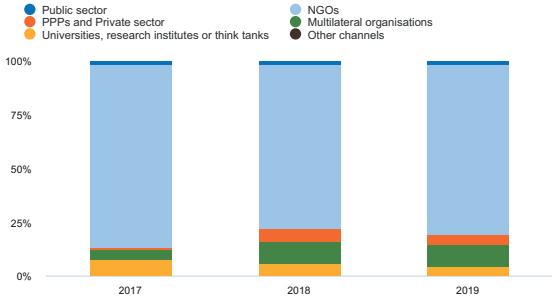
MULTILATERAL CORE

100% through grants

0% through programme-related investments

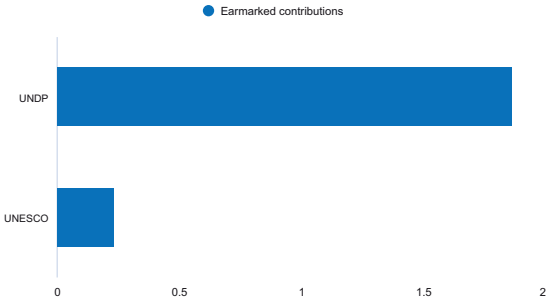
Citi Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



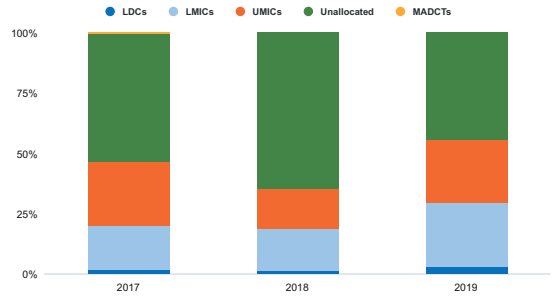
Citi Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



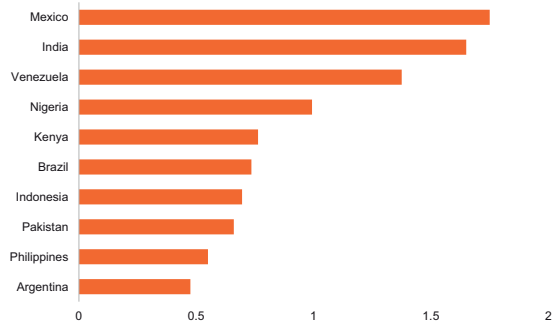
Citi Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Citi Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-citifnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: City Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

CONRAD N. HILTON FOUNDATION

INTRODUCTION

The Conrad N. Hilton Foundation provides funds to non-profit organisations working to improve the lives of individuals living in poverty and experiencing disadvantage in the United States and across the world. Programmes serving developing countries include Catholic Sisters, Safe Water, Young Children Affected by HIV and AIDS, Avoidable Blindness, and Disaster Relief and Recovery.

FINANCING

IN 2019

Gross private development finance

42

USD MILLION

100%

BILATERAL

0%

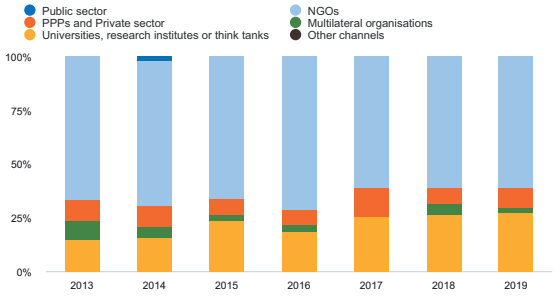
MULTILATERAL CORE

100% through grants

0% through programme-related investments

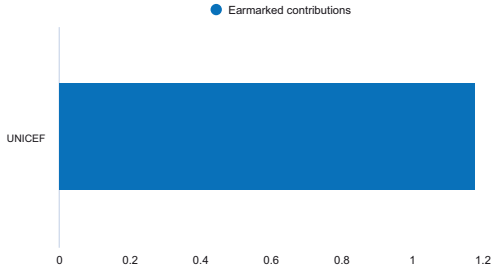
Conrad N. Hilton Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



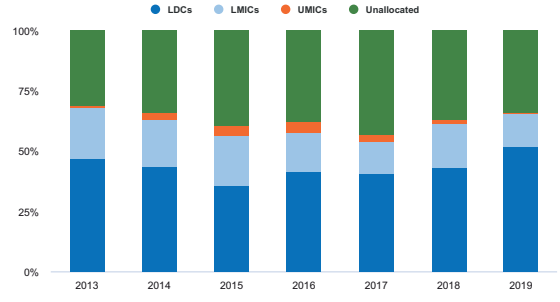
Conrad N. Hilton Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



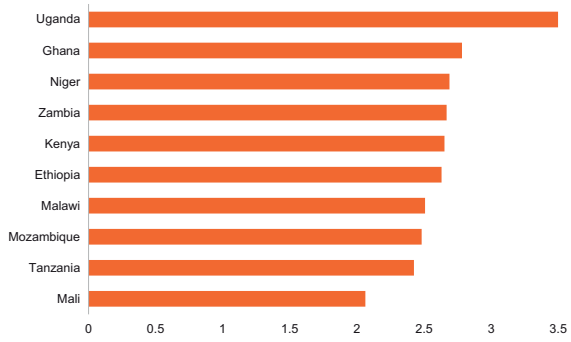
Conrad N. Hilton Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Conrad N. Hilton Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-cnhiltonfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Conrad N.Hilton Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

FORD FOUNDATION

INTRODUCTION

The Ford Foundation is active both domestically and internationally. Programme areas working to address inequality in all its forms include: Civic Engagement and Government; Creativity and Free Expression; Gender, Racial and Ethnic Justice; Natural Resources and Climate Change; as well as the Future of Work(ers).

FINANCING

IN 2019

Gross private development finance

194

USD MILLION

100%

BILATERAL

0%

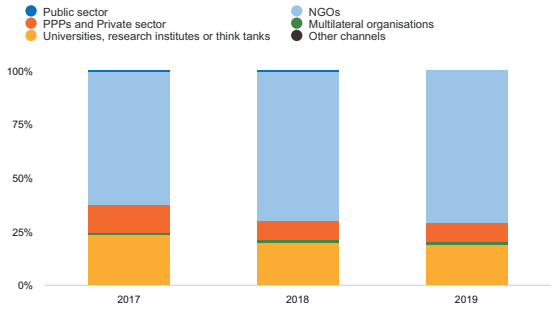
MULTILATERAL CORE

100% through grants

0% through programme-related investments

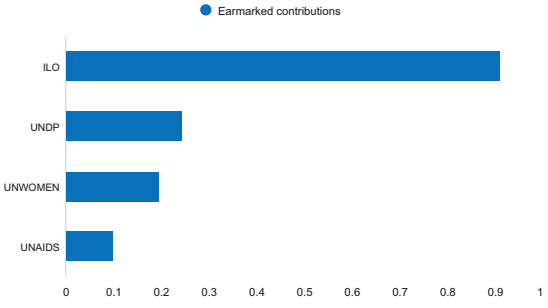
Ford Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



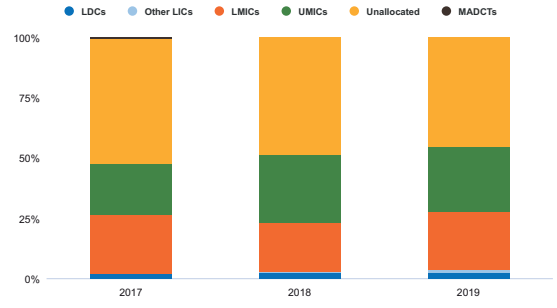
Ford Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



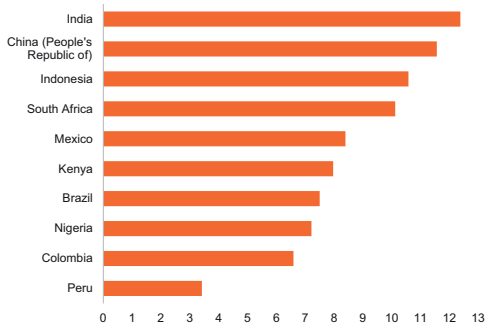
Ford Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Ford Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-fordfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Ford Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

GATSBY CHARITABLE FOUNDATION

INTRODUCTION

The Gatsby Charitable Foundation's work in Africa focuses on accelerating inclusive and resilient economic growth in East Africa by demonstrating how key sectors can be transformed.

FINANCING

IN 2019

Gross private development finance

19

USD MILLION

100%

BILATERAL

0%

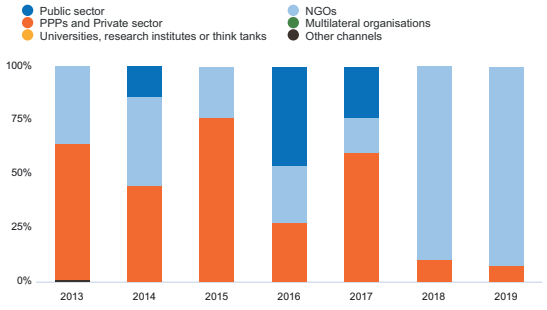
MULTILATERAL CORE

100% through grants

0% through programme-related investments

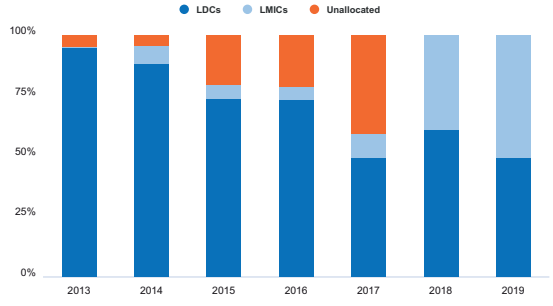
Gatsby Charitable Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



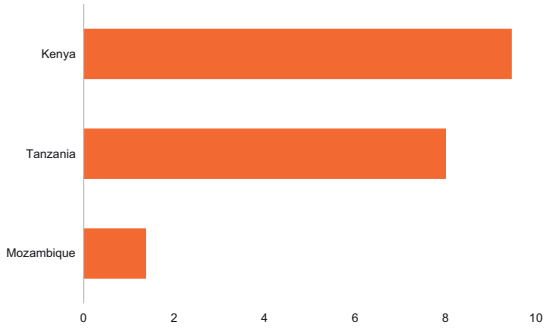
Gatsby Charitable Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Gatsby Charitable Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-gatsbyafrica.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Gatsby Foundaiton reports activity-level data to the OECD as a philanthropic provider

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

GORDON AND BETTY MOORE FOUNDATION

INTRODUCTION

The Gordon and Betty Moore Foundation focuses on local, as well as international, causes. Development-related grant making is primarily administered through its Environmental Conservation Program.

