OECD Skills Studies

OECD Skills Strategy Luxembourg

ASSESSMENT AND RECOMMENDATIONS

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Foreword

Developing relevant skills and using them effectively is crucial for Luxembourg's ability to thrive in an increasingly interconnected and rapidly changing world.

Digitalisation, globalisation, demographic change and climate change combined are increasing and transforming the skills needed to thrive in Luxembourgish workplaces and society. People will need a stronger and more well-rounded set of skills, including cognitive, social and emotional, and job-specific skills, to flourish in life both in and outside of work. The COVID-19 crisis has accelerated the digitalisation of learning and work, making upskilling and reskilling even more critical for many adults.

Luxembourg has achieved relatively strong skills performance in many areas. In terms of developing people's skills, the tertiary attainment level among young adults is among the highest across the OECD, and many adults continue to learn throughout adulthood. In terms of using people's skills, the unemployment rate is at a record low, and Luxembourg is providing jobs to a large number of foreign talents, many of whom are cross-border workers.

However, Luxembourg still faces a number of skills challenges. Skills imbalances are high, with prevalent skills shortages throughout Luxembourg's economy. Adult learning participation varies significantly across socio-economic groups, with those most in need participating the least. Foreign talent faces complex immigration procedures, high living costs and language barriers when seeking to work and live in Luxembourg. Finally, sufficiently timely and reliable data on current and future skills needs are missing.

Recent and planned policy reforms show great promise, but more needs to be done to ensure better skills outcomes. The government and all relevant stakeholders should continue to work in partnerships that involve every level of government, education and training providers, employers, trade unions, the non-profit sector and learners. Since Luxembourg is economically closely integrated in the Greater Region, which includes Luxembourg and the neighbouring regions of France (Lorraine), Germany (Saarland, Rhineland-Palatine) and Belgium (Wallonia), effective co-ordination in skills policies with actors in the Greater Region is essential.

While no single action is the answer, a clear vision and concrete steps taken together by all stakeholders can ensure that Luxembourg will bridge the skills gap. Citizens of all ages and backgrounds should be able to develop and use their skills effectively to take up the opportunities of a rapidly changing society.

To support Luxembourg in its reform agenda, the OECD has conducted a collaborative and tailored National Skills Strategy. It did this by providing detailed analysis and widespread engagement with stakeholders, leading to several tailored recommendations for Luxembourg, as outlined in this report.

The OECD stands to support Luxembourg as it seeks to implement better skills policies for better lives.

The opinions expressed and arguments employed herein do not necessarily reflect the official views of the OECD member countries.

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Abbreviations and acronyms

The following are the main acronyms cited in the report.

Abbreviation/Acronym	Full description
ABBL	Association des banquiers luxembourgeois, or Luxembourg Banker's Association
ACA	Association des compagnies d'assurances et de réassurances du Grand-Duché de Luxembourg, or Companies Association of Insurance and Reinsurance
ADEM	Agence pour le développement de l'emploi, or the Agency for the Development of Employment
ADEM-OP	Service d'orientation professionnelle de l'ADEM, or ADEM's Career Guidance Service
AES	Adult Education Survey
AI	Artificial intelligence
ALCOMFI	Association Luxembourgeoise des conseils comptables et fiscaux, or the Luxembourg Association of Accountants and Tax Officers
ALFI	Association Luxembourgeoise des Fonds d'Investissement, or the Association of the Luxembourg Fund Industry
ATVA	Agence pour la transition vers une vie autonome, or Agency for Transition to Independence
BIBB	Bundesinstitut für Berufsbildung
BTS	Brevet de technicien supérieur, or Higher Technician Certificate
CAI	Contrat d'accueil et d'intégration, or Welcome and Integration Contract
CASA	Centre d'Appui Social et Associatif, or Social and Associative Support Centre
CASNA	Cellule d'accueil scolaire pour les élèves nouveaux arrivants, or School Reception Unit for Newly Arrived Pupils
CC	Chambre de commerce, or Chamber of Commerce
CCP	Certificat de capacité professionnelle, or Vocational capacity certificate
CdM	Chambre des Métiers, or Chamber of Skilled Trades and Crafts
CCSS	Centre commun de sécurité sociale, or Joint Social Security Centre
CdC	Centres de Compétence de l'Artisanat, or Competence Centres
CdC-GTB/PAR	Centres de Compétences du Génie Technique du Bâtiment et Parachèvement, or Competence Centres of the Building Services Engineering and Completion Engineering
CEDEFOP	European Centre for the Development of Vocational Training
CEFR	Common European Framework of Reference for Languages
CEOs	Chief Executive Officers
CePAS	Centre psycho-social et d'accompagnement scolaires, or Centre for Psycho-Social and Educational Accompaniment
CHFEP	Chambre des fonctionnaires et employés publics, or Chamber of Civil Servants and Public Employees
CIF	Congé individuel de formation, or Individual Training Leave
CLAE	Comité de Liaison des Associations d'Étrangers, or Liaison Committee of Associations of Immigrants
CLC	Confédération luxembourgeoise du commerce, or the Luxembourg Trade Confederation
CLQ	Cadre luxembourgeois des qualifications, or Luxembourg Qualification Framework
CNFPC	Centre National de Formation Professionnelle Continue, or National Centre for Continuing Vocational Training
CSL	Chambre des salariés, or Chamber of Employees
CTIE	Centre des technologies de l'information de l'État, or the State Information Technology Centre
CVET	Continuing vocational education and training
CVTS	Continuing Vocational Training Survey
DAES	Diplôme d'accès aux études supérieures, or Diploma of entry to higher education

Abbreviation/Acronym	Full description
DAP	Diplôme d'aptitude professionnelle, or Vocational aptitude diploma
DITEX	Digital Industry Tools Experts
DLI	Digital Luxembourg Initiative
DT	Diplôme de technicien, or Technician's Diploma
EC	European Commission
ECS	European Company Survey
ECTS	European Credit Transfer and Accumulation System
EHTL	École d'Hôtellerie et de Tourisme du Luxembourg, or the Luxembourg School of Hospitality and Tourism
EIG	Economic Interest Group
EQF	European Qualification Framework
ERDF	European Regional Development Fund
ERIC	European Research Infrastructure Consortiums
ESCO	European Skills, Competences, Qualifications and Occupations Classification
EST	École Supérieure du Travail
EU	European Union
EURES	European Employment Services
FDA	Fédération des Artisans, or Federation of Artisans
FEDIL	Fédération des Industriels Luxembourgeois, or the Federation of Luxembourgish Industrials
FHL	Fédération des Hôpitaux Luxembourgeois, or Federation of Luxembourgish Hospitals or
FO	Forum Orientation
GDP	Gross domestic product
GDPR	EU General Data Protection Regulation
GVCs	Global value chains
HE	Higher education
HORESCA	Fédération Nationale des Hôteliers, Restaurateurs et Cafetiers du Grand-Duché de Luxembourg, or the National Federation of Hoteliers, Restaurateurs and Café Owners of the Grand Duchy of Luxembourg
HoT	House of Training
HPWPs	High-performance work practices
HR	Human Resources
IBA-OIE	Observatoire interrégional du marché de l'emploi, or Interregional Labour Market Observatory
ICDL	International Computer Driving Licence
ICT	Information and communication technology
IDCN	International Dual Career Network
IFEN	Institut de Formation de l'Éducation nationale, or the National Education Institute of Training
IFSB	Institut de Formation Sectoriel du Bâtiment, or the Construction Sector Training Institute
IGSS	Inspection générale de la sécurité sociale, or General Inspectorate of Social Security
ILA	Individual Learning Accounts or compte personnel de formation
INAP	Institut national de l'administration publique, or National Institute of Public Administration
INFPC	Institut national pour le développement de la formation professionnelle continue, or National Institute for the Development of Continuing Vocational Training
INL	Institut national des langues, or National Languages Institute
ISCED	International Standard Classification for Education
ISCO	International Standard Classification of Occupations
IT	Information technology
ITA	OECD Indicators of Talent Attractiveness
IVET	Initial vocational education and training
LFF	Luxembourg for Finance
LFS	Labour Force Survey
LHoFT	Luxembourg House of Financial Technology
LIH	Luxembourg Institute of Health
LISER	Luxembourg Institute of Socio-Economic Research

Abbreviation/Acronym	Full description
LIST	Luxembourg Institute of Science and Technology
LLLC	Luxembourg Lifelong Learning Centre
LMI	Labour market information
LWK	Landwirtschaftskammer, or Chamber of Agriculture
MAEE	Ministère des Affaires étrangères et européennes, or Ministry of Foreign and European Affairs
MECO	Ministère de l'Économie, or Ministry of Economy
MENJE	Ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse, or Ministry of Education, Children and Youth
MESR	Ministère de l'Enseignement supérieur et de la Recherche, or Ministry of Higher Education and Research
MFAMIGR	Ministère des Affaires familiales, de l'Intégration et de la Grande Région, or Ministry of Family Affairs, Integration and the Greater Region
MFIN	Ministère des Finances, or Ministry of Finance
MinDigital	Ministère de la Digitalisation, or Ministry for Digitalisation
MJUST	Ministère de la Justice, or Ministry of Justice
MO	Maison de l'orientation
MTEESS	Ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire, or Ministry of Labour, Employment and the Social and Solidarity Economy
NACE	Statistical classification of economic activities in the European Community
NDEP	National Data Exchange Platform
NEET	Not in education, employment and training
NGO	Non-governmental organisation
NLP	Natural language processing
NVAO	Accreditation Organisation of the Netherlands and Flanders
OJA	Online job advertisements
OF	Observatoire de la formation, or Training Observatory
PCI	Plans d'intégration communautaire, or Communal Integration Plans
PES	Public employment services
PIA	Accompanied Integration Pathway
PIAAC	Programme for the International Assessment of Adult Competencies (OECD Survey of Adult Skills)
PISA	OECD Programme for International Student Assessment
PROFIL	Fédération des Professionnels du Secteur Financier, or Luxembourg Financial Industry Federation
R&D	Research and Development
RETEL	Réseau d'études sur le travail et l'emploi, or Labour Market and Employment Research Network
ROME	Répertoire opérationnel des métiers et des emplois, or Operational Directory of Trades and Jobs
SAA	Skills assessment and anticipation
SCRIPT	Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques, or Department for the Co-ordination of Educational and Technological Research and Innovation
SECAM	Service de la scolarisation des enfants étrangers, or Department for Schooling of Foreign Children
SePAS	Service psycho-social et d'accompagnement scolaires
SES	Structure of Earnings Survey
SFA	Service de la formation des adultes, or Department of Adult Education
SFP	Service de la formation professionnelle, or Department of Vocational Training
SMC	Service des médias, de la connectivité et de la politique numérique, or Department of Media, Connectivity and Digital Policy in Ministry of State
SME	Small and medium-sized enterprise
SNJ	Service National de la Jeunesse, or National Youth Service
SOC	Standard Occupational Classification
SCRIPT	Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques, or Department for the Co-ordination of Educational and Technological Research and Innovation
STATEC	Institut national de la statistique et des études économiques, or National Institute for Statistics and Economic Studies
STEM	Science, technology, engineering and mathematics
STRIs	Services Trade Restrictiveness Indicators
SYVICOL	Syndicat des villes et communes Luxembourgeoises, or Association of Luxembourg Cities and Municipalities

Abbreviation/Acronym	Full description
TCNs	Third country nationals
TEVA	School – Active Life Transition
TRF	Apprentissage transfrontalier, or Cross-border apprenticeship
TRIFOB	Formation continue trinationale dans le Rhin Supérieur, or Trinationale Further Education on the Upper Rhine
UEL	Union des Entreprises Luxembourgeoises, or Association of Luxembourg Companies
UIMM	Union des Industries et Métiers de la Métallurgie, or Union of Metallurgy Industries and Trades
UL/UoL	University of Luxembourg
ULCC	University of Luxembourg Competence Centre
VAE	Validation des acquis de l'expérience, or Accreditation of prior experiential learning

Executive summary

OECD-Luxembourg collaboration on the OECD Skills Strategy project

This OECD Skills Strategy Assessment and Recommendations project identifies priority areas for action for Luxembourg and provides tailored recommendations for improving its skills outcomes. The Skills Strategy has benefited from the insights of a wide range of government and stakeholder representatives through a background questionnaire, written input on the four priority areas, bilateral meetings, two workshops and site visits in Luxembourg. This process provided invaluable input that shaped the findings and recommendations in this report.

Key findings and opportunities for improving Luxembourg's skills system

Megatrends such as digitalisation, globalisation, demographic change and climate change are transforming jobs and the way society functions and people interact. These megatrends have many repercussions in Luxembourg, including employers often struggling to find the skills they need and productivity becoming a more important driver of further economic growth. The COVID-19 crisis has accelerated the digitalisation of learning and work, disrupted the economy, and increased the risk of inequalities in education and labour markets in Luxembourg. In addition, the Russian Federation's (hereafter "Russia") war against Ukraine has led to high volatility in the stock market, contributing to a rise in inflation and wage pressures, further exacerbating prevalent skills shortages in Luxembourg's economy.

These megatrends and challenges reinforce the need for Luxembourg to design forward-looking and dynamic skills policies. To thrive in the world of tomorrow, people in Luxembourg need high-quality adult learning opportunities to develop a comprehensive set of skills and successfully manage transitions in the labour market. Moreover, given its relatively small domestic labour supply, Luxembourg needs to effectively attract and retain foreign talent from the Greater Region, the rest of the European Union and beyond. Luxembourg has already put in place a range of relevant strategies and initiatives: the Roadmap for the development of a National Talent Attraction, Development and Retention Strategy (2022); the Recovery and Resilience Plan of Luxembourg (2021); and the Digital Skills and Jobs Coalition (2017). Other strategies have a strong focus on skills as well. In the context of these ongoing initiatives, the country has a unique window of opportunity to put skills at the top of the agenda to positively influence the megatrends, tackle the challenges and seize the opportunities facing the country.

To support these efforts, the OECD and the Government of Luxembourg have identified four priority areas to further improve Luxembourg's skills system. These priorities and the key findings are summarised below.

Priority 1: Providing labour-market-relevant adult learning opportunities in Luxembourg

Building a strong adult learning system in Luxembourg requires all relevant actors to work more closely together, learn from each other and avoid unnecessary overlaps, contradictions and gaps in providing adult learning opportunities. These adult learning opportunities should be provided in a flexible and tailored

manner to ensure that all adults, regardless of their socio-economic background, can access them. Equally, adult learning opportunities need to be continuously reviewed and updated so that they respond to the evolving needs of the labour market and meet clearly defined quality standards. Luxembourg can strengthen providing labour-market-relevant adult learning opportunities by:

- improving the coherence and accessibility of adult learning opportunities
- increasing the relevance and ensuring the quality of adult learning opportunities.

Priority 2: Guiding and incentivising skills choices in Luxembourg

Career guidance services are growing in importance to help individuals successfully navigate and make informed skills choices in a constantly evolving labour market and throughout life. Guidance services need to be regularly updated, co-ordinated amongst diverse providers and customised to the needs of different individuals. Besides guidance, individuals also need personalised financial incentives to support greater participation in adult learning. Similarly, employers also need targeted financial incentives to provide adult learning opportunities. Luxembourg can strengthen guiding and incentivising skills choices by:

- improving guidance services for adult learning
- improving financial incentives for adult learning.

Priority 3: Attracting and retaining foreign talent to fill skills shortages in Luxembourg

The large number of foreign workers in Luxembourg's labour market suggests that Luxembourg is already an attractive destination for foreign talent. Many "pull factors" help Luxembourg attract foreign talent, including high quality of life, a safe living environment and attractive incomes. Nonetheless, there are opportunities to further improve Luxembourg's attractiveness to foreign talent, which should be seized to help Luxembourg remain competitive in the "global race for talent".

Retention of foreign talent will be as important as attraction to ensure that Luxembourg can benefit from the skills and talent it receives from abroad in the long term.

The country can strengthen its policies to attract and retain foreign talent to fill skills shortages by:

- facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs
- facilitating the integration of foreign talent and their families into Luxembourg's society and labour market.

Priority 4: Strengthening the governance of skills data in Luxembourg

Luxembourg collects a wide variety of quantitative and qualitative skills data (e.g. labour market, education and training data), which can be used to inform the design of skills policies. To allow data users (both in and outside of the government) to unlock the full potential of available skills data, Luxembourg should work on improving the quality of its skills data collection. Luxembourg also has space for strengthening the co-ordination of its approach to skills data collection and management. Given the cross-border nature of Luxembourg's labour market, exploring synergies with international data sources will be equally important for Luxembourg. Luxembourg can strengthen the governance of skills data by:

- improving the quality of Luxembourg's skills data collection
- strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg.

1 Key insights and recommendations for Luxembourg

This chapter summarises the context, key insights and policy recommendations of the OECD Skills Strategy for Luxembourg. It applies the OECD Skills Strategy Framework to provide a high-level assessment of the performance of Luxembourg's skills system and provides an overview of the four priority areas of focus selected for this project: 1) providing labour-market-relevant adult learning opportunities; 2) guiding and incentivising skills choices; 3) attracting and retaining foreign talent to fill skills shortages; and 4) strengthening the governance of skills data. The chapter provides an overview of the policy context for each of the four priority areas and summarises the related key findings and recommendations. Subsequent chapters provide more details on the opportunities for improvement, relevant practices and policy recommendations for Luxembourg in each priority area.

Skills matter for Luxembourg

Skills are vital for enabling individuals and countries to thrive in an increasingly complex, interconnected and rapidly changing world. Countries in which people develop strong skills, learn throughout their lives and use their skills fully and effectively at work and in society are more productive and innovative. They also enjoy higher levels of trust, better health outcomes and a higher quality of life (OECD, 2019[1]; 2012[2]). Moreover, as new technologies and megatrends increasingly shape our societies and economies, getting skills policies right becomes even more critical for ensuring societal well-being and promoting inclusive and sustainable growth.

In recent years, Luxembourg's economic performance has been strong. Between 2007 and 2021, annual gross domestic product (GDP) growth, on average, has been higher in Luxembourg than in the European Union (EU). As in other countries, the COVID-19 crisis led to a drop in Luxembourg's GDP growth, although the decline was comparatively mild: GDP contracted by 1.8% in 2020 but recovered quickly and grew by 6.9% in 2021 (OECD, 2022[3]). The recovery of Luxembourg's labour market from the COVID-19 crisis has been strong. As of March 2022, Luxembourg's unemployment rate (4.7%) was at its lowest in 13 years (ADEM, 2022[4]). Compared to March 2021, the number of job seekers declined by 22%. While the pandemic has unsurprisingly slowed down Luxembourg's employment growth, the number of new hires in Luxembourg surpassed pre-pandemic levels already in Q3 2020 (STATEC, 2021[5]).[1] During March 2022, employers declared record numbers of vacancies to Luxembourg's public employment agency (Agence pour le développement de l'emploi, ADEM), resulting in a 35% increase in comparison to March 2021. For the first time in Luxembourg's history, the total number of workers in Luxembourg's labour market surpassed 500 000 in 2022, increasing by 3.7% compared to 2021 (ADEM, 2022[4]).

However, other persistent and future challenges exist. While productivity levels in Luxembourg are high in international comparison, productivity growth has stagnated (National Productivity Council, 2021[6]) GDP growth is expected to decelerate to around 2.9% in 2022 and to slow further in 2023 due to various factors, such as flagging consumer sentiment, supply constraints and their effects on the export of goods, and the rising volatility of financial and business services. Furthermore, the Russian Federation's (hereafter "Russia") invasion of Ukraine poses a significant risk to Luxembourg's economic recovery. While high volatility in the stock markets, a surge in commodity prices and a rise in energy prices are disrupting the production of goods and services, Luxembourg has relatively little direct exposure to Russia, which accounts only for 1.7% of total trade. Nonetheless, the war has exacerbated rising inflation, which is set to increase to 8% in 2022 (OECD, 2022[3]). Furthermore, higher inflation and bottlenecks in the labour market are leading to rising wage pressures, with the total wage rate rising to 5.4% in 2021 following a wage indexation scheme.[2] This may further exacerbate prevalent skills shortages in Luxembourg's economy. In 2021, 40% of Luxembourg's chief executive officers (CEOs) identified the unavailability of key skills as a potential threat to their organisations' growth prospects, ranking it among the top-five most frequently cited potential threats (PwC, 2021[7]). Furthermore, with evidence in growth sectors (such as advanced manufacturing, construction, the health, creative, digital and green sectors) already highlighting recruitment difficulties in middle- and high-skilled jobs – which are expected to grow in the future due to rapid growth and an ageing workforce – reskilling, upskilling and lifelong learning within the existing workforce as well as sourcing international, cross-border workers (OECD, 2021[8]) become critical.

For Luxembourg, implementing a strategic approach to skills policies is essential to support its efforts to boost economic growth and to build a resilient and adaptable skills system. Luxembourg currently has a unique opportunity to set the right skills policy directions for the next decade and beyond.

Skills are essential for Luxembourg's response to global megatrends

In Luxembourg, as in other OECD countries, megatrends such as digitalisation, globalisation, demographic change and climate change are transforming jobs and how society functions and people interact. To thrive

in the world of tomorrow, people will need a stronger and better-rounded set of skills. These include foundational, cognitive and meta-cognitive, social and emotional, and professional, technical and specialised knowledge and skills. Luxembourg will also need to make better use of people's skills in the labour market and individual workplaces.

Prior to the COVID-19 pandemic, Luxembourg's labour market and society were being reshaped by digital transformation. Between September 2018 and September 2019, 68% of online job vacancies published in Luxembourg required basic digital skills (e.g. use of a computer, Internet, etc.), and 59% required more advanced digital skills (e.g. data analysis, programming language, etc.) (Hauret and Martin, 2020[9]; Bourgeon et al., 2020[10]). Moreover, certain jobs (especially in the financial sector) had begun to disappear in Luxembourg, driven by the desire of certain employers to cut costs and invest in technological transformation, leading to redundancies (Huberty, 2018[11]).

Luxembourg's integration into international trade and global value chains (GVCs) continues to influence the structure and competitiveness of its economic sectors, which in turn has an ongoing impact on skills supply and demand in the labour market. New technologies and trade liberalisation have led to a more globalised world characterised by expanding supply chains and outsourcing certain forms of work. Luxembourg is well integrated in GVCs (Di Filippo, 2018[12]). It is more open to international trade in services than OECD countries are on average, as shown by the OECD's Services Trade Restrictiveness Indicators (STRIs) (OECD, 2021[13]).

Demographic change importantly affects Luxembourg's socio-economic outlook. While people aged 65 and up made up 13.9% of Luxembourg's total population in 2012, the figure stood at 14.7% in January 2022 (STATEC, 2022[14]). However, Luxembourg is ageing slower in comparison to neighbouring countries (LISER, 2011[15]), primarily due to a large number of foreigners in the country: 53% of Luxembourg's residents are of other than Luxembourgish nationality (STATEC, 2022[16]) (see Chapter 4). Moreover, on average, these foreign residents tend to be younger than their Luxembourgish counterparts (LISER, 2011[15]). However, Luxembourg is considerably affected by demographic shifts in the Greater Region,[3] where the 65 and over population increased by 20% between 2000 and 2016 (Durand, 2019[17]). Demographic projections further predict an increase of almost 40% in the Greater Region population aged 65 and over by 2050 (i.e. more than 900 000 additional people). By 2050, the Greater Region will have approximately 3.2 million people over 65, representing more than one-quarter of the Region's total population (Durand, 2019[17]). Given that Luxembourg sources 46% of its workers from the Greater Region (STATEC, 2021[5]),[4] population ageing in the Greater Region will have significant implications for the type and quantity of skills that Luxembourg can expect to count on in the future. Creating high-quality and accessible opportunities for reskilling/upskilling for Luxembourg's residents and workers across the life course (see Chapter 2), as well as guiding and incentivising them to participate in reskilling/upskilling opportunities (see Chapter 3), is therefore paramount.

Environmental challenges – air quality, water pollution, heat waves, waste management and biodiversity loss – have implications for skills. These challenges are associated with a rise in respiratory and cardiovascular diseases, impaired cognitive development and acuity, school absences and poor performance in high-stakes tests, which together lead to long-term cognitive skills depreciation (Horvath and Borgonovi, 2022[18]). Furthermore, as a result of the green transition, some new "green jobs" will be created, leading to a change in skills needs, while some existing jobs could be eliminated or transformed in terms of their day-to-day tasks and methods (ILO, 2017[19]; Martinez-Fernandez, Hinojosa and Miranda, 2010[20]). Sectoral studies developed by Luxembourg's ADEM[5] count environmental trends among the key underlying forces shaping Luxembourg's labour market and its various sectors (ADEM, 2022[21]). For example, while retrofitting to increase the energy efficiency of buildings is becoming of increasing importance in Luxembourg's construction sector (ADEM, 2022[22]), the transition to green and sustainable finance (among others) is shaping skills needs in the financial sector (ADEM, 2022[23]). The long-term challenge for policy makers will be to help their economies move towards sustainable, highly skilled,

high-productivity activities, including by designing effective upskilling/reskilling pathways for workers who might find their jobs significantly impacted by the green transition.

Against this backdrop, people will increasingly need to upgrade their skills to perform new tasks in their existing jobs or acquire skills for new jobs. Strong foundational, digital, social and emotional skills, such as critical thinking, communication and adaptability, will become essential for people to be resilient in the face of changing skills demands and to succeed in both work and life. In addition, with aspirations to grow jobs in areas such as advanced manufacturing and the health, creative, digital, and green sectors to exploit future opportunities dealing with megatrends, the need for technical, high-skilled workers will be accentuated. Roles in areas such as professional, scientific activities, information and communication technology, finance and insurance (OECD, 2021[8]), as well as middle-skilled roles, such as in skilled trades, technicians and associate professionals, will be expanded.

The COVID-19 pandemic has disrupted progress and may exacerbate systemic challenges

Luxembourg's first case of COVID-19 was confirmed in February 2020 (Medical Press, 2020[24]). In March 2020, the Government of Luxembourg imposed a lockdown (including school closures), followed by curfews in October and December 2020 and another round of school closures in February 2021 in response to the deterioration of the sanitary situation (Luxembourg Wort, n.d.[25]; STATEC, 2022[26]). As of the end of April 2022, COVID-19 infections in Luxembourg were decreasing (Reuters, 2022[27]), and Luxembourg's complete vaccination[6] rate stood at 78.7% of the eligible population (i.e. the five and over population) (Government of Luxembourg, 2022[28]). Several factors have helped Luxembourg weather the impacts of the pandemic better than most countries. The share of jobs in Luxembourg compatible with teleworking was high in international comparison (although less so for Luxembourg's low-qualified workers) (LISER, 2021[29]), while the share of workers on temporary contracts in Luxembourg was also smaller than in other countries. In addition, support measures, such as short-time working schemes, helped keep people employed (STATEC, 2022[26]). To support the economy, the government also implemented a large and multi-pronged policy package in 2020, followed by a more targeted stimulus package in 2021 (IMF, 2021[30]).

Nonetheless, the impact of the COVID-19 crisis on Luxembourg's economy and society should not be underestimated. The well-being of workers during the lockdown suffered in multiple ways (Beine et al., 2020[31]). The share of workers in Luxembourg with a high risk of depression increased from 11% in 2020 to 15% in 2021, while the share of those whose emotional well-being had deteriorated and who presented a moderate risk of depression increased from 21% to 25% in the same period (CSL, 2021[32]). The pandemic also exacerbated Luxembourg's gender inequalities. Women's employment was affected more than men's during the lockdown, while the increase in childcare responsibilities during school closures fell disproportionately on women's shoulders (LISER, 2022[33]). The economy's recovery has been uneven, and targeted policy support may still be needed for those firms exposed to tourism and global supply disruptions (OECD, 2021[34]).

The COVID-19 crisis has exacerbated Luxembourg's skills imbalances (i.e. skills shortages, surpluses and mismatches). Already before the pandemic, the share of employers in Luxembourg finding it very or fairly difficult to find employees with the required skills (78%) was significantly higher than other countries, such as Denmark (57%) or Lithuania (65%) (Eurofound, 2019[35]). In 2021, 40% of Luxembourgish CEOs identified the "(in)availability of key skills" as a potential threat to their organisation's growth prospects, ranking this among the five most pressing business, economic, policy, social and environmental threats (PwC, 2021[7]). ADEM's sectoral studies show that between 2015 and 2020, the occupations with the greatest shortages in Luxembourg were those traditionally requiring higher-level skills (i.e. occupations in International Classification of Occupations [ISCO] groups 1-3), such as computer engineers and legal experts [7] (ADEM, 2022[21]). With the COVID-19 crisis inducing firms around the world to restructure in ways

that accelerate digitalisation (OECD, 2021[36]) equipping Luxembourg's labour force with the skills needed in an increasingly digitalised world will be essential to sustain Luxembourg's economic performance in the years to come.

Skills should be at the core of Luxembourg's policy response

The megatrends mentioned above and COVID-19 reinforce the need for Luxembourg to design forward-looking, dynamic skills policies. Strong foundational skills will make people more adaptable and resilient to changing skills demands. Digital, transversal, social and emotional, and job-specific skills (Box 1.1) will become increasingly essential for individuals to succeed in learning, work and life. High-quality learning across the life course should be accessible for everyone to enable full participation in society and to successfully manage transitions in the labour market. Adults will need greater opportunities to upskill and reskill, while learning providers will need to create more flexible and blended forms of learning. Firms will have to adopt more creative and productive ways of using their employees' skills. Finally, robust governance structures will be needed to ensure that reforms are sustainable.

The importance of skills for Luxembourg is also reflected in the European Skills (European Commission, 2022[37]), which seeks to: strengthen sustainable competitiveness as set out in the European Green Deal (European Commission, 2022[38]); implement the first principle of the European Pillar of Social Rights (access to education, training and lifelong learning for everybody in the European Union) (European Commission, 2022[39]); and build resilience to react to crises (learning from the COVID-19 pandemic). In line with these goals, the European Commission has recommended that Luxembourg improve the quality and efficiency of skills development. While Luxembourg has made substantial progress in reducing achievement gaps among students and early school leaving, more remains to be done to support skill development for adults (European Commission, 2020[40]) so as to put skills at the top of the agenda to tackle the challenges facing the country and seize the opportunities of the future. This Skills Strategy seeks to support Luxembourg in achieving these aims.

Box 1.1. A wide range of skills are needed for success in work and life

The OECD defines **skills** as **the bundle of knowledge, attributes and capacities** that can be learned and that enable individuals to successfully and consistently perform an activity or task and can be built upon and extended through learning.

The OECD Skills Strategy 2019 identifies a broad range of skills that matter for economic and social outcomes, including:

- **Foundational skills**: Including literacy, numeracy and digital literacy;
- **Transversal cognitive and meta-cognitive skills**: Including critical thinking, complex problem solving, creative thinking, learning to learn and self-regulation;
- **Social and emotional skills**: Including conscientiousness, responsibility, empathy, self-efficacy, collaboration, perseverance, self-control, self-organisation, sociability, and self-esteem;
- **Professional, technical and specialised knowledge and skills**: Needed to meet the demands of specific occupations.

Adult learning (see Chapters 2 and 3) is measured as participation in formal education and non-formal education during adulthood (25+ years):

- **Formal education** is provided in a structured environment (e.g. schools, colleges, universities or other educational institutions), leading to a certification recognised by a national educational classification.
- **Non-formal education** is also provided in a structured environment but does not lead to a certification recognised by a national education classification. To the extent possible with available data sources, only **labour-market-relevant adult learning provision** is considered, which in Luxembourg is commonly referred to as **continuous professional training** (*formation professionnelle continue*) or **continuous vocational education** and training.

In the context of this Skills Strategy, and similarly, as in Luxembourg's Roadmap for the development of a National Talent Attraction, Development and Retention Strategy, **foreign talent** (see Chapter 4) is defined as all foreign-born individuals who could help fill shortages in Luxembourg's labour market. The term does not restrict "talent" to individuals with high-level qualifications (International Standard Classification for Education [ISCED] 2011 levels 5-6).

Skills data (see Chapter 5) refer to all data relevant for skills policy making, and most importantly, labour market and education and training data.

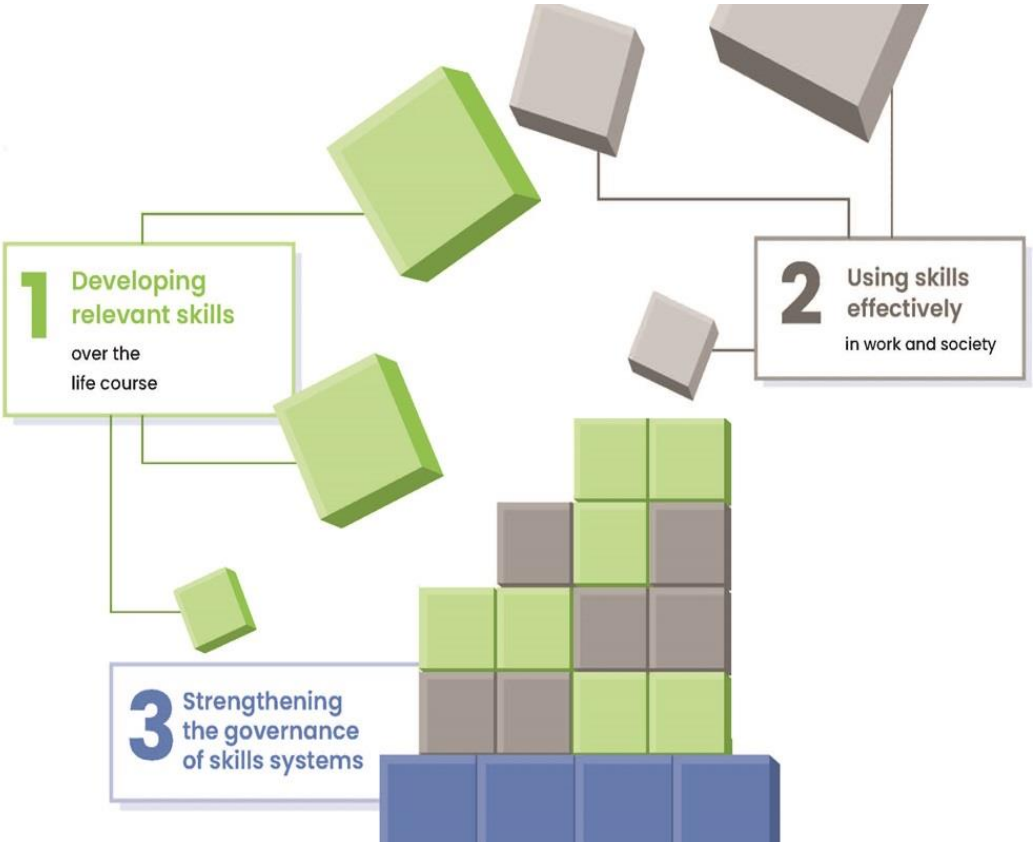
Source: OECD (2019[1]), *OECD Skills Strategy 2019: Skills to Shape a Better Future*, https://dx.doi.org/10.1787/9789264313835-en; UNESCO Institute for Statistics (2012[41]), *International Standard Classification of Education (ISCED) 2011,* http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf; ILO (2022[42]), *International Standard Classification of Occupations (ISCO)*, https://ilostat.ilo.org/resources/concepts-and-definitions/classification-occupation/.

The OECD Skills Strategy for Luxembourg

OECD Skills Strategies provide a strategic and comprehensive approach to assessing countries' skills challenges and opportunities and building more effective skills systems. The OECD collaborates with countries to develop policy responses tailored to each country's specific skills challenges and needs. The foundation of this approach is the OECD Skills Strategy Framework (Figure 1.1), the components of which are:

- **Developing relevant skills over the life course:** To ensure that countries can adapt and thrive in a rapidly changing world, all people need access to opportunities to develop and maintain strong proficiency in a broad set of skills. This process is lifelong, starting in childhood and youth and continuing throughout adulthood. It is also "life-wide", occurring both formally in schools and higher education, and non-formally and informally in the home, community and workplaces.
- **Using skills effectively in work and society:** Developing a strong and broad set of skills is just the first step. To ensure that countries and people gain the full economic and social value from investments in developing skills, people also need opportunities, encouragement and incentives to use their skills fully and effectively at work and in society.
- **Strengthening the governance of skills systems:** Success in developing and using relevant skills requires strong governance arrangements to promote co-ordination, co-operation and collaboration across the whole of government; engage stakeholders throughout the policy cycle; build integrated information systems; and align and co-ordinate financing arrangements. The OECD Skills Strategy for Luxembourg adopted this approach by forming an interdepartmental project team to support the whole-of-government approach to skills policies and engaging a wide variety of stakeholders.

Figure 1.1. The OECD Skills Strategy Framework



Source: OECD (2019[1]), OECD Skills Strategy 2019: Skills to Shape a Better Future, https://dx.doi.org/10.1787/9789264313835-en.

The OECD held a virtual skills seminar in June 2021 to kick off the Skills Strategy, an assessment workshop in October 2021 to identify challenges and opportunities, and a recommendation workshop in April 2022 to develop tailored policy recommendations. Each workshop was attended by more than 120 government and stakeholder representatives. In addition, the OECD held more than 60 bilateral meetings with a wide range of government officials and stakeholders. The consultations during the workshops and bilateral meetings sought not only to enrich the analysis with local insights but also to develop a constructive dialogue and cultivate a shared understanding of skills challenges and opportunities as a basis for taking collective action to improve the skills performance of Luxembourg. Overall, more than 160 participants, who represented ministries and agencies, municipalities, education providers, employers, workers, researchers, and other sectors, were engaged in the context of the OECD Skills Strategy for Luxembourg.

The report was prepared after the initial outbreak of the COVID-19 pandemic and makes recommendations that could facilitate Luxembourg's post-pandemic growth, as well as recommendations to build the performance and resilience of Luxembourg's skills system to further unforeseen challenges in the longer term.

The performance of Luxembourg's skills system

Developing relevant skills

Primary to secondary education is universal, but learning outcomes could be improved

Luxembourg is among the strongest performers in school enrolment from the pre-primary to secondary levels. In 2019, gross enrolment rates at the pre-primary level were higher in Luxembourg (91%) than the OECD average (82%), as well as at the primary level, where enrolment rates were also higher in Luxembourg (105%)[8] than the OECD average (102%) (World Bank, 2022[43]). On the other hand, gross enrolment rates at the secondary level in Luxembourg (105%) are close to the OECD average (106%) for the same year (World Bank, 2022[43]).

However, despite widespread access to schooling, there remain opportunities for the country to improve the skill outcomes of its youth and improve the inclusivity of skills development initiatives for young people. In the latest OECD Programme for International Student Assessment (PISA) round in 2018, Luxembourg performed below the OECD average. Students in Luxembourg scored below the OECD average in key skill areas such as reading, mathematics and science. Low scores among socially disadvantaged students largely account for this underperformance. The link between socio-economic status and performance in PISA is stronger in Luxembourg than in any other participating country. For instance, in reading tasks, advantaged students in Luxembourg performed better than disadvantaged students by 122 score points – significantly higher than the OECD average difference of 89 score points (OECD, 2019[44]).[9]

Tertiary education attendance is high but needs to be more inclusive

Tertiary education has been expanding in the last few decades, and Luxembourg has performed relatively well compared to other OECD countries in terms of its provision of tertiary education to young adults, especially women. In 2020, 64% of 25–34-year-old women in Luxembourg had a tertiary qualification in comparison to 53% of males, and the country performed better than the OECD average for both genders (52% for young women and 39% for young men) (OECD, 2021[45]). Furthermore, international student mobility at the tertiary level has risen steadily, and international students represented 49% of tertiary students in Luxembourg in 2019. However, as with other levels of education, more could be done to improve inclusivity and outcomes for disadvantaged students. For instance, students from low- and lower-middle-income countries represented only 13% of Luxembourg's international student base, as opposed to 29% in OECD countries (OECD, 2021[45]).

The culture of adult learning is relatively strong, but challenges remain

Luxembourg has a relatively strong adult learning culture compared to other OECD countries. According to the latest Labour Force Survey data (2020), participation in adult learning is higher in Luxembourg (16%) than in the European Union (9%) and the Greater Region average (8%) and surpasses neighbouring countries such as France (12%), Germany (7%) and Belgium (4%). Furthermore, employees in Luxembourg have higher participation rates in continued vocational training than most other countries across the OECD.

However, many challenges remain in Luxembourg's adult learning system, such as implementing quality assurance measures and ensuring that existing training offers are relevant to labour market needs. For example, insights from the latest EU Company Survey in 2019 found that 27% of employers in Luxembourg had concerns that the training provided to their employees was of low value in terms of addressing their employees' skills needs, compared with 25% of employers in the European Union and 22% of those in France. Furthermore, participation in adult learning also differs significantly across socio-economic backgrounds. Groups with lower participation rates in Luxembourg include those who are low-qualified, in

lower-skilled jobs, older workers above 55 years old, cross-border workers, males and those in smaller businesses and low training sectors. For these groups, several practical barriers make it difficult to access adult learning, such as scheduling conflicts, health reasons, lack of guidance and costs, among others.

Using skills effectively

Luxembourg's performance in attracting foreign talent is strong but could be further improved

Luxembourg's strong economic performance has led to rapid job growth over the past decade. The country's unemployment rate has been declining steadily since 2015 and was one of the lowest across the OECD in 2021 at 5.7%. While its small population size limits the domestic supply of labour, the large numbers of cross-border workers in Luxembourg's labour market have alleviated labour pressures and have helped keep the economy dynamic and fast-growing. Around 47% of the workforce is composed of cross-border workers. Only 26% of the workforce is made up of resident workers with Luxembourgish nationality. Some 22% of the workforce are residents with an EU nationality (other than Luxembourgish), and a small (5%) yet rapidly increasing share of the workforce consists of resident workers with a non-EU nationality. Luxembourg's reliance on foreign talent manifests itself across most sectors. With the exception of public administration, most employees in each of Luxembourg's ten largest sectors (in terms of the number of active employees) are made up of non-Luxembourgish residents or cross-border workers (see Chapter 4).

Luxembourg has several opportunities to further improve its attraction of foreign talent. The efficiency of Luxembourg's admission procedures could be improved, as international evidence on work permits shows that the maximum processing time in Luxembourg is higher than statutory times in most OECD countries for which data are available. There is also room for making migration policy more responsive to labour market needs. Currently, only high-skilled foreign talent is exempted from the "labour market test" (an assessment of whether a particular job could be performed by a jobseeker in the national labour market before allowing the existing vacancy to be filled by a foreign worker), despite Luxembourg's talent shortages across skill levels. Affordability of living in Luxembourg (not only) for foreign talent should be improved (including by expanding the supply of affordable housing and evaluating and potentially strengthening the financial incentives for attracting foreign talent) and providing information for foreign talent and Luxembourg's employers strengthened.

Furthermore, the retention of foreign talent is just as important as talent attraction, and Luxembourg could better facilitate the integration of foreign workers and their spouses into society and the labour market. For example, the employment rate of foreign spouses in Luxembourg is 16 percentage points lower than the employment rate of the principal migrant whom they accompany (see Figure 4.11 in Chapter 4). Furthermore, comprehensive programmes offering systematic support to foreign workers' spouses in the social and labour market integration process are not available. Finally, while the share of international students in Luxembourg's higher education system (49%) is the highest in the OECD (OECD, 2021[45]), data collected via an employment study conducted by the University of Luxembourg show that there is still space for better facilitating the study-employment transitions of international students into Luxembourg's labour market.

The supply of skills needs to be better aligned with labour market needs

While Luxembourg has developed a relatively strong workforce stemming from high tertiary education attendance and has attracted a sizeable stock of foreign talent, ongoing improvements are required to maintain this position and broaden opportunities for all over time. For example, more could be done to ensure the relevance of education and training offers to the labour market's needs. Employees do not always have the skills required for their jobs. The share of employers in Luxembourg (78%) who find it very

or fairly difficult to find workers with the right set of skills is significantly higher than in other countries, such as Denmark (57%) or Lithuania (65%) (Eurofound, 2019[35]). Furthermore, 40% of CEOs in Luxembourg find that insufficient access to the skills they need potentially threatens their organisations' growth (PwC, 2021[7]). These are evident in meta-skills and evolving middle and higher technical skills. Addressing these challenges requires improving ongoing relevance and accessibility to high-quality provision and extending the reach to help individuals progress, especially those from under-represented groups, such as low-skilled workers and those with low qualifications. There will also be a crucial role for Luxembourg's guidance services to inspire individual engagement in learning within growth areas.

The full and effective use of skills in the workplace could be strengthened

Compared to other OECD countries, Luxembourg has a higher proportion of "middle" performing businesses adopting people-centred high-performance work practices (HPWPs), which promote active skills use. As such, there is greater scope to increase investment in high-performing, high-investment businesses to reach the levels of international leaders (Eurofound, 2019[35]). Furthermore, smaller firms often lag in adopting HPWPs, and there is a relatively high share of zombie firms in Luxembourg, which have low productivity and would normally exit in a competitive market. Increasing productivity and strengthening competitiveness requires strengthening management and working practices. Moreover, Luxembourg could do more to increase the adoption of digital technologies and innovation, as only 1.3% of its GDP is allocated to research and development (R&D) activities, owing to a decline in business R&D over the past decade. This is far below the OECD average and does not meet its 2020 national target of 2.3% to 2.6% of GDP (OECD, 2019[46]).

Strengthening the governance of skills systems

Strong foundations for a whole-of-government approach are present but could be improved

Luxembourg has strong foundations in place to strengthen inter-ministerial co-ordination for adult learning. This includes the provision of guidance services at different stages of education and working life through governance bodies, such as the Maison de l'orientation (MO), which brings together ministries with skills-relevant mandates and serves as a guidance co-ordination hub (MO, 2022[47]). In addition to horizontal co-operation across ministries, a whole-of-government approach in Luxembourg can also be observed through the strong role that local municipalities play in providing adult learning opportunities for residents and offering their own adult learning centres.

Nonetheless, across OECD countries, major skills challenges are rooted in inadequate co-ordination and the lack of adequate information on skills and learning outcomes, with Luxembourg being no exception (OECD, 2020[48]). Since roles and responsibilities for skills governance are distributed across many different ministries and departments in the country, there is room to strengthen co-ordination mechanisms across the whole of government. For instance, addressing Luxembourg's barriers to attracting and retaining foreign talent would require designing a comprehensive strategy involving many ministries that have roles in integrating cross-border workers into society and the labour market. In recognition of this need, Luxembourg created an inter-ministerial working group to design a Roadmap for the development of a National Talent Attraction, Development and Retention Strategy in partnership with stakeholders outside the government.

Co-ordination with stakeholders is essential for effective skills policies

In Luxembourg, diverse stakeholders, such as chambers representing employers and employees across sectors, play a key role in skills policies through their involvement in skills policies as well as their direct provision of education and training. Co-ordinating effectively with these stakeholders enables policy makers to benefit from their expertise and ensure that policies acquire a higher level of legitimacy and

accountability (OECD, 2020[49]). The engagement of stakeholders occurs in Luxembourg through formal bodies, such as the Tripartite Coordination Committee (Comité de Coordination Tripartite), which seeks to foster consensus among government, employer and employee representatives on economic and social issues, as well as more informal bodies, such as the Skillsdësch, which brings together different ministries and stakeholders to discuss skills policies. ADEM and the Association of Luxembourg Companies (UEL) have also been working together since 2015 in the context of the Companies, Partners for Employment Partnership (Entreprises, partenaires pour l'emploi) to raise awareness of the services offered by ADEM among employers, organise recruitment days in various sectors and set up tailor-made training for job seekers.

The development of the country's key skills-related strategies and policies, such as the Lifelong Learning Strategy (2012), has involved the participation of a wide variety of stakeholders, such as employer and employee representatives, among many others. However, since the labour market context, in particular during COVID-19, has significantly changed, an updated and forward-looking adult learning strategy would be needed to further facilitate co-ordination between the government and stakeholders in achieving the ambitions set out in the Recovery and Resilience Plan 2021-2026 (European Commission, 2021[50]) as well as the goals in the EU Skills Agenda 2025 (European Commission, 2022[37]).

High-quality and relevant skills data from both national and international sources are important for Luxembourg

Given Luxembourg's complex workforce structure, having timely and reliable data on current and future skilling needs is central to aligning skills supply and demand. However, the country's skills data governance could be strengthened on several fronts. There is room to improve the quality of Luxembourg's skills data collection in terms of accuracy, coverage and granularity. Moreover, there is space to better facilitate skills data co-ordination and exchanges both within the government and with relevant stakeholders in Luxembourg. With its labour market extending beyond national borders, Luxembourg could equally benefit from building stronger synergies with international data sources, especially to better understand the changing skills supply and demand in the Greater Region.

The policy context in Luxembourg

A range of policies in Luxembourg recognises the importance of skills

Luxembourg has already developed a range of strategies and reforms (see Table 2.1 in Chapter 2 for a comprehensive overview) to help the country overcome the challenges of its skills system and seize the opportunity to leverage its investments in skills to advance its economic and societal ambitions. Relevant priorities and goals from these strategies are summarised at the beginning of each chapter to highlight their connection with the OECD's assessment and recommendations.

Furthermore, as detailed in subsequent chapters, Luxembourg has embarked on a range of skills policy reforms in recent years. These include introducing several strategies that have given adult learning and lifelong learning a high priority on the country's political agenda. For instance, the Lifelong Learning Strategy (2012) was developed in collaboration with various actors to support the skills development of Luxembourg's workforce. The strategy introduced, among others, measures to ensure the quality of adult learning, a single information portal on lifelong learning, the professionalisation of guidance services and a consultative body on lifelong learning. Since then, several other strategies and initiatives supporting lifelong learning and adult learning have been put in place to directly address the effects of global megatrends on the country's workforce, such as the Digital Skills and Jobs Coalition (2017) and the Recovery and Resilience Plan of Luxembourg (2021), which both identify concrete measures to raise digital skills in the country. Similarly, the more recent Artificial Intelligence: A Strategic Vision for

Luxembourg (2020) provides recommendations on how the country could best meet future needs for artificial intelligence-related skills.

Luxembourg has also taken concrete steps to improve the resilience and inclusivity of its skills system by taking a strategic, co-ordinated approach to foreign talent attraction and retention efforts and addressing the needs of cross-border workers and vulnerable and under-represented groups. As mentioned above, a Roadmap for the development of National Talent Attraction, Development and Retention Strategy was developed by several governmental and non-governmental stakeholders. In turn, the National Action Plan for Integration (2018) focuses on improving the integration of all non-Luxembourgers into society and labour markets by supporting adult learning opportunities, language training, integration courses and active labour market programmes.

Policy areas and recommendations

Based on the OECD's initial assessment of the performance of Luxembourg's skills system and discussions with the Luxembourgish National Project Team, four priority areas were identified for this Skills Strategy. Over the course of developing the Skills Strategy, the OECD identified opportunities for improvement and developed recommendations in each priority area based on in-depth desk analysis and consultations with the Government of Luxembourg and stakeholder representatives. The four priority areas are:

1. Providing labour-market-relevant adult learning opportunities in Luxembourg
2. Guiding and incentivising skills choices in Luxembourg
3. Attracting and retaining foreign talent to fill skills shortages in Luxembourg
4. Strengthening the governance of skills data in Luxembourg.

The development of youth's skills was not selected as a priority area, as there are already many ongoing policy reforms in this area, and their impact would have to be assessed before considering further reforms. Furthermore, the youth who leave Luxembourg's education system represent only around half of Luxembourg's labour market workers. For these reasons, this project has concentrated on the skills challenges and opportunities in Luxembourg once individuals have left their initial education.

The summaries below highlight the key findings and recommendations for each priority area, while subsequent chapters provide a fuller description of these.

Priority Area 1: Providing labour-market-relevant adult learning opportunities in Luxembourg (Chapter 2)

Opportunity 1: Improving the coherence and accessibility of adult learning opportunities

It is critical for Luxembourg's adult learning system to be coherent in order to be effective. While both public and private sector actors in Luxembourg are active in providing adult learning opportunities, they could work more closely together, learn from each other and be guided by an overarching strategy to co-ordinate their respective efforts and avoid unnecessary overlaps, contradictions and gaps. As Luxembourg is economically closely integrated into the Greater Region, more co-ordination with actors in the Greater Region could improve the coherence of provided adult learning opportunities. It is also important to support all adults, regardless of their socio-economic background, to access upskilling and reskilling programmes so they are well-equipped to thrive in an evolving labour market. Access is a challenge when prospective adult learners do not have the necessary prerequisites for adult learning programmes or when the adult learning programmes are not flexible enough to accommodate their schedules or are not tailored enough to their specific needs. Opportunity 1 describes how Luxembourg can improve the coherence and accessibility of adult learning opportunities (Table 1.1).

Table 1.1. Opportunity 1: Improving the coherence and accessibility of adult learning opportunities

Policy directions	Recommendations	Responsible parties
Improving the coherence of adult learning opportunities	1.1. Develop a forward-looking strategy for adult learning in Luxembourg with all relevant actors	• INFPC, including MESR
	1.2. Develop a co-operation agreement on adult learning provision among actors in the Greater Region	• MENJE, MTEESS, MESR, MFAMIGR and other relevant ministries • Relevant counterparts in the Greater Region
Improving the accessibility of adult learning opportunities	1.3. Develop modules based on a common skills classification framework (e.g. ESCO) to make them transferable across providers, such as between providers of initial and continuous training, as well as between public and private providers	• MENJE
	1.4. Expand basic digital skills modules across adult learning programmes through digital learning platforms	• MENJE, ADEM, Digital Luxembourg • Public and private providers

Note: INFPC: Institut national pour le développement de la formation professionnelle continue; MESR: ministère de l'Enseignement supérieur et de la Recherche; MENJE: ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse; MTEESS: ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire; MFAMIGR: ministère des Affaires familiales, de l'Intégration et de la Grande Région; ADEM: Agence pour le développement de l'emploi.

Opportunity 2: Increasing the relevance and ensuring the quality of adult learning opportunities

Luxembourg's adult learning system needs to become more responsive to the evolving needs of the labour market. Around 27% of employers in Luxembourg had concerns that the training provided to their employees was of low value in terms of addressing their employees' skills needs. The long-term unemployed (51% of unemployed) and individuals needing reskilling due to health reasons (19% of unemployed) in Luxembourg also require labour-market-relevant adult learning opportunities to improve their employment and career prospects. Besides relevance, which is about providing adult learning opportunities that meet labour market needs, the quality of adult learning programmes, which is about meeting clearly defined quality standards, also matters. Due to the lack of a rigorous accreditation process in Luxembourg, there has been a proliferation of training providers with limited oversight. Around 78% of training providers are private, and around 73% of training providers are comprised of a single trainer or between one to four employees. Currently, there are no common quality standards on how to develop and implement the curricula of adult learning programmes. Similarly, there is no national certification procedure to become an adult learning teaching staff nor a regular professional development requirement for such staff. Opportunity 2 describes how Luxembourg can increase relevance and ensure the quality of adult learning opportunities (Table 1.2).

Table 1.2. Opportunity 2: Increasing the relevance and ensuring the quality of adult learning opportunities

Policy directions	Recommendations	Responsible parties
Increasing the relevance of adult learning opportunities	1.5. Develop a regular and systematic curriculum review process to ensure labour market relevance of formal adult education programmes	• Public and private providers • Employer and employee representatives
	1.6. Expand the provision of tailored training offers to the long-term unemployed and individuals in need of reskilling for a new job by developing modular training programmes with training partners	• ADEM (lead role) • Public and private providers
Ensuring the quality of adult learning opportunities	1.7. Establish an adult learning quality assurance system	• MENJE (lead role) • Relevant ministries, government agencies • Employers and employee representatives
	1.8. Require individuals who want to become adult learning teaching staff to be certified through fulfilling specified criteria related to teaching	• MENJE

Note: ADEM: Agence pour le développement de l'emploi; MENJE: ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse.

Priority Area 2: Guiding and incentivising skills choices in Luxembourg (Chapter 3)

Opportunity 1: Improving guidance services for adult learning

Career guidance services are growing in importance in skills systems to help individuals successfully navigate a constantly evolving labour market and skills landscape at different stages of their lives, with an increasingly complex set of potential options and pathways available to them. New research has started to quantify that change (OECD, 2021[51]) highlighting a rising demand for career guidance among adults and young people – indeed, four out of ten adults recently reported that they had spoken to a guidance advisor in the previous five years. The increasing importance of guidance services is clearly recognised in Luxembourg, with action being taken to better co-ordinate guidance services for individuals of all ages through the establishment of the MO. The importance of career guidance is particularly underlined during turbulent labour market conditions, such as those generated by the COVID-19 pandemic, which intensified industrial restructuring and increased the risk of job displacement (CEDEFOP, 2020[52]). Through such advice, individuals need a range of support to make the best skills choices in a complex ecosystem: assess their interests, build individual resilience, and respond to changing employment and skills requirements. As Luxembourg's skills system evolves, this inevitably calls for a change too in guidance services to ensure that they are working sufficiently for adults as well as young people. They also need to draw consistently on the latest labour market evidence and industry insight to ensure timely and high-quality advice. Opportunity 1 describes how Luxembourg can improve guidance and counselling on adult learning (Table 1.3).

Table 1.3. Opportunity 1: Improving guidance services for adult learning

Policy directions	Recommendations	Responsible parties
Evaluating and regularly updating the content of guidance services	2.1. Develop a regular research programme to keep the content of guidance relevant, drawing on evaluative research about the operation of the guidance service and nationally co-ordinated labour market information	• The MO through the Forum Orientation • Contributions of labour market information from ADEM, IGSS, employer and employee representatives
	2.2. Develop an engagement strategy to more actively involve employer and employee representatives in guidance services	• The MO through the Forum Orientation • Employer and employee representatives

Policy directions	Recommendations	Responsible parties
Strengthening the co-ordination and delivery of guidance services	2.3. Revise Luxembourg's National Strategic Plan for career guidance to ensure its vision and strategic priorities are relevant for the future	• The MO through the Forum Orientation • Individual guidance partners
	2.4. Improve quality assurance of guidance services	• The MO through the Forum Orientation • Guidance experts/consultants • International network of guidance professionals
Widening access to guidance services	2.5. Customise guidance services to the needs of different vulnerable groups (e.g. the low-qualified, cross-border workers, the unemployed, older workers and those with health needs), combining awareness raising with tailored, enhanced advice to widen access	• The MO through the Forum Orientation • Additional actors competent for each vulnerable group, e.g. local community groups

Note: MO: Maison de l'orientation; ADEM: Agence pour le développement de l'emploi; IGSS: Inspection générale de la sécurité sociale.

Opportunity 2: Improving financial incentives for adult learning

In Luxembourg, lower levels of adult learning participation can be observed among those low-qualified, in lower-skilled jobs, older workers, cross-border workers, males and those in smaller businesses and low training sectors. If adult learning participation is to be raised, it is important to address the market failures that have led to employers and individuals under-investing in adult learning and limiting economic and social prospects. Across OECD countries, various financial incentives exist in the "potential" policy toolkit to overcome barriers and incentivise greater investment in adult learning to enhance individual and business opportunities and prosperity. However, for individuals in Luxembourg, the cost of participation in adult learning is among the three most commonly reported barriers hindering participation. Furthermore, access to employer-financed training in Luxembourg is below the EU average. Therefore, to increase participation in adult learning, it will be important to strengthen existing financial incentives for individuals to participate in learning as well as the incentives for employers to provide adult learning opportunities. The overriding aim of efforts in these areas would be to improve the uptake of adult learning and the skills mix of the workforce moving forward, creating greater opportunities for all in the Luxembourg economy, thus fulfilling a key strategic aspiration of the Luxembourg skills system. Opportunity 2 describes how Luxembourg can improve financial incentives for adult learning (Table 1.4).

Table 1.4. Opportunity 2: Improving financial incentives for adult learning

Policy directions	Recommendations	Responsible parties
Targeting better financial incentives to individual needs	2.6. Enhance the customisation and targeting of current financial incentives to better support vulnerable groups	• MENJE, MTEESS (lead roles) • CIF consultative committee
	2.7. Regularly review and develop customised and targeted vouchers to stimulate the take-up of training for future skills in high demand	• MENJE, MTEESS • Relevant ministries, government agencies • Employer and employee representatives
Targeting better financial incentives to employer needs	2.8. Target more of the financial incentives within the existing co-financing scheme to support smaller employers to train	• MENJE (lead role) • Co-funding consultative committee
	2.9. Design and pilot collaborative training incentives (such as sector training funds) for targeted networks of businesses to overcome market failures of under-investment in skills	• Employer and employee representatives • MENJE, MTEESS • Co-funding consultative committee • Relevant ministries, government agencies

Policy directions	Recommendations	Responsible parties
	2.10. Create with industry partners a Future Innovation Upskilling Fund for employers to support strategic and proactive workforce upskilling through workplace transformations	• MENJE, MTEESS and MECO (lead roles) • Employer and employee representatives

Note: MENJE: ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse; MTEESS: ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire; CIF: congé individuel de formation; MECO: ministère de l'Économie.

Priority Area 3: Attracting and retaining foreign talent to fill skills shortages in Luxembourg (Chapter 4)

Opportunity 1: Facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs

The large number of foreign-born workers in Luxembourg's labour market suggests that Luxembourg is already an attractive destination for foreign talent. Many "pull factors" help Luxembourg attract foreign talent, including high quality of life, a safe living environment and attractive incomes. Nonetheless, assessing Luxembourg's attractiveness internationally, an opportunity for improvement remains, especially in the context of a dynamic future labour market and the ongoing need to ensure a steady supply of highly technical middle and higher skills in response to industrial restructuring and growth areas in advanced manufacturing, and the creative, digital and green sectors. Access to Luxembourg and its labour market could be better facilitated. There is room to increase the efficiency of admission procedures, better reflect labour market needs in migration policy, and improve cross-border mobility. The cost of living in Luxembourg poses further obstacles to attracting foreign talent. While incomes in Luxembourg are high, so is the cost of living. Housing prices, in particular, have been increasing rapidly since the start of 2019 for both new and existing dwellings. On average, housing prices have risen by 9.7% per annum over the last five years, almost double the EU average of 4.9% (OECD, 2022[53]). In addition, recruiting foreign talent could be better facilitated by strengthening the provision of information to foreign talent and Luxembourg's employers. Stakeholders have agreed that Luxembourg lacks an internationally recognisable "nation brand", and employers and foreign talent could benefit from improved, accessible and regularly updated information on international hiring processes and opportunities. Opportunity 1 describes how Luxembourg can improve in facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs (Table 1.5).

Table 1.5. Opportunity 1: Facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs

Policy directions	Recommendations	Responsible parties
Improving the accessibility of Luxembourg to foreign talent	3.1. Improve the efficiency of talent admission processes through greater digitalisation	• MAEE • MinDigital
	3.2. Elaborate a list of shortage occupations for talent admission purposes, updated regularly	• ADEM, MTEESS • MAEE • MECO • Employers
	3.3. Facilitate cross-border workers' daily access to Luxembourg's labour market by further facilitating cross-border transport, supporting the creation and use of co-working spaces near the borders, increasing the flexibility of working hours and expanding teleworking possibilities	• Government of Luxembourg • Employers
Supporting the affordability of living of foreign talent in Luxembourg	3.4. Review the nature, range, and timeframe of, and eligibility conditions for, the benefits granted under the inpatriate tax regime based on the results of the regime's planned evaluation	• MFIN

Policy directions	Recommendations	Responsible parties
Strengthening the information provision for, and exchange between, foreign talent and Luxembourg's employers	3.5. Strengthen synergies between nation branding and foreign talent attraction strategies	• MAEE • MECO
	3.6. Expand the provision of information on international job-matching processes and opportunities by further improving the Work in Luxembourg portal, and by raising awareness of the EURES portal	• ADEM • EURES • MECO • MFIN • MAEE
	3.7. Support opportunities for direct information exchange between foreign talent and employers by participating in targeted international job fairs and by considering the organisation of international job-matching programmes	• ADEM • MAEE • MECO

Note: MAEE: ministère des Affaires étrangères et européennes; MinDigital: ministère de la Digitalisation; ADEM: Agence pour le développement de l'emploi; MTEESS: ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire; MECO: ministère de l'Économie; MFIN: ministère des Finances; EURES: European Employment Services.

Opportunity 2: Facilitating the integration of foreign talent and their families into Luxembourg's society and labour market

While Luxembourg could further improve its capacity to attract foreign talent, retention will be equally important to ensure that Luxembourg can benefit from the skills and talent it receives from abroad in the long term. Data from the Inspection générale de la sécurité sociale (IGSS) show that only around 44% of Luxembourg's residents with an EU nationality (other than Luxembourgish) who started working and living in Luxembourg in 2015 were still living in Luxembourg in 2020, while the figure stands at 42% for non-EU nationals residing in Luxembourg during the same period. Evidence suggests that Luxembourg ranks among the top ten OECD performers in talent retention, yet space for improvement still exists. To support the retention of foreign talent, integration of said talent into society and the labour market is essential. While Luxembourg has developed targeted policy tools supporting the integration of foreign talent, their take-up could be improved. For example, Luxembourg's language training for foreign talent could be further strengthened, and integration support for spouses of foreign talent could be more ambitious and systematic. Equally, there is space to better facilitate the transition of former international students into Luxembourg's labour market. Opportunity 2 describes how Luxembourg can improve in facilitating the integration of foreign talent and their families into Luxembourg's society and labour market (Table 1.6).

Table 1.6. Opportunity 2: Facilitating the integration of foreign talent and their families into Luxembourg's society and labour market

Policy directions	Recommendations	Responsible parties
Supporting the integration of foreign talent into Luxembourg's society	3.8. Raise awareness of the benefits of the Welcome and Integration Contract (CAI)	• MFAMIGR • University of Luxembourg • ADEM
	3.9. Create better opportunities for inter-cultural exchanges	• MFAMIGR
	3.10. Strengthen language training for foreign talent by raising awareness of the linguistic leave, extending the scope of subsidies for language training under CAI and boosting the supply and monitoring of language courses	• MTEESS • MFAMIGR • MENJE
Facilitating the integration of foreign talent's spouses into Luxembourg's labour market and society	3.11. Develop comprehensive integration programmes for accompanying spouses of foreign talent	• MFAMIGR, MAEE (lead) • ADEM, MENJE, MESR
Facilitating the transition of former international students into Luxembourg's labour market	3.12. Support international students in establishing connections with Luxembourg's labour market during their studies by increasing the authorised number of hours for working alongside studies and developing targeted career guidance services	• MTEESS • University of Luxembourg

Policy directions	Recommendations	Responsible parties
	3.13. Expand opportunities for former international students from third countries to legally remain in Luxembourg to look for a job following the completion of their studies	• MAEE • MTEESS
	3.14. Support the alignment of the higher education offer to labour market needs by considering introducing funding and/or regulatory incentives	• MESR • University of Luxembourg

Note: MFAMIGR: ministère des Affaires familiales, de l'Intégration et de la Grande Région; ADEM: Agence pour le développement de l'emploi; MTEESS: ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire; MENJE: ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse; MAEE: ministère des Affaires étrangères et européennes; MESR: ministère de l'Enseignement supérieur et de la Recherche.

Priority Area 4: Strengthening the governance of skills data in Luxembourg (Chapter 5)

Opportunity 1: Improving the quality of Luxembourg's skills data collection

Luxembourg collects a wide variety of quantitative and qualitative data, which can inform the design of skills policies, including labour market data and education and training data. Labour market data are commonly used as proxies for analysing evolving skills needs because they allow for the observation of growth or decline in employment in specific occupations. To allow data users (both in and outside of the government) to unlock the full potential of Luxembourg's labour market data, Luxembourg should work on addressing accuracy, coverage and granularity challenges of certain labour market data sources, including social security data and vacancy data. Education and training data (e.g. on attainment, participation, outcomes, expenditure, curricula, etc.) provide important information on the access, quality and relevance of the supply of education and training opportunities. Going forward, Luxembourg has opportunities to further expand its education and training data and strengthen its granularity. Opportunity 1 describes how Luxembourg can improve the quality of its skills data collection (Table 1.7).

Table 1.7. Opportunity 1: Improving the quality of Luxembourg's skills data collection

Policy directions	Recommendations	Responsible parties
Improving the accuracy, coverage and granularity of Luxembourg's labour market data	4.1. Improve the accuracy of occupational social security data by creating targeted incentives for employers, strengthening existing guidance tools for identifying the correct occupational codes, and conducting targeted awareness raising	• CCSS • IGSS • RETEL • ADEM • Employers and their representatives
	4.2. Explore the possibility of including ADEM's vacancy data in CEDEFOP's Skills-OVATE tool	• ADEM • LISER
	4.3. Increase the share of job postings created and reported by employers to ADEM, by designing targeted incentives and services for employers, especially small and medium-sized enterprises, and through employer-led awareness raising	• ADEM • Employers and their representatives
	4.4. Review existing employer surveys, together with administrative data on skills needs to help assess the need for a national employer survey	• Trends working group (ADEM and UEL) • STATEC
	4.5. Adopt a skills-based occupational classification to link occupations to skills	• ADEM
Expanding the range and strengthening the granularity of Luxembourg's education and training data	4.6. Consider combining graduate surveys in higher education with administrative data	• University of Luxembourg • MESR
	4.7. Initiate tracking of adult learners' outcomes by creating a centralised training register interoperable with administrative data and by considering introducing a nationwide survey of adult learners' outcomes	• INFPC • STATEC

Policy directions	Recommendations	Responsible parties
	4.8. Incentivise adult learning providers to describe the learning outcomes of their courses in sufficient detail, and develop an information technology tool helping to extract structured information on skills from the learning outcomes' descriptions	• INFPC

Note: ADEM: Agence pour le développement de l'emploi; CEDEFOP: European Centre for the Development of Vocational Training; CCSS: Centre commun de sécurité sociale; IGSS: Inspection générale de la sécurité sociale; RETEL: Réseau d'études sur le travail et l'emploi; LISER: Luxembourg Institute of Socio-Economic Research; UEL: Union des Entreprises Luxembourgeoises; STATEC: Institut national de la statistique et des études économiques; MESR: ministère de l'Enseignement supérieur et de la Recherche; INFPC: Institut national pour le développement de la formation professionnelle continue.

Opportunity 2: Strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg

A strategic and co-ordinated approach to collecting and managing public and even private data is important for taking full advantage of the social, scientific, economic and commercial potential of data resources. Stakeholders in Luxembourg have highlighted that Luxembourg lacks a co-ordinated approach to skills data collection and management. There is low awareness of all the existing skills data sources, as well as what they cover and how they can be accessed, which limits the extent to which they can be fully leveraged to inform the design and implementation of Luxembourg's skills policies. In addition, efforts to improve Luxembourg's skills data collection and use often occur in an uncoordinated fashion. Skills data exchanges between government institutions and stakeholders remain limited, not least because laws and technical infrastructure allowing for such exchanges must be further developed. Moreover, Luxembourg is not taking full advantage of international skills data sources, especially those of neighbouring countries. However, exploring synergies with international data sources is crucial for Luxembourg, given the cross-border nature of its labour market, and could help Luxembourg assess the potential skills supply and demand in the Greater Region. Opportunity 2 describes how Luxembourg can strengthen co-ordination of, and synergies between, skills data within and beyond Luxembourg (Table 1.8).

Table 1.8. Opportunity 2: Strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg

Policy directions	Recommendations	Responsible parties
Strengthening the co-ordination of labour market and education and training data flows within government and with stakeholders	4.9. Designate a single entity to lead the co-ordination of Luxembourg's skills data collection and analysis efforts	Consortium of public authorities: • INFPC • ADEM • IGSS • STATEC
	4.10. Develop a national skills data charter and an action plan with clear roles, responsibilities and procedures for government and stakeholders to co-ordinate improving the relevance and quality of skills data in Luxembourg in the short and medium term	• Consortium of public authorities
	4.11. Support the development of the National Data Exchange Platform, and advance discussions on the inclusion of skills data among the main priorities of the project	• Consortium of public authorities • MESR
	4.12. Establish a simplified protocol for sharing existing labour market data by introducing agency-specific "data passports" to reduce the bureaucratic burden for recurrent institutional data users	• Consortium of public authorities
	4.13. Increase the value of the existing and new skills data collections by better facilitating further publication of open data on skills	• Consortium of public authorities • Ministry of State

Policy directions	Recommendations	Responsible parties
Building synergies between Luxembourg's and neighbouring countries' data sources to improve the skills data availability for the Greater Region	4.14. Develop a comprehensive mapping of the neighbouring countries' data sources on skills	• Research institutes • MFAMIGR • IBA-OIE
	4.15. Promote the establishment of a data exchange platform for skills data within the Greater Region	• Consortium of public authorities • MFAMIGR • IBA-OIE

Note: INFPC: Institut national pour le développement de la formation professionnelle continue; ADEM: Agence pour le développement de l'emploi; IGSS: Inspection générale de la sécurité sociale; STATEC: Institut national de la statistique et des études économiques; MFAMIGR: ministère des Affaires familiales, de l'Intégration et de la Grande Région; IBA-OIE: Observatoire interrégional du marché de l'emploi.

Overview of main recommendations

Box 1.2. Main recommendations to strengthen Luxembourg's skills system

Based on OECD analysis and in-country consultations, two recommendations have been selected for each priority area that could be considered to have the highest priority based on an assessment of potential impact, relevance in the current Luxembourg context, as well as overall support from stakeholders for implementation.

Providing labour-market-relevant adult learning opportunities in Luxembourg

- Develop a forward-looking strategy for adult learning in Luxembourg with all relevant actors (Recommendation 1.1)
- Establish an adult learning quality assurance system (Recommendation 1.7).

Guiding and incentivising skills choices in Luxembourg

- Develop an engagement strategy to more actively involve employer and employee representatives in guidance services (Recommendation 2.2)
- Target more of the financial incentives within the existing co-financing scheme to support smaller employers to train (Recommendation 2.8).

Attracting and retaining foreign talent to fill skills shortages in Luxembourg

- Elaborate a list of shortage occupations for talent admission purposes, updated regularly (Recommendation 3.2)
- Strengthen language training for foreign talent by raising awareness of the linguistic leave, extending the scope of subsidies for language training under CAI and boosting the supply and monitoring of language courses (Recommendation 3.10).

Strengthening the governance of skills data in Luxembourg

- Improve the accuracy of occupational social security data by creating targeted incentives for employers, strengthening existing guidance tools for identifying the correct occupational codes, and conducting targeted awareness raising (Recommendation 4.1)
- Develop a national skills data charter and an action plan with clear roles, responsibilities and procedures for government and stakeholders to co-ordinate improving the relevance and quality of skills data in Luxembourg in the short and medium term (Recommendation 4.10).

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Notes

1. The data do not distinguish between new job creations, jobs retirements and job replacements.

2. Luxembourg's wage indexation scheme automatically increases all salaries and social benefits once the consumer price index rises by more than 2.5% over six successive months. In October 2021, wages increased by 2.5% due to the scheme, which contributed to the 5.4% total wage rise in 2021. On 1 April 2022, the automatic indexation was again set off, further increasing all salaries and social benefits by 2.5%, although a tripartite agreement was reached between government, business, and some trade unions to delay changes by at least one year. The government has increased transfers to poorer households to cover the financial support expected to come from the wage indexation scheme.

3. Greater Region refers to the territories of: 1) Lorraine, in the French region of Grand Est; 2) Wallonia, the Federation Wallonia-Brussels and Ostbelgien in Belgium; 3) Saarland and Rhineland-Palatinate in Germany; and 4) the Grand Duchy of Luxembourg (Grande Région, n.d.[55]). The Greater Region is characterised by a high degree of political co-operation and economic interdependence.

4. The so-called cross-border workers work in Luxembourg but live in the surrounding regions of Belgium, France and Germany.

5. The sectoral studies were developed on the basis of vacancies declared by employers to ADEM between 2015 and 2020. Despite an existing legal obligation to declare vacancies to ADEM, the declared vacancies cover only approximately 30% of actual job creations in Luxembourg (see Chapter 5 for more details).

6. A complete vaccination scheme consists of two doses of Moderna, BioNTech/Pfizer, AstraZeneca and Novovax vaccines, or one dose of the Johnson & Johnson vaccine.

7. ADEM's sectoral studies showed that certain traditionally middle- and low-skilled occupations (i.e. occupations in ISCO groups 4-9), such as cooks, head waiters or craft workers, were also suffering from shortages because job seekers showed little interest in pursuing careers in these occupations even if the job-seekers could, in theory, be a suitable match for these shortage occupations (ADEM, 2022[54]).

8. Gross enrolment rates account for students of all ages, regardless of whether they fall within the official age group for the specified level of education. Early enrolment (i.e. enrolment among students younger than the official age group), late enrolment (i.e. enrolment among students older than the official age group) or grade repetition can cause gross enrolment rates to exceed 100%.

9. When interpreting PISA results for Luxembourg, it is important to note that the students going through the Luxembourgish initial school system represent fewer than half of individuals joining the Luxembourgish workforce. The inequality in PISA scores does not fully account for the inequality in employment outcomes, since half of the workforce was educated elsewhere.

2 Providing labour-market-relevant adult learning opportunities in Luxembourg

Providing labour-market-relevant adult learning opportunities is critical for individuals, firms and society to adapt and thrive in a world of changing and rising skills demands. This chapter explains the importance of providing labour-market-relevant adult learning opportunities in Luxembourg and provides an overview of current practices and performance. It then explores two opportunities to strengthen labour-market-relevant adult learning opportunities in Luxembourg: improving the coherence and accessibility of adult learning opportunities; and increasing the relevance and ensuring the quality of adult learning opportunities.

The importance of providing labour-market-relevant adult learning opportunities

Adult learning occurs after initial education. Participation in adult learning can occur in formal and non-formal education programmes as well as in informal contexts (Box 2.1).

There are significant benefits to participation in adult learning for individuals, firms and society. Adult learning participation enables individuals to maintain and improve their skills to become more efficient, adapt to changing workplaces, be more socially and economically mobile and participate actively in increasingly diverse societies. Firms benefit from their employees' participation in adult learning as it increases productivity, adaptability and innovation, all of which are important for competing effectively in an increasingly knowledge-based global society. Society benefits from increased adult learning participation as it spurs economic growth, can enable a fairer distribution of the benefits of growth and can strengthen social cohesion (OECD, 2019[1]).