FINANCING

IN 2019

Gross private development finance

48

USD MILLION

100%

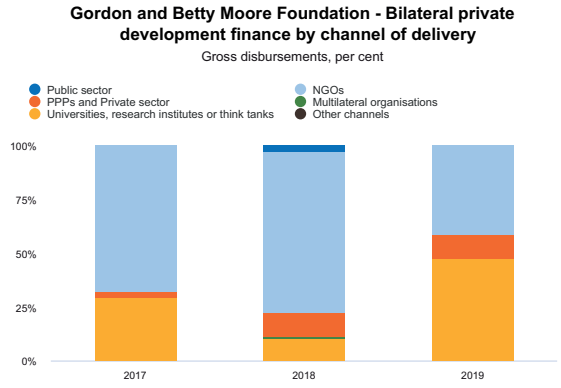
BILATERAL

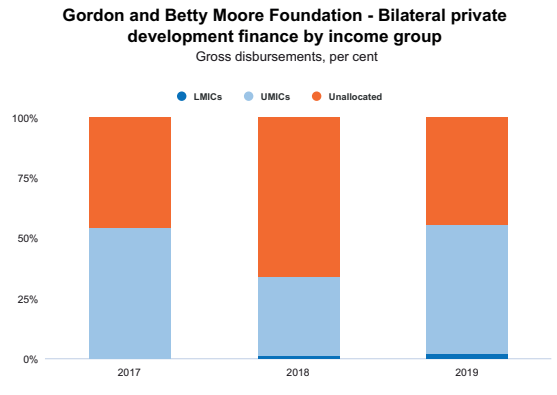
0%

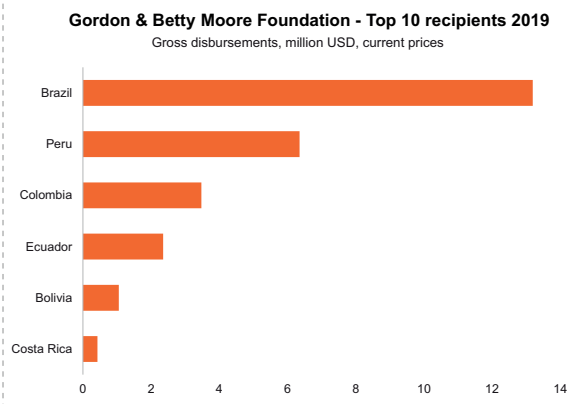
MULTILATERAL CORE

100% through grants

0% through programme-related investments







Full profile: *https://oe.cd/il/dev-coop-gbmoorefnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Gordon and Betty Moore Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

GRAMEEN CRÉDIT AGRICOLE FOUNDATION

INTRODUCTION

The Grameen Crédit Agricole Foundation's mission is to finance and support microfinance institutions, businesses and projects that promote inclusive finance and the development of rural economies everywhere in the world. The foundation promotes female entrepreneurship and rural economies through the institutions it supports.

FINANCING

IN 2019

Gross private development finance

55

USD MILLION

100%

BILATERAL

0%

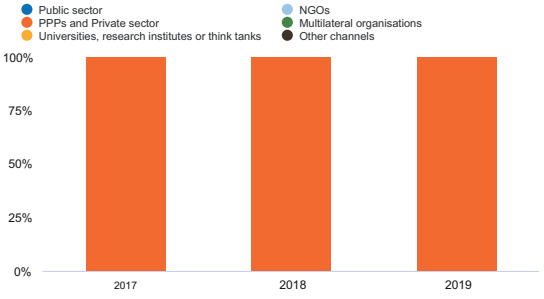
MULTILATERAL CORE

100% through grants

0% through programme-related investments

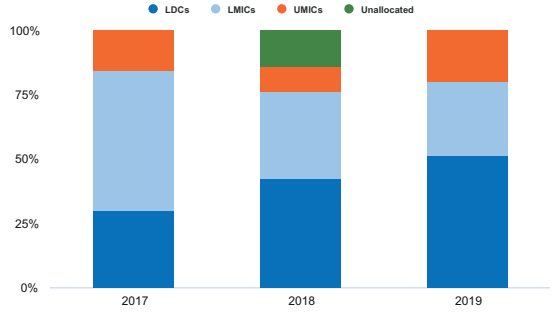
Grameen Crédit Agricole Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



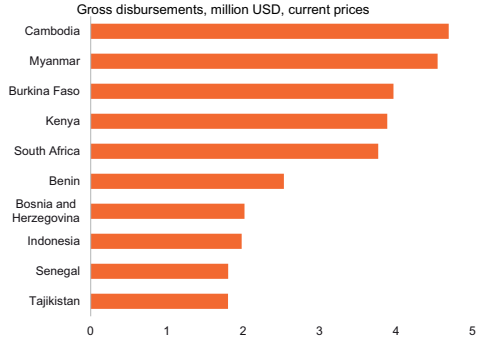
Grameen Crédit Agricole Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Grameen Crédit Agricole Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-gcafnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Grameen Crédit Agricole Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

H&M FOUNDATION

INTRODUCTION

Through partnerships with experienced organisations around the globe, the H&M Foundation aims to accelerate the progress needed to reach the United Nations Sustainable Development Goals by 2030 through investing in people, communities and innovative ideas. The H&M Foundation works both on a global scale, creating systemic change with transformative programmes, as well as in local projects to directly address urgent needs.

FINANCING

IN 2019

Gross private development finance

17

USD MILLION

100%

BILATERAL

0%

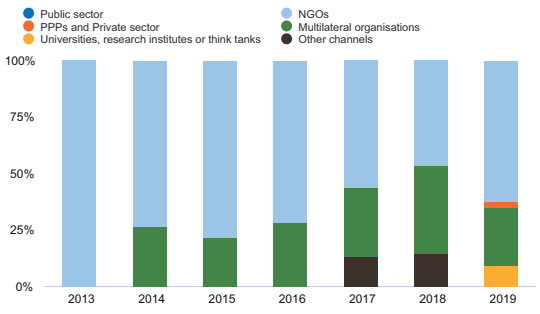
MULTILATERAL CORE

100% through grants

0% through programme-related investments

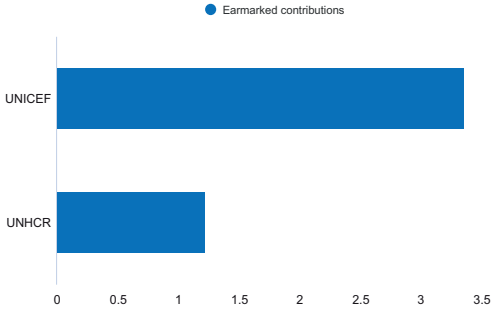
H&M Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



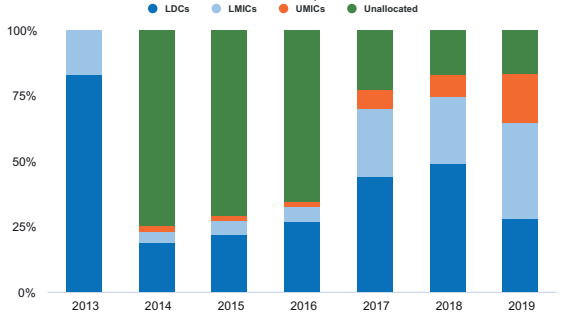
H&M Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



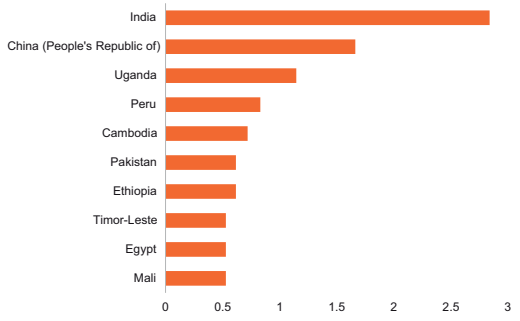
H&M Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



H&M Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-hmfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

IKEA FOUNDATION

INTRODUCTION

The IKEA Foundation focuses on creating livelihood opportunities for children and families living in vulnerable communities, while protecting the planet and limiting the impacts of climate change.

FINANCING

IN 2019

Gross private development finance

192

USD MILLION

100%

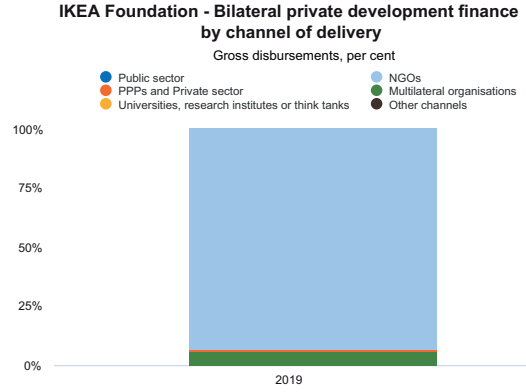
BILATERAL

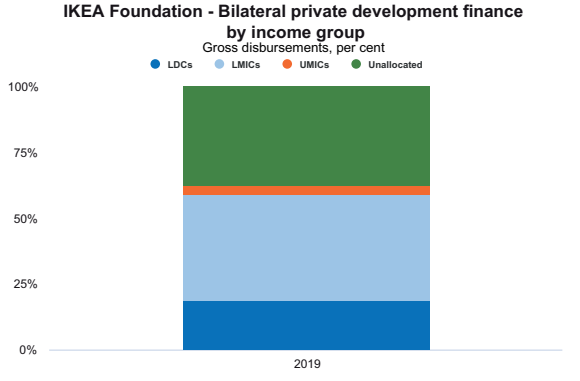
0%

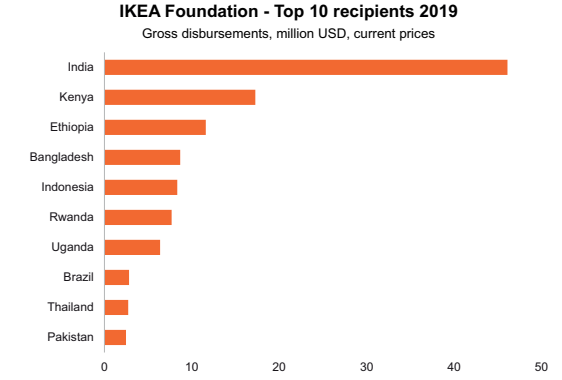
MULTILATERAL CORE

100% through grants

0% through programme-related investments







Full profile: *https://oe.cd/il/dev-coop-ikeafnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Ikea reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

JACOBS FOUNDATION

INTRODUCTION

The Jacobs Foundation is one of the world's leading foundations dedicated to facilitating innovation for children and youth. The foundation wants to co-create evidence-based ideas for learning, support schools in offering quality education and sharing best practices, and transform education systems around the world. The Jacobs Foundation's goal is to provide children and youth with effective knowledge, skills, tools and equitable opportunities to reach their full learning potential.

FINANCING

IN 2019

Gross private development finance

17

USD MILLION

100%

BILATERAL

0%

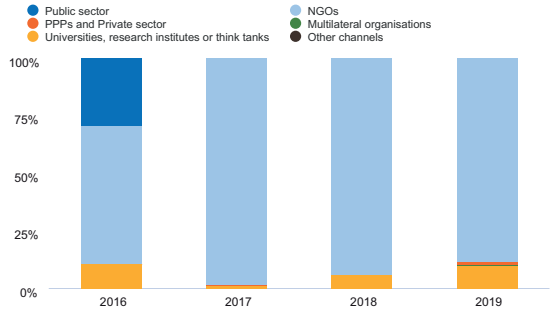
MULTILATERAL CORE

100% through grants

0% through programme-related investments

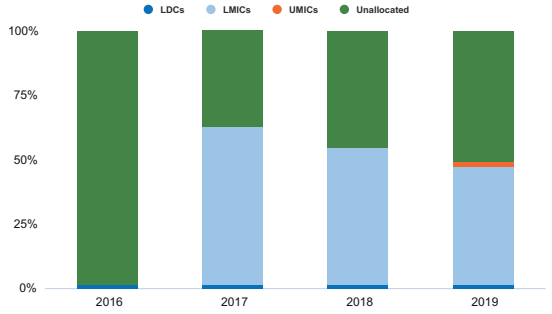
Jacobs Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



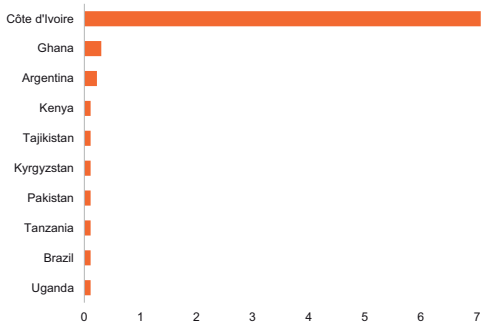
Jacobs Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Jacobs Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-jacobsfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Arcus Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

JOHN D. AND CATHERINE T. MACARTHUR FOUNDATION

INTRODUCTION

The John D. and Catherine T. MacArthur Foundation supports creative people, effective institutions and influential networks building a more just, verdant and peaceful world. The MacArthur Foundation is placing a few big bets that truly significant progress is possible on some of the world's most pressing social challenges, including over-incarceration, global climate change, nuclear risk and significantly increasing financial capital for the social sector.

FINANCING

IN 2019

Gross private development finance

109

USD MILLION

100%

BILATERAL

0%

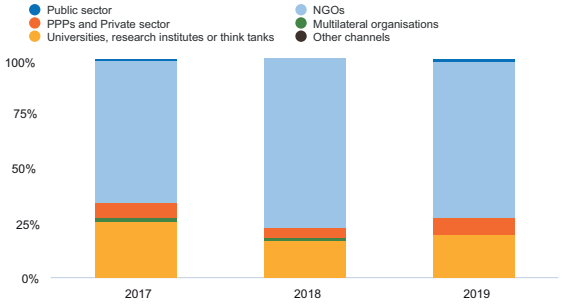
MULTILATERAL CORE

95% through grants

5% through programme-related investments

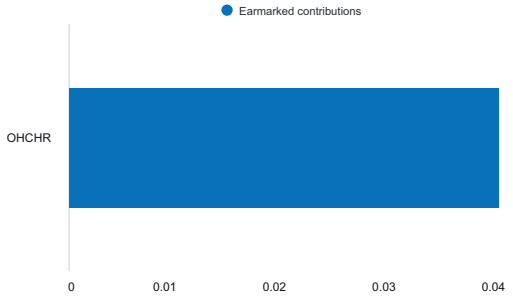
John D. & Catherine T. MacArthur Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



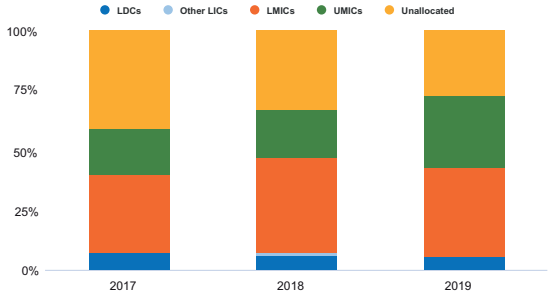
John D. & Catherine T. MacArthur Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



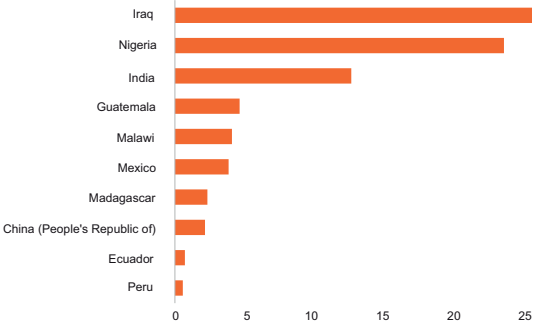
John D. & Catherine T. MacArthur Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



John D. & Catherine T. MacArthur Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-jcmacarthurfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: John D. & Catherine MacArthur Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

LA CAIXA BANKING FOUNDATION

INTRODUCTION

The La Caixa Banking Foundation contributes towards the progress and equality of people, especially those most in need. It focuses on programmes that transform society, such as those that fight child poverty and social exclusion, that foster employment and help to improve the living conditions of the most vulnerable people.

FINANCING

IN 2019

Gross private development finance

34

USD MILLION

100%

BILATERAL

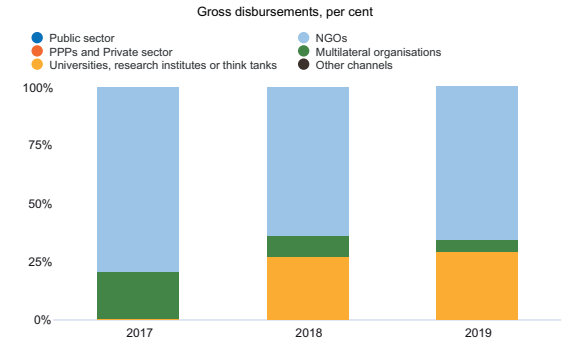
0%

MULTILATERAL CORE

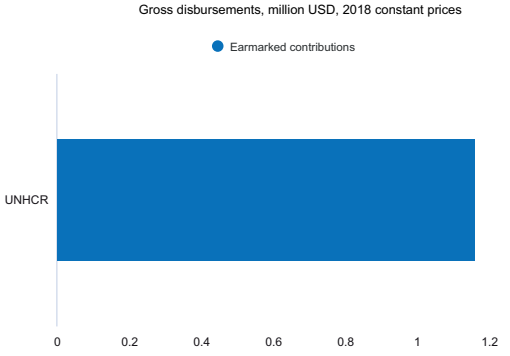
100% through grants

0% through programme-related investments

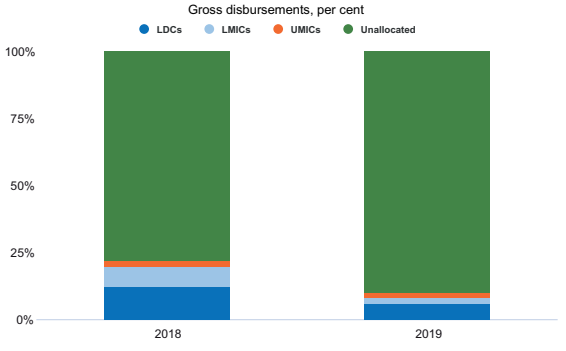
La Caixa Banking Foundation - Bilateral private development finance by channel of delivery



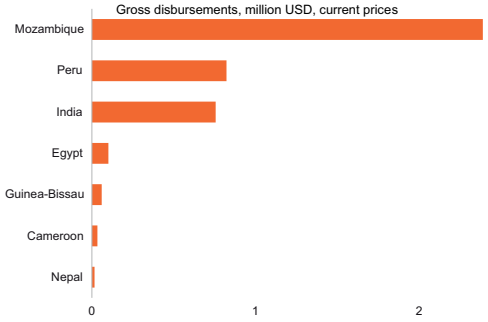
La Caixa Banking Foundation - Top 10 United Nations recipients 2019



La Caixa Banking Foundation - Bilateral private development finance by income group



La Caixa Banking Foundation - Top 10 recipients 2019



Full profile: *https://oe.cd/il/dev-coop-lacaixa.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: La Caixa Banking Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

LAUDES FOUNDATION

INTRODUCTION

Advancing the industry-changing work of the former C&A Foundation, the Laudes Foundation envisions global markets that value all people and respect nature, an economy in which industries uplift all who participate in them, and regenerate and restore nature as a fundamental part of what they do.

FINANCING

IN 2019

Gross private development finance

46

USD MILLION

100%

BILATERAL

0%

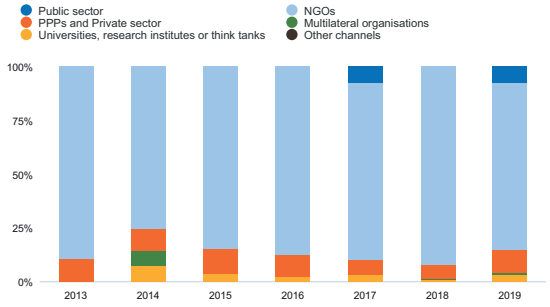
MULTILATERAL CORE

100% through grants

0% through programme-related investments

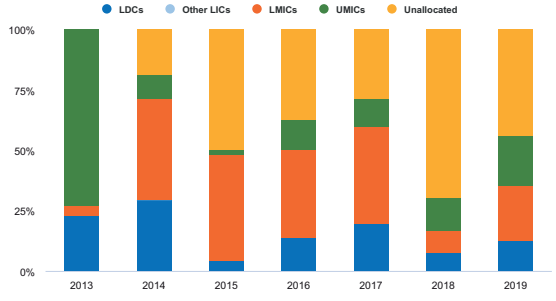
Laudes Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



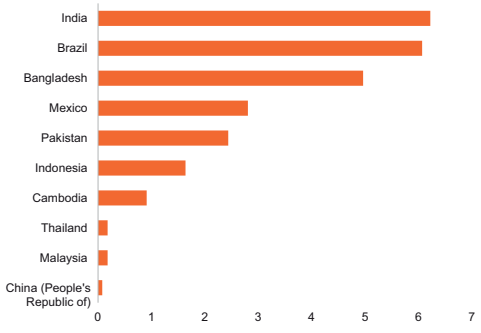
Laudes Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Laudes Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-laudes.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Laudes Foundation reports activity-level data to the OECD as a philanthropic providerFull

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

LEGO FOUNDATION

INTRODUCTION

The LEGO Foundation's programmes and projects aim to make children's lives better by making sure that the fundamental value of play is understood and acted upon. It shares its overall mission with the LEGO Group: to inspire and develop the builders of tomorrow. The LEGO Foundation is guided by the vision that play in its own right and as a means of learning is vital to empower children to become creative, engaged, lifelong learners.