For Luxembourg, the provision of labour-market-relevant adult learning opportunities is critical to help address the skills challenges resulting from ongoing megatrends, and more recently COVID-19, as well as achieve its economic ambitions in the long term.

Ongoing megatrends, such as globalisation, population ageing, migration, technological progress, and climate change, are driving skills needs in Luxembourg (see Chapter 1), increasing the need for effective adult learning policies. COVID-19 and its attendant containment measures have accelerated some of these megatrends. Most notably, technological progress is increasing the adoption of remote learning and teleworking practices and has underscored the need to provide all adults with access to adequate and tailored adult learning opportunities so that no individual is left behind.

Luxembourg has important economic ambitions that go beyond its prominent financial sector. The economy is diverse, with particularly strong employment growth in sectors such as wholesale, transportation, accommodation and food services, public administration, and health and social work (STATEC, 2021[2]). Important innovation clusters for Luxembourg's future include mobility, health tech, wood, materials/manufacturing, creative industries and clean tech (Luxinnovation, 2021[3]). Ensuring Luxembourg has the skills required to support further growth and innovation in these and emerging sectors is essential for the country to thrive within the European Union and globally.

Luxembourg has recently introduced strategies that give adult learning a high priority on the political agenda. For example, adult learning policies are part of the recent (European Commission, 2021[4]) Recovery and Resilience Plan of Luxembourg (2021), with plans to provide reskilling and upskilling in particular for those adversely affected by COVID-19 (Ministry of Finance, 2021[5]). Similarly, Artificial Intelligence: A Strategy Vision for Luxembourg (2020) emphasises the need to increase learning in the workforce to support adaptation to new skills needs arising as the result of increasing adoption of artificial intelligence (AI) technologies across sectors (Government of Luxembourg, 2021[6]). The current government has also recognised the value of adult learning in its Accord de Coalition (2018-2023), improving co-ordination among adult learning providers, simplifying the validation and recognition of prior learning, providing sector-specific and digital adult learning opportunities, and considering introducing a personal learning account, among others (Government of Luxembourg, 2018[7]).

This chapter analyses the provision of labour-market-relevant adult learning opportunities. While a strong foundation in initial education in one's childhood and youth is critical for learning success later in life, extensive analysis of initial education itself is beyond the scope of the chapter. Furthermore, this chapter is concerned with the provision of adult learning opportunities, while Chapter 3 is concerned with incentives and guidance policies that encourage adults to participate in these adult learning opportunities.

This chapter begins with an overview of the current practices and performance indicators for providing labour-market-relevant adult learning opportunities in Luxembourg. It then discusses two opportunities for strengthening labour-market-relevant adult learning opportunities: improving the coherence and

accessibility of adult learning; and increasing the relevance and ensuring the quality of adult learning opportunities.

Overview and performance

Overview of Luxembourg's current practices for providing labour-market-relevant adult learning opportunities

Adult learning is measured as participation in formal education, non-formal education and informal learning during adulthood (Box 2.1). As this chapter's scope is on labour-market-relevant adult learning opportunities, these different forms of adult learning are covered and analysed to the extent possible with available data sources when they are labour-market-relevant. In Luxembourg, this specific form of adult learning is referred to as continuous professional training (formation professionnelle continue) or continuous vocational training.

Box 2.1. Adult learning: Formal education, non-formal education and informal learning

Formal education is provided in schools, colleges, universities or other educational institutions and leads to a certification recognised by the national educational classification. The International Standard Classification for Education (ISCED) defines formal education as institutionalised, intentional and planned education, which constitutes the formal education system of a country.

Non-formal education is any organised and sustained educational activity but is not necessarily associated with a continuous pathway. Rather, it is an addition or alternative to formal education and includes courses, such as distance education, on-the-job training, seminars, workshops or private lessons. These courses do not lead to any qualifications recognised as formal by the relevant national authorities.

Informal learning relates to typically unstructured, often unintentional, learning activities that do not lead to certification. It may include learning activities that occur in the family, workplace or local community or as part of daily life on a self-directed, family-directed or socially-directed basis.

For the purposes of this report, adult learners are defined as individuals aged 25 and older who have left the initial "first chance" education system (either primary, secondary, post-secondary or tertiary level) but are engaged in learning.

Source: OECD (2011[8]), *PIAAC Conceptual Framework of the Background Questionnaire Main Survey*, www.oecd.org/skills/piaac/PIAAC(2011_11)MS_BQ_ConceptualFramework_1%20Dec%202011.pdfwww.oecd.org/skills/piaac/PIAAC(2011_11)MS_BQ_ConceptualFramework_1%20Dec%202011.pdf; European Commission (2021[9]), *Adult Education and Training in Europe: Building Inclusive Pathways to Skills and Qualifications*, https://education.ec.europa.eu/news/adult-education-and-training-in-europe-building-inclusive-pathways-to-skills-and-qualifications.

Overview of the provision of adult learning programmes

There are many different actors involved in the provision of adult learning. These include public sector actors (e.g. ministries, municipalities, government agencies and institutes), private sector actors (e.g. professional chambers, employers' associations, unions, sectoral training bodies, private training providers), not-for-profit associations and foundations, and actors in the Greater Region, to name a few.

Public sector actors

At the national level, three main ministries are responsible for adult learning.

The Ministry of Education, Children and Youth (Ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse, MENJE) has responsibilities at many levels of education, including pre-school, primary, secondary, initial and continuous vocational education, back-to-education programmes and various adult learning programmes. MENJE is also responsible for several institutions involved in delivering education:

- The National Languages Institute (Institut national des langues, INL) oversees language courses and examinations for adults.
- The National Centre for Continuing Vocational Training (Centre national de formation professionnelle continue, CNFPC) provides training for adults (employees, job seekers or others) to acquire, maintain or extend professional knowledge and skills and to adapt them to social and technological requirements.
- The Department of Adult Education (Service de la formation des adultes, SFA) provides second-chance learning opportunities, education in foundational skills (e.g. literacy, numeracy) and citizenship training.
- The National Education Training Institute (Institut de Formation de l'Éducation nationale, IFEN) provides training and professional development for school staff.
- The National Institute for the Development of Continuing Vocational Training (Institut national pour le développement de la formation professionnelle Continue, INFPC) promotes adult learning through administering financial support from the state for training provision (cofinancement de la formation); maintaining an adult learning information portal (lifelong-learning.eu) (INFPC, 2021[10]); building partnerships with news outlets to inform the public about adult learning; and monitoring training provision through its Training Observatory (Observatoire de la formation, OF) (Observatoire de la formation, 2021[11]), which gathers and regularly publishes statistical information about the provision of training in Luxembourg.

The Ministry of Higher Education and Research (Ministère de l'Enseignement supérieur et de la Recherche, MESR) oversees, among other institutions, the University of Luxembourg (UL), which offers formal and non-formal adult learning programmes. The most recent initiative of the UL jointly with the Government is the creation of the University of Luxembourg Competence Centre (ULCC), which conducts regular studies analysing the skills needs in the labour market and provides training courses (e.g. massive open online courses) to a variety of sectors, in particular health, law, finance and information technology (IT) (University of Luxembourg Competence Centre, 2021[12]).

The Ministry of Labour, Employment and the Social and Solidarity Economy (Ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire, MTEESS) has responsibilities for active labour market policies, guidance and counselling services, and a variety of skills development programmes for adults. The ministry also oversees the Agency for the Development of Employment (Agence pour le développement de l'emploi, ADEM), which implements the programmes to retrain (mostly) the unemployed, supports the reintegration of disabled workers, raises awareness about the importance of training and provides guidance and counselling, among other responsibilities (ADEM, 2021[13]). The ministry is also in charge of a training institute (École Supérieure du Travail), which is governed by a tripartite board and provides training in particular for employees, the self-employed and representatives from temporary employment agencies on topics such as labour law, social security, taxation and others (EST, 2021[14]).

In addition to the ministries, other national institutes provide adult learning opportunities. The National Institute for Public Administration (L'Institut national de l'administration publique, INAP) offers mandatory and elective training and professional development opportunities for government officials. The National School of Physical Education and Sports (L'École nationale de l'éducation physique et des sports, ENEPS)

provides initial and continuous training for sports professionals, including coaches, referees and sports instructors, among others.

Besides these actors at the national level, municipalities also play an important role in providing adult learning opportunities for their residents and offer their own adult learning centres (e.g. Landesakademie). Examples of course offerings provided through these centres include music, first aid, languages, physical education and many others. Municipalities also operate, with financial support from the state, IT centres (Internetstuffen) that promote digital access and skills among participants. Municipalities have also increasingly started to work with one another in networks to provide adult learning services together (INFPC, 2021[10]).

Private sector actors

Professional chambers, employers' associations, unions and private training providers are also active actors in the adult learning system. Some of these assess skills needs through their surveys and offer their own adult learning programmes tailored to their sectors' specific needs. Besides these actors representing sectors, employers also play an important role in directly providing training to their employees, interns and adult apprentices.

A variety of private actors provide adult learning opportunities across sectors. Some actors offer adult learning opportunities in multiple sectors. For example, the House of Training, originally started by the Chamber of Commerce (CC) and the Luxembourg Banker's Association (ABBL), offers diverse training opportunities in architecture, insurance, commerce, culture, hospitality, industry, transportation and logistics and many more. Similarly, the Luxembourg Lifelong Learning Centre (LLLC) was started by the Chamber of Employees (Chambre des salariés, CSL) to provide a variety of adult learning opportunities in the form of university-level programmes (in co-operation with universities), evening classes, seminars, certified courses, among others, across all sectors. In specific sectors, there are also specialised adult learning providers, for example, in agriculture (Landeswirtschaftskammer, LWK), construction (Institut de Formation Sectoriel du Bâtiment, IFSB), crafts (Centres de Compétence de l'Artisanat, CdC; Chambre des Métiers, CdM), accommodation and food services (Luxembourg School of Hospitality and Tourism, EHTL), human health and social work (DeWidong), among others.

The Federation of Approved Private Training Centres (Fédération des Centres de formation privés agréés) (FCF, 2021[15]) was recently established to represent the interests of private training providers. Private training providers are often small in size (see Opportunity 2) and can broadly be grouped into three categories: 1) specialised for-profit training bodies providing training, for example, in languages, human resources, safety, health, environment, financial management, law, banking, management, among others; 2) commercial companies that sell specific hardware or equipment and offer training on how to use such hardware and equipment to buyers; 3) consultancy firms or independent consultants providing management-related training. Training providers offer courses often in a variety of languages (e.g. German, English, French) and in several countries besides Luxembourg (INFPC, 2021[16]).

INFPC, which is under MENJE, offers public and private training providers the opportunity to be featured on its website (lifelong-learning.lu) as well as in an annual list of registered training providers. While the website provides information on many training providers, not all training providers active in Luxembourg are named in its list of providers. The most recent list from 2021 includes 455 organisations offering training services in Luxembourg (INFPC, 2021[17]).

Not-for-profit associations and foundations

In addition to private sector actors, a significant number of not-for-profit associations and foundations offer adult training. As in the case of private training providers, not-for-profit associations and foundations offer training options in a variety of fields of study, such as banking, insurance, human resources, construction,

tourism, restaurant, management languages, information technology (IT) and health, among others (INFPC, 2021[17]). Like private training providers, INFPC, as a public institution that promotes adult learning, also offers not-for-profit associations and foundations the opportunity to be featured on its website (lifelong-learning.lu) and in its annual list of training providers.

Actors in the Greater Region

In addition to actors within Luxembourg, public and private actors in the Greater Region are also relevant for Luxembourg, given its large number of cross-border workers. The Greater Region includes Luxembourg, the neighbouring regions of France (Lorraine), Germany (Saarland, Rhineland-Palatine) and Belgium (Wallonia) and has a combined population of about 11.2 million inhabitants (STATEC, 2021[2]). Luxembourg's population alone is 626 000 (STATEC, 2021[2]).

The most important body for Greater Region co-operation is the Summit Secretariat of the Greater Region, which organises the Summit of the Greater Region (Sommet de la Grande Région) and brings together senior representatives from the Greater Region to discuss how to co-operate in implementing policies and initiatives (Grande Région, 2021[18]). Additional bodies support the Summit Secretariat. The Interregional Parliamentary Council comprises parliamentary representatives from the Greater Region whose responsibilities cover a few policy areas, including education and adult learning. The Economic and Social Committee of the Greater Region represents employees and employers and collaborates on a variety of topics, including education and the labour market. The Interregional Labour Market Observatory (L'Observatoire interrégional du marché de l'emploi, IBA-OIE) gathers information about the labour market in the region and publishes regular reports that are provided as input for the regular summit (IBA-OIE, 2021[19]).

Besides these co-ordination bodies, several learning institutions are relevant for Luxembourg, given that cross-border workers participating in their programmes can acquire relevant skills for their jobs in Luxembourg. Example institutions include, in Belgium, the Technifutur, Technofutur TIC and the Digital Wallonia Hub, which provide training in IT and digital domains. In France, Digital Industry Tools Experts (DITEX) at the Université de Lorraine provides training in engineering, manufacturing and management (DITEX, 2021[20]), while the Pôle Formation UIMM Lorraine (Union des Industries et Métiers de la Métallurgie) provides vocational training. Finally, in Germany, the Mittelstand 4.0 Kompetenzzentrum Saarbrücken provides training in digital and other skills for industry 4.0 (Mittelstand 4.0 Kompetenzzentrum Saarbrücken, 2021[21]).

Efforts to co-ordinate adult learning provision

Several strategies and initiatives have been launched to co-ordinate adult learning provision among relevant actors in Luxembourg. Example strategies include, the Recovery and Resilience Plan of Luxembourg, Artificial Intelligence: A Strategic Vision for Luxembourg, the National Action Plan for Integration, and the Lifelong Learning Strategy (Table 2.1). Most of these strategies support skills-related policies and programmes as a component of larger and more comprehensive strategies. For example, the most recent Recovery and Resilience Plan of Luxembourg underscores the importance of skills policies to support Luxembourg's recovery and efforts to become more resilient. The latest comprehensive strategy specifically on the topic of adult learning was the Lifelong Learning Strategy (S3L) of 2012, which was developed through extensive consultations with relevant stakeholders and included specific recommendations. Example recommendations that have been implemented include the launch of a diploma (Diplôme d'accès aux études supérieures, DAES) to allow drop-outs from secondary education to gain access to higher education; and the creation of a single website (lifelong-learning.lu) that centralises information on adult learning, among others.

Table 2.1. Overview of strategies and initiatives that relate to adult learning in Luxembourg

Strategy	Year	Description
Recovery and Resilience Plan of Luxembourg	2021	Component 1A, "Skilling, Reskilling and Upskilling" of the Recovery and Resilience Plan, commits EUR 10.44 million to a variety of adult learning initiatives. The Skillsdësch aims to engage all relevant actors to analyse skills needs and support the development of a national skills strategy. The Future Skills programme aims to upskill job seekers through three-month-long training sessions in digital, soft and management skills with a six-month-long internship in a public sector institution. The Digital Skills programme offers all employees a voucher (maximum of EUR 500) to participate in short digital training courses.
Artificial Intelligence: A Strategic Vision for Luxembourg	2020	The vision highlights as one of its seven areas of focus, "skills and lifelong learning". It provides recommendations on skills as they relate to artificial intelligence (AI), including, for example, the development of digital training modules on AI, the development of AI-enhanced learning environments and the assessment of future needs of AI-related skills. The vision expands the Digital Skills Bridge programme, which was launched by the MTEESS and ADEM to test the support services needed by businesses to upskill and reskill their workforce and help them better adjust to digital transformations.
Lifelong Learning Strategy (S3L)	2012	The S3L builds on Luxembourg's commitment, as an European Union (EU) Member State, to create a comprehensive approach to lifelong learning as part of the bloc's efforts to foster sustainable and inclusive growth. The strategy was agreed upon by both policy makers and social partners alike and recognises lifelong learning as necessary for all individuals regardless of their age. It is based on six principles, namely: (1) design and promote learning processes adapted to different phases of the learner's life; (2) put the learner at the centre of the learning process by promoting environments conducive to learning; (3) support learners' educational and professional choices through co-ordinated and professionalised guidance services; (4) establish a transparent certification system which includes transferrable units; (5) systematically develop the quality of lifelong learning; and (6) foster participation in lifelong learning by developing measures to facilitate access for all and by making the individual aware of his/her training rights.
National Action Plan for Integration	2018	This plan focuses on the integration in the labour market and society of all non-Luxembourgers residing in the territory. The plan includes concrete proposals for supporting adult learning opportunities, such as language training, integration courses and active labour market programmes, among others. Some adult learning programmes are also targeted at the various service providers of non-Luxembourgish residents.
Digital Skills and Jobs Coalition	2017	The coalition, inspired by the European Commission's Agenda for Digital Skills, brings together more than 500 public and private sector actors to identify concrete measures to raise digital skills in Luxembourg. The coalition facilitates networking and disseminates news, events, resources and a list of relevant IT training opportunities. To strengthen the digital skills ecosystem, it organises periodic thematic digital skills and jobs webinars for coalition members and other stakeholders.

Source: Authors, based on Ministry of Finance (2021[5]), *Recovery and Resilience Plan of Luxembourg,* https://gouvernement.lu/dam-assets/documents/actualites/2021/04-avril/27-programme-stabilite-gramegna/Plan-pour-la-relance-et-la-resilience.pdf; Government of Luxembourg (2021[6]), *Artificial Intelligence: A Strategic Vision for Luxembourg,* https://gouvernement.lu/dam-assets/fr/publications/rapport-etude-analyse/minist-digitalisation/Artificial-Intelligence-a-strategic-vision-for-Luxembourg.pdf; Ministry of Family (2018[22]), *Plan d'action national pluriannuel d'intégration,* https://integratioun.lu/wp-content/uploads/2018/09/PAN-integration.pdf; Government of Luxembourg (2021[23]), *Digital Skills and Jobs Coalition,* https://digital-skills-jobs.europa.eu/en/about/national-coalitions/luxembourg-digital-skills-and-jobs-coalition ; Eurydice (2021[24]), *Luxembourg's Strategy for Lifelong Learning,* https://eacea.ec.europa.eu/national-policies/eurydice/content/lifelong-learning-strategy-46_fr.

Luxembourg's performance in providing labour-market-relevant adult learning opportunities

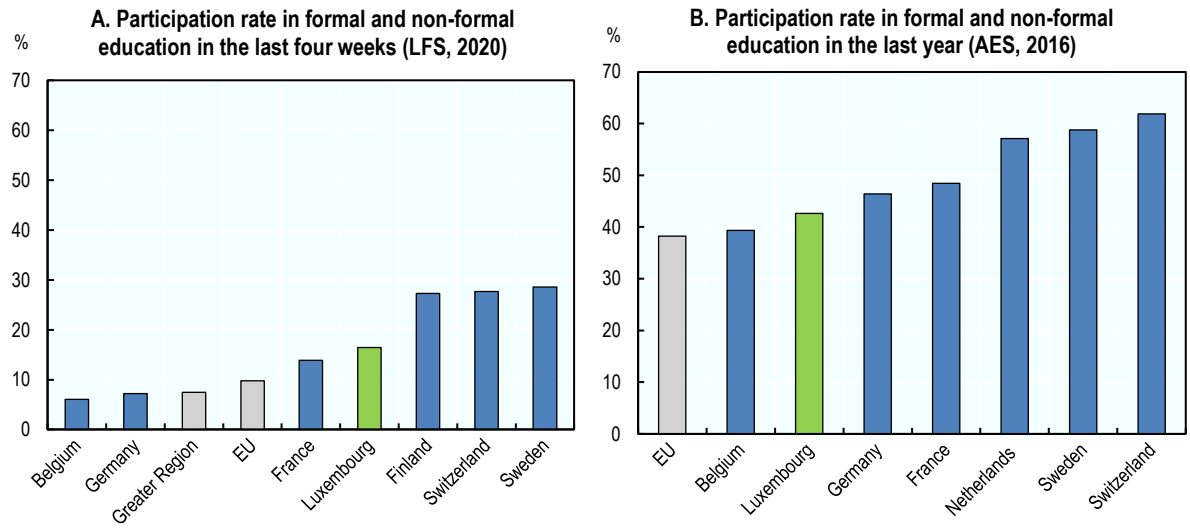
The available evidence on the provision of labour-market-relevant adult learning opportunities suggests that Luxembourg is doing well compared to the EU average. However, there is room for improvement to reach the EU adult learning 2025 targets and to avoid falling behind other leading EU countries. Furthermore, there are important variations in performance within Luxembourg among groups from different socio-economic backgrounds and sectors, highlighting the importance of tailoring adult learning policies to the specific needs of groups.

Participation in adult learning by individuals

Participation in adult learning is relatively higher in Luxembourg than in the EU and the Greater Region. Based on the latest available Labour Force Survey (LFS) data (2020), which measures participation in education and training in the last four weeks, around 16% of adults in Luxembourg were participating

(Figure 2.1). This rate is above the EU average (9%) and the Greater Region average (8%). Neighbouring countries, such as France (12%), Germany (7%) and Belgium (4%), have significantly lower participation rates than Luxembourg. Even though Luxembourg is ahead of its neighbours, it lags behind leading EU countries, such as Sweden (29%), Switzerland (28%) and Finland (27%). For Luxembourg to reach a level comparable with Sweden's, an additional 45 000 adults would need to participate in adult learning monthly.

Figure 2.1. Participation rates in adult learning in Luxembourg, the Greater Region and leading countries, 2020 and 2016



Note: Panel A: Population 25–64 year-olds. LFS data for Luxembourg include only Luxembourg residents. For LFS data on cross-border workers in Luxembourg, see Figure 2.2.
Panel B: Adult learning participation excludes informal learning and guided on-the-job training, to be consistent with the EU Skills Agenda indicator; population 25–64 year-olds.
Source: Eurostat (2020[25]), EU Labour Force Survey, https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey (Panel A) and Eurostat (2016[26]), Adult Education Survey, https://ec.europa.eu/eurostat/web/microdata/adult-education-survey (Panel B).

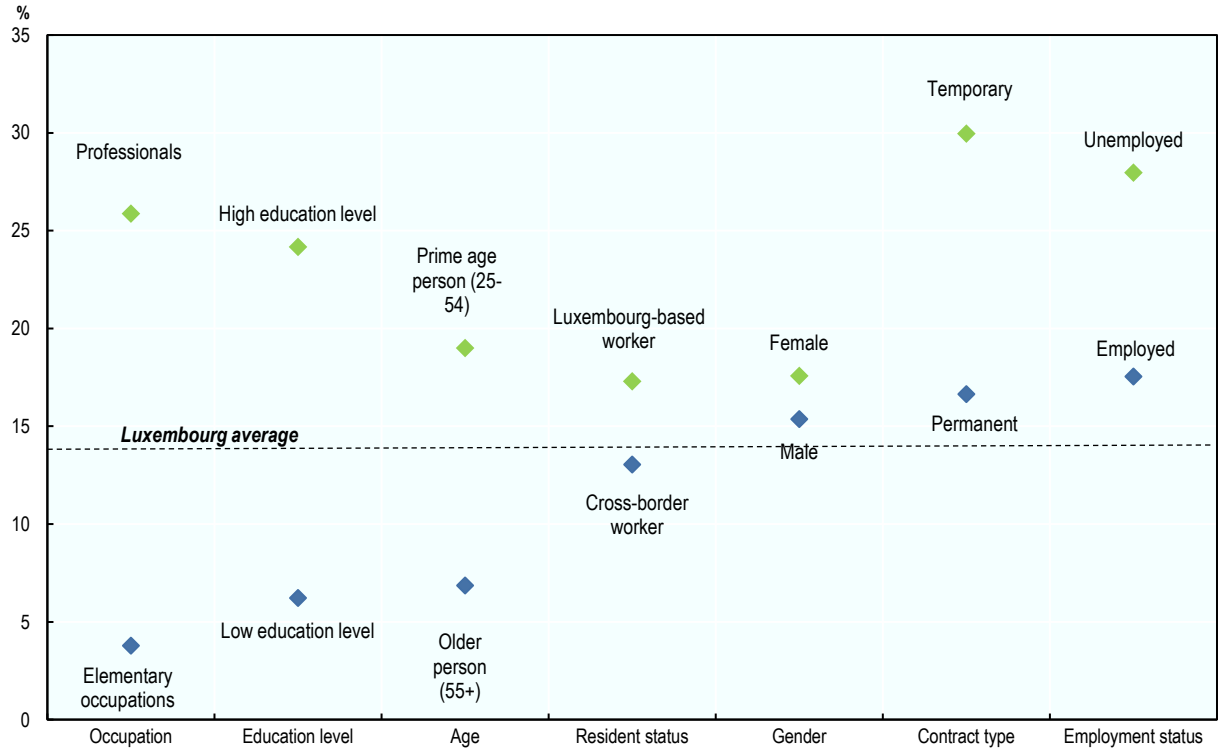
StatLink https://stat.link/9oyxv6

Participation in formal and non-formal adult education in the past 12 months, as measured in the 2016 Adult Education Survey (AES), shows some similarities and differences with the LFS data (Figure 2.1). The participation rate in Luxembourg (43%) is higher than in the European Union (38%) and Belgium (39%) but behind France (48%), Germany (46%) and leading countries, such as the Netherlands (57%), Sweden (59%) and Switzerland (62%). The EU Skills Agenda uses this indicator to measure progress towards achieving its objectives (European Commission, 2020[27]). The EU-level target is for at least 50% of all adults between 25-64 years to be participating in adult learning by 2025. For Luxembourg to achieve this target, an additional 26 000 adults would need to participate in adult learning within a 12-month period.

Participation in adult learning also differs significantly across socio-economic backgrounds. Individuals who work in elementary occupations, who have lower secondary education levels, who are older than 55 or are cross-border workers and males, have lower participation rates relative to individuals who work in professional occupations, have higher education, are of prime age (25-54 years old), are Luxembourg-based workers, and female (Figure 2.2). Individuals with permanent contracts and who are employed have adult learning participation rates around the average but lower rates than those on temporary contracts or who are unemployed. The significant variation within Luxembourg highlights the need to provide adult learning opportunities that are sufficiently accessible for all groups.

Figure 2.2. Differences in adult learning participation in Luxembourg by socio-economic background, 2020

Participation rates in education and training on a monthly basis



Note: Population: 25-65 year-olds. Occupation codes for professionals refer to International Standard Classification of Occupations (ISCO) 2, while elementary occupations refer to ISCO 9; low education level refers to lower secondary education, while high education level refers to higher education. For all indicators, except for resident status, only Luxembourg residents are considered.
Source: Eurostat (2020[25]), EU Labour Force Survey, https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey.

StatLink https://stat.link/h5dkj7

Provision of adult learning opportunities

As noted in the previous section, various actors are responsible for providing different adult learning opportunities in Luxembourg. Some actors are responsible for formal programmes, others for non-formal programmes and others for both programmes.

Regarding formal adult education, the most important providers are: 1) secondary education schools; 2) vocational schools; and 3) the University of Luxembourg and private higher education institutions. Collectively, these institutions provide a greater number of programmes at different education levels.

Provision of adult learning opportunities by employers

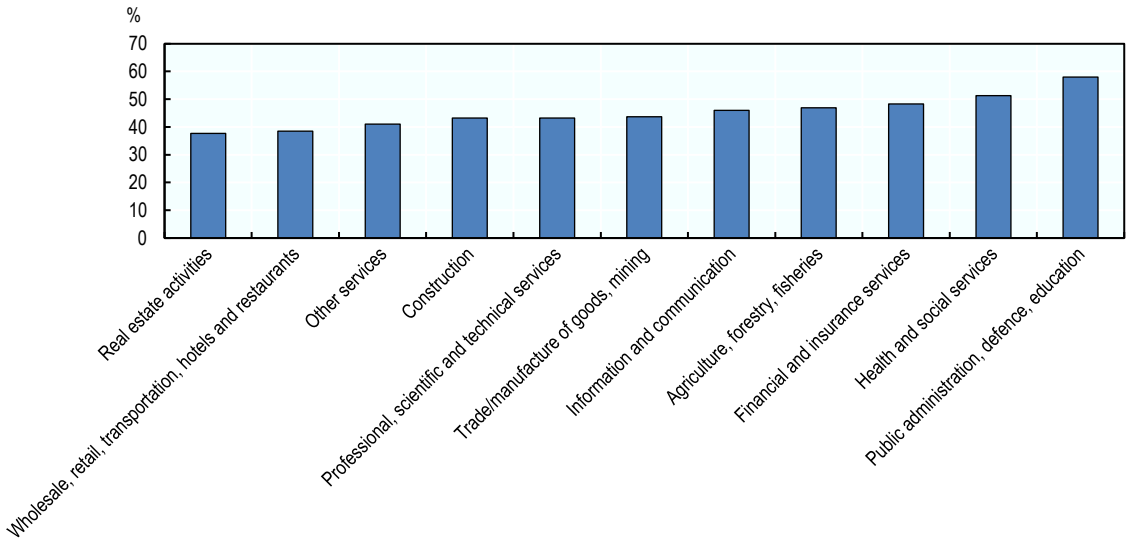
Employers play a particularly important role in providing labour-market-relevant adult learning opportunities among the various adult learning providers. While employers provide the most non-formal learning opportunities in Luxembourg, they provide relatively fewer learning opportunities to adults than employers in many other EU countries. Compared to its European neighbours, the share of employers providing training to their employees is relatively small. Based on the latest available data from the European Company Survey (2019), around 32% of employers in Luxembourg provide training to most of their

workforce, which is higher than France (30%), but below the EU average (35%) and neighbouring countries, such as Germany (35%) and Belgium (37%), and significantly below that of leading EU countries, such as Austria (48%), Finland (55%) and Ireland (57%).

Within Luxembourg, adult learning provision varies significantly by sector and firm size (Figure 2.3). The highest participation rates in adult learning are found in the public administration, defence, and education sector, followed by health and social services in second place, and financial and insurance services in third place. Conversely, the sectors with the lowest share of firms providing adult learning include: professional, scientific and technical services; wholesale, retail, transportation, hotels, and restaurants; and other services. Looking at the latest results from the European Continuing Vocational Training Survey (CVTS) for 2020, there are also important differences across firm size. Indeed, the CVTS shows that larger firms are more active in adult learning provision than smaller firms. For instance, a greater share of the largest firms, with 250+ employees, provide continuing vocational training provision (98%) and have a dedicated training budget (68%) and hence, more resources to support adult learning provision, compared to the smallest firms with 10-49 employees. Some 63% of these smallest firms provide continuing vocational education and training (CVET) courses, and 27% have a training budget. In Luxembourg, larger firms are more likely than medium and smaller firms to benefit from subsidies (59% compared to only 13% of smaller enterprises), as illustrated through the co-financing programme of the state supporting adult learning provision (see Chapter 3).

Figure 2.3. Provision of adult learning across sectors in Luxembourg, 2020

Share of firms providing training by sector



Source: Based on Quality of Work Index microdata provided to the OECD. The Quality of Work Index survey is carried out by the Chambre des salariés (CSL) in collaboration with the University of Luxembourg.

StatLink https://stat.link/8149r5

Opportunities to improve labour-market-relevant adult learning

Luxembourg's performance in providing labour-market-relevant adult learning opportunities is due to many factors. These include individual, institutional, and system-level factors and the country's broader economic and social conditions. However, two key opportunities for improvement have been identified based on a literature review, desk analysis and data and input from officials and stakeholders consulted in conducting this OECD Skills Strategy.

Luxembourg's main opportunities for improvement in providing labour-market-relevant adult learning opportunities are:

1. improving the coherence and accessibility of adult learning opportunities
2. increasing the relevance and ensuring the quality of adult learning opportunities.

Opportunity 1: Improving the coherence and accessibility of adult learning opportunities

It is critical for Luxembourg's adult learning system to be coherent to be effective. While in Luxembourg, both public and private sector actors are active in providing adult learning opportunities, they could work more closely together, learn from each other and be guided by an overarching strategy to co-ordinate their respective efforts and avoid unnecessary overlaps, contradictions and gaps. As Luxembourg is economically closely integrated in the Greater Region, more co-ordination with actors in the Greater Region could improve the coherence of the adult learning opportunities they provide.

Another challenge that actors in Luxembourg highlighted during the review process was improving the accessibility of adult learning opportunities. While the demand-side factors affecting accessibility are explored in detail in Chapter 3, this chapter explores the supply-side factors affecting accessibility. Luxembourg could expand modular adult learning programmes and provide digital basic skills programmes, for example.

Improving the coherence of adult learning opportunities

Luxembourg lacks a coherent approach to adult learning provision. Policy coherence occurs when multiple actors, such as public and private actors, work together to create the necessary enabling environment, mobilise resources and pursue collective action to achieve shared goals (OECD, 2016[28]). In the absence of policy coherence, policies can overlap, be contradictory, and gaps can arise. Moreover, insufficient co-ordination between relevant actors means that they may be unaware of what other actors are doing; they may not learn from one another; and they may not be able to reinforce each other's efforts (see Chapter 4). Therefore, a coherent approach to adult learning provision is needed, involving both public and private sector actors in Luxembourg, as well as actors in Luxembourg and its neighbouring regions.

Greater co-ordination and collaboration are needed to guide the actions of public and private sector actors. Public and private sector actors have their respective roles and responsibilities in the adult learning system. When all actors work together, this raises the effectiveness of the adult learning offer. A coherent approach can be achieved when all relevant actors are sufficiently and successfully engaged.

Actors in Luxembourg frequently noted that while a variety of promising initiatives are taking place, there is not enough coherence between the different approaches. Actors are implementing adult learning programmes often without being aware of other initiatives.

Similar to other countries, such as Belgium and France, Luxembourg engages social partners in the definition of its training system (Table 2.2), which means that social partners participate in identifying training needs as well as developing, funding, implementing and monitoring training programmes. This goes further than in many other countries, where social partners often only have a consulting role.

However, there are also countries where the level of engagement is even more advanced. For example, in Germany and the Netherlands, social partners are engaged in the definition of the training system and its management.

Table 2.2. Social partners' engagement in the education and training systems in OECD countries, 2018

Level of engagement	Countries
Social partners define and manage the training system	Austria, Denmark, Germany, Iceland, Italy, Netherlands
Social partners contribute to the definition of the training System	Belgium, Canada (AB), Canada (BC), Finland, France,[1] Japan,[2] Luxembourg, Mexico, Norway, Poland, Slovenia, Switzerland, Türkiye
Social partners play a consulting role	Canada (QC), Czech Republic, Estonia, Greece, Ireland, Israel, Latvia, Lithuania, New Zealand, Portugal, Slovak Republic, Spain, Sweden[3]
Other	Australia, Hungary, United Kingdom, United States

Note: AB: Alberta; BC: British Columbia; QC: Québec. Social partners play no role in the governance of education and training systems in Chile and Korea. No information is available for Colombia.
1. For France, social partners define and manage the training system at the sectoral level, contribute to the definition of the training system at the national/cross-sectoral level and play a consulting role at the company level, sectoral level and national/cross-sectoral level.
2. For Japan, social partners contribute to the definition of public training systems through the Labour Policy Board.
3. For Sweden, this refers to the social partners' role in the public education system only.
Source: OECD (2016[29]; 2018[30]), "OECD Policy Questionnaire: Towards Resilient and Inclusive Collective Bargaining Systems" and OECD (OECD, 2018[31]), "OECD Policy Questionnaire: Readiness of Adult Learning Systems to Address Changing Skills Needs".

A few steps have been taken to increase coherence in Luxembourg's training activities in the public and private sectors. In the latest Coalition Agreement 2018-2023, the Government of Luxembourg has made a commitment to co-ordinating among all relevant actors in the adult learning system (Government of Luxembourg, 2018[7]).

Furthermore, and as a reaction to the COVID-19 pandemic, the Tripartite Co-ordination Committee (Comité de coordination tripartite) created a working group called Skillsdësch ("Skills Table"), which brings together the relevant ministries (MENJE and MTEESS) as well as key stakeholders (e.g. employers' associations, chambers, unions, private training providers). The Skillsdësch met for the first time in the summer of 2020 and is mandated to develop a future-oriented skills strategy aligned with the demands of the private sector.

Several steps have also been taken to increase the coherence of training activities within sectors in Luxembourg. For example:

- In the finance sector, the ABBL has a working group with representatives across the sector to regularly map the existing training measures (i.e. non-formal and formal programmes) and, based on this work, propose co-ordination mechanisms to address any gaps, if found (ADEM and UEL, 2021[32]).
- In the construction and crafts sector, the Crafts Competence Centres (CdC-GTB/PAR) organise twice annually a survey of members to identify the sectors skills needs, what types of adult learning programmes have been implemented by members, which occupations are covered by adult learning programmes and the likely number of programme participants. This sectoral-level information is helpful to co-ordinate the efforts of actors in the sector (CdC-GTB, 2022[33]).
- In the industry sector, the Federation of Luxembourgish Industrials (FEDIL) organises two surveys (one on industry and one on IT) to assess the types of adult learning programmes provided by employers, skills needs, recruitment difficulties and needs for further collaboration. FEDIL also engages actors in the Greater Region (as will be discussed in the next section) (FEDIL, 2022[34]).

A challenge in using the data from these surveys to assess skills issues at the Luxembourg level is that they are qualitative in nature and participation rates are low and, therefore, not representative. They also

do not use a common and comprehensive skills classification framework, which makes it difficult to link these data sources (see Chapter 5).

Stakeholders in Luxembourg have highlighted the need to further improve co-ordination at the national level in the longer term. This would be beneficial for several reasons. While existing initiatives at the national, and some sectoral, levels have been significant, Luxembourg has been without a comprehensive and forward-looking adult learning strategy for some time. The last adult learning strategy was launched in 2012, and actors have emphasised the need to update that strategy. A forward-looking, national adult learning strategy could generate significant benefits. It could clearly identify the roles and responsibilities of all relevant actors, include adult learning targets, identify funding sources to achieve these targets, and hold all actors accountable for their contributions through regular monitoring and evaluation. Furthermore, such a strategy could also allow Luxembourg to more effectively co-ordinate its efforts to reach the EU Skills Agenda 2025 adult learning targets (e.g. 50% adult learning participation rate[1]) and to achieve its ambitions, as outlined in the Recovery and Resilience Plan (2021-2026) (Ministry of Finance, 2021[5]), to become more sustainable and resilient, and be better prepared for the green and digital transitions.

Across the OECD, many countries have developed and implemented adult learning strategies (Table 2.3). In some cases, these are dedicated adult learning strategies, while others are broader strategies providing recommendations for adult learning. Many strategies identify quantitative targets, deadlines, dedicated funding sources and monitoring plans.