FINANCING

IN 2019

Gross private development finance

44

USD MILLION

100%

BILATERAL

0%

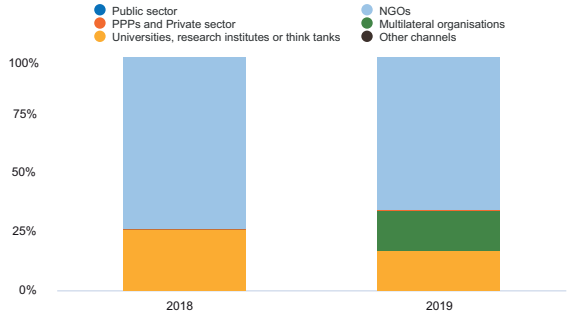
MULTILATERAL CORE

100% through grants

0% through programme-related investments

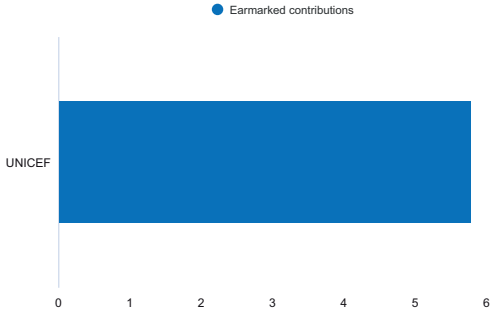
LEGO Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



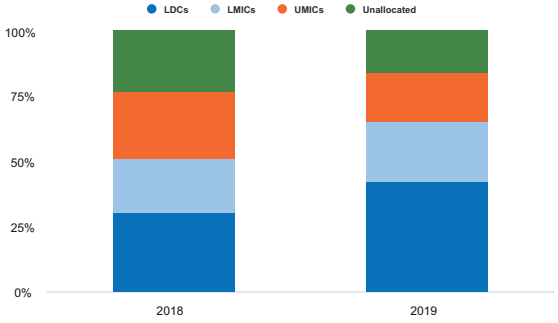
LEGO Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



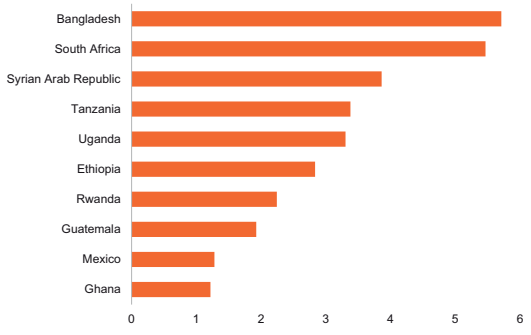
LEGO Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



LEGO Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-legofnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Lego Foundation reports activity-level data to the OECD as a philanthropic provider

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

MARGARET A. CARGILL FOUNDATION

INTRODUCTION

Margaret A. Cargill Foundation focuses on a limited number of underserved or low-attention areas and causes, favouring community-based, on-the-ground programmes that provide meaningful assistance and support to society, the arts and the environment.

FINANCING

IN 2019

Gross private development finance

44

USD MILLION

100%

BILATERAL

0%

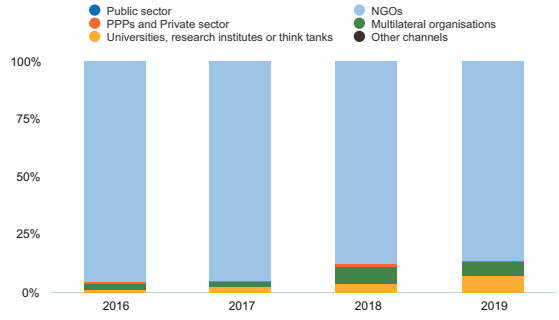
MULTILATERAL CORE

100% through grants

0% through programme-related investments

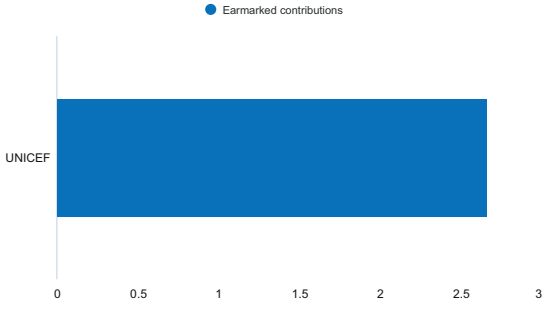
Margaret A. Cargill Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



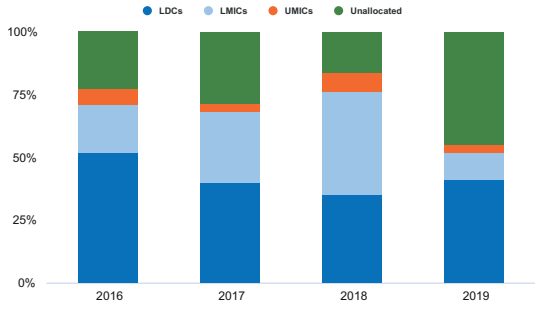
Margaret A. Cargill Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



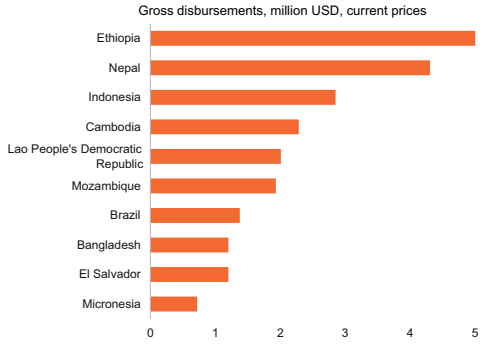
Margaret A. Cargill Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Margaret A. Cargill Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-maca.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Margaret A. Cargill Foundation reports activity-level data to the OECD as a philanthropic provider

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

MASTERCARD FOUNDATION

INTRODUCTION

The MasterCard Foundation partners with visionary organisations to advance education and financial inclusion to catalyse prosperity in developing countries, particularly in Africa.

FINANCING

IN 2019

Gross private development finance

298

USD MILLION

100%
BILATERAL

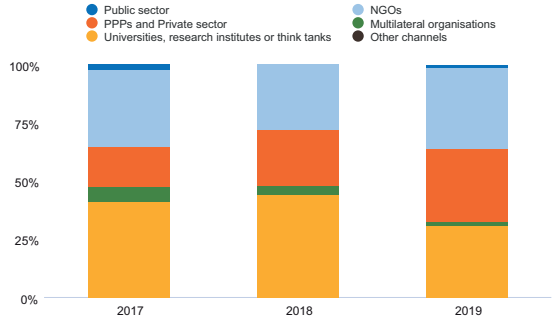
0%
MULTILATERAL CORE

100% through grants

0% through programme-related investments

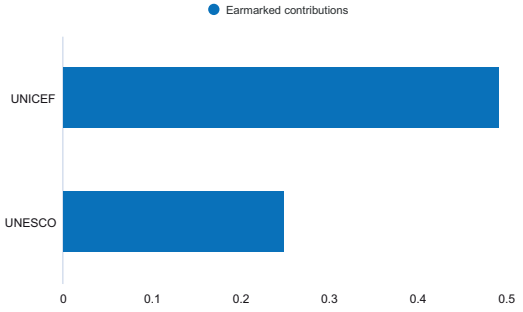
MasterCard Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



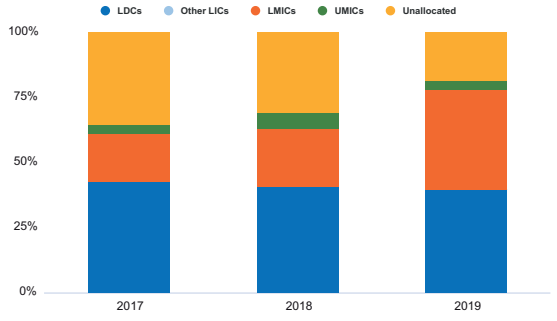
MasterCard Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



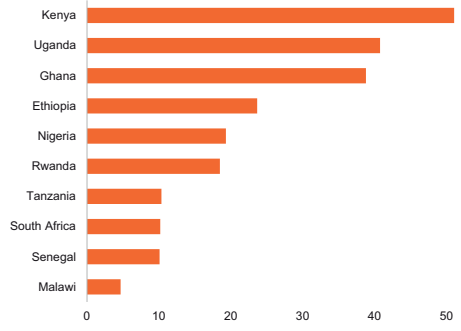
MasterCard Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Mastercard Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-mastercardfnd*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: MasterCard Foundation reports activity-level data to the OECD as a philanthropic provider

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

MAVA FOUNDATION

INTRODUCTION

The MAVA Foundation mainly provides support for projects in the Mediterranean basin, coastal West Africa and the Alps, as well as for activities with a global dimension. Programmes serving developing countries include the Mediterranean, Coastal West Africa, Sustainable Economy and Global Projects.

FINANCING

IN 2019

Gross private development finance

40

USD MILLION

100%

BILATERAL

0%

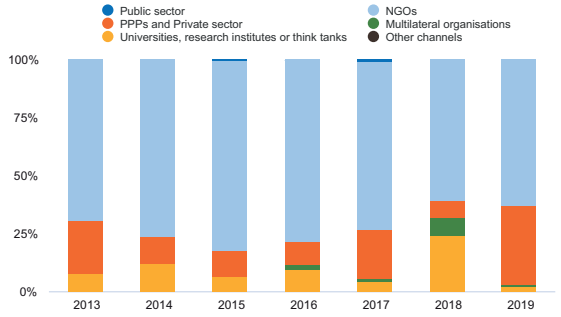
MULTILATERAL CORE

100% through grants

0% through programme-related investments

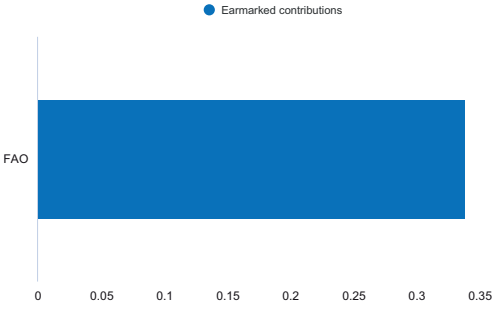
MAVA Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



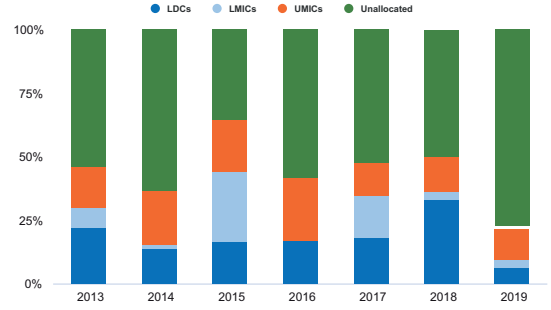
MAVA Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



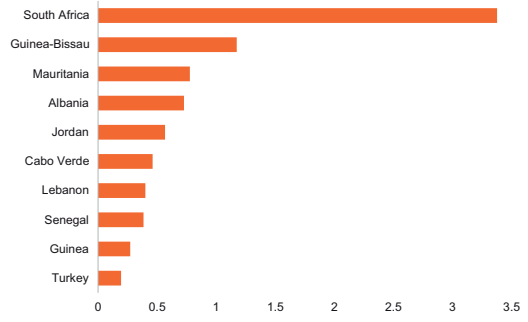
MAVA Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



MAVA Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-mavafnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: MAVA Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

MCKNIGHT FOUNDATION

INTRODUCTION

The McKnight Foundation is active both domestically and internationally. Its programmes aim to advance a more just, creative and abundant future where people and planet thrive. The foundation is built on four values: stewardship, equity, respect and curiosity. Its grant making related to development concerns agriculture research and Southeast Asia.

FINANCING

IN 2019

Gross private development finance

9

USD MILLION

100%

BILATERAL

0%

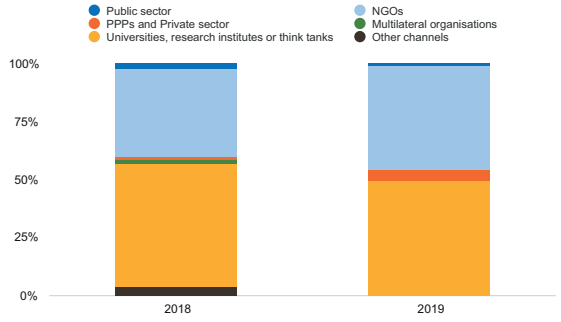
MULTILATERAL CORE

100% through grants

0% through programme-related investments

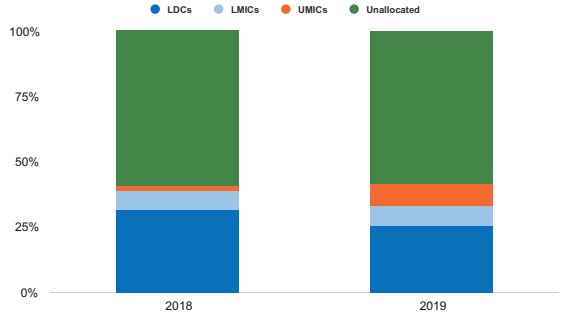
McKnight Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



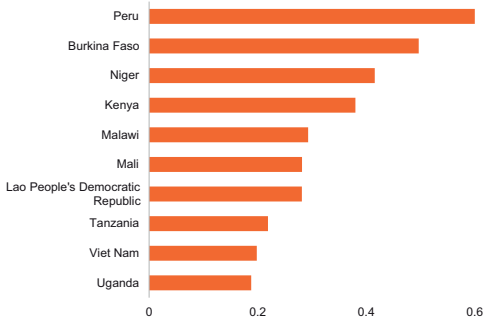
McKnight Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



McKnight Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-mcknightfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Mcknight Foundation reports activity-level data to the OECD as a philanthropic provider

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

METLIFE FOUNDATION

INTRODUCTION

The MetLife Foundation's goal is to build healthier and stronger communities worldwide and it has been focusing its resources on advancing financial inclusion in the United States and internationally. The foundation also supports local communities and provides humanitarian aid.

FINANCING

IN 2020

Gross private development finance

14

USD MILLION

100%

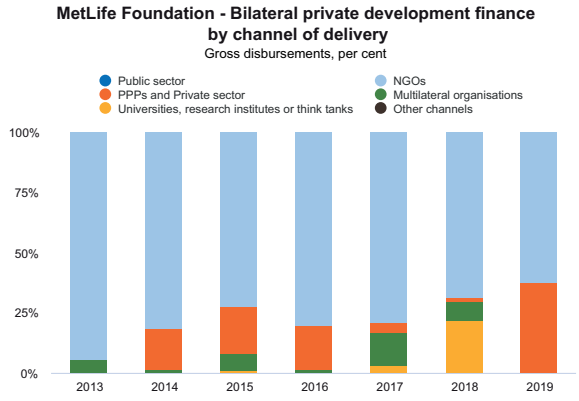
BILATERAL

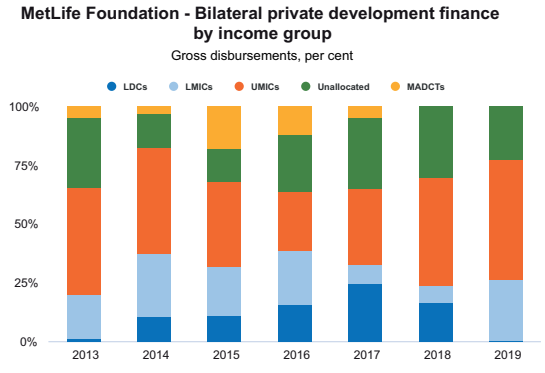
0%

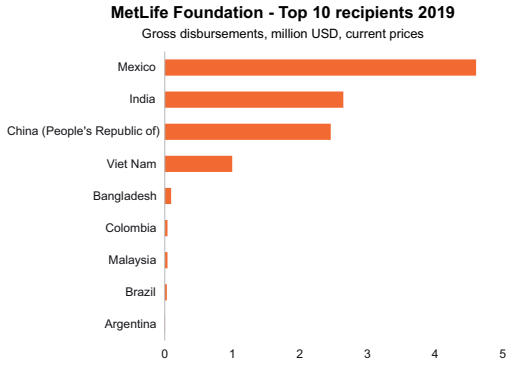
MULTILATERAL CORE

100% through grants

0% through programme-related investments







Full profile: *https://oe.cd/il/dev-coop-metlifefnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: MetLife Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

MICHAEL AND SUSAN DELL FOUNDATION

INTRODUCTION

The Dell Foundation is inspired by its founders' passion for children and by a shared desire to transform the lives of children living in urban poverty.

FINANCING

IN 2019

Gross private development finance

35

USD MILLION

100%

BILATERAL

0%

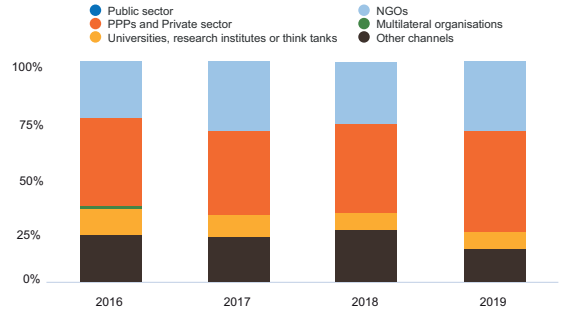
MULTILATERAL CORE

54.3% through grants

45.7% through programme-related investments

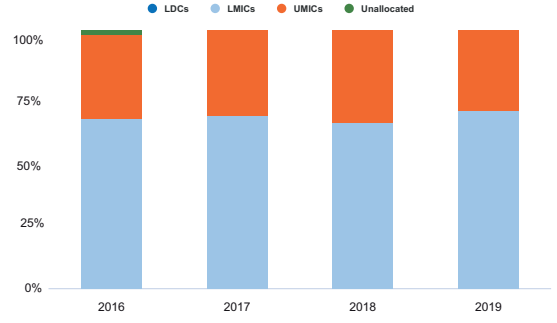
Michael & Susan Dell Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



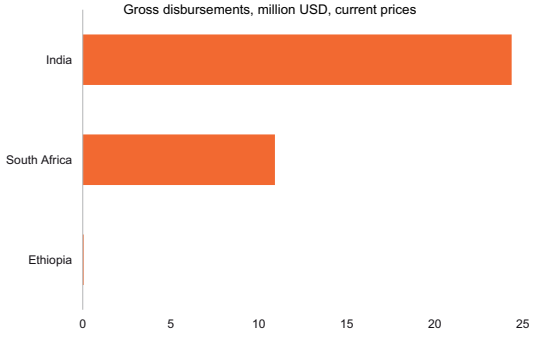
Michael & Susan Dell Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Michael & Susan Dell Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-msdellfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Arcus Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

OAK FOUNDATION

INTRODUCTION

The Oak Foundation supports civil society as a pillar of democracy and justice and nurtures innovation and visionary leadership within it. Programmes benefiting developing countries include: Preventing Child Sexual Abuse, Environment, International Human Rights, Issues Affecting Women, Learning Differences, India, Zimbabwe and Brazil.

FINANCING

IN 2019

Gross private development finance

136

USD MILLION

100%

BILATERAL

0%

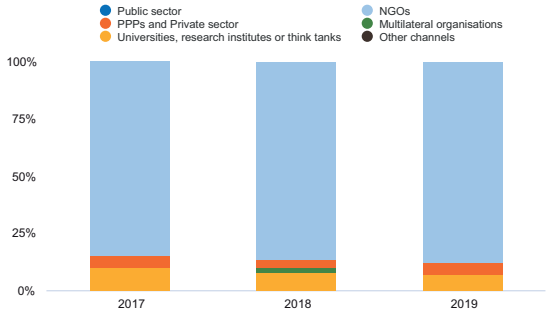
MULTILATERAL CORE

100% through grants

0% through programme-related investments

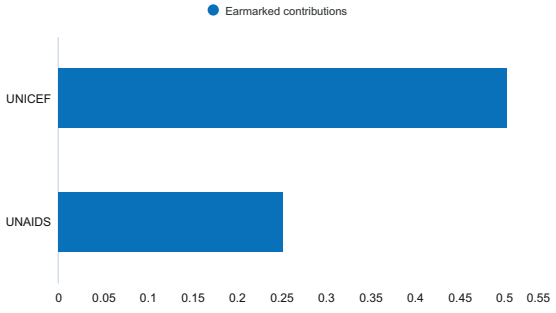
Oak Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



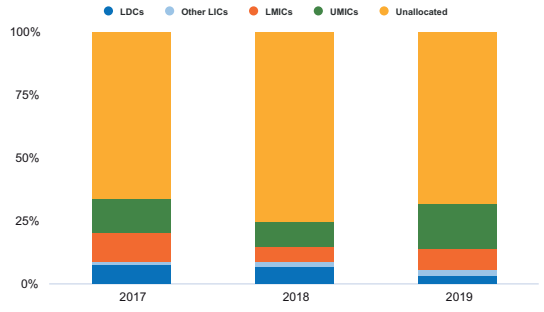
Oak Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



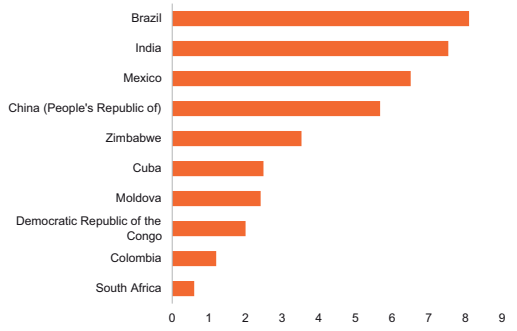
Oak Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Oak Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-oakfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Oak Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

OMIDYAR NETWORK FUND, INC.

INTRODUCTION

The Omidyar Network's areas of work benefiting developing countries mainly include: Digital Identity, Education and Property Rights.