Table 2.3. Examples of adult learning strategies across selected countries, 2019

	Adult learning strategy			Quantitative targets	Deadlines	Dedicated funding	Monitoring plan	Name of strategy
	Dedicated	Part of broader strategy	Specific aspect of adult learning					
Belgium		x	x	x	x	x	x	Plan Formation 2020 (Brussels), Lifelong Learning and a Dynamic Professional Career (Flanders)
Estonia	x			x	x	x	x	Lifelong Learning Strategy (2020)
France			x	x	x	x	x	Plan d'Investissement dans les Compétences 2018-22
Germany	x			x	x	x	x	Weiterbildungstrategie 2020
Hungary		x			x		x	Lifelong Learning Policy Framework Strategy 2014-20
Ireland	x			x			x	Ireland National Skills Strategy 2025
Latvia	x			x	x	x	x	National Development Guidelines for Education and Skills 2021
Luxembourg	x						x[1]	Lifelong Learning Strategy 2012
Norway	x						x	National Skill Strategy 2017-21
Poland		x		x	x		x	Lifelong Learning Perspective 2013 (Perspektywa uczenia się przez całe życie)
Romania	x			x	x	x	x	National Lifelong Learning Strategy 2015-20
Slovenia	x			x	x	x	x	Adult Education Master Plan for 2014-20
Switzerland			x		x	x	x	Promotion of the Basic Skills of Adults 2017-20

1. For Luxembourg, the strategy states that a committee should be set up to monitor progress.
Source: Based on OECD (2019[35]), *Getting Skills Right: Future-Ready Adult Learning Systems*, https://doi.org/10.1787/9789264311756-en.

As mentioned in the previous section, Luxembourg's most recent dedicated adult learning strategy was the Lifelong Learning Strategy from 2012. It did not include quantitative targets, deadlines or identified dedicated funding sources. Although the strategy established a committee to monitor progress involving MENJE, the chambers, and the Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques (SCRIPT)[2] and initially met three to four times a year, it eventually stopped meeting. In addition, the implementation of some recommendations (e.g. creating the DAES, a diploma for those that could not finish their secondary education to access higher education) was delayed since changes to the legal framework were required and took a number of years to accomplish.

Stakeholders in Luxembourg commented that the tenth anniversary since the launch of the strategy could be a fitting moment for Luxembourg to create a new strategy that would, in particular, take into account the most recent challenges since the onset of the COVID-19 crisis and provide a more forward-looking vision to support Luxembourg's recovery and long-term growth.

A similar comprehensive national skills strategy was launched in Ireland (Box 2.2), which is a model that Luxembourg could consider. Given the rapidly changing landscape, the latest and comprehensive skills data (see Chapter 5) should be borne in mind for the design, implementation and evaluation of such a national adult learning strategy for Luxembourg.

Box 2.2. Relevant international example: National skills strategy

Ireland

The Irish National Skills Strategy 2025 is a ten-year plan developed in collaboration with numerous government departments and agencies, employer and employee representatives, and a wide range of other social partners that guide the skills agenda. The vision expressed in the strategy is that "Ireland will be renowned at home and abroad as a place where the talent of our people thrives". The six objectives to achieve this vision are: 1) education and training providers placing a stronger focus on providing skills development opportunities that are relevant to the needs of learners, society and the economy; 2) employers participating actively in the development of skills and making effective use of skills in their organisations; 3) quality of teaching and learning at all stages of education and training continually being enhanced and evaluated; 4) people across Ireland engaging more in lifelong learning; 5) active inclusion to support participation in education and training and the labour market; and 6) support an increase in the supply of skills to the labour market. Each of the six objectives is further elaborated with actions and corresponding measures. For each measure, the strategy clearly states who is/are the leading actor(s) of implementation, with a baseline, mid-term, and 2025 indicator.

Source: Government of Ireland (2021[36]), *Ireland's National Skills Strategy*, www.gov.ie/en/publication/69fd2-irelands-national-skills-strategy-2025-irelands-future/.

Given Luxembourg's high reliance on cross-border workers, co-ordination and collaboration in the area of adult learning are also needed between actors in Luxembourg and those in the Greater Region (CGFP and LCGB, 2021[37]). Around 47% of Luxembourg's labour force are cross-border workers (i.e. those who work in Luxembourg and live in the neighbouring regions of Belgium, France and Germany) (see Chapter 4). Ensuring that these cross-border workers have sufficient and relevant adult learning opportunities is thus in Luxembourg's interest. It is also in the interest of the neighbouring regions of Belgium, France and Germany to provide their residents with relevant adult learning opportunities and support their participation in the Luxembourg labour market, as this reduces their risk of unemployment and alleviates the financial burden on their social and healthcare services (see Chapter 4). Furthermore, co-operating with actors in the Greater Region in the provision of adult learning would make it possible to reach a critical mass of participants needed to provide adult learning programmes in certain specialised subject areas. Some of these programmes would not be economically sustainable if they served only Luxembourg's relatively small population.

The participation rate in adult learning among cross-border workers in regions of neighbouring countries is significantly below that of workers residing in Luxembourg. In 2020, the participation rate in adult learning in Luxembourg was 51%, which was higher than in neighbouring countries, Belgium (45%), Germany (44%) and France (39%). While cross-border workers who reside in the Greater Region can theoretically access adult learning programmes in Luxembourg, participation in programmes in Luxembourg can be challenging, especially when programmes take place outside working hours (e.g. evenings or weekends). Many cross-border workers have a long commute (relative to Luxembourg-based workers) (see Chapter 4) from their workplace in Luxembourg to their home in a neighbouring region, which constrains the time they have for additional adult learning programmes outside working hours. Furthermore, cross-border workers may face language barriers when adult learning programmes in Luxembourg are only available in one of the languages they may not speak.

Participation in adult learning across the Greater Region could be raised through greater co-operation among providers in the Greater Region. For example, cross-border apprenticeships (L'Apprentissage transfrontalier, TRF) allow adults (cross-border workers or workers residing in Luxembourg) to receive on-the-job training in a company in Luxembourg, while attending an approved school in the Greater Region.[3] However, in 2021, the number of adults participating in a cross-border apprenticeship programme was only 17, representing only 2% of all adult apprenticeships in the same year (ADEM, 2021[13]).

Overall participation in cross-border initiatives, such as cross-border adult apprenticeships, is still modest, suggesting there is potential to raise collaboration efforts even further across the Greater Region. Stakeholders in Luxembourg have noted that one of the challenges with these cross-border initiatives is informing potential adult learning participants of these opportunities. While information about adult learning programmes is available in Luxembourg (INFPC, 2022[38]) and similar portals exist in Belgium, France and Germany, there is no single portal[4] for the Greater Region. This makes it difficult for potential candidates to learn about the programmes available in neighbouring countries, their benefits, how to access them, and how to receive support (e.g. financial, etc.) to benefit from them. In the Oberrhein region between France, Germany and Switzerland, individuals have access to a single portal (TRIFOB, n.d.[39]) that hosts comprehensive information about adult learning opportunities across the three countries (Box 2.3).

Box 2.3. Relevant international example: Cross-border co-operation in adult learning

France/Germany/Switzerland

A co-operation agreement on adult learning for the Oberrhein region covers the neighbouring regions of France, Germany and Switzerland. The tri-national metropolitan region of the Upper Rhine, the border region between France, Germany and Switzerland with its 6 million inhabitants, is economically highly integrated. The online bilingual platform, TRIFOB (Trinationale Further Education on the Upper Rhine, or Formation continue trinationale dans le Rhin Supérieur) provides transparent information about adult learning opportunities in Baden, the southern Palatinate, Alsace, and north-western Switzerland, networked across borders.

Source : TRIFOB (2021[40]), *Formation continue dans le Rhin Supérieur,* www.trifob.org/de/faq-weiterbildung.html; Grand Est (2021[41]), *Réussir sans frontière*, www.erfolgohnegrenzen.eu/weiterbildung-ausbildung/frankreichaufenthalt-weiterbidlung-beschaftigung-2/.

Several regional bodies (e.g. Summit Secretariat of the Greater Region, the Interregional Parliamentary Council, the Economic and Social Committee of the Greater Region, and the Observatory for the Greater Region Labour Market) play an important role in strengthening collaboration across the Greater Region. The actors represented in these various bodies contribute to regular discussion papers (Les Cahiers de la Grande Région), which include recommendations for improving collaboration in adult learning provision. For example, the November 2020 edition proposed that actors in the Greater Region should collaborate on skills needs assessments in key occupations (e.g. health professionals, mechanics and engineers) and

explore collaboration of training centres across borders. Actors in the Greater Region could also co-invest in training across borders by sharing training costs (Pigeron-Piroth and Belkacem, 2020[42]). Co-operation on adult learning could be further strengthened through a formal co-operation agreement among the Greater Region actors.

A relevant example of cross-border co-operation in adult learning provision can already be found in the industry sector. The DigiMob Industrie 4.0 project (Grande Région, 2021[18]) brings actors across the Greater Region together to develop a coherent approach to training workers to meet shared skills needs for Industry 4.0. Greater Region actors include public employment services, training centres and employers' associations, among others. From Luxembourg, key partners in this initiative include MENJE/Service de la formation professionnelle (SFP), the CC, the House of Training and ADEM. The innovative aspect of this initiative is that the actors of the Greater Region collectively identify the relevant skills and develop training programmes that develop these skills for their respective residents. An example of a shared training programme is the Maintenance and Production Operators 4.0 programme, which targets job seekers in the Greater Region and leads to a certification in the form of "Badges", which are recognised across the entire Greater Region. The project is financed through the European Regional Development Fund (ERDF) funds (60%) and funds from key partners in Belgium, France and Luxembourg. For the project's duration (October 2019 to December 2022), the goal is to train 165 job seekers in the Greater Region. This initiative, and others like it, could be expanded and introduced to other sectors.

Recommendations

- **1.1. Develop a forward-looking strategy for adult learning in Luxembourg with all relevant actors**. The strategy should include clear goals and implementation milestones in the short, medium and long term, identify the actions to be taken at the national and sectoral level, allocate responsibilities to all actors, establish a regular monitoring and updating process, and earmark funding for its implementation. Where possible, and in the context of limited resources, the actions outlined in the strategy should prioritise building on existing adult learning initiatives and structures rather than creating new ones. An assessment should also be made as to whether the current legal framework needs to be updated to implement the actions in the strategy. The main entity in charge of skills data and analysis (see Recommendation 4.9.) should inform and guide the strategy development, implementation and evaluation. INFPC could, based on that data collection and assessment, play a leading role in facilitating the process for developing the strategy and co-ordinating its implementation. The strategy should be supported through expressions of high-level support, for example, by featuring the strategy in the next government's Coalition Agreement (Accord de Coalition).
- **1.2. Develop a co-operation agreement on adult learning provision among actors in the Greater Region.** This co-operation could start with developing a single online platform (e.g. within lifelong-learning.lu), where all relevant information about adult learning opportunities, financial support for participation and procedures for recognising diplomas across borders can be found. Furthermore, actors in the Greater Region should collaborate on developing regional skills needs assessments to identify common skills needs, expand cross-border adult learning programmes (e.g. cross-border adult apprenticeships), and co-invest in adult learning programmes across borders. As much as possible, a co-operation agreement should build on existing cross-border co-operation initiatives, such as the DigiMob Industrie 4.0. A dedicated task force should lead the design and implementation of the co-operation agreement with representatives of the key actors across the Greater Region. Each area of the Greater Region should specialise in the provision of adult learning programmes that respond to their respective core economic activities but be accessible to learners in other parts of the region as well.

Improving the accessibility of adult learning opportunities

It is important to ensure that all adults, regardless of their socio-economic background, have access to upskilling and reskilling programmes to be well-equipped to thrive in an evolving labour market. While Chapter 3 considers how financial and information barriers can be overcome to improve access, this chapter considers how accessibility can be improved through the provision of modular adult learning programmes and the provision of digital adult learning programmes. Each of these is discussed in turn.

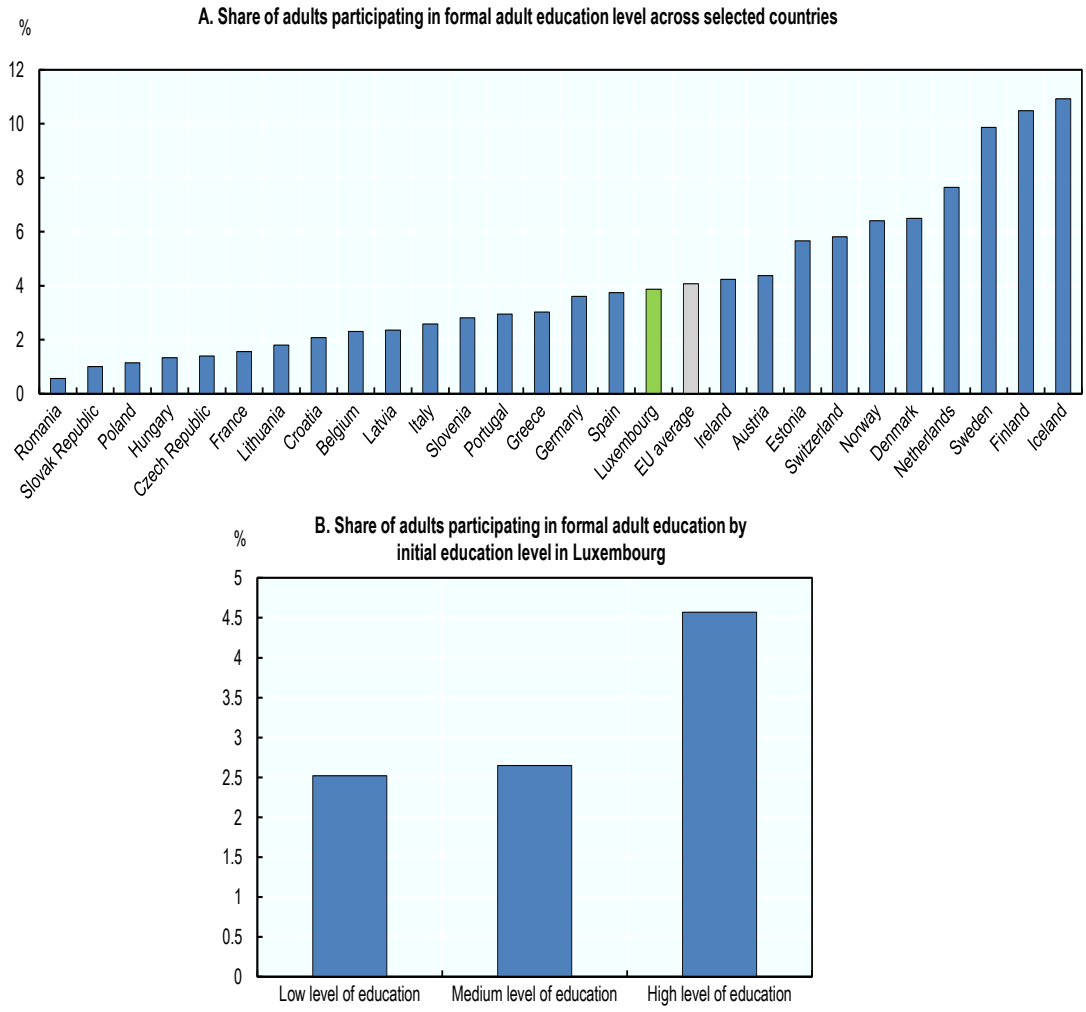
One approach to making adult learning opportunities accessible is through modular programmes. Modular programmes divide a formal education programme into smaller, self-contained modules. Each module has its own curriculum and learning objectives, which, once achieved, leads to certified credits or partial qualifications (also known as micro-credentials). These credits or partial qualifications can then be tracked in a personal learning portfolio and combined into a full qualification over time. The benefit of such an approach is that it gives the learner more flexibility and choice in their learning pursuits, as learners can test and try different modules without having to commit to a full-fledged programme, while at the same time providing them with the opportunity to use these credits to earn a credential. Learners can also pursue these modules in their own time (OECD, 2019[43]).

Modular programmes are particularly relevant for individuals with low levels of education and the unemployed as individual modules are more manageable to complete one at a time and spread out over time (Fouarge, Schils and de Grip, 2013[44]). A more flexible modularised programme offering would help increase uptake and lower the drop-out rate among individuals and the unemployed.

In Luxembourg, the participation rate (3.9%) in formal adult education is close to the EU average (4%) but is significantly lower than that of leading EU countries, such as Iceland (11%), Finland (10%), Sweden (10%), Netherlands (8%) and Denmark (7%). In Luxembourg,[5] individuals with higher levels of education (4.6%) are significantly more likely to participate in formal adult education than individuals with medium (2.7%) or low (2.5%) levels of education (Figure 2.4). Offering more formal adult education programmes as modular programmes has the potential to raise the participation rate for individuals with lower levels of education.

The University of Luxembourg provides several formal adult education programmes at the bachelor and master levels in diverse subject areas (e.g. computer science, health, economics and management, behavioural and cognitive sciences). Programme duration varies between two and three years, and programmes can be pursued on a part-time basis. In addition, the university offers a variety of shorter certificate programmes, which can vary from 8 days (e.g. Certificate in Sustainable Finance), 3 weeks (e.g. Certificate in Principles of Biobanking) to 12 months (e.g. Certificate in management for the health sector). Some programmes lead to a certificate of participation, while others lead to a certificate granting credits within the European Credit Transfer and Accumulation System (ECTS).[6] When there are relevant diploma programmes, these credits accumulated through certificate programmes can be used to fulfil part of the requirements and shorten the duration of the diploma programme. While most programmes are structured in individual modules, it is currently not possible for learners to sign up for individual modules. Instead, learners must sign up for a whole programme, which can constitute a significant commitment in terms of time and finances and thus make it less accessible. Moreover, modules are not transferable across programmes. The module structure and size are not yet standardised across the whole university and have been designed to fit only within a specific programme. The university does not have an interoperable module structure across programmes because each programme features a distinct core course and optional modules. The possibility of offering major-minor combinations is currently being explored.

Figure 2.4. Participation in formal adult education in selected countries, 2020



Note: LFS data for Luxembourg captures only the residents of Luxembourg. Low level of education refers to ISCED 0-2 (up to lower secondary education); medium level of education refers to ISCED 3-4 (upper secondary education); high level of education refers to ISCED 5-8 (tertiary education).
Source: Eurostat (2020[25]), EU Labour Force Survey, https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey.

StatLink https://stat.link/9sct75

The University of Luxembourg's Competence Centre (ULCC), which was created as a joint initiative between the University of Luxembourg and the government to co-ordinate and provide adult education programmes in partnership with external partners, offers a certificate programme for the Promotion of Children's Physical Activity (Bewegungsförderung), for which all modules were made individually accessible (University of Luxembourg Competence Centre, 2021[45]). Thus, learners can join individual modules that are of most interest to them in their own time and at their own pace and based on their specific interests. The advantage of this flexible approach has been raising the average number of participating students across modules and making the programme financially feasible. The Luxembourg national qualifications framework currently does not cover formal adult education programmes of shorter duration, such as the certificate programme of the Competence Centre.

A modular adult learning programme was also developed in the crafts sector by the Crafts Competence Centres (CdC-GTB/PAR). Each of their adult learning programmes has clear skills outcomes that correspond to one of the eight levels of the European Qualification Framework (EQF)[7] and follows a credit point system. The modules, also called "bricks of training" (*briques de formation*), are each well-defined and self-contained units. This modular approach allows participating individuals to accumulate credit points that can then be stacked and recognised within the crafts sector and thus facilitate vertical mobility (i.e. stackable model, Stufenmodell). This approach also makes it possible to support horizontal mobility, with modules being transferable across subject areas (Goetzinger and Bourgeois, 2018[46]). While this approach seems promising, it only exists in the crafts sector.

Various private adult training institutions offer courses resulting in certifications and even foreign university degrees. Most of them focus on a specific sector or type of course. For example, the House of Training, the training institution of the CC, provides courses mainly aimed at employees of companies sent to attend day courses. The House of Training offers a large number of courses to companies and individuals active in some 20 different economic sectors, from banking to Horeca. The LLLC, which is the training centre of the CSL, provides training to employees and offers programmes on different subjects. The LLLC also partners with a variety of universities (e.g. University of Luxembourg, University Paris Nanterre, University of Lorraine, University of Rennes I, University Panthéon-Assas Paris II, University of Lille) to propose university diplomas, such as bachelor and master's degrees (LLLC, 2022[47]). The courses are mainly offered outside working hours (House of Training, 2021[48]; LLLC, 2022[49]; 2022[47]).

Overall, the current offer of adult learning programmes varies greatly in applying a modular approach. An overarching challenge is the lack of a consistent skills classification across Luxembourg at a national level, to which all modular approaches adhere. In practice, this means that the different modular-based initiatives are not interoperable and, thus, do not reinforce each other. If all adult learning programme modules used the same skills classification system (e.g. the European Skills, Competences, Qualifications and Occupations Classification [ESCO]; see Chapter 5, Recommendation 4.8), and if these were mutually recognised by all actors and officially validated (e.g. by MENJE), then individuals would have more flexibility in being able to take different modules from different providers and combine them, based on individual preference, needs and availability.

Since the crafts sector has already developed a skills framework for the modularised adult learning programmes in its sector, it could be a source of inspiration for the eventual adoption of a common skills classification approach across all sectors, thereby making all adult learning modules eventually interoperable and transferable. If the modules are furthermore linked to a (or multiple) level(s) of the EQF, individuals could then stack modules, receive corresponding credits (potentially leading to a micro-credential) and have these eventually be recognised to either shorten the duration of a corresponding formal education programme.

In 2021, the European Commission adopted a proposal to introduce a European approach to micro-credentials for adult learning. The aim is to develop for micro-credentials a common EU definition, EU standards and key principles for design, issuance and portability across borders. Furthermore, the Commission plans to support the development of a coherent and transparent ecosystem for micro-credentials across the European Union (European Commission, n.d.[50]). Ireland is actively engaged in developing modules that lead to micro-credentials (Box 2.4). If Luxembourg decides to support the development of modules leading to micro-credentials, it would be important to align the approach with the ongoing EU-wide initiative.

By following a common regulatory framework, all modules would thus be in a standard and comparable format and enhance horizontal and vertical career mobility and trajectories. Individuals could more easily transfer across sectors, as modules (particularly those that target transversal skills, such as soft skills or digital skills) they completed in one sector could be recognised and built upon in another sector. Individuals

would also have greater vertical career mobility (i.e. *Stufenmodell* - stackable model), as the modules accumulated over time and leading to formal diplomas could open career advancement opportunities.

Box 2.4. Relevant international example: Modular approach to adult learning

Ireland

Ireland's Quality and Qualifications (QQI) Agency is responsible for the quality assurance of education and training providers, and the national framework of qualification (NFQ) approves modules from public and private providers that lead to micro-credentials (5-30 ECTS) and are formally recognised with a "Special Purpose Award" at NFQ levels 6-9 (equivalent to EQF levels 5-7). The Irish Universities Association is in the process of establishing a Multi-Campus Micro-Credentials system across its seven universities with a coherent national framework for micro-credentials leading to ECTS. This initiative aims to develop high-demand modules from existing formal programmes and tailored modularised courses to meet the needs of employers and learners (QQI, 2021[51]).

Source: QQI (2021[51]), *Quality and Qualifications Ireland,* www.qqi.ie/.

Since initial education (e.g. initial vocational education and training) is already organised in modules, the modules in adult learning (e.g. CVET) should be organised in a way that is coherent with those in initial education. While the modules in adult learning do not need to be identical to those in initial education in terms of content and duration, they could be aligned in terms of learning objectives and outcomes. All modules should be transparent and have clear learning outcomes, so it is easier to "mix and match" modules from different systems towards a qualification or training path. This would make it easier for individuals who have dropped out in initial education to build on completed modules in initial education and then identify and pursue any missing modules during adult education to fulfil all requirements for a formal degree.

Furthermore, modular training programmes could be offered, providing a learning path across one's career. Such an approach already exists in certain professions, such as accountants and back-office officers, among others. For these professions, the person can follow a structured modular learning path starting from a beginner level and up to an expert level. To achieve this, the skills to master each level have been identified and linked to learning modules and courses. Employers can then use this information to create personalised training plans to match modules with the skills needs of their employees. Individuals could use this information to plan their career trajectories over the life course, identifying which modules would be required to switch careers or to move up to the next level. If professional profiles could be developed in a consistent format for all sectors and linked to all modules, this would facilitate and support access to adult learning.

Adult learning opportunities should be made more accessible by making use of digital learning platforms. Digital learning platforms enable online learning, which can be a powerful way of attracting, engaging and motivating learners who would otherwise not be interested or willing to participate in traditional education formats. Moreover, online learning can reduce learning obstacles, such as time barriers, and be tailored to the individual learner's specific learning needs and profile.

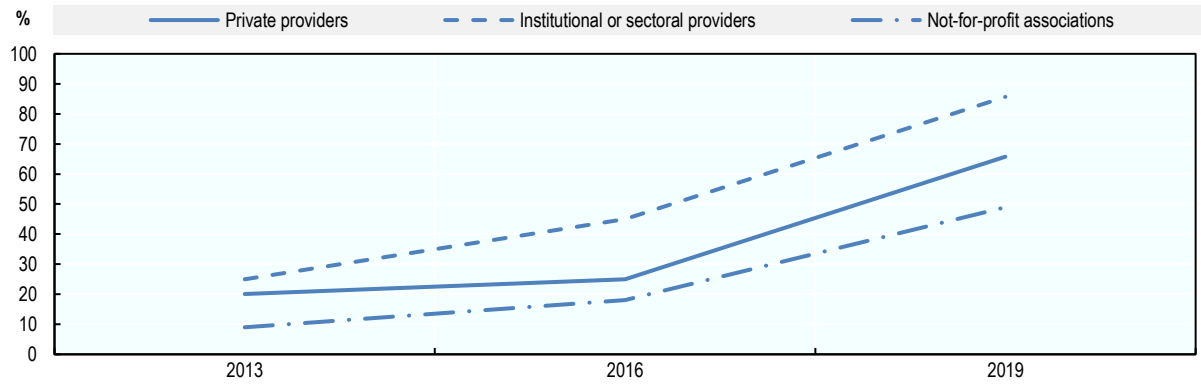
Overall, there are three different types of online learning. First, asynchronous online courses do not take place in real time. Instead, learners receive content and assignments and are then given time to complete the coursework and exams. Interaction among learners is facilitated through discussion boards, blogs and wikis. This type of learning is particularly accessible for adult learners with busy schedules and time constraints. Second, synchronous online courses require all learners to interact on line at the same time. Such interaction could occur, for example, during a webinar, and learners may communicate with each

other live through video, audio or chat. This type of learning is possible when adult learners are in the same time zone and available during the same time slots, for example, in the evening or at weekends. Accessibility to such courses will largely depend on individuals' availability in the proposed time slots. Third, hybrid courses or blended courses allow learners to have the chance to interact with the instructor and each other in person as well as online. This type of learning is possible when adult learners are geographically in the same location and can easily access in-person meetings.

Increasingly, adult learning providers in Luxembourg offer their programmes through digital platforms in online formats. Since 2013, the share of adult learning providers offering online learning formats has increased significantly (Figure 2.5) across private providers, institutional, sectoral providers and not-for-profit associations. This was happening before the COVID-19 pandemic started, but the pandemic has further accelerated the adoption of digital tools for learning. The Luxembourg Media and Digital Design Centre plays an important role in supporting this transition to online formats. The Centre, initiated by the MENJE, MESR and the Luxembourg Institute of Science and Technology, provides advisory and technical assistance to education providers in designing and producing digital content for learning. Furthermore, the centre operates a platform that hosts digital learning content from a variety of providers (Luxembourg Media and Digital Design Centre, 2022[52]).

Figure 2.5. Provision of online adult learning in Luxembourg, 2013-19

Share of adult learning providers providing online learning



Source: Based on the INFPC (2019[53]), "Enquête sur l'offre des organismes de formation établis au Luxembourg", https://www.lifelong-learning.lu/Accueil/fr.

StatLink https://stat.link/tbxzk9

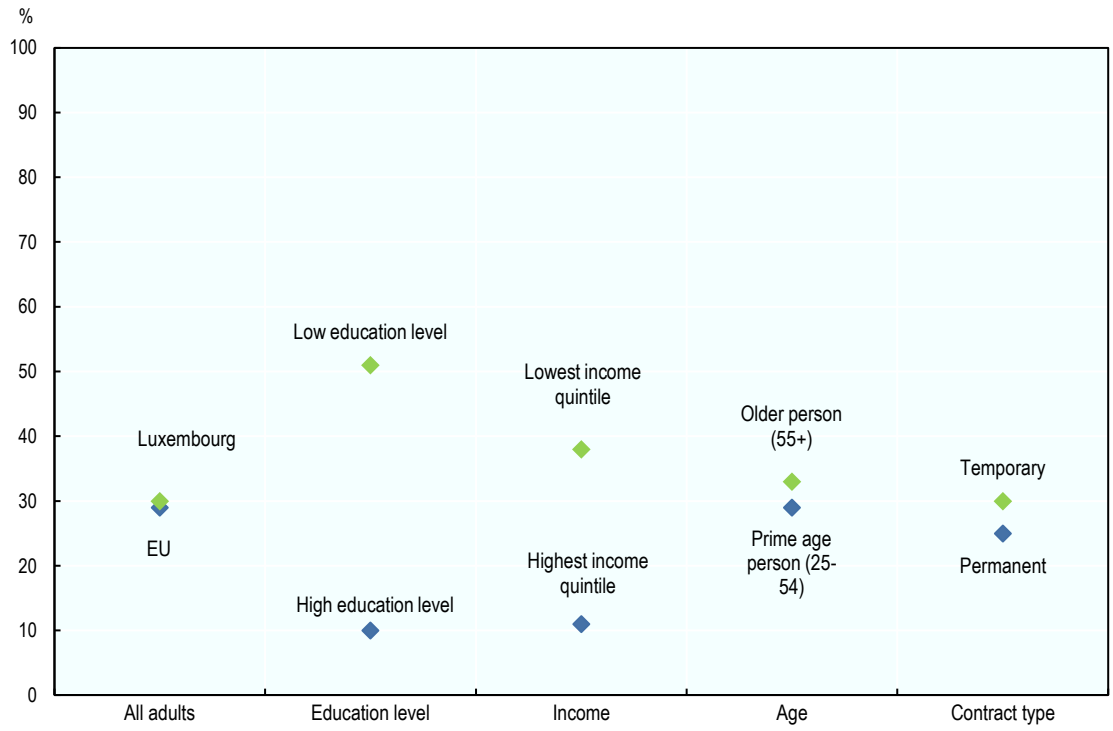
However, not all sectors are benefitting equally from online learning opportunities. For the latest available year (2019) of data, the share of online training provision by sectors also varies significantly, with some sectors, such as financial and insurance activities (66%), information and communication (40%) and industry (38%) having higher shares of training providers offering online learning options than other sectors, such as arts, entertainment, recreation (6%), agriculture, forestry and fisheries (8%) and accommodation and food services (8%) (INFPC, 2019[53]). This variation suggests that online learning may be more suitable to support skills development in some sectors than others.

While greater provision of online learning can increase overall accessibility, not all groups are equally equipped to benefit from this format. For example, managers, executives and employees of the private sector (81%) have a significantly higher participation rate in online learning than job seekers (21%) (INFPC, 2019[53]). For some groups, low basic digital skills can be an important obstacle to accessing online

learning. Around 30% of adults in Luxembourg report low basic digital skills,[8] and there are significant differences by background characteristics. For example, individuals with lower levels of education, lower income and who have temporary contracts are more likely to have low digital skills than individuals with higher levels of education, higher income, who are prime age and who have permanent contracts (Figure 2.6).

Figure 2.6. Level of digital skills in Luxembourg's population, 2019

Share of individuals with low basic digital skills by background characteristics



Source: Based on EC Community Survey on ICT Usage in Households and by Individuals 2019, https://ec.europa.eu/eurostat/cache/metadata/en/isoc_i_esms.htm.

StatLink https://stat.link/c0mdi2

In Luxembourg, there are several initiatives to support adults in developing basic digital skills. An example initiative includes the International Computer Driving Licence (ICDL), an internationally recognised programme targeting basic to advanced digital skills and leading to a widely recognised private certificate implemented by the LLLC. Internet-Führerschäin, which MENJE organises, provides basic digital skills leading to a certificate of attendance. Other initiatives, such as the Digital Skills initiative offered by MTEESS, and the Basic Digital Skills programme offered by ADEM, House of Training and LLLC, are targeted at specific groups, such as employees or job seekers (Table 2.4).

Table 2.4 Adult learning programmes providing basic digital skills in Luxembourg, 2020

Name	Target groups	Number of participants	Responsible actors	Description of programme
International Computer Driver License (ICDL)	All adults	600-800 annually + 4 000 annually in certification exam	Luxembourg Lifelong Learning Centre (LLLC)	LLLC as a partner with the ICDL foundation, provides a range of digital courses ranging from basic to advanced digital skills. The programme leads to a certificate that is recognised by employers.

Name	Target groups	Number of participants	Responsible actors	Description of programme
Internet-Führerschäin	All adults	n/a	Ministry of Education, Children and Youth	The ministry provides a 20-hour course to develop basic digital skills. The goal is to raise understanding of digital tools (e.g. hardware, software, safe use), use of digital tools for finding information (e.g. searching, evaluating and using information), use of digital tools for communication (e.g. sending text messages, participating in social media, using e-commerce, using e-banking) and use of digital tools for creating (e.g. text, images). Participants who complete at least 70% of the course can receive a certificate of participation.
Digital Skills	Employees who benefited from partial unemployment	~230 (2021)	Ministry of Labour, Employment, Social and Solidarity Economy	The ministry supports participation in digital skills training offered by approved partner training centres. Training includes topics such as digital information, communication, content creation, digital security and problem solving. While training is financed up to EUR 500, the training cannot exceed 2 days or 16 hours.
Basic Digital Skills	Job seekers registered with the ADEM who have a minimum B2 level in French, German or English	64 (2021)	Agency for the Development of Employment (ADEM), House of Training and Luxembourg Lifelong Learning Centre	ADEM offers training to improve the labour market opportunities of registered job seekers. Courses cover how to use different software (e.g. Microsoft Office), draft a digital letter of motivation or curriculum vitae (CV) and use the Internet safely. The course duration is four weeks and is provided by the House of Training and LLLC.

Source: Based on ADEM (2020[54]), *Training "basic digital skills,"* https://adem.public.lu/dam-assets/fr/publications/demandeurs-emploi/formations/basic-digital-skills.pdf; Ministry of State's Department of Media (2014[55]), *Digital Luxembourg Initiative,* https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/luxembourg-digital-luxembourg-initiative; Government of Luxembourg (2021[56]), *Digital skills,* https://guichet.public.lu/fr/citoyens/enseignement-formation/etudes-superieures/aides-logement/aide-financiere.html; INFPC (2021[57]), *Internet driving licence (InternetFührerschein)*, www.lifelong-learning.lu/Formation/internetfuhrerschein-tous-les-niveaux-in-infu-2/fr.

Among the existing programmes providing basic digital skills in Luxembourg, the ICDL programme is unique in that it leads to a certificate recognised in Europe and beyond. The ICDL programme offers a variety of modules, which are provided in a standardised format and are logically linked, so that individuals can progress from developing basic to more advanced digital skills. Individuals who pass an ICDL module in one country can have it recognised in another country where ICDL programmes are offered. This is particularly relevant in Luxembourg since a large share of the workforce is foreign workers. Another advantage of the ICDL is that all modules are continuously and systematically updated at an international level to keep pace with evolving digital tools. Since 2014, some ICDL basic modules (e.g. computer essentials, online essentials, Word and Excel) have been introduced in some vocational education and training programmes of the Vocational Aptitude Diploma (DAP) and the Technician's Diploma (DT) preparing for administrative job profiles. The annual number of participants in ICDL has varied between 600-800 participants. In addition to the direct programme participants, many individuals also only take the certification ICDL exams.

Access to digital basic skills programmes could be expanded, especially since 30% of Luxembourg's adult population, or around 142 000 individuals, are estimated to have low basic digital skills (Figure 2.6). Access could be raised through, for example, integrating ICDL modules (or other equivalent basic digital skills modules) across more formal programmes, such as the DAP and DT, beyond those that lead to administrative job profiles. ICDL modules could also be integrated across other initial education programmes (e.g. general secondary education,[9] higher education). MENJE recently launched a lifelong learning centre (Université populaire, UniPop) and is considering offering some ICDL modules, which would further increase access (INFPC, 2021[58]). Similarly, MENJE also launched the Digital Learning Hub, which provides digital CVET courses. The rapid acceleration of digital technologies at home and work

during COVID-19 has underscored the importance of equipping all adults with sufficient basic digital skills to not be left behind. In Ireland, the ICDL framework has been mapped onto the National Framework of Qualifications, and participation in ICDL modules leads to certificates demonstrating that individuals have the basic digital skills required to participate in formal programmes (Box 2.5).

Box 2.5. Relevant international examples: Basic digital skills programme

Ireland

The International Computer Driving Licence is mapped to the national framework of qualification in Ireland. Participants can have their ICDL certificates recognised to meet specific requirements in over 40 formal programmes recognised within the NFQ. Approximately one-quarter of all post-primary students gain an ICDL certification while in school. When they continue with adult learning, they can often use ICDL certificates to receive exemptions to meet certain requirements of a formal programme (ICDL, 2021[59]).

Source: ICDL (2021[59]), *ICDL References and Endorsements*, https://icdlasia.org/app/uploads/2021/11/ICDL-References-Brochure-English-2021.pdf.

At the national level, the Digital Luxembourg Initiative (DLI) provides ongoing support for digital initiatives in Luxembourg (Government of Luxembourg, 2021[60]). The initiative is led by the Luxembourg Ministry of State's Department of Media, Telecommunications and Digital Policy (SMC) and involves more than 60 public and private sector actors, governmental organisations, the non-governmental organisation (NGO) sector and international businesses. One initiative, in particular, is the Digital Skills and Jobs Coalition, which is led by the State Ministry, the CC and the CdM and provides a platform for all private and public sector actors to exchange on digital skills approaches (Government of Luxembourg, 2020[61]). This platform, and through the DLI, best practices in providing basic digital skills training should be further explored.

Recommendations

- **1.3. Develop modules based on a common skills classification framework** (e.g. ESCO) to make them transferable across providers, such as between providers of initial and continuous training, as well as between public and private providers. Modular programmes divide an education programme into smaller, self-contained modules. Each module has its own curriculum and learning objectives, which, once achieved, leads to certified credits or partial qualifications (also known as micro-credentials). While the objectives of the modules should be standardised, the implementation (e.g. pedagogical approach) of modules should remain flexible. The application of a common skills classification across all modules by all public and private providers should be promoted through a quality assurance system (see Recommendation 1.7). It could initially be piloted in domains (e.g. languages) where there is already a strong consensus about desired skills outcomes. A consistent modular approach would make it easier for individuals to move across sectors, as the training modules they had completed in one sector could be recognised and built upon in another. For modules that aim to provide a formal certification of skills (rather than only a certification of participation), the modules should follow a standardised credit point system (like how ECTS are used in higher education), leading to partial qualifications (e.g. micro-credentials in line with ongoing EU initiatives) and when combined, lead to a full qualification. Existing initiatives, such as those from the crafts sector and EDUpass, could be

used as an inspiration for these efforts. Furthermore, when modules are linked to professional profiles, employers can create personalised training plans to match modules with the skills needs of their employees. At the same time, individuals can use this information to plan their career trajectories, identifying which modules would be required to switch careers or to move up to the next level.

- **1.4. Expand basic digital skills modules across adult learning programmes through digital learning platforms.** Digital skills modules are self-contained learning units for developing digital skills, such as using digital tools for finding information (e.g. searching, evaluating and using information), for communicating (e.g. sending text messages, participating in social media, using e-commerce, using e-banking) and for creating (e.g. text, images). Each module has its own curriculum and learning objectives. Public providers, such as the CNFPC, Digital Learning Hub and Université Populaire, should expand their offers of basic digital skills modules as part of their adult learning programmes (e.g. DAP and DT). The Luxembourg Media and Digital Design Centre could provide advisory and technical assistance to education providers in adopting digital learning platforms that feature such basic digital skills modules. Best practices in providing basic digital skills training should be promoted through the DLI and shared through the Digital Skills and Jobs Coalition.

Opportunity 2: Increasing the relevance and ensuring the quality of adult learning opportunities

Luxembourg's adult learning system needs to be more responsive to the evolving needs of the labour market. Employees require labour-market-relevant adult learning opportunities to acquire the necessary skills to remain productive, progress professionally and increase their salaries. Unemployed individuals require labour-market-relevant adult learning opportunities to improve their employment and career prospects. Furthermore, adult learning opportunities need to be of high quality. While relevance is about providing adult learning opportunities that meet labour market needs, quality is about providing adult learning opportunities in line with clearly defined quality standards. The quality of adult learning matters, so that the resources for adult learning are used as effectively as possible in the provision of adult learning programmes. Quality also matters to create trust in and prestige of the adult learning system, as high-quality adult learning providers build credibility vis-à-vis adult learning participants and contracting organisations (e.g. ADEM contracting training institutions for the unemployed; employers contracting training institutions for the employed) (OECD, 2021[62]).

Increasing the relevance of adult learning opportunities

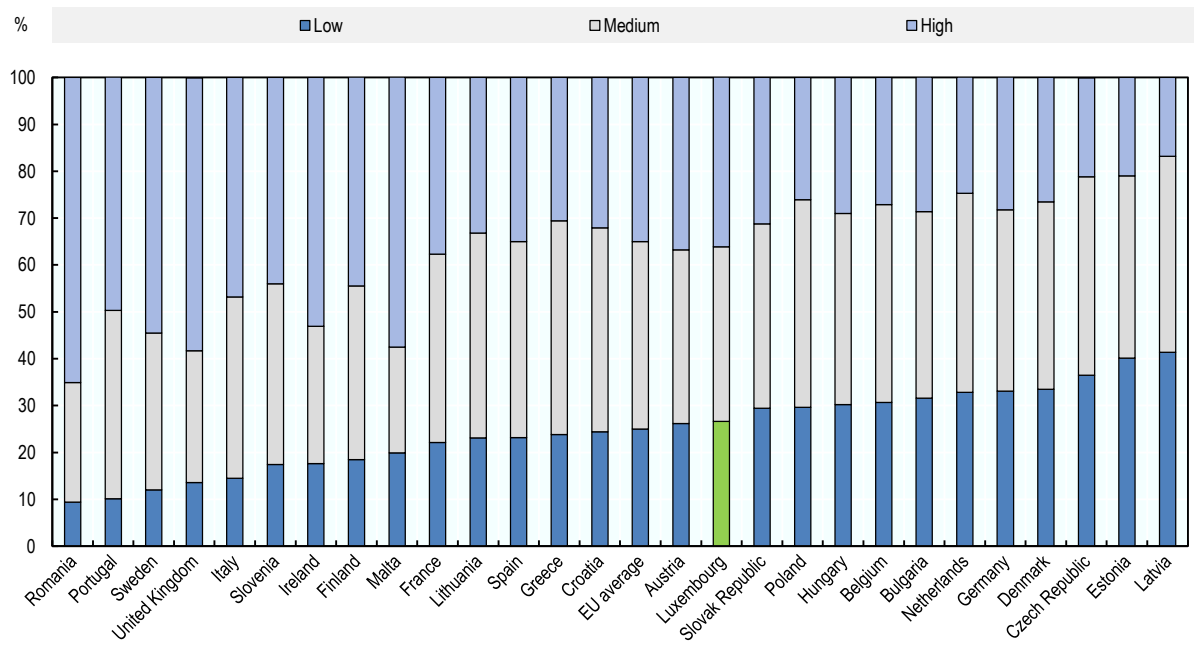
The relevance of adult learning matters because it allows individuals, employers and society to adapt to the evolving needs of the labour market. In this section, relevance is considered only as it relates to the labour market needs and not to the broader needs of society. While both needs are not always mutually exclusive, the scope here focuses specifically on the labour market, as stakeholders expressed this as a top priority for Luxembourg.

The latest EU Company Survey 2019 shows that existing training offers may not be sufficiently relevant to Luxembourg's economy. Around 27% of employers in Luxembourg expressed concern that training provided to their employees was of low value in terms of addressing their employees' skills needs. This share in Luxembourg is higher than France (22%) and the EU average (25%) but lower than Belgium (31%) and Germany (33%) (Figure 2.7). This could be partly due to a high concentration of training in certain subject areas that may not correspond with actual demand. Based on a survey of training providers, the five most common fields of study offered by training providers were personal and professional development (44%); business and human resources (37%); communication and multimedia (26%); health

and social work (23%); and IT and telecommunications (20%) (Observatoire de la formation, 2018[63]). Stakeholders in Luxembourg raised concerns that the concentration of programmes in these fields of study is driven more by supply-side than demand-side factors. As discussed in the next section, most training providers are in the private sector, and most are very small. Many of these training providers are former professionals in certain sectors (e.g. consulting, managers) who have started their own businesses offering training related to their fields of expertise and are actively marketing these courses to individuals. These courses may be of interest for individual learners but may not meet the specific demands of employers.

Figure 2.7. Employers' views of the value of training in EU countries, 2019

Share of employers that report low, medium or high value of provided training to their employees



Note: The figure shows data for EU countries prior to the departure of the United Kingdom from the EU in 2020.
Source: Eurofound and CEDEFOP (2019[64]), European Company Survey - Data visualisation, www.eurofound.europa.eu/surveys/data-visualisation/european-company-survey-data-visualisation.

StatLink https://stat.link/ojhcwb

Engaging employers and employees in the decision-making process of designing and providing training programmes is an effective way to ensure greater labour market relevance of adult learning opportunities for employees.

More could be done to engage employers and employees in ensuring the labour market relevance for adult learning opportunities. In Luxembourg, there is currently no systematic way of engaging employers and employees in identifying skills needs. While around 73% of employers in Luxembourg report conducting individual future skill needs exercises, and some skills assessment exercises are conducted at the sectoral level (e.g. crafts, construction and industry) (see Chapter 5), there is no initiative at the national level to engage employers in the identification of skills needs. It would thus be useful to consider introducing a national employer survey (see Recommendation 4.4 in Chapter 5), which could guide adult learning programme design and implementation. The Training Observatory of the INFPC could support such an effort. By way of example, in Estonia, the Co-ordination Council of the System of Labour Market Monitoring and Future Skills Forecasting (Oskuste Arendamise koordinatsioonisüsteem, OSKA) engages both

employers and employees, provides skill forecasts using quantitative methods in specific sectors, gathers qualitative insights from a panel of advisers and sectoral councils and proposes actions for both labour market and educational policy (Estonian Ministry of Education and Research, 2021[65]).

Furthermore, employers and employees could be regularly engaged to review adult learning curricula and ensure that they remain relevant based on the latest labour market information. The University of Luxembourg is setting up a regular programme review process, so that all programmes (including initial education and adult learning programmes) would be regularly reviewed at specific intervals, e.g. up to six or seven years. Employers and industry representatives are included in a curriculum review process within the university in several programmes, such as engineering, education and social work. Since employee representatives are not yet included in such processes, it could be beneficial to have them on such boards to provide complementary perspectives to those of employer representatives.

The University of Luxembourg Competence Centre engages employers in reviewing its programme through a follow-up digital questionnaire sent to employers of employees who participated in the programme. The questionnaire asks whether employers have seen any positive changes following employees' participation in the adult learning programme. The questions follow the Kirkpatrick model,[10] which provides a framework for evaluating adult learning.

Across the examples mentioned above, while employer representatives are mostly engaged, employee representatives are seldom engaged. More fully engaging employee representatives would help to ensure the relevance of the training offer from the employee's perspective, as these representatives can advocate for training that develops general skills, which are important for promoting continuous learning and advancing the careers of employees, but which employers may be hesitant to support due to concerns that doing so could increase the likelihood that employees will leave their jobs (e.g. due to poaching or changing careers).

A regular mapping exercise identifying existing adult learning programmes would be useful to avoid unnecessary duplications when creating new adult learning programmes. A relevant example from Germany that engages both employer and employee representatives in a regular curriculum review could be considered by Luxembourg (Box 2.6). A national quality assurance agency (further discussed in the next section) could establish standards for a rigorous curriculum review process that engages both employers and employees in evaluating adult learning programmes and helps disseminate best practices across sectors.

Box 2.6. Relevant international example: Stakeholder engagement in updating curriculum

Germany

The German process for systematically updating vocational training regulations (Modernisierung/Neuordnung von Ausbildungsberufen) is a promising approach that could be applied to adult education and training more widely. In Germany, the training for each recognised vocational occupation is regulated through a vocational training regulation. The regulations establish the duration of vocational training, the training plan and the criteria for assessing the acquisition of knowledge, skills and abilities. Existing training regulations are updated regularly according to a clearly specified process: 1) social partners or the Federal Institute for Vocational Education and Training (Bundesinstitut für Berufsbildung, BIBB) make a case for updating the training to the responsible ministry, typically the Ministry of Economy and Technology; 2) the ministry agrees on new/updated training regulations with key stakeholders; 3) the BIBB develops the regulation in collaboration with experts nominated by the social partners within one year; 4) the education ministries of the federal states develop school-based elements of the dual vocational training; and 5) a council of representatives of the national and states level sign off on the new/updated training regulations. In 2006-15, 130 of the 328 vocational training

regulations and their training content were modernised, and 19 additional regulations for new occupations were created (BIBB, 2017[66]). According to BIBB, the speed of adaptation is increasing (BIBB, 2017[66]). Among the 25 new and modernised training regulations in 2018 were regulations governing training for a range of information and communication technology (ICT) and electronics occupations.

Source: Federal Institute for Vocational Education and Training (2021[67]), *New training year begins with 25 updated occupations,* www.bibb.de/en/pressemitteilung_82427.php; BIBB (2017[66]), *Training regulations and how they arise* (*Ausbildungsordnungen und wie sie entstehen),* www.bibb.de/veroeffentlichungen/en/publication/download/206.

Besides the engagement of employers and employees at the operational level of adult learning programmes, employers and employees could also be more actively engaged at the strategic level. For example, the role of the University of Luxembourg Competence Centre in providing labour-market-relevant adult learning opportunities could be strengthened by including employers and employee representatives in its governance board. Currently, the Competence Centre's advisory board engages representatives from employees (Chambre des salariés), employers (Chambre de Commerce), the National Institute of Public Administration (Institut national de l'administration publique, INAP) and ADEM, while the steering committees of the two Competence Centre's certificate programmes have employer representatives. These two channels can inform the design and review of adult learning programmes, which is important. However, the most critical strategic decisions of the Competence Centre are taken at the governance board (Collège de gérance) level, which currently includes only four representatives from the University of Luxembourg and two representatives from the Ministry of Higher Education and Research, without any representatives of other stakeholders, such as employers and employees. Due to a lack of engagement at the highest level, stakeholders have expressed that they do not feel well informed about the evolving role of the newly created Competence Centre, its long-term strategy and how they can proactively collaborate with the centre. As an alternative option to including employer and employee representatives on the governance board, the advisory board's role could be strengthened, so that it is given greater influence in strategic decisions concerning the programmes the centre should offer.

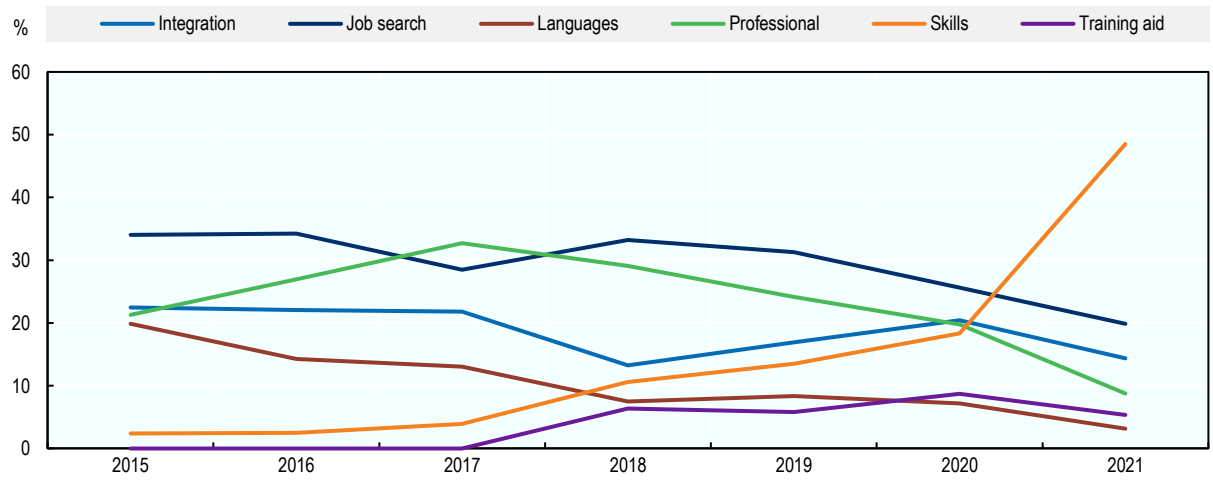
A noteworthy national practice example of engaging employers and employees in the governance of adult learning provision is the Higher School for Labour (École Supérieure du Travail, EST). The institute is under the supervision of the MTEESS and has a tripartite board of directors with employers and employees equally represented. The institute provides courses for employed workers, self-employed workers and employee representatives in a variety of subject areas, such as economics, taxation, constitutional law, employment law, social security legislation and culture (INFPC, 2021[16]).

It is equally critical to provide labour-market-relevant opportunities for the unemployed. The EU Skills Agenda 2025 emphasises the importance of providing skills development opportunities to the unemployed.

Job seekers registered with ADEM can access six different forms of training the agency offers. The data presented in Figure 2.8 cover the training directly offered by ADEM (ADEM, 2022[68]) together with its partners, and not the training that job seekers can register for at the professional chambers (CC, CdM, CSL) based on a quota or training that is co-funded by ADEM through the provision of financial support (professional training aid) (ADEM, 2022[68]). The share of participants in skills training, which aims to improve certain transversal skills (e.g. digital, soft skills, project management), rose significantly between 2015 (3%) and 2021 (49%) and has become the most common training form. The second most common form of training is job search, which is training that provides job search skills and is attended by about 20% of training participants. The third most common form of training (14%) is integration training, which aims to support the integration in the labour market of specific target groups, such as women, refugees, the young and those with disabilities. The next most common form of training is professional training (9%), which is occupation-specific training. Training aid (5%) is not a training programme but a subsidy that allows the

unemployed under certain conditions to be financially supported for a training of their choice. Finally, language training is the least common form (3%).

Figure 2.8. Unemployed participants across different types of training in Luxembourg, 2015-21



Note: Integration refers to training for specific target groups (e.g. women, refugees, young, disabled). Job search refers to training aimed at improving participants' job search skills. Languages refer to language courses. Professional refers to occupation-specific trainings. Skills refer to training that improves certain skills (e.g. digital, soft skills). Training aid refers to a subsidy aimed at job seekers who wish to participate in a training of their choice.
Source: Based on ADEM administrative data provided to the OECD.

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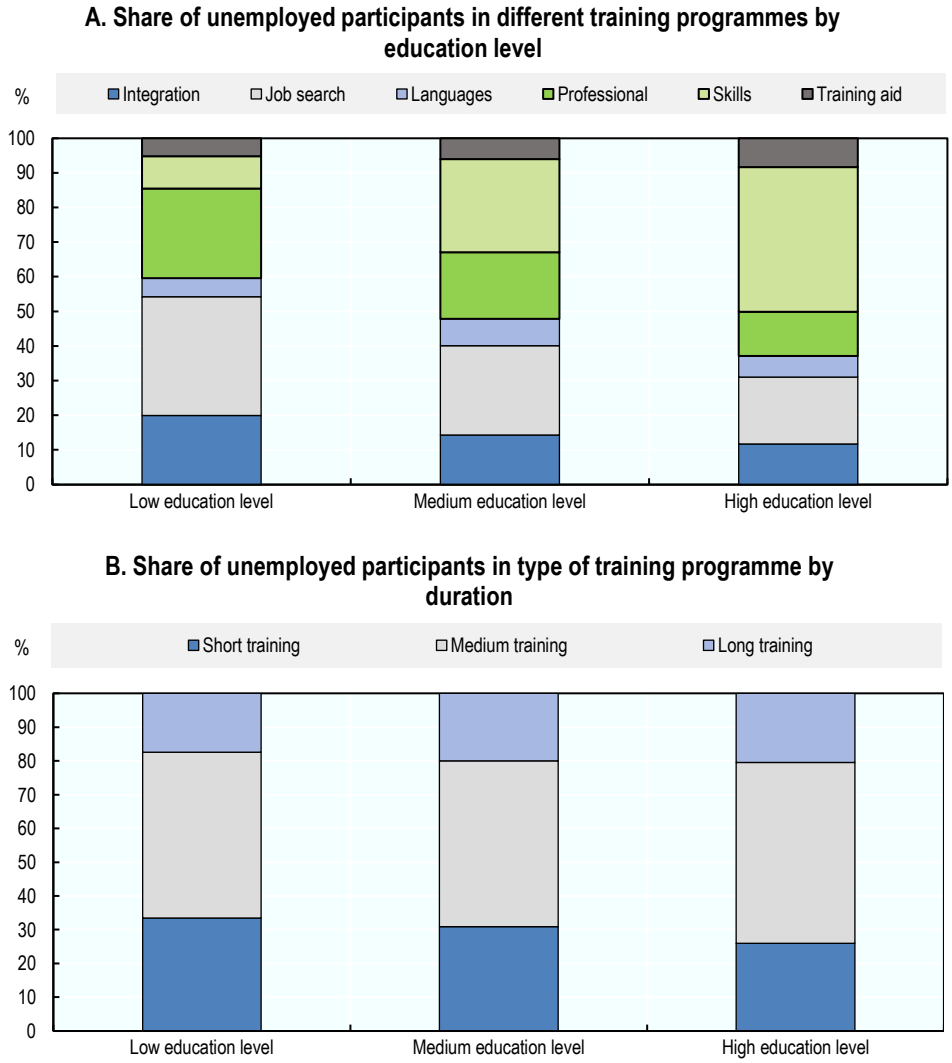
Analysis of the educational profiles of unemployed individuals participating in different training options shows that the unemployed with lower levels of education are more likely to participate in integration and job search programmes. In contrast, the unemployed with medium and high levels of education are more likely to participate in skills and professional training programmes (Figure 2.9). Unemployed adults, regardless of their education level, are most likely to participate in medium-duration training (one to three months), followed by long-duration training (more than three months) and short-duration training (less than one month).

These training programmes are developed based on the skills requirements in the labour market or are tailored to the needs of specific target groups of job seekers. The public employment service (ADEM) does not provide training programmes itself but works in close collaboration with training partners (e.g. CNFPC, INL, University of Luxembourg Competence Centre, CC, CdM, CSL). Working with these labour market actors ensures that the programmes provided are designed in line with labour market needs and raises the chances that the unemployed successfully transition to employment (INFPC, 2021[10]).

However, as emphasised by stakeholders consulted for this project, certain subgroups of the unemployed are still not receiving the labour-market-relevant adult learning opportunities they need. For example, one important subgroup that is underserved are individuals who need reskilling for a new job (reclassement professionnel) because they are no longer able to perform their previous job due to health reasons, disability or bodily wear and tear, but who are not at the same time eligible for the Invalidity Pension. This group represents about 19% (as of November 2021) of the unemployed and, due to their need to transition to a completely different profession with different skills needs, their required training efforts are high (ADEM, 2021[69]). The nature of their disability may also limit their possible alternative professional options and, hence, their adult learning pathways. Common characteristics of individuals in this group include

having lower levels of education, being middle-aged (40-55 years), working in physically demanding occupations (e.g. cleaning, building) and having physical problems (e.g. back, shoulder, knees). There are also subgroups based on language skills with, for example, cross-border workers only speaking one official Luxembourg language (e.g. German or French) or other workers, such as EU/non-EU workers (e.g. Portuguese) and refugees (e.g. Arabic), not speaking any official Luxembourg language.

Figure 2.9. Share of unemployed participants in different types of training in Luxembourg by education level, 2018-21



Note: Integration programmes are trainings aimed at specific target groups (e.g. women, refugees, young, disabled). Job search training aims to improve job search skills. Languages are language courses. Professional training refers to training organised for specific sectors or employers. Skills training refers to training targeting specific skills (e.g. digital, soft skills). Training aid refers to a subsidy aimed at job seekers to participate in the training of their choice.
Low education level refers to ISCED 0 2; medium education level refers to ISECD 3 4; high education level refers to ISCED 5 8. Short training (<1 month), medium training (1-3 months) and long training (>3 months).
Source: Based on ADEM administrative data provided to the OECD.

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Individuals in this reclassement professionnel category can benefit from internal professional redeployment within the same company or external professional deployment through measures such as a job reintegration contract (Contrat de réinsertion-emploi) with alternating practical and theoretical training for over 12 months, professional training internships (stage de professionalisation) of between 6-9 weeks or a job assignment in the public sector (Travaux d'utilité publique) of at least 4 months (ADEM, 2021[13]). ADEM has specialised counsellors with a professional background in social work and psychology to support individuals needing professional redeployment. In addition, five doctors at ADEM can examine individuals to assess their physical capacities and inform the counsellors about their clients' potential future job opportunities.

In the latest available national data, the share of long-term unemployed among the unemployed in Luxembourg (resident job-seekers) is 52% (as of November 2021) (ADEM, 2021[70]). One of the challenges in addressing the needs of the long-term unemployed is their varying needs. For example, the long-term unemployed are quite diverse, differing in characteristics such as age, ethnic minority status, gender and parental status (e.g. single parent). Some long-term unemployed also have criminal status. When individuals who need reskilling for a new job (reclassement professionnel) are more than 12 months unemployed, they would also be categorised as long-term unemployed.

While ADEM-OP (Service d'orientation professionnelle de l'ADEM) offers a range of training guidance, apprenticeship guidance and career guidance options, it still relies heavily on other actors to provide specialised services for the substantive needs of the unemployed in need of professional redeployment (reclassement professionnel) as well as to meet the diverse needs of the long-term unemployed. Two important skills needed for these two unemployed groups are language (i.e. official languages in Luxembourg, which are Luxembourgish, French and German) and basic digital skills, which are also essential skills to access most other training programmes.

One challenge is that the available training supply is still insufficient to meet the high demand. ADEM could expand its work with the INL to explore ways to increase the language provision capacity, which currently is constrained due to a limited number of classrooms and teachers. INL, which as a public language teaching centre follows a fixed timetable (e.g. not open during school holidays) and has a set number of teachers on permanent contracts, cannot easily expand course offerings to meet a sudden rise in demand. Thus, ADEM may consider developing additional partnerships with other private language providers to meet a sudden demand increase. Regarding basic digital skills, there is currently a pilot basic digital skills training programme being implemented together with the CSL. Insights gained from this pilot experience will need to be considered to provide a large-scale basic digital skills programme.

Another key challenge for ADEM is identifying quality training providers who can deliver relevant and tailored training to meet the needs of different groups. Introducing a quality label given to training providers that meet specified quality standards (see Recommendation 1.8.) could make it easier for ADEM to identify quality training providers. To improve the relevance of training provision, ADEM could consider asking training providers to offer their training in shorter modules that can be tailored to the specific needs of target groups. Currently, most unemployed participate in long (two-to-three month) training programmes with relatively large numbers of participants. This makes it challenging to tailor the training offer to the diverse needs of smaller subgroups among the unemployed. A modular approach would make it possible to offer, for example, different modules of basic digital skills courses tailored to specific subgroups of participants (e.g. subgroups with different language backgrounds receiving training in their own language). To provide more comprehensive support to the unemployed, ADEM could also work with other actors providing complementary services. A common approach across countries has been for the public employment service to co-operate with a wide range of actors (e.g. social welfare services, disability services, integration services) to outsource specialised services, such as developing individual action plans and providing mentoring, coaching and counselling that complement the training offers. Since these actors are often mission-based organisations working with particular subgroups, they are best placed to reach out to these groups. By way of example, the Finnish Training for Unemployed Migrants, through a public-private

partnership, organises training in language and life skills, facilitates internship placements and provides individual coaching (Box 2.7) (Bertelsmann Stiftung, 2016[71]).

Box 2.7. Relevant international example: Comprehensive training for the unemployed

Finland

The Koto-SIB Employment Programme (Koto-SIB, 2022[72]) is a public-private partnership managed by the Ministry of Economic Affairs and Employment that aims to integrate migrants quickly into the labour market by providing them with 36 months of intensive language courses in Finnish. Once the level of Finnish reaches a working level proficiency, these migrants are provided with an internship. During the entire training period, participating unemployed migrants receive unemployment benefits. Individuals are placed in language courses according to their existing levels of proficiency and, at the same time, receive complementary training in courses in job skills (e.g. job search, preparing a CV, participating in an interview and starting a business) as well as individual coaching to find a job.

Source: Koto-SIB (2022[72]), *Fast track training and employment programme for immigrants in Finland,* https://kotosib.fi/en/.

Recommendations

- **1.5. Develop a regular and systematic curriculum review process to ensure labour market relevance of formal adult education programmes.** A national quality assurance system (see Recommendation 1.7) should establish standards for a rigorous curriculum review process to evaluate adult learning programmes. Existing best practices of rigorous curriculum review processes across sectors should be widely disseminated. In addition, employer and employee representatives should be included in the governance board of the University of Luxembourg Competence Centre, or the advisory board's role should be strengthened to influence the programmes the centre should offer at a strategic level. The curriculum review process needs to be informed by the insights gathered from a potential cross-sectoral skills needs survey engaging employer and employee representatives (see Recommendation 4.4 in Chapter 5). It should be noted that the curriculum review process of formal study programmes needs to be distinct from the formal accreditation process, which would have to be external.
- **1.6. Expand the provision of tailored training offers to the long-term unemployed and individuals in need of reskilling for a new job by developing modular training programmes with training partners.** The design of shorter modules should allow tailoring them to the diverse needs of target groups. ADEM should work with INL and potentially other training providers to expand the availability of language courses for unemployed individuals with language needs (i.e. official languages in Luxembourg – Luxembourgish, French and German). ADEM should also work with partners (e.g. CNFPC, CSL) to expand the provision of basic digital courses funded through public funding (e.g. Fonds pour l'emploi) and make them more widely available to the unemployed. To improve their reach and provide more comprehensive support to the unemployed, ADEM could outsource to actors (e.g. social welfare services, disability services, integration services) working closely with groups that are characterised by high rates of unemployment, specialised services, such as the development of individual action plans and the provision of mentoring, coaching and counselling services that complement the training offers.

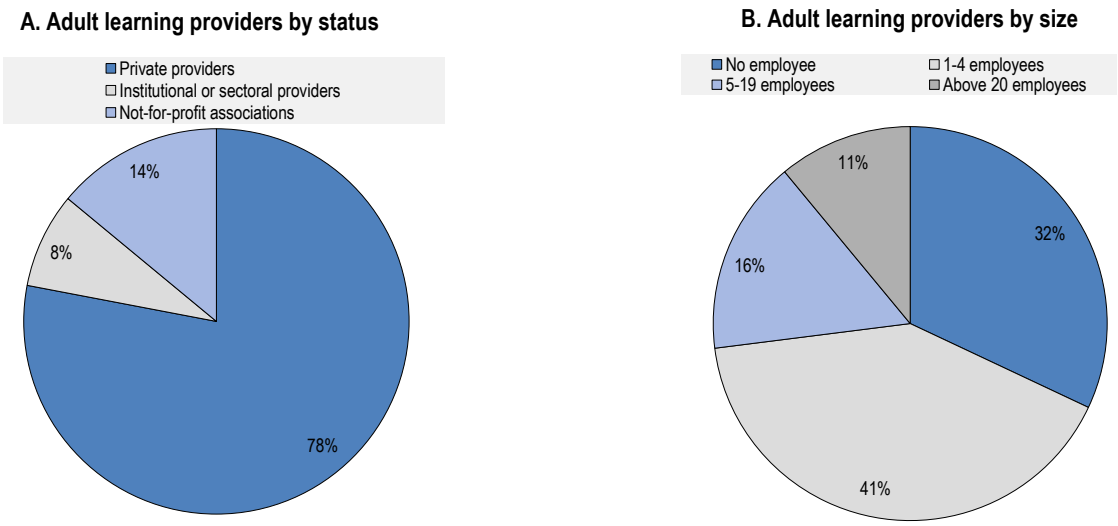
Ensuring the quality of adult learning opportunities

Quality in this context is defined as "the planning and development of formal activities and managerial processes in an attempt to achieve the desired objectives" of adult learning (OECD, 2021[73]). When quality standards are met, resources are effectively used to implement adult learning programmes. OECD countries have different quality assurance approaches that can broadly be divided into regulatory, advisory, and organic approaches. In the regulatory approach, the state plays an important role in imposing minimum quality standards that need to be met to become an adult learning provider or access funds for implementing programmes. In the advisory approach, guidelines and examples of good practices are provided to guide providers in implementing quality measures. Finally, in the organic approach, providers must define their own quality needs (OECD, 2021[62]). In Luxembourg, there is a mix of the three approaches, as further explored in this section.

The need for quality assurance in adult learning in Luxembourg is due to the minimally regulated adult learning market. It is relatively easy to start a training business if certain requirements are met (discussed further below). This has led to the proliferation of training providers with limited oversight. Around 78% of training providers are private, and around 73% comprise a single trainer or between one to four employees (Figure 2.10).

Figure 2.10. Overview of adult learning providers in Luxembourg, 2019

Share of adult learning providers by status and size



Source: Based on Observatoire de la formation (2021[74]), "Offre de formation: L'offre de formation continue en chiffres-enquête 2020", https://www.lifelong-learning.lu/bookshelf/documents/l_offre-de-formation-continue-en-chiffres---enquete-2020.pdf.

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In Luxembourg, the Ministry of the Economy provides, after consultation with MENJE, official accreditation status to training providers. Initially, an application process to become a training provider must be sent to the Ministry of Economy (INFPC, 2021[10]). In the application, the applicant must demonstrate that he or she has "vocational worthiness" and "vocational credentials". The "vocational worthiness" test or "fit for business" requirement means that the director of the training provider has in the past ten years not had any incidences of forging documents, failing to comply with legal provisions, failing to keep proper accounts, having any serious and recurring convictions due to business activities, and having any large

amounts of debt. The “vocational credentials” can be proven by either having a higher education qualification (e.g. university diploma) or a certain number of years (between two to three years) of professional experience in a company at the management level or as a solopreneur. Individuals with at least three years of work experience as an employee, who have undergone relevant training, and who received a certificate from MENJE also fulfil the “vocational credentials” criteria.

Foreign training providers can also receive accreditation to provide training in Luxembourg if they have received accreditation in their country of origin. For foreign training providers to offer training in Luxembourg, they must comply with the same requirements as training providers based in Luxembourg.

In 2021, 101 individuals applied to the Ministry of Economy for accreditation as training providers. Among the applicants, 78% applied on behalf of a training company, while 22% applied on behalf of his or herself as a self-employed training provider. In addition, 41 registered training providers cancelled their accreditation, which occurs when they are no longer in business (Ministry of Economy, 2021[75]).

Stakeholders consulted in Luxembourg noted that ensuring quality was an important objective, and many raised concerns that the current process was too minimalistic. There are, for example, no common quality standards, requirements pertaining to the pedagogical expertise of training staff, or requirements concerning how to develop and implement the curricula of adult learning programmes.

Concerns about the quality of adult learning provision have been longstanding in Luxembourg. In the Luxembourg 2012 Lifelong Learning Strategy, quality assurance was mentioned as a key issue, but since the development of the strategy, no concrete actions have been taken. The need to ensure quality was also mentioned in the recent Coalition Agreement 2018-2023 (Accord de Coalition). Stakeholders in Luxembourg notably underscored that Luxembourg lacks a national accreditation agency and thus must rely on foreign accreditation partners, such as the Accreditation Organisation of the Netherlands and Flanders (NVAO).

Stakeholders consulted in Luxembourg stressed the need for a clear vision and a roadmap for achieving quality in adult learning programmes. The vision and the roadmap should clearly identify the goals of quality, the responsible actors and the necessary actions. The process of creating such a vision and roadmap could be led by MENJE and involve all relevant actors from other ministries, employer, and employee representatives, among others.

Another potential avenue to assure quality in practice is to create a national quality assurance agency. Responsibilities would include the accreditation of new adult learning programmes and the regular evaluation of already accredited programmes. Other responsibilities of such an agency would include identifying priority areas for training and allocating funds (e.g. a co-financing scheme; see Chapter 3) to finance training programmes. Relevant international and national experts would support the agency's work to implement quality assurance services for adult learning programmes.

The idea of a national quality assurance agency has been discussed for many years in Luxembourg and is most recently featured in Luxembourg’s Plan for Recovery and Resilience (Ministry of Finance, 2021[5]). For quality assurance of adult learning programmes at the higher education level, the existing partnership between MESR and the Dutch/Flemish quality assurance agency NVAO should be considered since they are collaborating to establish quality assurance at the higher education level in Luxembourg (Ministère de l’Enseignement supérieur et de la Recherche, 2022[76]).

In collaboration with relevant actors, the national quality assurance agency could develop and set minimum quality standards for adult learning programmes, which could then be implemented and monitored by the same agency. Stakeholders have proposed to have an independent body oversee the agency so that the relevant perspectives of employers, employees, the state and private training providers are all sufficiently represented in the agency.

The national quality assurance agency could also introduce a quality label for adult learning providers. Quality labels are a formal recognition by an external body that the training providers meet certain minimum quality requirements. Example criteria for receiving quality labels could, for example, include having adult learning staff with andragogical expertise, providing professional development opportunities for adult learning staff, and having a process in place to regularly monitor quality, among others. These types of criteria exist in the French Qualiopi label (Box 2.8), which has already been adopted voluntarily by some private training providers in Luxembourg and could be further promoted. The broad uptake of such a quality label by training providers could be incentivised financially by making possessing a quality label a prerequisite for accessing more public funding (e.g. co-financing scheme for adult learning programmes). Like the French Qualiopi label, a quality label in Luxembourg could be valid only for a limited duration, which would have to be renewed every three years through an on-site audit.

Box 2.8. Relevant international example: Quality assurance of adult learning

France

To simplify its complex quality assurance landscape, the French government in September 2018 passed a law requiring that all training centres wishing to receive public funds obtain a new quality certificate – called the Qualiopi – based on a single national quality reference system (Référentiel de certification qualité des organismes prestataires d'actions concourant au développement des compétences). Receiving the certificate means that the training provider has measures and processes in place to assure the quality of their programmes. Such measures include, for example, monitoring and evaluation processes, qualified staff, professional development for staff, collecting feedback from students to improve and resources for implementing training, among others. Providers can freely choose their certification body – if it is a body accredited by the French Accreditation Committee (COFRAC) – and must be certified if they wish to receive public financing. The certifying bodies conduct an on-site audit during the initial application process to ensure that providers' self-reported information is properly implemented and corresponds to the National Quality Certification Framework (Référentiel National de Certification Qualité, RNCQ). Moreover, inspections take place one year later to ensure that the training provider still implements the RNCQ. If the certification body detects non-compliance, the label may be suspended or withdrawn. Moreover, when the Qualiopi label expires after three years, a new on-site audit is carried out to renew the certification for another three years.

Source: French Ministry of Labour (2020[77]), *Référentiel National Qualité mentionné à l'article L. 6316-3 du Code du Travail [National Quality referred to in Article L. 6316-3 of the Labour Code],* https://travailemploi.gouv.fr/IMG/pdf/guide_referentiel_qualite_28-02.pdf.

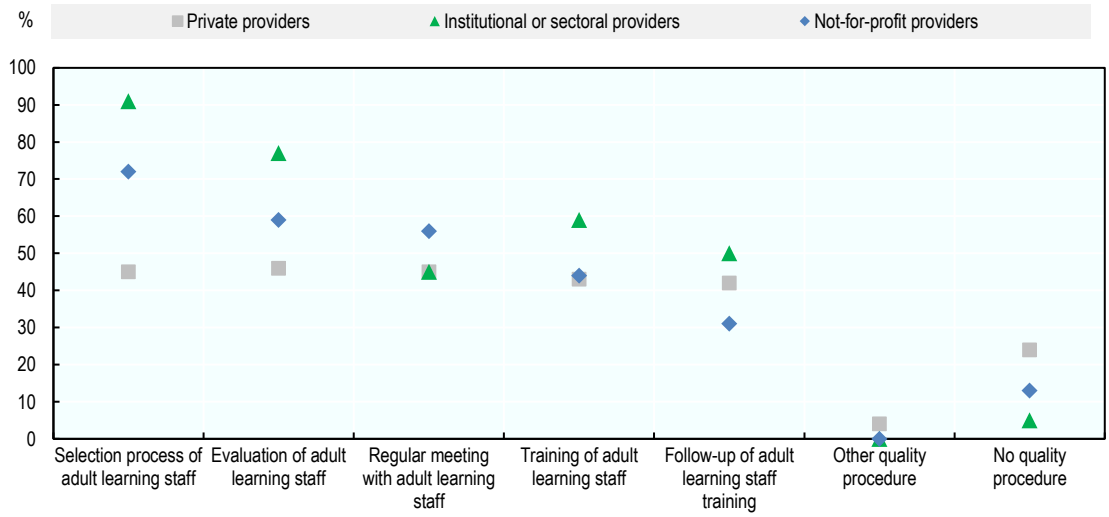
While a quality assurance agency would provide external incentives for providers to adhere to minimum quality standards, a quality label would provide internal incentives allowing training providers to differentiate themselves from the competition. In the current context, with such a diversity of adult learning providers and the lack of a quality label, it is challenging for individuals to identify adult learning programmes that are of the highest quality. It is also challenging for employers and public sector actors to identify adult learning programmes that would be most worthwhile to financially support. Introducing quality labels would provide a clear signal in the adult learning market and make the allocation of resources more efficient (OECD, 2021[62]).

If the capacity of the national quality assurance agency in Luxembourg is not sufficient to certify all training providers, the certification task could also be outsourced to accredited private certification bodies, as long as they apply the same criteria in the evaluation. A potential benefit of involving private certification bodies is that such bodies could specialise in specific adult learning programmes by sector, which may be more difficult to achieve by a national quality assurance agency. To ensure that the private certification bodies

apply consistent criteria in certifying training providers with the Qualiopi label, in France, the French Accreditation Committee accredits these private certification bodies. Luxembourg could work with such private certification bodies to implement the Qualiopi label.