FINANCING

IN 2019

Gross private development finance

59

USD MILLION

100%

BILATERAL

0%

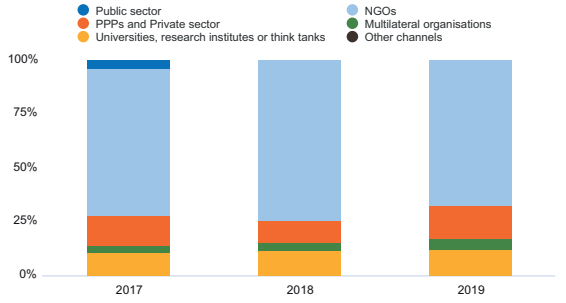
MULTILATERAL CORE

96.5% through grants

3.5% through programme-related investments

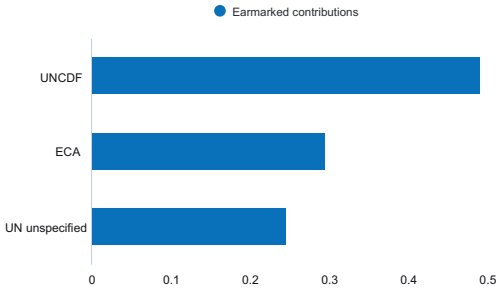
Omidyar Network Fund, Inc. - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



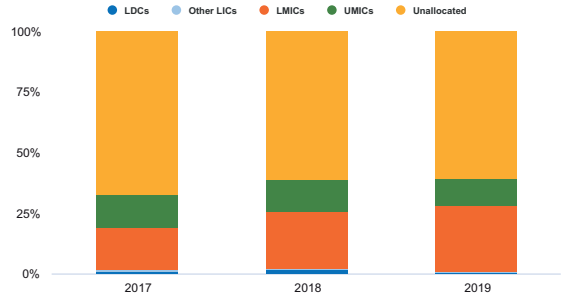
Omidyar Network Fund, Inc. - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



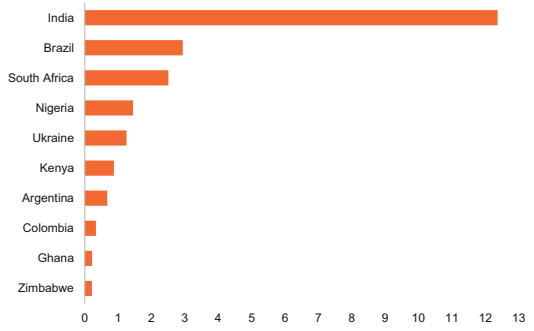
Omidyar Network Fund, Inc. - Bilateral private development finance by income group

Gross disbursements, per cent



Omidyar Network Fund - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-omidyarnet.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata.*

Note: Arcus Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

ROCKEFELLER FOUNDATION

INTRODUCTION

The Rockefeller Foundation advances new frontiers of science, data, policy and innovation to solve global challenges related to health, food, power, and equity and economic opportunity. As a science-driven philanthropy, the foundation seeks to inspire and foster large-scale human impact that promotes the well-being of humanity throughout the world by identifying and accelerating breakthrough solutions, ideas and conversations.

FINANCING

IN 2019

Gross private development finance

104

USD MILLION

100%

BILATERAL

0%

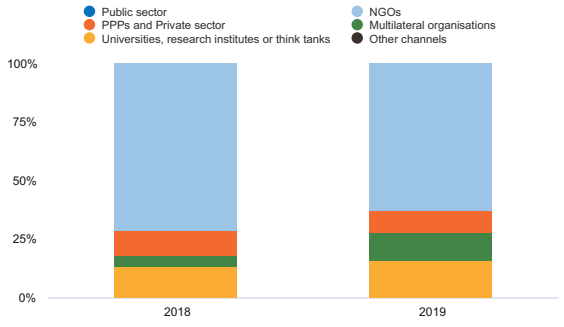
MULTILATERAL CORE

100% through grants

0% through programme-related investments

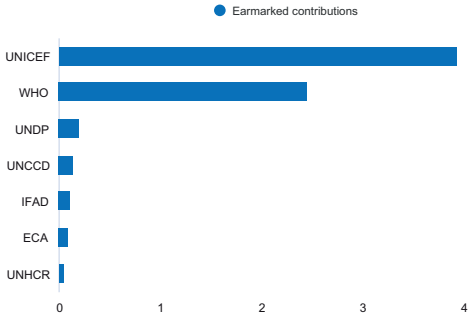
Rockefeller Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



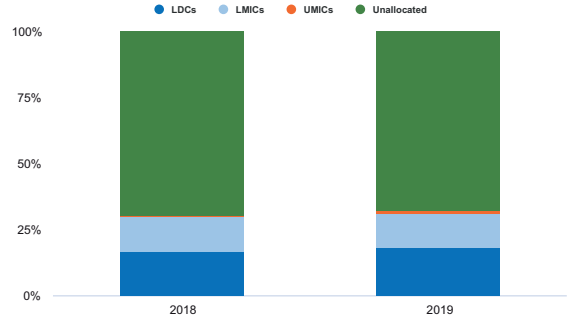
Rockefeller Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



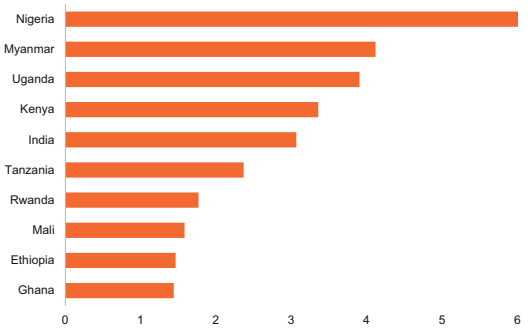
Rockefeller Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



Rockefeller Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-rockefellerfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata.*

Note: Rockefeller Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

UNITED POSTCODE LOTTERIES

INTRODUCTION

The United Postcode Lotteries are a significant provider of unrestricted support to organisations working on development issues and beyond, such as environmental protection, climate change, human rights, gender equality and social cohesion.

FINANCING

IN 2019

Gross private development finance

353

USD MILLION

100%

BILATERAL

0%

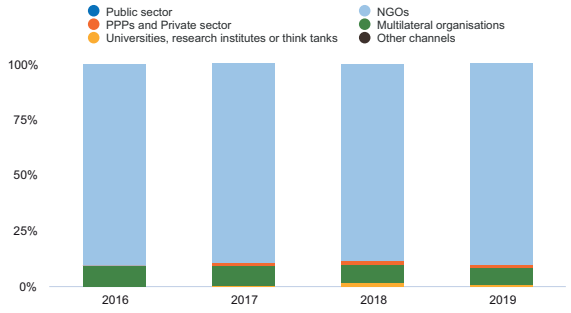
MULTILATERAL CORE

100% through grants

0% through programme-related investments

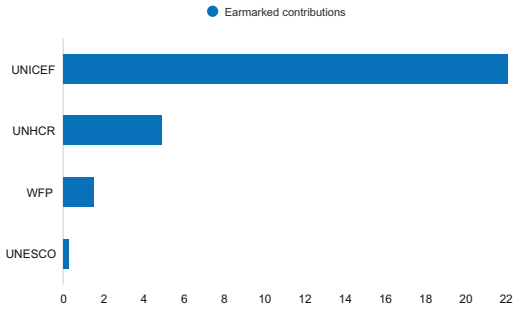
United Postcode Lotteries - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



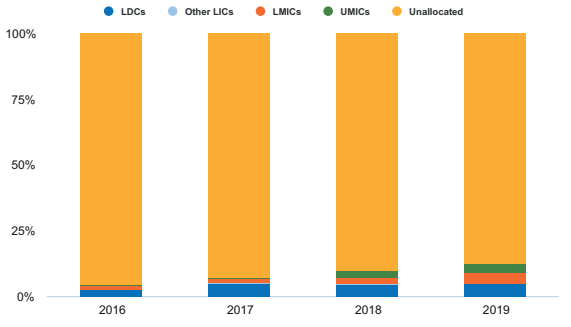
United Postcode Lotteries - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



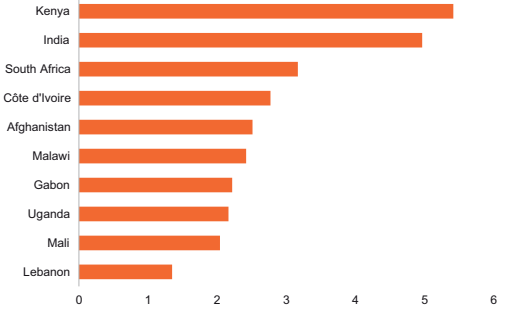
United Postcode Lotteries - Bilateral private development finance by income group

Gross disbursements, per cent



United Postcode Lotteries - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-upl.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: United Postcode Lotteries reports activity-level data to the OECD as a philanthropic provider

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

WELLCOME TRUST

INTRODUCTION

The Wellcome Trust directly funds research every step of the way from discovery to impact. Its funding schemes offer grants across biomedical science, population health, medical innovation, humanities and social science, and public engagement, while also identifying areas in which Wellcome can lead significant change to transform the global response to some of today's biggest health challenges, such as vaccine development, drug-resistant infections and mental health.

FINANCING

IN 2019

Gross private development finance

327

USD MILLION

100%

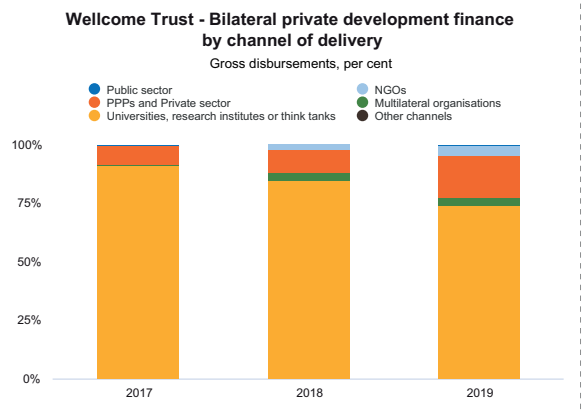
BILATERAL

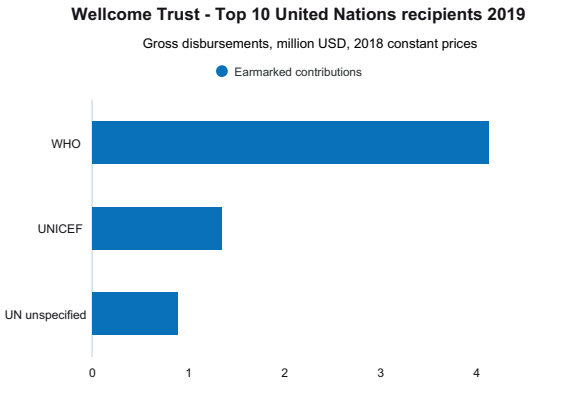
0%

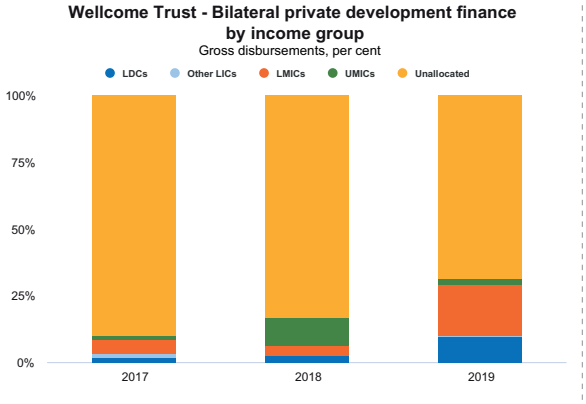
MULTILATERAL CORE

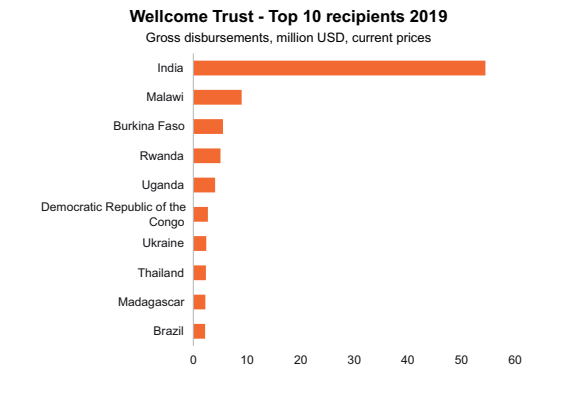
100% through grants

0% through programme-related investments









Full profile: *https://oe.cd/il/dev-coop-wellcometrust.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Wellcome Trust Foundation reports activity-level data to the OECD as a philanthropic provider

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

WILLIAM AND FLORA HEWLETT FOUNDATION

INTRODUCTION

The William and Flora Hewlett Foundation's programmes focus on domestic and international issues. Programmes with an international scope include: Global Development and Population, Education, Environment, Cyber, and Effective Philanthropy.