Besides establishing a quality assurance agency, the quality of adult learning programmes could be raised by providing training providers with the necessary support to improve the skills of their staff. The quality of adult learning programmes depends to a great extent on measures that ensure the quality of the skills of those who provide adult learning. However, implementing measures to raise instruction quality is challenging for a significant share of adult learning providers. In particular, private adult learning providers, who comprise about 78% of providers, report implementing fewer measures to ensure quality (Figure 2.11). For example, many small private providers lack robust processes for hiring, evaluating and training staff.

Figure 2.11. Adult learning providers with quality measures in place in Luxembourg, 2016



Note: The sample for this figure has the following distribution in terms of training provider size: single person training provider (32%); provider with 1-4 employees (41%); provider with 5-19 employees (16%); provider with 20+ employees (11%).
Source: Based on Observatoire de la formation (2018[63]), "Formabref", www.lifelong-learning.lu/bookshelf/documents/l_offre-de-formation-continue-en-chiffres---enquete-2017.pdf.

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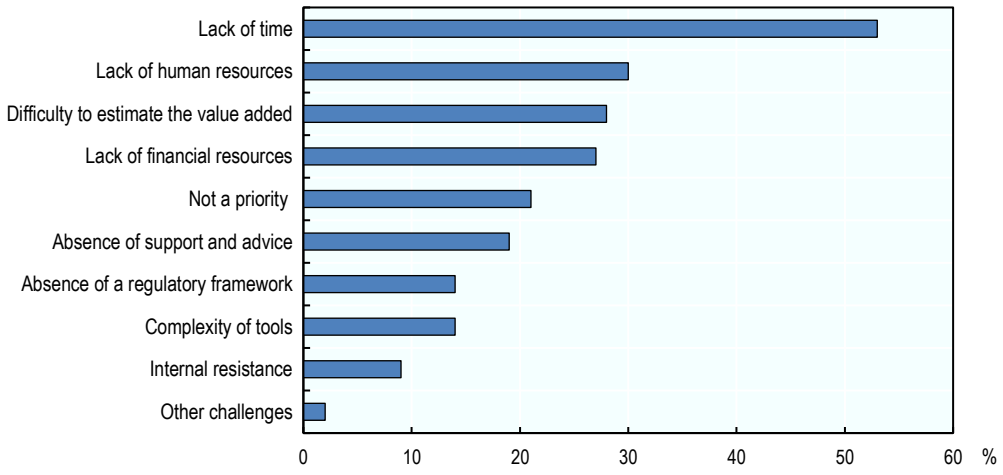
Adult learning providers face numerous challenges in implementing quality assurance measures. Among the main reasons adult learning providers give for not implementing quality assurance measures are a lack of time, a lack of human resources, difficulty in estimating the value added of such measures, a lack of financial resources and such measures not being a high priority (Figure 2.12). This suggests that additional support may be required to encourage training providers to take steps to ensure the quality of their adult learning programmes. For example, the quality assurance agency could provide regular training sessions for adult learning staff to further develop their teaching skills. Such training sessions would be particularly beneficial for self-employed trainers and small training providers since they lack the human and financial resources to organise such training themselves.

In Luxembourg, there are no regulations in place governing how private adult learning providers hire or manage and train their teaching staff. As mentioned above, self-employed trainers only have to demonstrate that they are “fit for business” and have an education qualification; they have only to fulfil

these two requirements and are not required to demonstrate any teaching expertise. Training providers can decide for themselves how they hire, manage and train their teaching staff.

Figure 2.12. Challenges adult learning providers face in implementing quality assurance measures in Luxembourg, 2016

Share of adult learning providers that face a given challenge in implementing quality measures for adult learning



Source: Based on Observatoire de la formation (2018[63]), "Formabref", www.lifelong-learning.lu/bookshelf/documents/l_offre-de-formation-continue-en-chiffres---enquete-2017.pdf.

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Other countries have taken a different approach and have established specific minimum qualifications and training requirements for adult learning staff (Table 2.5). For example, in Slovenia, adult learning teaching staff are required to have a university degree in the field they teach and pass a relevant professional examination. In addition, adult learning teaching staff receive at least 5 days of training per year or 15 days of training over 3 years. In Finland, adult learning teaching staff need to fulfil the same qualification requirements as initial education teachers. Specifically, they must possess a degree in the subject area they teach and accumulate 1 400 hours in studies related to teaching competence. Furthermore, Finnish adult learning staff participate in continuous professional development training for 9-15 days per year.

Table 2.5. Entry and training requirements for adult learning teaching staff in selected countries, 2009

Country	Area of teaching	Entry requirements for adult learning teaching staff	Training requirements for adult learning teaching staff
Australia	Vocational education and training	National certificate in training and assessment	n/a
	Literacy	Teaching qualification and post-graduate qualification with at least three years' experience	n/a
Belgium (Flanders)	Adult education	Proof of teaching competence	Training with 280 teaching periods, 120 of which are dedicated to practical training
Chile	Adult education	University degree (same requirements as required to practise as a teacher in the school system)	Training of 1 week, followed by annual refresher sessions

Country	Area of teaching	Entry requirements for adult learning teaching staff	Training requirements for adult learning teaching staff
Denmark	Adult education	Master's degree or equivalent level; completion of a course in educational theory and practice	n/a
Estonia	Adult education	Professional qualification for adult learning teaching staff	n/a
Finland	Adult education	University degree in the teaching subject (same qualification requirements as for teachers in initial education), including 35 credit points in studies related to teaching (1 credit point equals 40 hours of student's work)	Training of 9-15 days a year
Israel	Adult education	Teacher's college or university degree; certification by the Division of Adult Education	Participation in periodic in-service training sessions is part of the accepted timetable for teachers
Korea	Adult education	Certification by the government	Training through undergraduate, graduate courses, or in-service course programmes
New Zealand	Literacy	Specific qualifications for adult literacy and numeracy educators	n/a
Slovak Republic	Adult education	University degree in the field of teaching; experience in the field	n/a
Slovenia	Adult education	University degree in the field of teaching and passed the professional examination	Training of at least 5 days per year or 15 days every 3 years
	Literacy	University degree; completed adult education training; and passed the relevant professional exam	Initial adult literacy teacher training in a 112- to 132-hour programme
Switzerland	Vocational education and training	Adult education certificate and diploma across different levels: Level 1 (Trainer Certificate), Level 2 (Federal Trainer Diploma) and Level 3 (Advanced Federal Training Manager Diploma)	n/a
United Kingdom	Adult education	Teaching qualification based on National Standards for Teaching and Supporting Learning	n/a

Source: UNESCO (2009[78]), *Global Report on Adult Learning and Education*, https://unesdoc.unesco.org/ark:/48223/pf0000186431.

Luxembourg could consider introducing requirements and support mechanisms for improving the skills of adult learning teaching staff. For example, individuals who want to become adult learning staff should be required to fulfil certain criteria that relate to the specific teaching and training role they are to fulfil. Currently, many of the trainers active in Luxembourg apply for French (The French Association for Standardisation (Association française de normalisation, AFNOR) or international (e.g. International Organization for Standardization, ISO) teaching certificates to distinguish themselves in the training labour market.

Like other countries, Luxembourg could develop a tailored certificate for adult learning teaching staff in Luxembourg. The possession of the certificate from Luxembourg could be made mandatory to teach and train. Furthermore, the maintenance of the certificate could be tied to regular participation in "train-the-trainer" courses. Currently, the University of Luxembourg offers a "train-the-teacher" course, but it is only available for internal staff. The House of Training also has a five-day train-the-trainer course, which some stakeholders consider too long, particularly for trainers who provide a relatively limited number of training hours per year (e.g. 20 hours). MENJE is thus considering developing a shorter train-the-trainer

course of one or two days, which could be made mandatory for any trainers that provide more than 20 hours of training per year.

As in Luxembourg, Switzerland experienced an increase in the number of adult learning teachers, many of whom were working part-time and did not possess relevant professional expertise. In response to this challenge, the Swiss Federation for Adult Learning (SVEBB) introduced a structured train-the-trainer (AdA) programme that has three levels (Level 1: Professional Practice Trainer Certificate; Level 2: Federal Training Diploma; and Level 3: Advanced Federal Training Manager Diploma) (Swiss System in Higher Education for Adult Learning, 2021[79]) and ensures that adult learning teaching staff have the required teaching skills (Box 2.9).

Luxembourg could explore the option of establishing a designated institute (e.g. IFEN) to offer training and professional development opportunities to adult learning staff. Attendance in such courses could be made a requirement for maintaining adult learning teaching certificates, like how professional development attendance is mandatory for teachers in initial education. In Slovenia, the Institute for Adult Education provides training and peer learning opportunities to adult learning staff, which could be relevant for Luxembourg to consider (Box 2.9).

Box 2.9. Relevant international examples: Ensuring the quality of adult learning staff

Switzerland

The Swiss Federation for Adult Learning (SVEB) (FFA, n.d.[80]) provides nationally train-the-teacher courses, which lead to different levels of certificates: Level 1: Professional Practice Trainer Certificate; Level 2: Federal Training Diploma; and Level 3: Advanced Federal Training Manager Diploma. All courses are provided in a modular format with clear learning outcomes, a self-contained curriculum and in line with the regulations of the Quality Assurance Commission. At the end of module levels 2 and 3, participants need to pass a national exam (*Berufsprüfung*). Once they have passed the exam, participants can receive reimbursement of 50% of the module costs for the specific level tested. Adult learning providers use these certificates to recruit staff.

Slovenia

In Slovenia, the Institute for Adult Education provides professional training to support adult educators to: 1) acquire new knowledge and skills in order to perform quality work; and 2) share their experience with others and evaluate their own practices under expert guidance in order to improve them. Three types of programmes are offered: 1) a general training programme, which helps participants acquire and further develop their knowledge of the discipline of adult education; 2) training for performing special roles, such as mentor in study circles, counsellor in guidance centres, quality evaluator, etc.; 3) training, where participants can further deepen their knowledge while reflecting on their practices and exchanging with others. Importantly, the Slovenian Institute for Adult Education supports the recognition of prior learning for teachers. An up-to-date website contains all the information on activities, programmes and events organised by the Institute.

Source: ACS (2022[81]), *Educational Activity*, https://izobrazevanje.acs.si/; FFA (n.d.[80]), *Devenir formateur professionnel avec un certificat FFA*, https://alice.ch/fr/devenir-formateurtrice/diplomes-ffa/.

Recommendations

- **1.7. Establish an adult learning quality assurance system.** Establishing a quality assurance system should begin with outlining a clear vision and a roadmap for achieving quality in adult learning programmes. The vision and the roadmap should clearly identify the goals of quality, the responsible actors and the necessary actions. The process of creating such a vision and roadmap could be led by MENJE and involve all relevant actors, such as from other ministries, employer, and employee representatives, among others. The quality assurance system could be implemented with oversight provided by a quality assurance agency, as outlined in the Accord de Coalition, overseen by a public governance body. The agency should establish a set of minimum quality standards to certify new providers and recognise the achievement of these standards with a quality label (e.g. Qualiopi). The agency should also regularly audit and evaluate existing providers. The agency could outsource some of its tasks to private certification entities (see the French example) if they apply the same quality standards. In order to incentivise the uptake of the quality label, the possession of a quality label could be made a prerequisite for accessing public funding (e.g. co-financing scheme for adult learning programmes). Information on which training providers have received a quality label should be made publicly available to inform the choices of adults and institutions procuring training. The quality label should be valid for a limited duration (e.g. three years) and require re-certification to ensure that adult learning providers continue to meet quality standards over time. To establish a quality assurance system of formal adult education programmes at higher levels of education (leading to ECTS), Luxembourg should build on the existing partnership between MESR and NVAO.
- **1.8. Require individuals who want to become adult learning teaching staff to be certified through fulfilling specified criteria related to teaching.** Make the maintenance of certification conditional upon regular participation in train-the-trainer courses (e.g. two days), which MENJE could develop. The certificate could distinguish between different levels of expertise, with each level requiring a greater commitment to participate in initial and continuous training. The requirement for adult learning teaching staff to participate in continuous training would be like the requirement of regular schoolteachers to participate in a certain number of courses at the IFEN. An institution (e.g. IFEN) could be designated to oversee train-the-trainer training programmes and peer learning opportunities for adult learning teaching staff.

Overview of recommendations

Providing labour-market-relevant adult learning opportunities is critical for individuals, firms and society in Luxembourg to adapt and thrive in a world of changing and rising skills demands. Two opportunities have been selected, indicating where the provision of labour-market-relevant adult learning opportunities can be strengthened:

1. improving the coherence and accessibility of adult learning opportunities
2. increasing the relevance and ensuring the quality of adult learning opportunities.

This chapter presented eight recommendations to seize these opportunities in adult learning provision. A high-level overview of the recommendations can be found in Table 2.6. This selection is based on input from a literature review, desk research, discussions with the Luxembourg National Project Team and broad engagement with a large variety of stakeholders, including two workshops in Luxembourg and various related meetings and group discussions.

Two recommendations have been selected that should be considered to have the highest priority based on potential impact, relevance in the current context in Luxembourg and the overall support for implementation. To strengthen the provision of labour-market-relevant adult learning opportunities, the OECD recommends that Luxembourg should:

- Develop a forward-looking strategy for adult learning in Luxembourg with all relevant actors (Recommendation 1.1)
- Establish an adult learning quality assurance system (Recommendation 1.7).

Table 2.6. High-level overview of recommendations to provide labour-market-relevant adult learning opportunities in Luxembourg

Policy directions	Recommendations	Responsible parties
Opportunity 1: Improving the coherence and accessibility of adult learning opportunities		
Improving the coherence of adult learning opportunities	1.1. Develop a forward-looking strategy for adult learning in Luxembourg with all relevant actors	• INFPC, including MESR
	1.2. Develop a co-operation agreement on adult learning provision among actors in the Greater Region	• MENJE, MTEESS, MESR, MFAMIGR and other relevant ministries • Relevant counterparts in the Greater Region
Improving the accessibility of adult learning opportunities	1.3. Develop modules based on a common skills classification framework (e.g. ESCO) to make them transferable across providers, such as between providers of initial and continuous training, as well as between public and private providers	• MENJE
	1.4. Expand basic digital skills modules across adult learning programmes through digital learning platforms	• MENJE, ADEM, Digital Luxembourg • Public and private providers
Opportunity 2: Increasing the relevance and ensuring the quality of adult learning opportunities		
Increasing the relevance of adult learning opportunities	1.5. Develop a regular and systematic curriculum review process to ensure labour market relevance of formal adult education programmes	• Public and private providers • Employer and employee representatives
	1.6. Expand the provision of tailored training offers to the long-term unemployed and individuals in need of reskilling for a new job by developing modular training programmes with training partners	• ADEM (lead role) • Public and private providers
Ensuring the quality of adult learning opportunities	1.7. Establish an adult learning quality assurance system	• MENJE (lead role) • Relevant ministries, government agencies • Employers and employee representatives
	1.8. Require individuals who want to become adult learning teaching staff to be certified through fulfilling specified criteria related to teaching	• MENJE

Note: INFPC: Institut national pour le développement de la formation professionnelle continue; MESR: ministère de l'Enseignement supérieur et de la Recherche; MENJE: ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse; MTEESS: ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire; MFAMIGR: ministère des Affaires familiales, de l'Intégration et de la Grande Région; ADEM: Agence pour le développement de l'emploi.

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Notes

1. Adult Education Survey indicator measuring adult learning participation rate in the past year.

2. SCRIPT is an agency under MENJE that provides research-based input into the design of education policy.

3. In some cases, the approved school can also be in countries outside the Greater Region.

4. The website https://frontaliers-grandest.eu/ provides some information, but only for cross-border workers Germany-Luxembourg and not France-Luxembourg or Belgium-Luxembourg.

5. The underlying Labour Force Survey data only includes Luxembourg residents.

6. ECTS credits represent learning outcomes and the associated workload for an education programme. The ECTS makes it possible for credits taken at one institution to be counted towards a qualification studied at another. In practice, 1 ECTS credit corresponds to 25-30 hours of work. A full-time academic year would typically correspond to 60 ECTS credits.

7. The levels are as follows: 1-2: General basic knowledge; 3-5: Professional mastery; 6: Bachelor level; 7: Master level; and 8: Doctorate level. The crafts sector uses the European Qualification Framework rather than Luxembourg Qualification Framework (CLQ).

8. Basic digital skills are measured as having used the Internet in the past three months to source information, communicate, create content and/or solve problems (EC Community Survey on ICT Usage in Households and by Individuals).

9. Since 2018, MENJE (through the resource administration of MENJE (Centre de gestion informatique de l'éducation, CGIE)) provides iPads for students for educational purposes.

10. The Kirkpatrick model has four levels for evaluating adult learning programmes. These levels include: Level 1 (reaction), measures whether learners find the learning engaging and relevant; Level 2 (learning) measures whether learners acquire certain knowledge, skills, and attitudes; Level 3 (behaviour) measures whether learners are applying what they are learning; Level 4 (results) measures whether learners have an impact on business outcomes, such as sales, workplace accidents and productivity.

3 Guiding and incentivising skills choices in Luxembourg

As Luxembourg's skills system moves to a lifelong learning approach that is more responsive to the needs of the labour market and supports adults to reskill and upskill throughout their lives, guiding and incentivising skills choices will become increasingly important. This chapter explains the importance of guiding and incentivising skills choices in Luxembourg and provides an overview of current practices and performance. It then explores two opportunities to strengthen guiding and incentivising skills choices in Luxembourg: improving guidance services for adult learning; and improving financial incentives for adult learning.

The importance of guiding and incentivising skills choices

As Luxembourg seeks to build a more resilient and adaptable skills system that can respond not only to the immediate challenges of short-term disruptions, such as with COVID-19, but also to the longer run impacts of megatrends, greater focus needs to be placed on guiding and incentivising skills choices. Specifically, individuals need to have access to the support and guidance services needed to make better decisions about their career development and learning through different life stages. Some of these services can exist in terms of information, counselling and advice. However, there is also a range of financial and non-financial incentives that help to overcome barriers to learning, offer support and motivate individuals to continually develop the skills needed for successful careers and fulfilling lives.

Disruptions from short-term, unexpected shocks and long-term megatrends, such as globalisation, digitalisation and demographic and climate change, as outlined in Chapter 1, are having a major impact on the industrial structure of national economies – and Luxembourg is no exception (CEDEFOP, 2020[1]). Indeed, such forces of change are challenging notions of "jobs for life", modifying ways of working and driving fluctuations in employment, which are evident in cycles of job growth and decline as well as changing skills requirements (OECD, 2019[2]).

More complex portfolio careers are transforming traditional career pathways, opening up new and varied options for work and learning, and increasing the complexity of career decisions and choices people must make throughout their lives. More and more, these are lifelong processes pursued by adults rather than something constrained to initial education and the choices of young people. As Luxembourg's skills system evolves from a "front-loaded education" approach (where individuals' learning is focused on their early life before leaving the education system) to a "lifelong learning" approach (where learning takes place throughout life), there is a need to reform the support that is made available to adult learners. This applies to both guidance services and the financial and non-financial incentives used, whether that is, on the one hand, to inform individual choices about future career options and adult learning opportunities, or on the other, to facilitate the take-up of those opportunities.

Career guidance are vital services provided across many OECD countries (OECD, 2019[2]) to help individuals successfully navigate a constantly evolving labour market and skills system. Through such advice, individuals get help in: identifying suitable career opportunities; understanding their training needs to secure work and progress in their careers; and navigating the many education, training and employment offers available (OECD, 2021[3]). Targeted career guidance services are also crucial in the context of increased unemployment resulting from the COVID-19 pandemic and restructuring in the economy to encourage those workers most at risk of displacement (especially those who are low-qualified and in low-skilled roles) to upskill and reskill before they become unemployed (CEDEFOP, 2020[4]).

Firms can also use such information to plan their management strategies and guide their approach to people management and working practices for their existing and future workforce (e.g. the provision of training, recruitment and succession planning). A key goal is to help employers to understand how to get the best out of their workforce through more effective skills utilisation and the creation of good work and then to support individuals in securing those roles.

Besides providing information to guide skills choices, a number of financial and non-financial incentives can encourage greater investment and engagement in skills development and learning. Financial incentives can be designed for and targeted at individuals to steer their participation in adult learning programmes. They can also be directed at employers to encourage investment in skills development within their workforce (OECD, 2017[5]). Both seek to enhance learning and skills development that is high quality and labour market relevant and can therefore enhance economic prospects. Clearly, where financial incentives can be aligned and assume a dual approach, working for both employers and individuals, this provides the basis to overcome the barriers that inhibit participation in learning and skills investments as a

whole and can significantly enhance the collective benefits from training – thus producing a sum greater than its parts.

This chapter is structured as follows: the following section provides an overview of current practices in providing guidance and financial incentives in Luxembourg. The next section assesses Luxembourg's performance in guidance and financial incentives. The last section conducts a detailed assessment and provides tailored policy recommendations in two opportunities for guiding and incentivising skills choices: improving guidance services for adult learning; and improving financial incentives for adult learning.

Overview and performance

The assessment of guidance and incentives to better inform skills choices starts with a review of the current arrangements and performance of guidance services and financial incentives. The section first considers guidance and support services and then the nature and role of incentives.

Overview of Luxembourg's current practices in providing guidance

In Luxembourg, while several partners are involved in delivering guidance services to individuals in different stages of their education and working life, since 2008, there have been continual steps to bring the different services together (FO, 2010[6]). This culminated in the regrouping of guidance activities into one structure in 2012 and the establishment of the Maison de l'orientation (MO).[1] The MO has aimed to offer a coherent and centralised service for individuals delivered through a national guidance centre or "one-stop-shop" for guidance, with multiple services located in a single building to enhance ease of access.

At a strategic level, the work of the MO is co-ordinated by a range of partners operating through the Forum Orientation (FO), backed by the Government and established in law. The FO has brought together all relevant ministries, including the Ministry of Education, Children and Youth (MENJE), the Ministry of Higher Education and Research (MESR), and the Ministry of Labour, Employment and the Social and Solidarity Economy (MTEESS) as well as key stakeholders (e.g. employer associations, chambers, unions, guidance providers). The FO has functions which include: working as a guidance co-ordination hub for stakeholders; agreeing on where to make improvements to guidance activities; and consulting the government on new initiatives. The MO is primarily funded by the Government of Luxembourg, which helps to ensure continuity in the core service offer.

A central mission of the MO is to deliver lifelong guidance to all individuals, regardless of age, based on individual and personal development needs at any time in their lives. This includes support to identify people's capabilities, skills and interests, as well as to inform their professional and training activities and career choices, so that individuals become more resourceful in their own career management (CEDEFOP, 2020[7]). The primary guidance services of the MO are outlined in Table 3.1 (Maison de l'orientation, 2022[8]). The analysis considers all services to show how complementary guidance activities might support each other – for example, youth services encourage the take-up of training and learning into adulthood.

In 2021, the MO opened a new "Orientation Space" at its main office to facilitate the co-ordination of guidance services.[2] This has provided an opportunity for the MO to repurpose itself after the pandemic as both a physical and virtual one-stop-shop for guidance services and a resource centre for guidance professionals, teachers and individuals. This Orientation Space is organised into five thematic reception counters where individuals are welcomed and then connected more effectively to specialised services based on their needs, regardless of their backgrounds. These counters focus on: the school journey; higher education; youth information; training for adults; and the "universe of training and trades". The centre supports open access to the public without an appointment. After initial contact, clients are referred to advisers for more personal advice.

There is also a wide range of web-based and physical resources. These can be accessed on site through a new MO multimedia space, provided free of charge. This includes a growing library of resources and documents, computer workstations available for on-site research, and wider preparations for employment, such as writing curriculum vitae (CVs) and developing cover letters. Staff are available to offer support using the resources and equipment.

Table 3.1. Guidance services provided in Luxembourg's Maison de l'orientation

Ministry	Name of agency	Description of service
Ministry of Education, Children and Youth (MENJE)	Centre for Psycho-Social and Educational Accompaniment (Centre psycho-social et d'accompagnement scolaires, CePAS)	Offers socio-educational support for young people (including young adults) and their parents to build their personal development and skills for the future. CePAS has developed different tools (workshops, creative spaces, intervention groups, alternative learning methods, etc.) to serve the well-being of students in secondary schools. It complements the Psycho-Social and School Support Services represented by SePAS (Service psycho-social et d'accompagnement scolaires).
MENJE	National Youth Service (Service National de la Jeunesse, SNJ)	Supports young people (including young adults, usually up to the age of 24 years) to gather practical experience outside the formal education system in voluntary service projects and wider work experience. It connects to secondary schools through its regional offices and the local network of Local Antenna for Youngsters (ALJ), supporting young people through their transitions into the labour market. It particularly targets those susceptible to leaving school early. It runs specific initiatives such as Level Up.
MENJE	Department for Schooling of Foreign Children (Service de scolarité des enfants étrangers, SECAM)	A national service offered at schools to foreign young people (including young adults up to 24 years old) who want to continue their education, it provides advice to help foreign students settle within the Luxembourg skills system.
MENJE	Agency for Transition to Independence (Agence pour la transition vers une vie autonome – ATVA)	Supports young people with special needs aged 15-29 with transitions into independent living. Individuals are eligible when registered in competence centres, in their last year of schooling, or at risk of dropping out. The agency helps with work placements, internships, training and job searches.
MENJE	Service for Adult Education (Service de la formation des adultes, SFA)	Provides information, guidance and counselling around training and education. ThFis includes formal education, basic skills development and non-formal general education for adults. Its primary goal is to reignite interest and engagement in adult education.
Ministry of Higher Education and Research (MESR)	Higher education information service of MESR (Service d'information études supérieures du MESR)	Offers advice and information on higher education in Luxembourg and abroad, as well as career planning. It complements public financial aid for higher education, also offered through MESR. Once individuals become students at the University of Luxembourg, they are supported by Student Services (SEVE). The university also has its own career centre and an Incubator for students interested in becoming entrepreneurs.
Ministry of Labour, Employment and the Social and Solidarity Economy (MTEESS)	Vocational Guidance Service run by ADEM (Service d'orientation professionnelle de l'Agence pour le développement de l'emploi [ADEM])	Provides job guidance interviews and information sessions for young people and adults to help them find suitable work. It also supports placements into training through initial vocational education and training (IVET) and continuing vocational education and training (CVET) programmes, such as apprenticeships. It seeks to connect to wider initiatives to support young people's education and employment experience and prevent them from becoming young people, not in education, employment and training (NEET). This includes linking to specific industry information and guidance on careers and learning, such as that provided by professional chambers.

Source: Maison de l'orientation (2022[8]), "Homepage", https://maison-orientation.public.lu/fr.html.

Overview of Luxembourg's current practices in providing financial incentives

Various financial incentives are currently available for individuals and employers within Luxembourg to encourage their participation in learning once their career interests and training needs have been established. In addition, significant public support is currently available for adults and companies to incentivise more training in Luxembourg. The responsibilities of different ministries and day-to-day management to specific delivery agents are outlined in Table 3.2. While all schemes have specified eligibility criteria, some are broader and operate nationally with the aim of supporting training opportunities

for all. In contrast, others are targeted to specific groups of individuals and employers experiencing more specific and pressing barriers. This section provides an overview of the existing financial incentives[3] for individuals and employers.

Overview of financial incentives for individuals in Luxembourg

The range of incentives available to encourage individuals to participate in adult learning falls into three broad types – with reference to the OECD policy toolkit in Table 3.4 (later in this section). The focus has primarily been on financial incentives for individuals (see Table 3.2). First, there are various types of paid study leave, which provides a means for individuals to request time off to pursue different types of learning. These are seen as key in conveying to individuals their rights to training. Second, there are various subsidy-based schemes targeted specifically to certain types of training or for certain groups of individuals. These include: state financial aid for higher education; European grants; assistance in learning the national language; and support for vocational training for job seekers. Finally, there are tax incentives as a further basis to support ongoing professional development. The following section examines the main incentives more closely as a basis to then review current performance and where improvements might be required.

Table 3.2. Financial incentives for individuals in Luxembourg

Type of financial incentive	Name of incentive	Description
Study leave – paid	Individual Training Leave (congé individuel de formation)	The Individual Training Leave scheme is available to encourage individuals employed within the private sector to continue their learning. Individual training leave enables the recipient to undertake a broad range of learning. The worker may recover one-third of the time devoted to the training as individual training leave. Up to 80 days of training leave are available for individual training during a professional career. These days can be taken in several stages provided no more than 20 training leave days are taken over 2 years and 10 within a year. MENJE manages the scheme. The scheme runs as a wage compensation scheme. Training days are calculated according to an 8-hour working day – the minimum training duration is at least 24 hours.[1] For employees, each day of leave granted entitles the recipient to a compensatory allowance equal to their average daily salary (but is capped at four times the minimum wage for unskilled workers). The employer continues to pay the individual's salary and is reimbursed by the state to cover a proportionate share of their wage and social security contributions equivalent to the number of days of leave taken. For self-employed people, the compensatory allowance paid by the state is based on the income and contributions to the pension insurance scheme in the previous financial year and, again, is proportionate to the days taken. To make a request, an employee must have worked for an employer for at least six months, and the self-employed must have been affiliated to the Luxembourg social security system for at least two years. Training must also be for eligible training courses defined by the government.[2]
Study leave – paid	Youth leaders paid training leave (congé jeunesse)	Special provision is also available for employees or those self-employed in charge of youth activities to request special paid youth leave and is managed by MENJE. This is for up to 60 days over the course of their professional career. This supports activities in youth leadership programmes, workshops (i.e. creative, music, etc.), study days/weeks, courses, international competitions, leisure and sports activities, training camps, tournaments, meetings, events, camps and holiday camps both in Luxembourg and abroad. Again, it is a wage compensation scheme. For employees, each day of leave granted entitles the recipient to a compensatory allowance equal to their average daily salary (but is capped at four times the minimum wage for unskilled workers). The state reimburses the employer for the allowance and their social security contributions. For self-employed people, the compensatory allowance paid by the state is based on the income and contributions to the pension insurance scheme in the previous financial year.
Study leave – paid	Language training leave (congé linguistique)	Employees and self-employed people may apply for language training leave, a special paid leave of up to 200 hours over their professional career, to learn Luxembourgish and enhance their integration into Luxembourgish society. MTEESS manages this. Employees must have been employed for at least six months with the same employer legally based in Luxembourg. Self-employed people must have been affiliated with Luxembourg social security for at least six months. Again, it runs as a wage compensation scheme.
Study leave – paid	Paid training leave for staff representatives (congé-formation pour délégués du personnel)	This supports employee representatives to undertake training for their role. The scheme reimburses costs based on the individual's gross remuneration and the employer's contributions. A training schedule is usually determined over a year between relevant employers' associations, trade unions, and the Higher School for Labour (École Supérieure du Travail, EST).

Type of financial incentive	Name of incentive	Description
Tax measures	Tax reimbursement (déductibilitié fiscale)	Employees who are taxpayers can also support their training costs through a tax reimbursement scheme. This deducts the cost of professional development as business expenses (frais d'obtention) from their taxable income. The professional development costs must: have a direct link to the professional activity performed by the employee; be paid by the employee; and enable the employee to update their professional knowledge and facilitate promotion in their current professional activity. Eligible expenses include: registration fees for continuing training borne by the employee; the costs of buying books, as long as they are purchased on a wholly professional basis (specialist books that are not of general interest). These claims are processed annually by the individual's local tax office as part of any personal tax assessment for Inland Revenue.
Financial subsidies – loans and grants	State support for vocational training of job seekers (aide à la formation professionelle des demandeurs d'emploi)	While job seekers may participate free of charge in training offered by ADEM or via its partners (Chamber of Employees, Chamber of Commerce, Chamber of Skilled Trades and Crafts), there is also support in the form of a (partial or full) reimbursement of training costs for any other vocational training that a job seeker registered with ADEM wishes to take. Registration is managed through ADEM's vocational counsellors. Acceptance conditions include: the job seeker's professional background and area of vocational interest; the relevance of the training for the job seeker's employability; and full details of the training, including the trainer, course, duration of the training, rationale, cost of the training (including all taxes) and whether there will be a formal award and/or certification on successful completion. Financial support must be applied for before the training starts.
Financial subsidies – loans and grants	State financial aid in higher education (aide financière pour études supérieures)	There are also financial arrangements for individuals pursuing certain types of higher education through grants and loans. State financial aid is available for any higher education programme of study (first cycle, second cycle, doctoral programme) leading to a higher education diploma, qualification or degree and falling under the country's higher education system in which the qualification is awarded. In addition, state financial aid is available for professional development training, provided MENJE has granted authorisation. The potential grants available fall into four components: a basic grant; a mobility grant; a needs-based grant; and a family grant**.** In addition, there is a basic student loan (EUR 3 250, guaranteed by the state). A student with a total personal income exceeding the guaranteed minimum wage for unskilled workers may only receive financial support through a loan**.** Where their total income is more than 3.5 times the guaranteed minimum wage for unskilled workers, they may not receive any financial support**.** Loans should start to be repaid two years after the student has completed their studies or dropped out, with the maximum repayment period covering ten years. Recipients of financial support must: be registered for a full- or part-time course of higher education leading to a higher education qualification officially recognised in the country where the studies are pursued; and aim for at least 15 European Credit Transfer and Accumulation System (ECTS) credits per semester or attend a course lasting at least half the minimum duration of the course (for distance learning and part-time courses).
Financial subsidies – loans and grants	European grants (Programme Erasmus)	These are currently provided by the European Union's (EU's) Erasmus+ programme for education and training, youth and sports activities. For 2021-27, the current priorities focus on social inclusion, the green and digital transitions and promoting young people's participation in democratic life. Individual applications are not allowed but must be made through an institution and/or on behalf of a group of young people active in youth work. Funding is usually project-based, and the institution manages the project and deployment of the funding. Current funding supports a range of initiatives, including: school education; vocational education and training; higher education; adult education; and youth work.
Financial subsidies – loans and grants	Assistance in acquiring Luxembourg nationality (aide à l'acquisition de la nationallité luxembourgeoise)	Non-Luxembourg nationals seeking Luxembourgish nationality can request reimbursement of the fees for learning the Luxembourgish language. The Ministry of Justice processes these. Generally, this is around: EUR 75 to cover registration fees for the Luxembourgish language examination (Sproochentest Lëtzebuergesch); and up to EUR 750 for typical Luxembourgish language classes.

1. The number of hours of training is divided by eight hours (for full-time employees) to obtain the number of training days. The number of training days is then divided by three to obtain the number of days of training leave. This number is rounded down to the nearest whole number, if necessary.
2. This includes, for example, institutions accredited as public or private colleges that issue certificates recognised by the public authorities; professional chambers; local authorities; private foundations; natural persons or associations that are accredited by the Minister for Education, Children and Youth; and government ministries, departments or state bodies.
Source: INFPC (2022[9]), "Lifelong Learning Homepage", www.lifelong-learning.lu/Accueil/en; Guichet.lu (2022[10]), *Education,* https://guichet.public.lu/en/citoyens/enseignement-formation.html.

Overview of financial incentives for employers in Luxembourg

In addition to financial incentives for individuals, there are also financial incentives for employers to stimulate their investment in training (Table 3.3). Significant public support is available to encourage employers to train in Luxembourg, with a wide array of existing incentives. These range from: national subsidies supporting co-funding of individual company training plans; to more targeted subsidies supporting specified workers or directed at specific types of training (e.g. vocational education and training such as apprenticeships); as well as more collaborative measures, such as levies run through sector training funds, working across specific business communities, such as in key sectors.

In reflecting on the conditions for the successful implementation of employer incentives, it is important to consider the role of business representatives, intermediaries and public sector partners (as listed earlier for the individual incentives). As such, this calls upon private and public partnerships involving, in particular, the support of dedicated and well-known industry, employer, trade and professional bodies, wider social partners and business associations. These intermediaries provide vital mechanisms and trusted routes to reach and actively engage employers broadly across different business communities. In addition, these seek to raise awareness of the support available, enhancing the state's core information and advisory services through their dedicated membership networks, distribution channels and business services.

In Luxembourg, there are five main professional chambers represent social partners in the skills system in Luxembourg. These are publicly backed institutions financed by mandatory membership fees of companies from the sectors they represent. They also access income from the services they provide, including within areas of training. Three chambers represent employers: the Chamber of Commerce (Chambre de Commerce, CC), the Chamber of Skilled Trades and Crafts (Chambre des Métiers, CdM), and the Chamber of Agriculture (Chambre d'agriculture, LWK). Broader social partners capturing the employee perspective are represented by two professional chambers: the Chamber of Employees (Chambre des salariés, CSL) and the Chamber of Civil Servants and Public Employees (Chambre des fonctionnaires et employés publics, CHFEP).

It is also essential to connect to a range of broader business associations within the institutional landscape to extend the reach to wider employer networks through their membership and engagement channels. It is particularly important to engage smaller businesses, including through the wider supply chain. Many are members of the umbrella body, the Association of Luxembourg companies (UEL).[4] These represent wide sector interests across a broad range of areas, including skills, and have varying reach. As key sources of targeted business advice for their members, they are also likely to be key players in any future policy reforms.

As for the incentives targeting individuals, the current package of support for employers[5] within Luxembourg is described in Table 3.3. It highlights the existing arrangements, their purpose, and the principles of how they are intended to work to assist employers wishing to develop their employees' skills. The table also describes the key partners and their roles.

Table 3.3. Financial incentives for employers in Luxembourg

Type of financial incentive	Name of incentive	Description
Subsidies	Co-funding of company training (aides à la formation professionnelle continue en entreprise)	This scheme provides financial aid to private sector companies as a co-investment from the MENJE (and managed through the Institut national pour le développement de la formation professionnelle continue, INFPC) towards the company's annual training costs. This amounts to 15% of the annual training investment. Companies can request financial support where they are legally based in Luxembourg, and training courses must be aimed at employees affiliated with Luxembourg's social security system and have an employment contract. Accessing financial support depends on submitting a co-funding application. Investment in training is capped according to the size of the company (i.e. at 20% of total payroll for companies with 1-9 employees; at

Type of financial incentive	Name of incentive	Description
		3% of total payroll for companies with 10-249 employees; and at 2% of total payroll for companies with more than 249 employees). The costs covered include: participants' salaries; internal trainers' salaries; expenses for external, approved training bodies or supplier-trainers; travel, accommodation and subsistence expenses; the costs of training management software; the cost of subscriptions to training bodies and fees paid to an auditor (which is optional). An additional subsidy worth 20% of the salary cost for employees involved in the training is provided for certain employees, i.e. the low-qualified with no publicly recognised qualifications and less than ten years' service; and older workers over 45 years of age). The co-funding application is structured around seven training categories or themes (i.e. languages; information technology (IT)/office automation; management/human resources management; finance/accounting/law; quality/ISO (International Organization for Standardization)/safety; technical/core business related; and on-the-job training). It specifies different types of training that can be included: training with a training body (i.e. external training); training delivered to a minimum of two participants by an employee of the company (i.e. structured in-house training); on-the-job training (i.e. internal training); conferences, fairs and exhibitions; self-learning; and e-learning. EUR 500 is also refunded to cover the cost of drawing up the co-funding application. At least 50% of training time should be scheduled within normal working hours. As well as managing the scheme, the INFPC supplies an information and support service to companies seeking financial assistance.
Subsidies	Subsidies for learning Luxembourgish (remboursement de la formation)	Private sector companies, legally based in Luxembourg, can also receive wage compensation to recover some of the costs linked to their employees' Luxembourgish training. Any Luxembourgish language courses taught in Luxembourg or abroad are eligible. This is another wage compensation-based scheme, where MTEESS reimburses 50% of the training costs to the employer based on the worker's daily wage. The scheme is also intended to complement the special study leave programme for the learning employee (see above).
Subsidies	Employer subsidies to take on apprentices (remboursement de l'allocation d'apprentissage)	There is also financial aid to encourage companies to hire apprentices of all ages. Apprentices receive an apprenticeship allowance (*indemnité d'apprentissage*) which varies depending on the vocational education and training programme they follow and is fixed by a decree. While this allowance is paid by the employer, they can apply to the governmental employment fund to be reimbursed as part of the apprenticeship allowance. The funding support varies by the type of apprentice: so, 27% of the apprenticeship allowance is reimbursed for training towards a technician's diploma (DT) and/or vocational aptitude diploma (DAP) and 40% for a vocational capacity certificate (CCP) (see Chapter 2 for more detailed information). The state will also refund a share of the employer's social security costs for the apprentice. Furthermore, the company will be refunded the non-wage labour costs for unskilled workers. There are also special subsidies for adult apprenticeships and internships.
Subsidies	Tailor-made training for recruited job seekers (formation sur mesure pour les demandeurs d'emploi recrutés)	ADEM can organise tailor-made training at the request of an employer (or employers) recruiting job seekers. ADEM can cover the costs of the tailor-made training. A minimum of eight job seekers need to be selected.
Training levies and funds	Sector training funds (fonds de formation du secteur)	Several training funds have been deployed within Luxembourg to date to offer further financial support to businesses in certain sectors, such as the finance sector, construction and among the temporary workforce (CEDEFOP, 2016[11]). These have tended to be industry-led; either run by industry bodies and/or trade unions and professional bodies. As such, they have aimed to raise training and skills levels within certain business networks through a more customised sectoral approach. A key intention has been to meet technical training needs more effectively, pooling the resources for training from various sources and sharing the costs of skills investment between a broader and connected sector community of businesses.

Source: INFPC (2022[12]), *Support for company training*, www.lifelong-learning.lu/Detail/Article/Aides/Aides-formation-en-entreprise/en; Guichet.lu (2022[13]), *Financing and support measures*, https://guichet.public.lu/en/entreprises/financement-aides.html.

Luxembourg's performance in guiding and incentivising skills choices

Having outlined the current arrangements guiding and incentivising skills choices, the following section reflects on the performance of these services. The intention is to begin to draw from this analysis where there might be more pressing priorities for future improvements.

Initial insights for guiding and incentivising skills choices

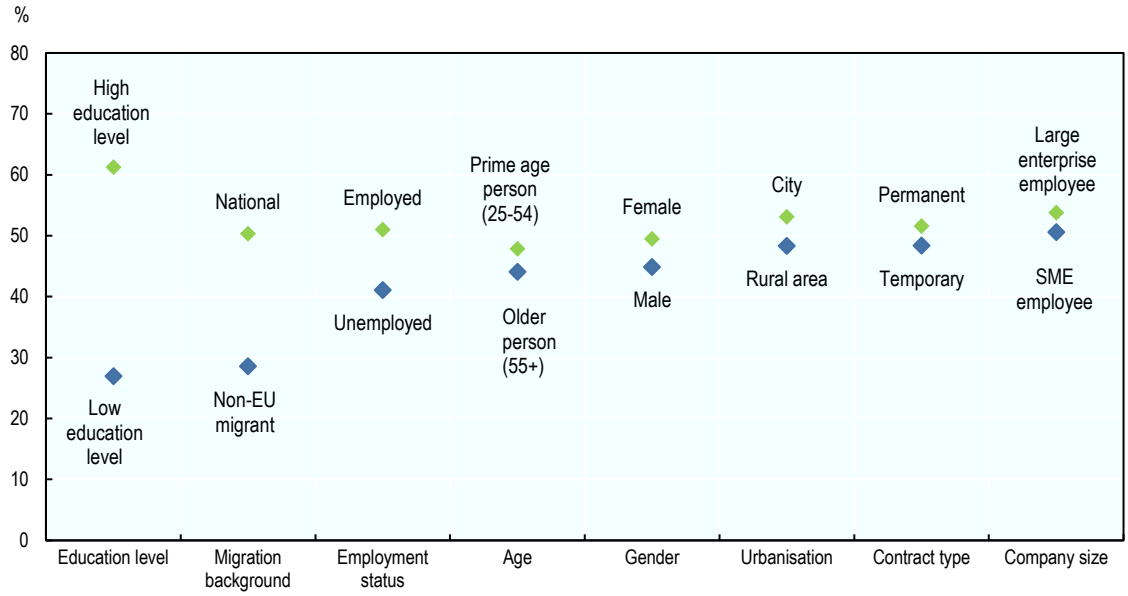
The earlier assessment pointed to significant public support for guidance services and to incentivise more adult learning in Luxembourg. However, with overall levels of training in Luxembourg lagging the international leaders, and with significant variations in learning patterns by different types of employers and individuals (as outlined in Chapter 2), this raises important implications for the nature of the guidance services and financial incentives moving forward. Lower levels of training among the low-qualified, older people, those working in low-skilled roles, small businesses and low-training sectors must be taken into account. Incentives and guidance need to be sensitive to varying needs to ensure future opportunities for all. This is not least in how these services are accessed and used in Luxembourg.

A first consideration has been the reach and accessibility of the guidance services as a mechanism to promote learning opportunities within Luxembourg and hence to overcome variations in learning. The creation of the MO as a one-stop-shop, and the introduction of online activities, alongside face-to-face support, have aimed to facilitate the co-ordination of guidance and access. Some positive developments are evident in recently collected statistics from the MO. Indeed, in its first couple of years of operation, the number of visits to the centre increased to over 23 000, representing a 36% increase from 2018 to 2019. While this was then affected by office closures during the COVID-19 pandemic lockdowns, engagement with the new online platform has increased by over 50%, from around 84 000 visits in 2020 to 129 000 in 2021 (the new platform was only launched in 2019, just prior to the pandemic).

Yet, the pandemic has interrupted the delivery of guidance services nevertheless, highlighting the importance of ongoing monitoring and promotion to recover levels of engagement. Indeed, while office visits had started to settle into annual rates of around 20 000 with office closures, numbers fell back to 7 000 between 2019 and 2020 (a fall of 62%). While numbers rose again to 16 000 in 2021, they have still not reached pre-pandemic levels. Wider research (OECD, 2021[3]) also highlights the importance of tracking different individuals' background characteristics to ensure services reach diverse communities. Indeed, vulnerable groups are known to be persistently hard to reach, particularly where they lack personal digital devices and access to online digital resources remotely (which was more crucial during the pandemic when the MO offices were closed except for urgent matters).

European Labour Market Information (LMI) for Luxembourg (such as that from the Adult Education Survey, AES) highlights the potential challenges that the MO is confronting around reaching diverse groups (Figure 3.1). While the data are dated, trends are consistent with those in other countries and therefore were tested during consultations with stakeholders to ensure their ongoing validity. This LMI reveals that while a higher share of adults in Luxembourg compared to the EU average are receiving guidance overall (which is in line with the growing statistics collected by the MO), there is significant variation in access according to individuals' background characteristics, particularly by education level, migration status and employment status. The gap in receiving guidance by level of education is the largest, with the share of low-qualified adults falling far behind the highly qualified. This raises a significant risk that guidance activities in Luxembourg are not sufficiently reaching under-represented groups, and in particular, those adults with low motivation to train. This points to a number of priority groups for more targeted activities – an area that the MO has already recognised in progressing their future services.

Figure 3.1. Share of individuals receiving adult learning information in Luxembourg by socio-economic background, 2016



Note: For all indicators, except for resident status, only Luxembourg residents are considered. The difference by contract type and company size is not statistically significant. SME: Small and medium-sized enterprises.
Source: STATEC, (2022[14]) Adult Education Survey 2016, https://ec.europa.eu/eurostat/web/microdata/adult-education-survey.

StatLink https://stat.link/dpytjf

In addition, it has also been useful to take a closer look at how some of the more significant financial incentives in Luxembourg have contributed to the overall training picture and patterns of take-up. The INFPC provides data on its co-financing programme with employers for adult learning. This shows that, on the positive front, the levels of co-financing with employers have grown over the last decade or so. Indeed, funding exceeded EUR 58 million in 2017 (INFPC, 2021[15]).

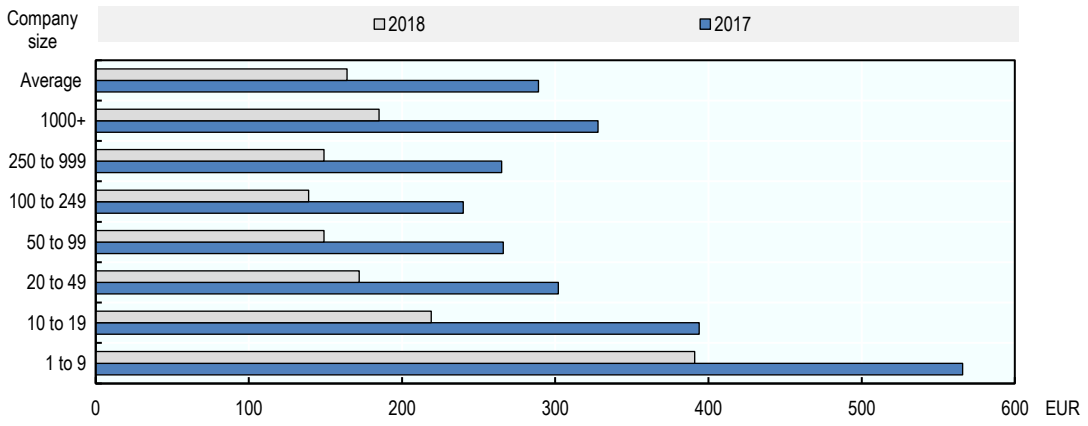
At the same time, investments have reached an increasing number of businesses over time (seeing a rise from 878 businesses in 2008 to 2 288 in 2018). As government funding through the co-financing scheme is concentrated in larger employers, the growth in investment has seen a corresponding increase in the potential share of the workforce who could benefit – reaching just under three-fifths of employees nationally in 2018. However, the penetration of the scheme is still fairly contained in terms of business engagement, with the businesses taking advantage of the aid representing only 10% of businesses nationally in the Luxembourg economy in 2018 (INFPC, 2021[15]). The level of employer engagement extent of businesses reached has also plateaued since 2017, which in part reflects a reduction in the level of public funds available from a 20% rate to 15% towards annual training costs, at that time due to changes in the Law of 29 August 2017.[6] While the programme has retained previous employers, with 80% of 2018 requests involving repeat renewals, it does mean around 20% of businesses did not renew. In a future of work context, where there are increasing calls for continuous training, any declines in engagement could be a cause for wider concern.

A closer examination of the latest data shows that the co-financing grant has amounted to an average of EUR 20 582 per request for employers and EUR 164 per employee (down from EUR 289 per employee in 2017, a 44% decrease when allowing for inflation over this period). However, the public funds are highly concentrated within larger employers and by sector. Of course, this threatens the overall strength of the incentive to stimulate the training behaviour and skills investment among certain employers and hence to

tackle some persistent variations in training within the Luxembourg economy (illustrated in Chapter 2). This is further illustrated in how the levels of funding supplied vary by type of employer.

For instance, companies with 250 or more employees capture almost two-thirds of the total funds provided, whereas companies with fewer than 50 employees only receive around 10% of total allocated funds. The more favourable entitlements for smaller businesses, outlined earlier, help to ensure that funds received per employee are higher for the smallest employers – that is, those with 19 employees or less (i.e. EUR 391 per employee for businesses with between 1-9 employees and EUR 219 per employee for businesses with between 10-19 employees). However, the benefit is lost for smaller businesses above 20 employees where the funding per employee is similar to the average rates (i.e. EUR 164 per employee). Also, in the last year for which data are available (2017 to 2018), the decrease in funds per employee has been greatest for those with between 10-19 employees, seeing a decline in funds by 45% between 2017 and 2018, when allowing for inflation, compared to 44% overall (see Figure 3.2).

Figure 3.2. Average training aid per employee in Luxembourg, by company size, 2017 and 2018



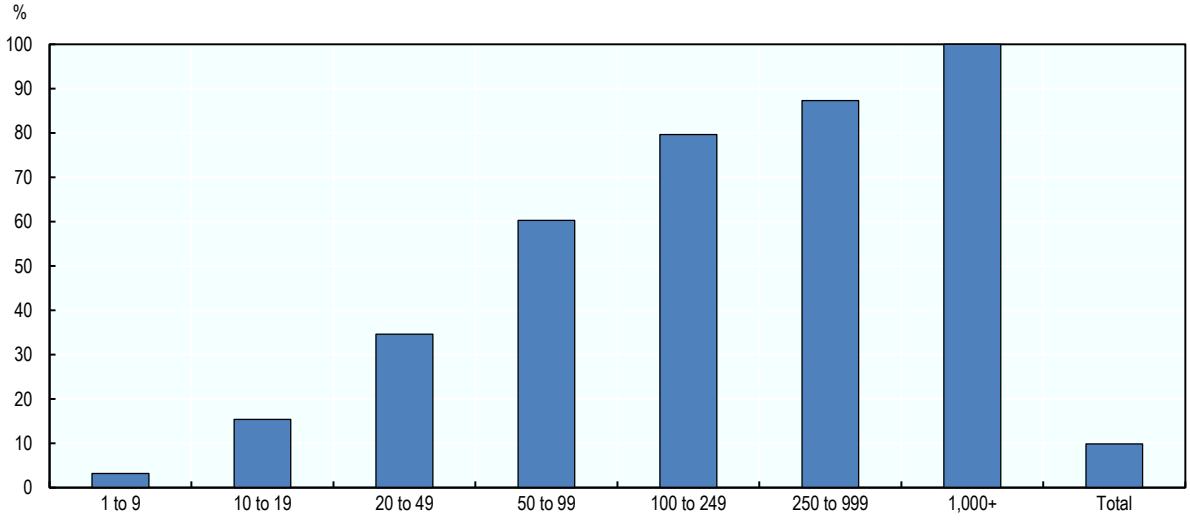
Source: Based on administrative data of co-financing adult learning programmes by the Ministry of Education, Children and Youth.

StatLink https://stat.link/z3wbsn

In addition, while levels of engagement are higher among the smallest businesses as a share of all employers funded, funds still reach a minority of the broader population of smaller businesses (Figure 3.3). So, for example, micro-businesses (with 1-9 employees) form 25% of the training aid recipients, but this accounts for only 3.2% of all micro-businesses in the Luxembourg economy. The funds also reach a lower proportion of businesses, with 10-19 employees and 20-49 employees, as seen in the figure. In contrast, whereas businesses with 250- 999 employees represent only 6.3% of fund recipients, they capture 87.3% of larger employers in this category across the Luxembourg economy.

Furthermore, the take-up of financial support for adult learning differs quite widely by sector (Figure 3.4). There is significant public investment in high-cost, high-skilled areas, such as the financial sector, which has been a strong area of the economy for some time and, more generally, has seen higher shares of training (see the training participation patterns among Luxembourg employers in Chapter 2). Indeed, businesses within financial and insurance activities and professional, scientific and technical activities, in 2018, represented 38.5% of companies requesting public co-financing and received 46.2% of the overall state aid (i.e. EUR 16.4 million). This accounted for 31.7% and 11.9% of all businesses, respectively, in those sectors in the wider economy.

Figure 3.3. Share of employers benefiting from co-financing in Luxembourg, by size, 2018

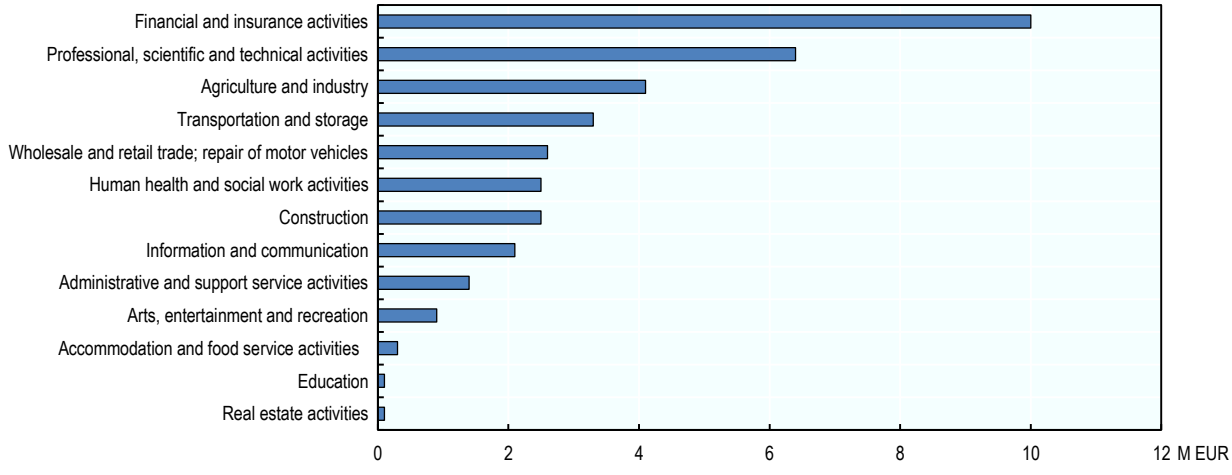


Note: Number of benefiting employers by size: 585 (1-9), 400 (10-19), 534 (20-49), 315 (50-99), 278 (100-249), 145 (250-999), 31 (1 000+). The total number of benefiting employers is 2 288.
Source: Observatoire de la formation (2021[16]), Analyse de la contribution de l'État à la formation en entreprise pour 2018, https://www.lifelong-learning.lu/bookshelf/documents/analyse-de-la-contribution-de-l_etat-a-la-formation-en-entreprise-pour-2018.pdf.

StatLink https://stat.link/8034fn

Figure 3.4. Total training co-financing amounts across sectors in Luxembourg, 2018

In EUR millions



Source: Based on administrative data of co-financing adult learning programmes by the Ministry of Education, Children and Youth, 2021.

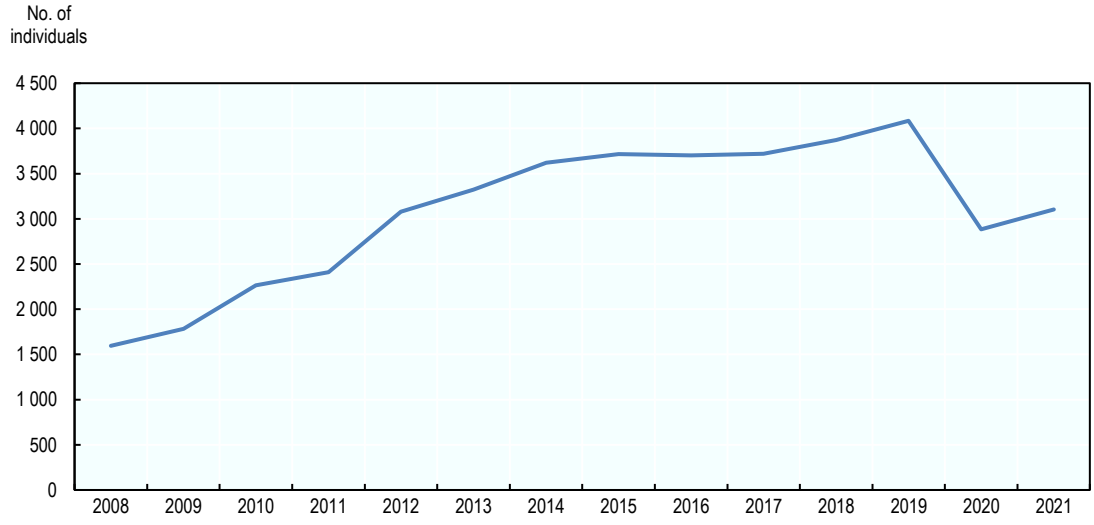
StatLink https://stat.link/3807ar

There are lower levels of funding, however, for wider sectors that are also increasingly seen as critical to the future Luxembourg economy, such as construction, the creative industries (including architecture) and information and communication technology (ICT). Indeed, investments reached only 9.7%, 5.7% and 1.2% of all businesses in these sectors, respectively, in the wider economy. Furthermore, large employment

sectors are also low recipients, such as accommodation and catering, with funds reaching only 1.2 % of businesses in this sector in the wider economy. This could also be a challenge in the context of raising learning aspirations in these areas. These patterns are reinforced when the share of employees that the funds reach within these businesses is considered. Indeed, coverage is as high as 74% of the workforce in finance and insurance and 84% in professional, scientific and technical activities, but only 11% in real estate and 21% in the creative industries.

The MENJE has also provided data on the composition of take-up of the Individual Training Leave scheme (Congé individuel de formation or CIF) to give a sense of the performance of one of the central incentive schemes for individuals, alongside the employer data from the co-financing scheme. The most recent information indicates that individuals submitted 3 104 requests for training leave in 2021, which amounted to around EUR 2.5 million in funding (Figure 3.5). Over the last 13 years, the number of applications has increased by nearly 100%, and the cost per day refunded has also seen growth over the same period (an increase of around 29% or 9% adjusting for inflation). Indeed, it reached an average of EUR 225 per day in 2021, up from EUR 175 in 2008. However, the programme's take-up has slowed in recent years, with applications reaching a high of 4 086 prior to the pandemic in 2019, but with a funding peak of around EUR 3.4 million in 2014. By 2021, applications had fallen back to current levels at around 3 000 – a fall of just under 30% between 2019 and 2020. This means penetration remains quite low at less than 1% of the total workforce in the Luxembourg labour market. The use of the scheme is also much lower than the main financial incentive scheme for employers – in terms of levels of funding and its economic reach.

Figure 3.5. Applications to Luxembourg's Individual Training Leave scheme, 2008-21



Source: Based on administrative data on the Individual Training Leave scheme by the Ministry of Education, Children and Youth.

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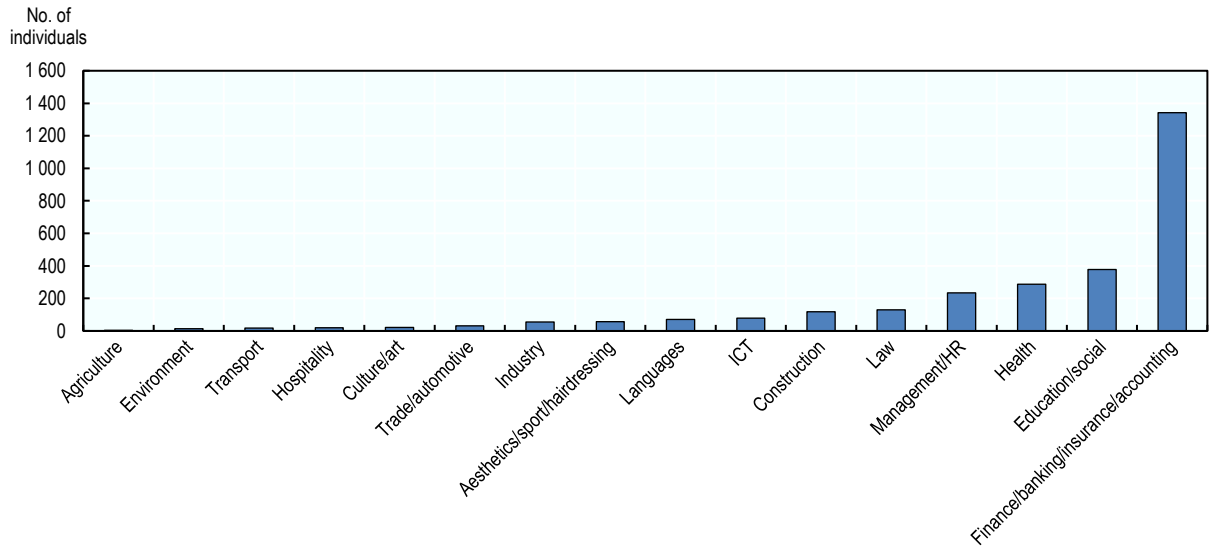
A closer examination of the composition of applicants to the CIF shows that, as with the co-funding scheme, take-up is quite concentrated. Most applications are from Luxembourg residents (around two-thirds), with the remaining third split evenly between residents living in Belgium, France and Germany. The majority come from employees (97%) rather than the self-employed and are male (55%) (Figure 3.6). While the scheme operates from a philosophy of supporting all individuals for a broad range of training, in reality, most of the applications that secure support fund sector-specific training courses, recognised by industry, for younger people, earlier in their careers. There is also a high concentration in high-skilled sectors, with

the financial, insurance and accountancy sector being the most dominant. The scheme, therefore, seems to have a closer connection to career pathways in higher-skilled areas. Indeed, 69% of applicants are younger, being aged 34 or under, half of the applicants are within the finance and insurance sector, and just under three-fifths of applicants have pursued sector training requirements leading to a recognised sector qualification (with less than 10% respectively funding broader continual education and training and/or formal education opportunities, such as a bachelor's degree).

Figure 3.6. Access to Individual Training Leave in Luxembourg, by sector, 2021

Number of individuals applying



Source: Based on administrative data on the Individual Training Leave scheme by the Ministry of Education, Children and Youth.

StatLink https://stat.link/2to389

So, with the limitations to the reach of some of the key financial incentive schemes, some groups are clearly missing out, especially those working in low-training sectors, smaller businesses and the self-employed and people who face multiple and severe barriers. While historically, that has included the low-qualified, older workers, those from lower socio-economic groups and working in low-paid and low-skilled work, it increasingly also captures those in jobs exposed to the risk of displacement from automation and/or wider processes of industrial decline, where training may be more limited. With skills-biased innovations connected to the future of work, much of this future employment demand will increasingly be more highly skilled (OECD, 2021[17]). Consequently, it appears that while the Government of Luxembourg has developed a comprehensive range of guidance support and financial aid to incentivise more adult learning over the last decade or so, given divisions in the balance of learning that persist, there is clearly more to do. Indeed, in this context, the analysis has started to signal priority areas for improvement.

Opportunities to improve guiding and incentivising skills choices

Luxembourg's performance in guiding and incentivising skills choices reflects many factors. These include individual, institutional and system-level factors, as well as broader economic and social conditions in the country. However, two critical opportunities for improvement have been identified based on a literature

review, desk analysis and data and input from officials and stakeholders consulted in conducting this OECD Skills Strategy.

Luxembourg's main opportunities for improvement in the area of guiding and incentivising skills choices are:

1. improving guidance services for adult learning
2. improving financial incentives for adult learning.

Opportunity 1: Improving guidance services for adult learning

Career guidance services are arguably growing in importance in skills systems to help individuals successfully navigate a constantly evolving labour market and skills landscape at different stages of their lives, with an increasingly complex set of potential options and pathways available to them. New research has started to quantify that change (OECD, 2021[3]), highlighting a rising demand for career guidance among adults and young people. Indeed, four out of ten adults recently reported that they had spoken to a guidance advisor in the previous five years. This is clearly recognised in Luxembourg with the moves to better co-ordinate guidance services for individuals of all ages through the establishment of the MO. The importance of career guidance has also particularly increased during turbulent labour market conditions, such as that created by the COVID-19 pandemic, where industrial restructuring has been intensified, and there is a greater risk of job displacement (CEDEFOP, 2020[4]). Through such advice, individuals may need a range of help to make the best skills choices in a complex ecosystem: assess their interests; build individual resilience; and respond to changing employment and skills requirements. As Luxembourg's skills system evolves, this inevitably calls for a change in guidance services to ensure that they are working sufficiently for adults and young people. In particular, Luxembourg could improve the evaluation and regular updating process of the central guidance services' content, the co-ordination and delivery of consistent guidance services, and access to guidance services.

Evaluating and regularly updating the content of guidance services

The most effective guidance services regularly evaluate and update the content of advice to keep abreast of developments in the labour market and learning programmes. This is to ensure guidance services not only draw on high-quality, timely, labour-market-relevant and user-friendly information regarding growing future careers and learning opportunities but are also responsive to robust evaluative research and feedback on the effectiveness of different guidance services (OECD, 2021[3]). This points to the need for a guidance research programme to ensure that guidance practices and products are sufficiently evidence-based. It also highlights the benefits of active stakeholder engagement to fully make use of such evidence in a way that enhances its value and application. This section considers how the Luxembourg guidance service can work to ensure the content of guidance is informed by the strongest, most current sources of LMI, industry insight and objective evaluative research, including feedback from a broad cross-section of its clients, partners and stakeholders.

Crucially, high-quality LMI is most needed to keep abreast of ongoing labour market changes, to consider the full breadth of opportunities and to direct individuals to areas of work with growing and good labour market prospects (CEDEFOP, 2020[7]). One primary goal, therefore, is to use robust LMI that is objective, well-coordinated, up-to-date, sufficiently granular and effectively contextualised by industry, providing trusted insight about a broad range of careers of the future (OECD, 2016[18]).

Since the strengthening of the MO's strategic objectives in 2017, there has been a common commitment to ensure that the guidance and advice provided by different arms of the overall service within Luxembourg connects to the labour market. This is exemplified through the development of MO's new website, launched in 2019, providing web-based employment and skills information through a single site. For instance, the website (https://maison-orientation.public.lu/fr/monde-du-travail.html) offers insights through

the “I discover” section (Je découvre) about key professions and trades where individuals could work. On the labour market side, there are links to a variety of employment sites and portals.

Two core guidance portals accessed via the MO platform include an employment platform developed in Luxembourg largely for young people (Beruffer-Anelo platform, https://beruffer.anelo.lu/fr/) and ADEM’s JobBoard facility (see Chapters 4 and 5 for further information).

- The Beruffer-Anelo platform has been designed to facilitate the transition of young people from education into their chosen careers. Information is provided in a variety of forms, making full use of multimedia and an extensive occupational database. It also combines job information with a range of self-help tools, including: promoting self-assessment; developing an e-portfolio, enhancing job interview skills; highlighting youth projects, training, apprenticeships and opportunities for employment and voluntary work.
- The JobBoard offers more real-time information about active vacancies in the Luxembourg labour market for those active job seekers ready to take up employment.

As such, key goals have been to provide information on some selected careers (i.e. professions and trades) from a broad directory of jobs and to improve matching between skills and jobs once individuals have made decisions about their career pathways. Of course, being online, these can equally be used by adults and young people. Given the significance of cross-border working in Luxembourg, there are also links to a range of international employment portals highlighting career opportunities in other countries, including Austria, France and Germany. For example, two platforms offer employment and training details based in Austria (www.whatchado.com/en/stories and www.berufslexikon.at/) and three sites pertinent to the French system include www.onisep.fr/Decouvrir-les-metiers, www.cidj.com/orientation-metiers and www.studyrama.com/formations/fiches-metiers.

The MO platform has already had some success in terms of use since, according to the European Centre for the Development of Vocational Training (CEDEFOP) (2020[7]), the Beruffer-Anelo platform is deployed more frequently than other sites on the platform. This success is confirmed by the engagement statistics of the MO collected since 2019. These point to an increasing use of the new MO platform since it was launched (as above), which proved essential during COVID-19. Indeed, the closure of the MO office due to nationally enforced public health measures, for instance, is believed to have encouraged access to the platform.

Consulted stakeholders highlighted, however, the challenges of guidance services and tools, such as the portals, making full use of detailed LMI on a continuing basis and keeping labour market insights up to date in a dynamic, ever-changing labour market. As more fully reported in Priority Area 4 (see Chapter 5), there were recognised challenges within the skills system relating to co-ordinating LMI nationally to give a consistent economy-wide picture, which inevitably was seen to complicate the systematic deployment of regularly updated LMI in guidance services. It was noted that some sectors do not routinely produce their own research, timeframes for updating labour market research vary, and there are gaps in industry insight as a result, which inhibits a consistent LMI coverage and assessment across the Luxembourg economy. This raised calls for more LMI to be provided for guidance services in the future on: employment and skills requirements by different jobs and sectors; transversal as well as technical skills; current as well as future demands; career pathways and hence progression opportunities; trends over time (what jobs were in decline or growing); and working terms and conditions, including pay. Stakeholders also wanted to see more transparently how existing research is being used through, for example, featuring references and industry endorsement on guidance products, such as the portals.

Other countries are using LMI in online career portals in ways outlined by stakeholders; one example is seen in Denmark (Box 3.1).

Box 3.1. Relevant international example: Online portal using high-quality labour market information

Denmark

The Danish website UddannelsesGuiden (www.ug.dk) provides an example of a one-stop-shop, which brings together information about different education options, the structure of the Danish labour market and the role of industries and businesses in the same place in an accessible way. It also features a Job Compass (JobKompasset) tool, which allows individuals to learn about different occupations within sectors. The LMI provided for each occupation is quite detailed and extends into the areas that Luxembourg should consider, such as: a description of daily activities, average income, tools or equipment used, and even the occupations' outlook for the future. The Job Compass also directly links to the vocational courses that prepare and certify individuals in these occupations. Furthermore, users can easily access further information and guidance via chat, phone or email.

Source: CEDEFOP (2022[19]), *Inventory of lifelong guidance systems and practices*, www.cedefop.europa.eu/en/country-reports/inventory-lifelong-guidance-systems-and-practices.

With recommendations to better co-ordinate LMI nationally in the future within the Luxembourg skills system (see Chapter 5), there was interest in the MO reviewing how to make better use of a consistent, robust, impartial baseline of LMI to enhance the labour market relevance of the guidance service. It was acknowledged that a dedicated research programme, designed by the MO to develop guidance products using the nationally co-ordinated LMI, could facilitate access to and use of such information as soon as it is updated (i.e. clarifying data collection and analysis methods in guidance products). Indeed, as well as providing richer insights and information for the website portal, it was seen to have value in other applications as a routine resource for guidance interviews and as a reference source for use directly by visitors to the national orientation centre.

The dedicated research programme could supplement robust national LMI sources by pooling and synthesising wider sector research, where it is available, to further bring careers to life. For example, this could add depth, richness and context to the consistent nationwide common baseline in different careers and sectors – such as highlighting more detailed skills needs and the use of the latest digital technologies and innovations in ways of working and career pathways. As discussed in Priority Area 1 (Chapter 2), various industries within Luxembourg are regularly researching changes in their respective sectors' employment and skills requirements, such as in the finance sector (Luxembourg's Banker's Association [ABBL], the construction and crafts sector (CdM) and in the industry sector (through the Federation of Luxembourgish Industrials [FEDIL]). ADEM also contributes to national labour market insight, largely through analysis of some of the key vacancy data it holds. Recently, its Future Skills Initiative[7] has been undertaking studies on key growth sectors aligned with the new innovation clusters that are thought to present critical skills and careers of the future in high demand.[8] Such LMI clearly has an important future role, too, alongside national sources in better informing the MO and its advisory process moving forward.

At the same time, regular evaluations of guidance services can also enhance the relevance of guidance as part of this dedicated research programme. Evaluations often consist of soliciting regular feedback from clients and stakeholders on the value of different guidance services, changes in the orientation process and their impacts. This usually involves putting in place systematic processes for data collection and reporting. A core aim is to support regular monitoring of activities through a blend of either self-evaluations and/or external evaluations or audits managed by an independent research body (OECD, 2021[3]). In a context where the MO has taken active steps to improve the collection of statistics and management information, it would also be useful to review its approach to evaluative research, working with its partners, such as through the FO.

International research shows that regular evaluations are important in providing independent insights on different aspects of guidance delivery and their effects, thus supporting the conditions for continuous improvement (OECD, 2021[3]). Some evaluations seek to review the benefits career guidance services can bring to individuals' employment and training outcomes (such as whether the individual has pursued training, acquired new skills or knowledge, secured a job, enhanced wages, etc.). In addition, many evaluations assess clients' satisfaction levels with different activities and services, and the tools they have deployed and their impacts (e.g. exploring whether the advice provided was accepted and perceived as high-quality, etc.). This might also extend to reviewing the psychological benefits of career guidance, such as higher self-esteem, self-confidence, sense of well-being, and/or a stronger awareness of future opportunities and direction (Brown, 2016[20]) and/or transversal skills and increased resourcefulness (Maguire, 2004[21]).

Since 2018, the MO has been continually improving guidance services. This could provide a basis to more systematically evaluate the effectiveness of providing skills diagnostics; building career management skills; developing personalised careers and training plans; providing information through portals; implementing job-matching processes; and conducting activities to enhance employability levels. The MO has taken steps centrally to improve data collection, and evaluation activities are being introduced to assess schools against the National Reference Framework for schools. Stakeholders agreed, however, that there would be benefits in widening and deepening evaluation activities more generally to more systematically support guidance service improvements.

Key objectives for the MO have been to ensure that any guidance and referral system: is well co-ordinated overall; efficiently directs individuals with and without appointments to the help they need; is sufficiently customised to the individual's personal goals; and enhances the individual's outcomes, in the form of access to training and employment opportunities, for example. The five thematic areas in the Orientation Space and the location of service experts under one roof at the national office are key inputs into the orientation process, for example. This means giving advisors the space and time to collect personal information on and assess individuals' unique skills and experience, personal objectives, strengths and interests. It also requires a connection to developments within different jobs and ways of working using LMI, as seen earlier. Evaluative research can be an effective basis for examining the uses of different approaches and how this varies across different parts of the services and client groups. The research could include assessments of what is working well in different guidance services and focus on different client groups at different career stages – including the unemployed, adults pursuing career changes, vulnerable individuals with more complex health and social issues, as well as students.

The Luxembourg system deploys various diagnostic tools for assessing skills, including a mix of interest and personality tests, psychometric tests and vocational aptitude tests. Many of the tools are available for self-assessment on line and, therefore, complement assessments delivered personally and face-to-face through meetings and interviews with counsellors, such as in ADEM. For example, several online self-assessment tools are available in multiple languages to enhance access and use by cross-border workers, non-residents and Luxembourg residents. These include: the RIASEC (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional) profile (in French, www.monemploi.com/riasec and English, https://openpsychometrics.org/tests/RIASEC/); Berufskompass (in German, www.berufskompass.at/berufskompass); the Oriane platform (in French, www.oriane.info/node/956); Check-U (in German, www.arbeitsagentur.de/bildung/welche-ausbildung-welches-studium-passt); and Berufsinteressentest (in German, www.berufsinteressentest.at/). In addition, professional chambers offer schemes such as TalentCheck (www.talentcheck.lu/de/tutor/talentcheck.html) managed by the CC and Basic-check (www.basic-check.lu/) delivered with the CSL and the CdM.