FINANCING

IN 2019

Gross private development finance

123

USD MILLION

100%
BILATERAL

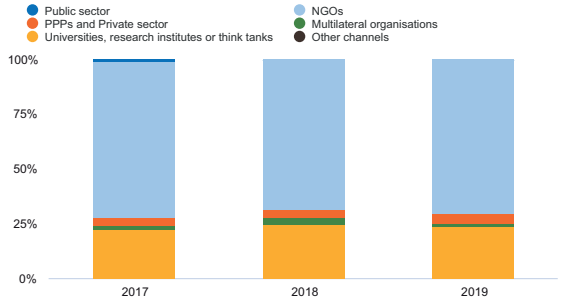
0%
MULTILATERAL CORE

100% through grants

0% through programme-related investments

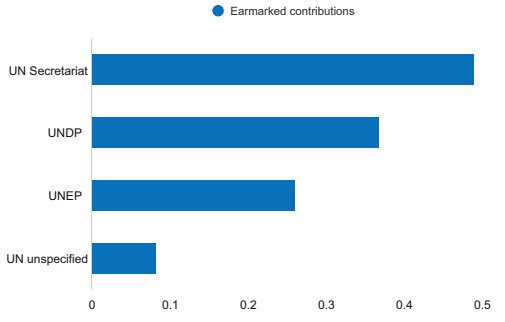
William & Flora Hewlett Foundation - Bilateral private development finance by channel of delivery

Gross disbursements, per cent



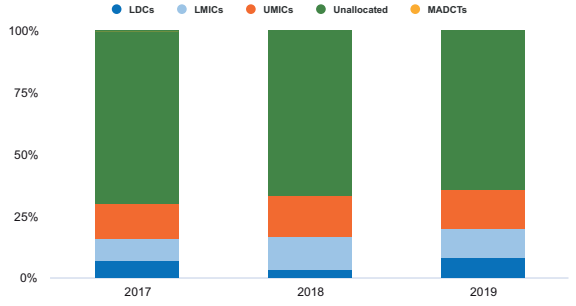
William & Flora Hewlett Foundation - Top 10 United Nations recipients 2019

Gross disbursements, million USD, 2018 constant prices



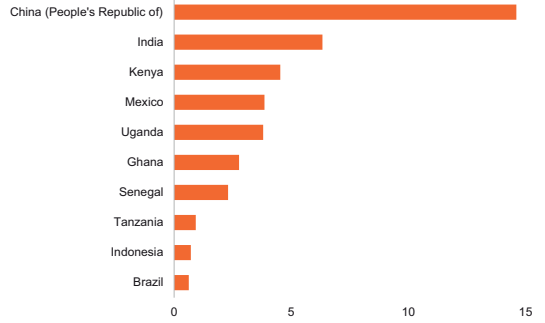
William & Flora Hewlett Foundation - Bilateral private development finance by income group

Gross disbursements, per cent



William & Flora Hewlett Foundation - Top 10 recipients 2019

Gross disbursements, million USD, current prices



Full profile: *https://oe.cd/il/dev-coop-wfhewlettfnd.*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: Arcus Foundation reports activity-level data to the OECD as a philanthropic provider.

DEVELOPMENT CO-OPERATION PROFILES AT A GLANCE

WORLD DIABETES FOUNDATION

INTRODUCTION

The World Diabetes Foundation pursues sustainable, scalable and policy-based approaches helping countries meet global targets for improved care of diabetes and other non-communicable diseases. The foundation has been active in more than 100 countries and built partnerships with governments, civil society, the private sector and international agencies, and is also engaged in regional and global advocacy.

FINANCING

IN 2019

Gross private development finance

17

USD MILLION

100%

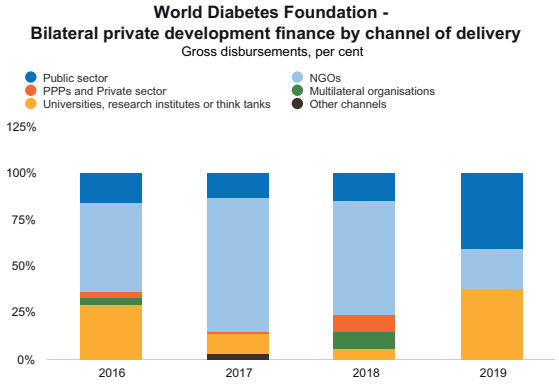
BILATERAL

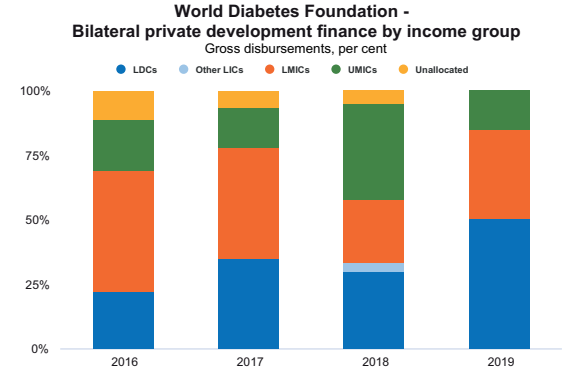
0%

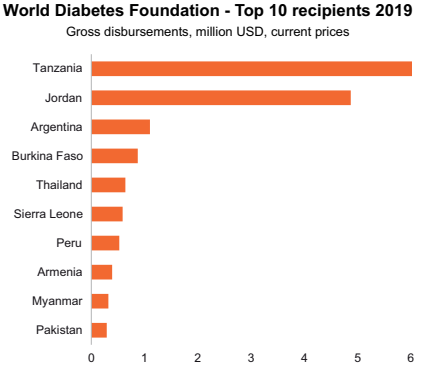
MULTILATERAL CORE

100% through grants

0% through programme-related investments







Full profile: *https://oe.cd/il/dev-coop-wdiabfnd*

Private Philanthropy for Development: *http://oe.cd/foundationsdata*

Note: World Diabetes Foundation reports activity-level data to the OECD as a philanthropic provider

ANNEX A. METHODOLOGICAL NOTES DEVELOPMENT CO-OPERATION AT A GLANCE 2021

General point: unless otherwise stated, and with the exception of data on official development assistance (ODA) allocation by sector, and ODA supporting gender equality and environment objectives (whose figures refer to commitments), all figures in the profiles refer to gross bilateral disbursements. The term DAC country average refers to weighted averages of Development Assistance Committee (DAC) countries for the specific allocation. Allocations by the European Union institutions are excluded from this calculation. All of the data presented in the profiles is publicly available at: www.oecd.org/dac/financing-sustainable-development and effectivecooperation.org.

This annex describes the methodology and sources for: ODA grant equivalent methodology; financial instruments (grants and non-grants); allocations to multilateral organisations; Sustainable Development Goal focus; bilateral ODA by channel of delivery; bilateral ODA unspecified/unallocated; ODA to least developed countries; bilateral allocable aid; Gender Equality Policy Marker; environment markers; amounts mobilised from the private sector; ODA disbursed through government agencies; private development finance. All methodologies and sources on ODA, described in the following sections, are also applicable to the concept of private development finance used in the profiles of philanthropic foundations.

ODA GRANT EQUIVALENT METHODOLOGY

In 2014, members of the OECD's DAC decided to modernise the reporting of concessional loans by assessing their concessionality based on discount rates differentiated by income group, and introducing a grant-equivalent system for calculating ODA figures. Instead of recording the actual flows of cash between a donor and recipient country, DAC members agreed that the headline figure for ODA would be based on the grant equivalents of aid loans, i.e. the "gift portion" of the loans, expressed as a monetary value. The grant equivalent methodology would provide a more realistic comparison of the effort involved in providing grants and loans and encourage the provision of grants and highly concessional (or soft) loans, especially to low-income countries.

In 2016, DAC members also decided to apply the grant equivalent measure to other non-grant instruments, such as equities and private sector instruments (PSI) to better reflect the donor effort involved. Whilst DAC members agreed on a methodology for counting the grant equivalent of official loans and loans to multilateral institutions, they have yet to reach agreement on how to calculate ODA grant equivalents for equities, PSI and debt relief. In 2020, the DAC agreed on a method for accounting debt relief on a grant equivalent basis. Pending an agreement, DAC members have decided on provisional reporting arrangements for PSI whereby either contributions to Development Finance Institutions (DFIs) and other PSI vehicles may be counted at face value (using an institutional approach), or loans and equities made directly to private sector entities may be counted on a cash-flow basis (using an instrument approach), with any equity sale proceeds capped at the value of the original investment. The review of rules governing reporting of PSIs is planned for 2021 to make the reporting of PSIs consistent with grant equivalents and it will result with the finalisation of implementation of past High Level Meeting (HLM) decisions.

This change in the ODA methodology took effect in 2019 with the publication of preliminary 2018 ODA, and this methodology has been in use in subsequent publications of the Development Co-operation Profiles.

The implementation of the ODA grant equivalent methodology added 3.5% to 2019 ODA levels for all DAC countries combined, with impacts on individual country figures

ranging from 33 % for Japan, 8.7% for Spain, 7.6% for Portugal and to -1.5% for Belgium, -1.6% for Finland and -2.1% for Korea.

The new "grant equivalent" headline ODA figures are no longer comparable with the historical series on "cash basis". In the cash basis, the net capital flow over the lifetime of a loan is nil because repayments of principal are deducted when made; interest payments are not taken into account. In the grant equivalent method, both principal and interest payments are taken into consideration, but discounted to the value they represent in today's money.

In order to be fully transparent, the OECD will continue to also publish ODA data on a cash basis, but not as the headline ODA figure to measure donors' performance in volume or as a percentage of gross national income (GNI).

FINANCIAL INSTRUMENTS (GRANTS AND NON-GRANTS)

In DAC statistics, financial instruments classified as grants comprise: grants, capital subscriptions, debt forgiveness, interest subsidies and other subsidies. Financial instruments classified as non-grants comprise loans, reimbursable grants, debt rescheduling, debt securities (bonds and asset-backed securities), mezzanine finance instruments, equity and shares in collective investment vehicles.

ALLOCATIONS TO MULTILATERAL ORGANISATIONS

This term refers to all funds channelled to and through multilateral organisations. It encompasses core contributions to multilateral organisations and earmarked resources channelled through multilateral organisations (also known as non-core resources or multi-bi funding).

Core contributions to multilateral organisations are resources transferred to multilateral organisations and that the governing boards of these organisations have the unqualified right to allocate as they see fit within the limits prescribed by the organisation's mandate.

Earmarked contributions are resources channelled through multilateral organisations over which the donor retains some degree of control on decisions regarding disposal of the funds. Such flows may be earmarked for a specific country, project, region, sector or theme, and they technically qualify as bilateral ODA.

Project-type earmarked contributions are resources strictly earmarked for a specific use, at the project level, leaving no, or limited flexibility to the recipient organisation on their allocation. These resources include contributions to project-type interventions (aid type C01 in the DAC CRS list of codes), as well as contributions in terms of donor country personnel (aid type D01) and other technical assistance (aid type D02).

Programmatic earmarked contributions are resources that are earmarked with a greater degree of flexibility. These resources include contributions to specific-purpose programmes and funds managed by implementing partners (aid type B03), as well as contributions to basket funds/pooled funding (aid type B04).

For further information see the methodological note on tracking development co-operation through international institutions in DAC statistics: https://www.oecd.org/dac/stats/tracking-flows-through-international-institutions.htm.

SUSTAINABLE DEVELOPMENT GOAL FOCUS

The Sustainable Development Goal (SDG) focus is a voluntary field reported in the Creditor Reporting System (CRS) for which

reporting started from 2018 flows, and thus the reporting coverage might be incomplete. Up to 10 Sustainable Development Goals or targets can be reported against each individual aid activity in the CRS. The share of SDG-related aid is calculated as the sum of all bilateral ODA commitments marked for a specific SDG over the sum of all bilateral commitments. The figure "Sustainable Development Goal Focus" differentiates between the share of bilateral ODA marked against a single SDG, and the share marked against two or more SDGs, giving a visualisation of SDGs overlaps. The portion of bilateral ODA reported as not contributing to any SDGs is visualised as "not marked". Given that activities can be simultaneously marked for more than one SDG, the sum of the shares of all SDGs is normally higher than 100%, and the shares from different SDGs should not be added up together. For more methodological information, please see: https://one.oecd.org/document/DCD/DAC/STAT(2018)41/REV1/en/pdf.

BILATERAL ODA BY CHANNEL OF DELIVERY

The channel of delivery tracks bilateral funding channelled through multilateral organisations, NGOs, PPPs and other channels. It also distinguishes between public and private implementing partners. The channel of delivery is the first implementing partner. It is the entity that has implementing responsibility over the funds and is normally linked to the extending agency by a contract or other binding agreement, and is directly accountable to it. Where several levels of implementation are involved (e.g. when the extending agency hires a national implementer which in turn may hire a local implementer), the first level of implementation is reported as the channel of delivery. Where activities have several implementers, the principal implementer is reported (e.g. the entity receiving the most funding). In the case of loans, the borrower (i.e. the first entity outside the donor country that receives the funds) is reported.

Channels of delivery are identified by their codes. Titles and definitions for channel-codes are available in DAC statistical reporting directives (e.g. multilateral organisations are coded in series 40000, universities, research institutes or think tank are coded in series 50000.) The most up to date version can be found in the list of codes, worksheet "channel-codes", available at http://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/dacandcrscodelists.htm.

Public sector institutions include central, state or local government departments (e.g. municipalities) and public corporations in donor or recipient countries. Public corporations refer to corporations over which the government exercises control by owning more than half of the voting equity securities or otherwise controlling more than half of the equity holders' voting power; or through special legislation empowering the government to determine corporate policy or to appoint directors.

Private sector institutions include "for-profit" institutions, consultants and consultancy firms that do not meet the definition of a public sector institution (see above).

BILATERAL ODA UNSPECIFIED/UNALLOCATED

Some activities may benefit several recipient countries. Regional projects and programmes are reportable under the most specific available "regional/multi-country" category (e.g. South of Sahara), and are not attributed to a specific recipient country.

The category "bilateral, unallocated" is used if an activity benefits several regions. It is also used for a number of activities undertaken in donor countries such as administrative costs not included elsewhere.

ODA TO LEAST DEVELOPED COUNTRIES

ODA to least developed countries (LDCs) is presented in different manners. Bilateral flows reflect the funds that are provided directly by a donor country to an aid-recipient country.

However, when calculating a donor's total ODA effort with regards to the UN target for LDCs, an estimate needs to be made to impute aid by multilateral organisations back to the funders of those bodies. For more information on imputed multilateral flows see: http://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/oecdmethodologyforcalculatingimputedmultilateraloda.htm.

BILATERAL ALLOCABLE AID

Bilateral allocable aid is the basis of calculation used for all markers (gender equality and environmental markers). It covers bilateral ODA with types of aid A02 (sector budget support), B01 (core support to NGOs), B03 (specific funds managed by international organisation), B04 (pooled funding), C01 (projects), D01 (donor country personnel), D02 (other technical assistance) and E01 (scholarships).

GENDER EQUALITY POLICY MARKER

The DAC Gender Equality Policy marker is a statistical instrument to measure aid that is focused on achieving gender equality and women's empowerment. Activities are classified as "principal" when gender equality is a primary objective, "significant" when gender equality is an important but secondary objective, or "not targeted". In the profiles of DAC and non-DAC providers, the basis of calculation is all screened (i.e., screened target and screened non-targeted) bilateral allocable aid.

Gender marker statistics are only shown for donors with sufficiently high coverage – that is, more than 50% of the donor's bilateral allocable aid is screened for the policy marker. Cross-country averages only take into account these donors.

Source: OECD (2019), "Aid projects targeting gender equality and women's empowerment (CRS)", *OECD International Development Statistics* (database), http://stats.oecd.org/Index.aspx?DataSetCode=GENDER.

ENVIRONMENT MARKERS

Aid in support of the environment and the Rio Conventions encompasses activities marked with either the "aid to environment" marker or any of the four Rio markers: biodiversity, desertification, climate change mitigation and climate change adaptation. Aid focused on environmental issues as a principal objective includes only activities marked as "principal" by the "aid to environment" marker.

Aid focused on climate change overall comprises activities classified as "principal" or "significant" by either the climate change mitigation or adaptation marker; projects marked with both Rio markers are subtracted from the total to avoid double counting. Shares of aid targeting climate change mitigation and climate change adaptation specifically do not exclude this overlap; thus, the two should not be added together. More details are available at: http://www.oecd.org/dac/environment-development/rioconventions.htm.

The table "Performance against environment and Rio Markers" captures activities marked by each of the following markers: aid to environment, biodiversity, desertification, climate change mitigation and climate change adaptation. For climate change, the table presents data on aid supporting both mitigation and adaptation

(i.e., activities marked with both the markers), only climate change mitigation (i.e., activities marked with the climate change mitigation marker, but not climate change adaptation) and only climate change adaptation (i.e., activities marked with the climate change adaptation marker, but not climate change mitigation). Since the same project may be marked for multiple markers, the figures for each individual marker should not be added up as this can cause double counting.

For the aforementioned statistics, the basis of calculation is either **total** bilateral allocable aid or all **screened** (i.e., screened targeted and screened non-targeted) bilateral allocable aid. If the statistic is based on a single marker (e.g., only the biodiversity marker), the denominator is all **screened** bilateral allocable aid. If the statistic is based on a combination of multiple markers (e.g., both the climate change adaptation and mitigation marker), the denominator is **total** bilateral allocable aid. Environment and Rio marker statistics are only shown for donors with sufficiently high coverage – that is, more than 50% of the donor's bilateral allocable aid is screened for the marker. Cross-country averages only take into account these donors

The figure "Climate and environmental focus by sector" presented in each provider profile nets out the overlaps between Rio and environment markers: it shows climate-related aid as a sub-category of total environmental aid; biodiversity and desertification are also included (either overlapping with climate-related aid or as additional – other – environmental aid) but not separately identified for the sake of readability of the figure. One activity can address several policy objectives at the same time. This reflects the fact that the three Rio conventions (targeting global environmental objectives) and local environmental objectives are mutually reinforcing. The same activity can, for example, be marked for climate change mitigation and biodiversity, or for biodiversity and desertification.

Source: OECD (2019), "Aid activities targeting global environmental objectives", *OECD International Development Statistics* (database), http://stats.oecd.org/Index.aspx? DataSetCode=RIOMARKERS.

AMOUNTS MOBILISED FROM THE PRIVATE SECTOR

In the OECD DAC statistics, mobilisation means the stimulation by specific financial mechanisms/interventions of additional resource flows for development. The methodologies for reporting on amounts mobilised are defined instrument by instrument (see Annex 6 of DCD/DAC/STAT(2018)9/ADD1/FINAL), but overall they reflect the principles of causality between private finance made available for a specific project and an official intervention, as well as pro-rated attribution as to avoid double counting in cases where more than one official provider is involved in a project mobilising private finance. The amounts mobilised from the private sector cover all private finance mobilised by official development finance interventions regardless of the origin of the private funds (provider country, recipient country, third country). The objective of data collection by the OECD DAC on amounts mobilised from the private sector is two-fold: i) to improve data on the volume of resources made available to developing countries (recipient perspective); and ii) to valorise the use by the official sector of mechanisms with a mobilisation effect (provider perspective). Data are collected through the regular CRS data collection for the following financial instruments: syndicated loans, guarantees, shares in collective investment vehicles, direct investment in companies / project finance special purpose vehicles and credit lines. Work is ongoing to expand the scope of the measure to also include simple co-financing arrangements, including in the form of technical assistance.

ODA DISBURSED THROUGH GOVERNMENT AGENCIES

The extending agency is the government entity (central, state or local government agency or department) financing the activity from its own budget. It is the budget holder, controlling the activity on its own account.

PRIVATE DEVELOPMENT FINANCE

Private Development Finance (PDF) includes cross-border transactions from the private sector having the promotion of the economic development and welfare of countries and territories included in the DAC List of ODA Recipients as their main objective, and which originate from foundations or other private organisations' own resources, notably endowment, donations from corporations and individuals (including high net worth individuals and crowdfunding), legacies, bequests, as well as income from royalties, investments (including government securities), dividends, lotteries and similar. More information can be found at http://www.oecd.org/development/financing-sustainable-development/development-finance-standards/beyond-oda-foundations.htm.

Development Co-operation Report 2021

SHAPING A JUST DIGITAL TRANSFORMATION

Digital transformation is revolutionising economies and societies with rapid technological advances in AI, robotics and the Internet of Things. Low- and middle-income countries are struggling to gain a foothold in the global digital economy in the face of limited digital capacity, skills, and fragmented global and regional rules. Political stability, democracy, human rights and equality also risk being undermined by weak governance and the abuse of digital technology.

The 2021 edition of the *Development Co-operation Report* makes the case for choosing to hardwire inclusion into digital technology processes, and emerging norms and standards. Providing the latest evidence and policy analysis from experts in national governments, international organisations, academia, business and civil society, the report equips international development organisations with the latest guidance and good practices that put people and the sustainable development goals at the centre of digital transformation.

PRINT ISBN 978-92-64-87667-5
PDF ISBN 978-92-64-85686-8