Crucially, where adults are involved in the process of developing their own career development roadmap, action plan or training plan, this can be a powerful tool to motivate them to act on their learning and career aspirations and to seek to find solutions to overcome individual and multiple barriers they may face (OECD, 2021[3]). A programme of evaluative research overseen by the MO with its partners could be deployed to

assess whether the guidance services in Luxembourg have been able to operate in practice in a way that inspires greater commitment and motivation for individuals to act.

There is also the question of whether the guidance interviews, such as the use of more personalised career and learning plans and diagnostic tools, are being consistently delivered and used in different parts of the guidance services and at different individual life stages, particularly in a way that improves individuals' self-motivation and, in turn, employment prospects – that is where assessments identify individuals' personal strengths and interests and support them to connect to the most relevant career opportunities. The MO has introduced regular meetings among the guidance community, and advisors are encouraged to share insights and ideas. However, independently conducted evaluative research could add substantial value to knowledge exchange, encouraging peer-to-peer learning and reflection more formally on how activities are working in an impartial and systematic way.

There are also the effects of the COVID-19 pandemic to consider. While the MO has recently taken steps to enhance activities with, for example, the new orientation centre, enhancing the physical space for guidance, these developments have clearly been affected by the COVID-19 pandemic and placed more emphasis on wider activities, such as online services, including virtual interviews with clients, telephone inquiries and self-assessment tools. For instance, the office closure due to nationally enforced public health measures saw a marked fall in office visits, with numbers decreasing by nearly two-thirds. While numbers have increased during 2021, they are not back to levels seen in 2019, so it appears there are some lasting effects. CEDEFOP research has drawn attention to the impacts of the pandemic on guidance services internationally, with the risk that those individuals displaced from the labour market and who have lost their jobs may be harder to reach through traditional methods. This highlights an important contribution for a focused programme of evaluative research within the Luxembourg guidance system to formally review and learn lessons from any changes in the delivery of guidance services as a basis to directly shape the balance and blend of future delivery and guidance services and the activities permanently taken forward.

Other countries, such as Scotland (United Kingdom), provide a useful reference source for developing regular research programmes to enhance the quality and relevance of guidance services (Box 3.2).

Box 3.2. Relevant international example: Ensuring the relevance of career guidance content

Scotland (United Kingdom)

Scotland's Integrated All Age-Inclusive Careers Service – Skills Development Scotland (SDS) has built a robust evidence base to support its careers guidance service and to enhance the relevance and quality of its advice. This involves articulating the current and future skills demands of Scotland's labour market and reviewing the effectiveness and impact of its Careers Information, Advice and Guidance (CIAG) services to ensure ongoing improvements. The research programme includes 16 annual sector skills assessments updated with Industry Leadership Groups and a programme of evaluative research. This information informs the development of their resources, such as workshop materials and online digital content, such as their careers hub (www.myworldofwork.co.uk/).

Source: Skills Development Scotland (2022[22]), "Homepage", www.skillsdevelopmentscotland.co.uk/.

In a changing labour market, it is also important that guidance services also draw regularly on key stakeholders' insights in making sense of LMI; employers, employees, and their representative bodies can play an important role in this interpretation. Wider research of the OECD points to more positive employment outcomes where career guidance is closely linked to the world of work through the insights of employers and employees and a range of industry bodies, business associations, trade unions and professional bodies (OECD, 2021[3]). In short, the employer and employee perspectives are needed to turn

LMI into labour market *intelligence* both nationally and locally for the guidance community and the individuals they serve. This provides the basis to better inform individuals about "what are the real employment opportunities in their local area, country and/or adjacent countries close to where they live". This can add substantial value to help guidance advisors and their clients navigate the wealth of LMI and draw out consistent messages and implications about important future career opportunities and critical skills needs in high demand in the Luxembourg economy.

At a national level, within Luxembourg, industry is formally engaged in the work of the MO, as described earlier, through the professional chambers, which work with other guidance stakeholders through the FO. However, the OECD has also highlighted the importance of engagement at a local level (OECD, 2021[3]). This, therefore, places an onus on the work of the local networks of the Luxembourg guidance community.

The local guidance offer for adults is largely delivered through ADEM, particularly through its vocational guidance service. This provides the basis to connect to local businesses for vocational training, placements and work experience, as well as managing employment opportunities. The MO encourages collaboration between ADEM, schools and the National Youth Service (SNJ) to co-ordinate local activities for younger adults, especially in their transitions from school to work. The MO has developed with partners a National Reference Framework for educational and vocational guidance to enhance the nature of advice and counselling delivered locally by secondary schools and to ensure they meet a minimum level of activity. With the backing of legislation, each secondary school is now expected to establish a guidance unit (*Cellule d'orientation*) to organise guidance activities for young people and their families. The activities of this unit are organised by a unit co-ordinator who also advances partnerships working through the MO community, such as employer and employee representatives.

There are examples of several guidance partnerships with stakeholders ranging from company visits, careers days, internships and industry mentoring to broader job fairs. Some projects have aimed to enhance individuals' understanding of different careers and professions, developing dedicated career brochures that provide more detailed information about opportunities. This has particularly focused on emerging areas of employment and skills, such as in science, technology, engineering and mathematics (STEM), the digital sector and the green economy. One example is the Discovery of Trades and Professions project, which was produced by a partnership between MENJE, including its Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques (SCRIPT), the Luxembourg Science Centre, the CdM and the MO. This offers deeper insights to students about the relevance of science to specific jobs and professions. This is available on the MO website.

Other projects support a range of internships for young people, usually in the form of taster days or one-day internships, such as the dayCARE and Digital Challenge projects. Recent initiatives have been developed in collaboration with CARE Luxembourg and Inspiring More Sustainability (IMS) Luxembourg. Whereas dayCARE encourages employers to offer young people a one-day internship in the company of their choice on one set day of the year, projects like the Digital Challenge project are focused on specific sectors. As such, students interested in digital careers are invited to a careers day where they aim to understand the sector better by working with digital employers and employees in host organisations on real digital problems facing the business and aim to develop solutions. There is also an industry mentoring programme for young people called M-Proj. This has been running for 10 years and has supported 550 pupils in 10 schools. A range of industry mentors is appointed to hold around six meetings of one or two hours each with a pupil as an additional source of information on careers in their chosen sector.

While current local activities are highly valued, stakeholders showed interest in exploring ways of enhancing partnership opportunities, extending their coverage and promoting them to ensure it is clear what industries are involved in guidance work. There was an interest in focusing especially on adults and young people, and several activities were identified, such as: industry projects and career guidance products, work experience, inspiration and work placement activities. These can positively present job opportunities and careers of the future more generally for the working population, particularly given the

uncertainties in the labour market following COVID-19. Interestingly, the use of digital, online tools and portals, which have been particularly enhanced through the COVID-19 pandemic, was felt to have facilitated the means for professional advisor communities to engage with employers, greatly enhancing the efficiency, reach, ease and cost of extending engagement activities. This might point to more efficient and lasting ways to engage with some industry partners.

Wider international experiences provide a useful reference point to reflect on the potential development areas to extend future activities for adults, working more comprehensively with employers and employees across key sectors. Employer engagement in guidance services for adults in other countries can take a wide range of forms. Of course, the mechanisms finally deployed will need to align with different priorities. Generally, engagement activities of stakeholders for guidance services could include: information exchange through activities such as research/policy and consultation interviews, workshops, and surveys and various forums for policy/training development/co-design; guidance-focused/provider-based activities, such as industry projects, employer talks, industry competitions and careers fairs; and in-workplace activities, such as workplace visits/taster days, work experience and inspiration placements, job shadowing and internships. Where career advice can be linked to broader skills policy priorities, this can also greatly enhance the advice given, especially where this might be connected to enhanced funding opportunities. For example, users of career guidance in Belgium's Public Employment Service receive up-to-date information about careers in high demand in the labour market based on publicly commissioned sectoral development plans, which more quickly connects individuals to areas of growing opportunity (OECD, 2021[3]). Further sources of innovation around engagement are seen in Australia (Box 3.3).

Box 3.3. Relevant international example: Encouraging employer and employee engagement in guidance and counselling

Australia

In Australia, the newly established National Careers Institute is working with industry and employers to better understand the changing nature of the workforce and promote opportunities for employee development, including upskilling and reskilling opportunities. The National Careers Institute Partnership Grants programme supports the delivery of innovative career advisory products and services for people at all stages of their careers. They do this by offering grants competitively to partnership projects involving employers, schools, tertiary institutions, industry, governments and researchers. These encourage partners to work collaboratively to improve work experience, career products and tools and, in turn, support better career outcomes and education and training pathways. Project ideas and ongoing innovation has been supported through several annual rounds of grants.

Source: OECD (2021[3]), *Career Guidance for Adults in a Changing World of Work*, https://doi.org/10.1787/9a94bfad-en; Australian Department of Employment and Workplace Relations (2022[23]), *Partnership Grants programme*, www.dewr.gov.au/nci/partnership-grants-program.

Recommendations

- **2.1. Develop a regular research programme to keep the content of guidance relevant, drawing on evaluative research about the operation of the guidance service and nationally co-ordinated labour market information.** This programme should include the use of robust data and research, including evaluations. These need to be objectively designed and independently conducted, working with key partners such as research institutions to provide an impartial perspective about what is working well in different career guidance services. Any evaluation research should include user-satisfaction research to understand access to the services and to base quality assessments on recipients' direct feedback and enhance labour market relevance. The research programme can ensure that official LMI (such as a potential nationwide, cross-sectoral employer survey, see more in Recommendation 4.4 in Chapter 5) is used consistently in different parts of the guidance service by developing a series of labour-market-relevant guidance products and briefing packs for advisors. The MO needs to liaise with industry partners and other actors (INFPC's Training Observatory) to use their results on current and future skills needs to inform these advisory products and guidance services.
- **2.2. Develop an engagement strategy to more actively involve employer and employee representatives in guidance services.** This should ensure employer and employee engagement is representative; goes beyond the existing professional chambers; and captures the evolving institutional infrastructure within Luxembourg – for example, working with emerging sectors, such as the creative industries, the digital sector and the green economy. Furthermore, the engagement of employer and employee representatives in guidance services should systematically take into account their perspectives on ongoing labour market developments. This engagement could involve: 1) information exchange in the form of research/policy and consultation interviews, workshops and surveys and various forums; 2) guidance-focused activities, such as industry projects, employer talks, industry competitions and careers fairs; and 3) in-workplace activities, such as workplace visits/taster days, work experience and inspiration placements, job shadowing and internships.

Strengthening the co-ordination and delivery of guidance services

Many national skills systems draw on the expertise of a variety of partners to tailor services to the needs of different age groups of clients, as in the Luxembourg approach. This includes the public employment service, dedicated public career guidance agencies, social partners, education and training institutions and private providers (OECD, 2021[3]). This highlights the importance of systems and processes for co-ordination to ensure consistent and high-quality delivery across guidance services for individuals of all ages; reduce duplication and gaps in provision; and support progression at different stages of an individual's career. This section considers how the MO can reinforce its governance and processes within Luxembourg to create the conditions to ensure consistency in what guidance services are offered to a diversity of clients and in a way that supports continuous quality improvement within the guidance community. The need to continually consider ways to improve services has arguably been particularly heightened given the service interruptions due to the COVID-19 pandemic.

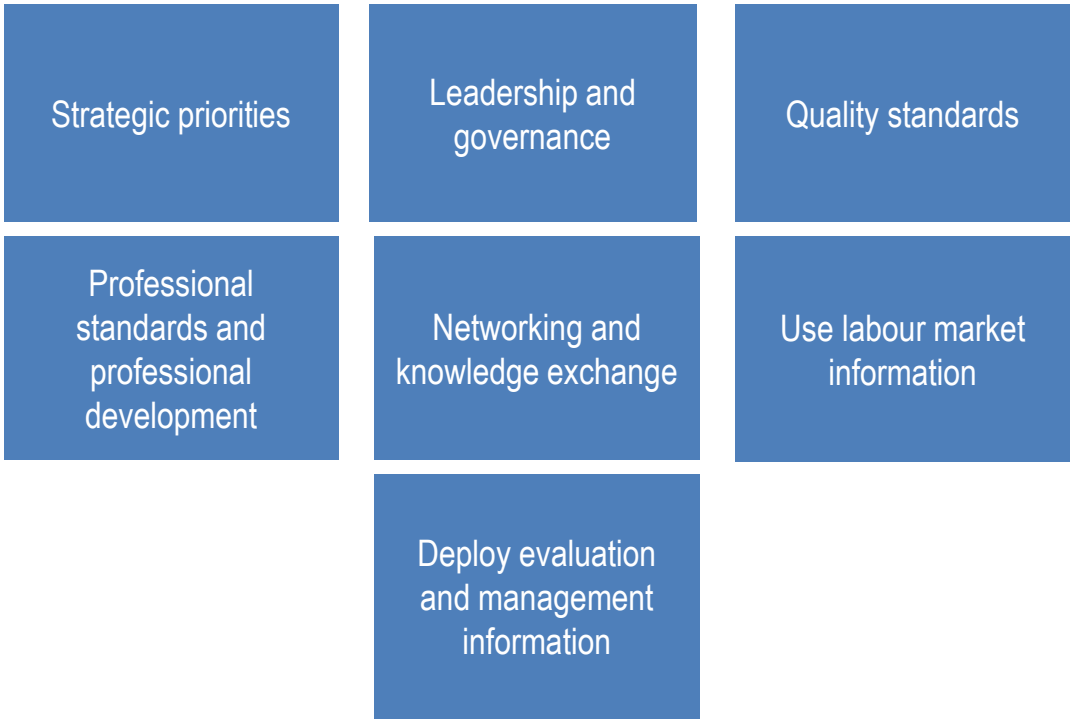
Luxembourg clearly has some strong foundations in place to strengthen the co-ordination of its guidance services. For instance, the MO, established as a dedicated agency to oversee guidance activities in Luxembourg, is in a good position to provide leadership over the guidance system nationally. Furthermore, its role has been enforced by legislation, with its co-ordination responsibilities formally recognised in law since 2017. It seeks, therefore, to ensure consistency between guidance activities of different services in

different parts of the country and individual life stages. Crucially its remit covers individuals of all ages – adults and young people.

However, in a climate of ongoing change, whether externally in the labour market or regular policy developments in the skills system, the co-ordination of guidance services must always be reviewed and scrutinised. Many countries wrestle with the practicalities of ensuring guidance is of a consistent high quality (OECD, 2021[3]). Indeed, with current governance and delivery responsibilities in Luxembourg split between multiple ministries of labour and education, between young people and adults, and with different partners involved nationally and locally, any potential risks of inconsistency in grassroots service delivery and fragmentation will need to be proactively managed. This is especially the case following the substantial disruptions in delivery due to the effects of COVID-19 and changes to delivery methods. For instance, partners such as SePAS and SNJ, and/or the higher education information service of MESR will be attuned to different policy goals working with young people in education, to advisors in the public employment service in ADEM dealing with the vocational training and employment needs, largely of adults. International research on innovations in guidance services provides an important source of information on how to handle any co-ordination challenges moving forward and manage risks of fragmentation (CEDEFOP, 2020[4]).

Research by the OECD (2021[3]) highlights a range of mechanisms that can be used to support better governance and co-ordination of guidance services maintaining consistent quality and mitigating risks to service delivery from fragmentation in what is offered. There is much that governments and their agencies can therefore do. This has been distilled into a strategic framework (Figure 3.7). The framework is not prescriptive, and the dimensions will need to be given varying emphasis as appropriate for local country contexts and varying cultures. However, it is nevertheless important that all dimensions are covered, as outlined below.

Figure 3.7. Strategic framework for co-ordinating the delivery of guidance services



Note: The figure captures the key dimensions vital to be in place to better co-ordinate and ensure consistent and high-quality delivery across guidance services for individuals of all ages.
Source: Based on OECD (2021[3]), *Career Guidance for Adults in a Changing World of Work*, https://doi.org/10.1787/9a94bfad-en.

OECD research (2021[3]) suggests that one of the most effective tools for strategically setting the right conditions for co-ordination is developing a committed career guidance strategy. Whether this is stand-alone or part of a broader national skills strategy, it is vital in steering career services. This includes, for instance: setting out the vision for the guidance system; defining guidance services across different contexts and quality assurance processes for consistent delivery; setting clear goals and agreeing on outcome measures; and providing leadership to various partners involved in the guidance system and a steer on how they should work together. The strategy can then form a basis for agreeing on an action plan and hence ensure the strategy can be delivered. For instance, the strategy and, in turn, the delivery plan, will usually have been the product of a process of consultations with many stakeholders. This can then provide a means for active engagement and ownership by partners.

In the context of developing a future Luxembourg Skills Strategy, this review, therefore, provides an opportunity for the Government of Luxembourg with the MO and its wider partners to also take stock of its own guidance service. As part of a formal response to the COVID-19 pandemic, this could consider whether there is a need to modify its guidance approach moving forward. It could also include reviewing the National Plan for Careers Guidance to ensure its vision, strategic priorities, governance and delivery methods are relevant for the future skills system. The former National Careers Strategy in Ireland could serve as inspiration (Box 3.4). Within Luxembourg, the MO works through the strategic FO (established by law as outlined earlier), which includes representatives from the national government, professional chambers and schools (see above). The FO should set the strategic direction for guidance services through social dialogue, considering the needs of employees and employers. This, therefore, could play a key role in consulting on the way forward.

Box 3.4. Relevant international example: National careers strategy

Ireland

Ireland's National Centre for Guidance in Education (NCGE) was an agency of the Department of Education and Skills (DES) responsible for running an integrated and impartial career guidance service. The NCGE regularly updated a national Strategy via a National Forum on Guidance. In addition, the NCGE provided annual reports to the DES reviewing performance around the strategy and action plan. Importantly, this tracked progress against a number of outcomes that act as key performance indicators. These included: the number of beneficiaries; the share of beneficiaries who progress to employment or further training; and participation by target groups (e.g. disadvantaged men/women, long-term unemployed).

Source: National Centre for Guidance in Education (2020[24]), *Output Statement of the National Centre for Guidance in Education 2020*, www.ncge.ie/sites/default/files/NCGE-Output-Statement-2020-EN.pdf.

As part of this review, it will be important to reassess the quality assurance processes across the guidance service as a whole. International research points to a wide range of tools connected to career strategies that can help with implementation and ensure consistent, high-quality service delivery. For example, quality standards, reference frameworks and guides set minimum delivery requirements and provide information and advice about how they can be implemented. These quality standards will vary in different national systems but might cover the following areas: core requirements for service delivery (i.e. assessment methods and diagnostic tools, information and guidance, personal planning techniques, equipment); skills requirements of the guidance community (i.e. ongoing commitment to training, continuing professional development and networking); management and governance of the guidance process (i.e. organisational missions, structures, working relationships, processes, resources, equipment, etc.); and specification of outcomes to ensure diversity and inclusion (i.e. monitor and evaluate services, build in client satisfaction, regular feedback, etc.). In addition, rigorous monitoring of career guidance strategies enables countries to

assess their performance against qualitative or quantitative targets and to make course corrections as needed (as highlighted earlier).

Within Luxembourg, the MO has worked with partners to establish a National Guidance Reference Framework to outline minimum common guidelines and raise quality standards for service delivery to be met in delivering educational and vocational career counselling, which was introduced in 2019 (MENJE, 2019[25]). However, this is focused primarily on secondary schools. According to CEDEFOP (2020[4]), there is no standardised quality assurance process to guide the customisation of services for different client groups more generally, and as such, each service only follows general standards. Stakeholders consulted by the OECD for this study raised questions about variation within Luxembourg in the guidance services in practice from one service institution to another and if there was the right balance between education and employment issues, young people and adults, and vocational and professional careers. There was interest in strengthening quality standards across the guidance community. This included additional consideration being given to the guidance services provided by private providers, who currently operate outside the public system overseen by MO. Given the scale of training delivered by private providers, it was thought to be important to consider ways in which they might work more closely with the MO in the future. The German model (Box 3.5) offers useful insights in this regard, from which to learn.

International research (OECD, 2021[3]) shows that the aforementioned mechanisms for establishing quality standards are often closely associated with several co-ordination mechanisms to build a climate for knowledge exchange, the sharing of ideas, quality improvement and professionalism within the guidance community. While career advisors are not generally regulated professions, many countries define minimum training and qualifications requirements for employing advisors and use these frameworks to form the basis of professional certifications and to guide continuing development programmes. An example of establishing quality standards for career guidance advisors can be found in Germany (Box 3.5).

Box 3.5. Relevant international example: Quality standards for career guidance advisors

Germany

Germany's National Guidance Forum has produced a Quality Concept for Guidance – BeQu Beratungsqualität. This forms a quality label for guidance. It consists of a competence profile and framework for quality development in public and private organisations, covering principles, staff competencies and process standards. In addition, the Federal Employment Agency trains career guidance professionals at the University of Applied Labour Science in a dedicated guidance bachelor's course.

Source: CEDEFOP (2020[7]), *Germany – European inventory on NQF 2020*, www.cedefop.europa.eu/en/country-reports/germany-european-inventory-nqf-2020.

Since 2018, an early priority of the MO has been to standardise training for career guidance advisors as a further basis to professionalise the guidance community. As such, the MO has worked in association with experts such as the National Education Institute of Training (Institut de Formation de l'Éducation nationale), the Centre for Psycho-Social and Educational Accompaniment and the University of Education in Lower Austria (Pädagogische Hochschule Niederösterreich)[9] to develop a series of training courses and study visits to professionalise career orientation within the Luxembourg guidance community. The first wave of training took place in 2019, primarily focused on practitioners in schools to ensure a common baseline capability around understanding current issues in guidance and developing the skills of students for adult life. A second wave was then implemented in 2020, also directed at schools to further advance modules on careers education, as well as thinking about the changing labour market and educational pathways. This was called Train the Trainer: Careers Education and Guidance in Schools. The latter higher education course consists of 10 ECTS equivalent to 200 hours of training over 2 years, and advisors are encouraged

to follow continuous training for at least 8 hours per year. The programme is at an early stage of implementation and still needs to promote ongoing take-up across the school guidance community to secure more universal coverage.

CEDEFOP has raised the fact that there have been no higher education courses specifically for educational, vocational or lifelong guidance across all guidance services, and many practitioners acquire their specific skills in-service and through day-to-day experience (CEDEFOP, 2020[7]). While the Euroguidance Network[10] has recognised that most advisers working in Luxembourg are highly qualified with either bachelor's and/or master's degrees, these tend to be in general fields, such as social and educational sciences and psychology. They report that many teachers and wider community workers may work as guidance practitioners simply because they show a personal interest and/or are nominated, for example, by a head teacher, as part of their wider responsibilities. No more than two dedicated advisors are required in each school. In addition, advisors employed as civil servants operating within the Adult Education Service, for instance, or ADEM, can access a full range of training as part of a three-year internship for new civil servants. This gives access to the post-graduate public administration study programme developed by the National Institute of Public Administration (INAP). INAP provides initial and continuing training for all public officials across the state, offering a wide range of technical and general training that is not restricted to guidance work.

Yet, it was recognised that many career advisors and co-ordinators were managing daily competing pressures on their time, whether working as civil servants and/or public professionals, teachers, lecturers, psychologists and community workers, which posed risks to their guidance roles in practice. In such a context, there may be a case to update training requirements across all professional guidance advisors, including developing further modules with experts such as the National Education Institute of Training as part of testing a new competency framework and putting guidance training on a stronger footing. As a result, this might provide a basis to review opportunities for accelerating and promoting development opportunities across the guidance community as a whole. Given the additional challenges for advisors from the recent pandemic, further support may be necessary to ensure guidance responsibilities are sufficiently prioritised and advisors' skills and knowledge continue to be advanced.

Other countries, identified through the work of CEDEFOP and the OECD, again provide useful insights about where improvements in the professional development of the guidance community might be made. For example, some countries have experimented with blended learning approaches to facilitate continuing professional development for advisors (Bimrose and Brown, 2019[26]). Off-the-job training modules have been updated in dynamic areas, such as helping the guidance workforce to be well-connected to transformations in the world of work and tracking more complex career pathways and transitions. For instance, career guidance advisors in France receive regular training sessions to encourage the active use of LMI. This is seen as a vital way to stay up to date with economic and labour market changes, innovations and digital transformations affecting ways of working, workforce composition and job profiles. Furthermore, advisors in Mexico's Employment Support Programme are offered continuous training on developments in local and national labour markets, drawing on insight from industry representatives, so that they can tailor their support accordingly.

Other forms of learning have encouraged active networking, peer-to-peer learning and knowledge exchange to augment advisors' continuing professional development activities once in post, as well as more formal delivery methods to ensure their skills and knowledge can stay up to date with the labour market, policy and training developments. Networking has also been a good way to: support common messaging and actions around national and local skills priorities; understand, debate and agree on key labour market trends and changing requirements across the guidance community; promote common high-demand skills, training and employment; and document and share new ideas. It can also create an environment that supports innovation, experimentation and enhancements. These advantages are especially noted where such forums also include wider social partners and professional and industry bodies in supporting career guidance advisors and hence their connection to the broader world of work.

For example, in the German guidance system, there is a range of dedicated manuals, core guidance and central resources being developed to provide an ongoing reference source for the advisor community in areas such as guidance services for young people, the long-term unemployed and individuals with complex social and health needs (CEDEFOP, 2020[7]).

The new physical location of the MO has been important in setting a climate and aspiration for stronger collaboration among partners across the guidance system as a whole, beyond the FO. The latest Orientation Space provides a resource for workshops and collaborative sessions. These are offered to the professional community to support knowledge exchange around service improvements, housing 40-60 participants at a time. Guidance training and workshop sessions are also organised in schools. Furthermore, the MO has maintained international partnerships, representing Luxembourg in the European lifelong guidance policy network and Euroguidance activities as an additional source of insights around new guidance practices and dealing with guidance challenges connected to the future world of work.

These are important developments and provide a fertile platform on which to take forward any new development and quality assurance activities in the area of guidance. Indeed, as the skills system and, in turn, the guidance system ramps up again following disruptions during COVID-19, this may present a good time for the review of quality standards and tools, and associated training activities for the guidance community, to support the delivery of a high-quality service moving forward.

Recommendations

- **2.3. Revise Luxembourg's National Strategic Plan for career guidance to ensure its vision and strategic priorities are relevant for the future.** The MO, its partners in the Forum Orientation, and relevant ministries (e.g. MENJE, MTEESS) should work together to ensure close alignment between guidance services with evolving national education and employment policy objectives. This would also reinforce MO governance and co-ordination processes and ensure continued coherence across the career guidance services (e.g. Service d'orientation professionnelle de l'ADEM [ADEM-OP], guidance services in higher education, etc.) through an agreed and repurposed national model that recognises and responds equitably to the diverse needs of individuals of all ages. In particular, the updated strategy can actively: set clear goals; outline roles and responsibilities of partners; agree on outcome measures to monitor and track progress and impacts to inform quality improvements; review quality standards to ensure the delivery of consistently high-quality practice by different guidance partners; align content with national skills priorities (i.e. advice and messaging, such as critical skills and careers of the future in growing demand); and oversee methods of professional development among the guidance community.
- **2.4. Improve quality assurance of guidance services.** The MO should work with partners to update quality standards and refine the national guidance model covering the following areas: core requirements for service delivery (i.e. assessment methods and diagnostic tools, information and guidance, personal planning techniques, equipment); skills requirements of the guidance community (i.e. initial training, continuous professional development, and networking); management of the guidance process (i.e. structures, working relationships, processes, resources, etc.); and specification of outcomes to ensure diversity and inclusion (i.e. monitor and evaluate services, build in regular client satisfaction feedback, etc.). The MO should also strengthen collaboration to encourage consistent and widespread adoption of the new quality standards through working groups and general networking. In a context of changes due to the COVID-19 pandemic, which has impeded "normal" practices, there could be further benefit in updating training requirements and activities for the professional guidance community, including developing further modules with experts, such as the National Education Institute of Training (IFEN) testing a new competency framework.

Widening access to guidance services

The effectiveness of career guidance and counselling also depends on how well services are customised and promoted so that different target groups are not only aware but are encouraged to actively take up those services as a basis to pursue more positive employment and skills outcomes. Crucially, this means overcoming any potential inequities in access among different individual groups. The international evidence shows (OECD, 2021[3]) that the most common and successful approaches are those that directly draw on the expertise of different guidance advisors. This either involves deploying their own outreach and engagement activities to promote their services or referring to another relevant, trusted partner and/or expert acting as an intermediary (OECD, 2022[27]). This section considers what steps can be taken to ensure guidance services in Luxembourg sufficiently customise awareness raising, referral and engagement activities to the needs of diverse groups so that they actively participate and are motivated to progress their career plans and learning.

Research by the OECD (2021[3]) has highlighted the important potential role of career guidance in tackling inequality and enabling different vulnerable individuals' access to training and employment opportunities. However, one of the challenges confronting many countries, including Luxembourg, is that those people with the greatest need, who already face labour market disadvantages, and low-training participation, are often the least likely to be aware that services exist and how they can access them. This includes workers in occupations at high risk of automation (OECD, 2019[28]). This is a pattern seen earlier in the context of Luxembourg. So, those groups of individuals least likely to access guidance in other countries are similar to those in Luxembourg. Even though the data from the AES is a little dated, the groups experiencing more problems with access tend to persist over time. This was confirmed by stakeholders for this project. Those least likely to access guidance are: low-qualified adults; non-EU migrants (e.g. immigrants and refugees without strong language skills); women (e.g. especially those who have left the world of work to manage caring responsibilities); older people (age 55+) and the unemployed (especially unemployed young people with limited life experiences).

International research (OECD, 2021[3]) has aimed to understand what guidance services and promotional activities might better raise awareness, reach and support such individuals. A recent survey of adults conducted by the OECD suggested that of those who had been alerted to the guidance service: 20% had been informed by the public employment service; another 18% received the information from their employer; 17% from a friend or family member; 7% were informed by their education provider; and about 10% found the information independently through Internet searches. The last data from the AES, while pre-dating the establishment of the MO, suggest that in Luxembourg, those institutions that have played the biggest role with adults in providing guidance information in the recent past have been skills and learning providers, followed by employers or employer bodies, trade unions and professional bodies and the employment service. Furthermore, these data also suggest that most individuals accessed advice on learning and did so remotely and/or independently through the Internet or leaflets without directly seeking the support of an advisor. Thus, it will be important to consider whether and how the recent work of the MO has changed these patterns.

While the same OECD research found that another more indirect way of reaching adults is to deploy general information, advertising and marketing campaigns, this had one of the lowest levels of impact on individuals. Furthermore, the OECD report that there is little evidence that such general campaigns are successful (OECD, 2019[29]). As such, they are rarely thought to be effective alone. They need to be backed with more targeted events and the use of promotional and awareness-raising activities linked to dedicated guidance and learning services and advice (OECD, 2019[2]). As a result, more countries have been considering how they can provide more personalised career guidance, and hence support, to disadvantaged adults and with that, more customised promotion and awareness-raising activities, too, so that one set of activities reinforces the other and individuals become more motivated to actively pursue their careers and learning. Moreover, early action is beneficial to avoid longer-term displacement from the

labour market and detachment from motivation to learn and work. These issues are of particular interest in Luxembourg with regard to enhancing the future accessibility of guidance, as its remit has broadened to cover adults as well as young people.

In the context of the guidance services in Luxembourg, there are already positive developments that align with wider international good practices supporting vulnerable groups. Indeed, there has been significant public investment through the MO to bring guidance services together. For example, the new Orientation Space has been reorganised into thematic areas to ensure individuals who visit the national office can be more quickly directed without an appointment to tailored support provided by the different services. Through a range of orientation diagnostic tools and techniques (outlined earlier), this seeks to support individuals to analyse and identify their personal strengths and individual interests, enhancing motivations to learn and work. This includes special support for the long-term unemployed and those with special health needs.

For example, ADEM has already developed a more personal advisory offer adapted to diverse clients, whether they are unemployed, economically inactive, with disabilities and health needs, older clients and/or non-Luxembourg nationals. These services have been strengthened through partnerships with some community groups, such as the foundation CASA (Centre d'Appui Social et Associatif), reaching out to the Portuguese-speaking community, for instance. Such activities clearly offer learning to personalise support more generally across guidance services.

Discussions with stakeholders during the OECD review have pointed to potential areas where additional activity can be undertaken, especially to provide extra guidance and support to those at risk of disadvantage. In particular, there is interest in enhancing the provision of targeted and dedicated services in line with developments in other countries to increase the customisation of services to more closely meet the requirements of specific vulnerable groups. Many of these individuals experience multiple challenges, and a more targeted approach to advice provides the basis to better understand and help resolve varying needs (OECD, 2022[27]). This might include additional dedicated resources for guidance services for targeted client groups and to increase the number of dedicated teams of personal employment and training advisors and caseworkers who can specialise their expertise, advice and support to those experiencing greater disadvantage. International insights also highlight the value of broadening the range of host sites in the community through civic buildings, such as libraries, town halls, shopping malls and museums, as well as mobile outreach centres (e.g. pop-up centres). These are known to break down barriers and fears individuals may face visiting official government buildings (OECD, 2022[27]). An example of activities to widen access to guidance can be found in the United Kingdom (Box 3.6).

Box 3.6. Relevant international example: Customised activities to widen access to guidance

United Kingdom

Local authorities in London have been working with community groups in local neighbourhoods to target working adults in low-paid work and support moves into good work. Mobile outreach in local libraries, civic buildings, shopping centres and community areas, connect free of charge, personalised career guidance, advice and skills acquisition, and wrap-around support from other existing services to individuals, enhancing networking with local employers and connections to growth career opportunities.

Source: Based on OECD (2022[27]), *Future-Proofing Adult Learning Systems in Cities and Regions: A Policy Manual for Local Governments*, https://doi.org/10.1787/11fa26cc-en.

Guidance services in Luxembourg have also increasingly emphasised connecting to more excluded, hard-to-reach people and places and ensuring access through the national and local institutional infrastructure. In particular, this includes a focus on local networks and guidance units through the schools'

network and the local arms of ADEM's employment service, for instance, in Esch-Belval and Diekirch, which are seeking to reach out to individuals within the community. That said, with significant variations in access to such advice reported among different vulnerable groups (as discussed above), which closely aligns with patterns of participation in learning, this area will require continued attention in the future.

In particular, the MO raised interest in exploring the feasibility of extending physical sites beyond the local schools' guidance units, the SNJ and ADEM's regional agencies, and providing additional local outreach guidance services. A core aim would be to increase the number of one-stop-shop facilities for advice and guidance in localities, offering a range of activities in a number of physical places. In Luxembourg, various local community organisations are already established, serving the needs of local groups that the MO might work with in the future, building on existing partnerships such as through ADEM. Working with trusted role models and community organisations is an effective way to reconnect to excluded groups and build positive attitudes to encourage re-engagement with learning and work. This would include non-governmental organisations (NGOs), such as Ons Heemecht, which supports refugees in integrating into the local community and the Liaison Committee of Associations of Immigrants (Comité de Liaison des Associations d'Étrangers or CLAE), which supports wider migrants in settling in Luxembourg. As the MO learns lessons from adaptations to delivering guidance services in its national office, it can build more personalised offers in wider locations moving forward.

The MO has also been working with partners at the national, regional and school levels to foster ways to promote and communicate learning and employment opportunities to young people and adults through social media channels, career events and fairs. Doing so can build on existing information services, such as ADEM-OP's detailed statistics shared with secondary schools about apprenticeship offers and placements. Two of the most significant events from which to draw wider lessons for the future are organised with and around schools and are:

- Schoulfoire[11] is funded by MENJE and is largely organised by MENJE's SCRIPT and the Department of Vocational Training, working with wider partners, including WorldSkills Luxembourg. It intends to promote the full range of education and vocational trainings on offer and inspire youth on a wide variety of trades and professions they can pursue. It focuses on pupils in Cycle 4 of basic education and those in the lower and upper classes of secondary education. The event is large, extending over an area of 17 000 m^2, with more than 1 000 "discovery" workshops and occupying 3 exhibition halls at the Luxexpo-The Box. The event incorporates other activities, such as Léierplazendag and Lux Skills.
- Léierplazendag is an event organised twice a year in collaboration with RTL Radio, ADEM, the Chamber of Commerce, the CdM and MENJE. It aims to promote the full range of vocational training opportunities, such as apprenticeships for young people and adults. At the event, individuals looking for training have the opportunity to meet employers, find out more about the opportunities on offer, what is involved and how to apply for training on site. In addition, wider representatives and training consultants from ADEM, the Chamber of Commerce, the CdM and MENJE are available to provide advice about employment requirements and applications for training, especially in sectors and jobs in high demand and where opportunities are difficult to secure.

In reviewing its local activities in the future, it would be beneficial for MO to extend the reach of its services to wider and more diverse groups of adults. This might involve running a programme of tailored social and cultural events, placements, work experience and inspirational activities for these groups. This can combine with networking activities involving trusted role models and community organisations in the design, promotion and delivery to enhance their success.

International research (OECD, 2022[27]) also provides further insights about enhancing and complementing guidance services for disadvantaged groups by extending the range of tailored career guidance reference materials made readily available. While digital platforms and career guidance portals play a key role in a

modern digitally-enabled world, they can also extend to information resources, books and self-help tools that are easily accessible physically. This is because where client groups lack access to digital resources, this can raise their dependency on public and community-based guidance centres housed in schools and education institutions, employment agencies and public libraries. These increasingly seek to complement face-to-face advice. As seen earlier, in the absence of outreach services, there has been a substantial demand for such materials. In the recent past, most individuals in Luxembourg have accessed such information and guides independently of advisors. This demand is expected to continue to be significant in the future.

Given these needs, the MO has developed multiple channels to widen access to a range of information, including an online platform and a careers information centre and multimedia space for wider resources at its national office, where individuals might not have a computer at home. As outlined earlier, this has been of particular value through the COVID-19 pandemic, where economic lockdowns stimulated moves to virtual and digitally-based advisory solutions. Nevertheless, it has been important to maintain telephone advisory services for those digitally-excluded individuals who cannot easily deploy digital tools without support and/or public sites for Internet access. This has been vital for those harder hit by the pandemic who have experienced more challenges in employment and greater risks of displacement from the labour market and unemployment (as highlighted in Chapter 1). As uncertainties remain uneven in a post-COVID-19 recovery, it will be important in developing customised services for vulnerable groups to maintain the delivery of multiple services for multiple groups. The evaluative research programme will provide one vital mechanism to track such activities and monitor their use and effectiveness.

Recommendation

- **2.5. Customise guidance services to the needs of different vulnerable groups (e.g. the low-qualified, cross-border workers, the unemployed, older workers and those with health needs), combining awareness raising with tailored, enhanced advice to widen access.** Multiple channels are needed to reach and motivate vulnerable groups at varying life stages. The most successful approaches are those that directly involve different guidance partners. This is particularly important when case workers and advisors are reaching out to work directly with different groups of individuals in the community through outreach activities. It is also important to introduce dedicated promotional activities that specially target and inspire traditionally hard-to-reach diverse groups. These will include individuals needing additional help, such as low-qualified individuals, the unemployed, older workers, atypical workers and those with special health needs. Customised services will require dedicated resources, designated teams of employment advisors and businesses, the expansion of local outreach activities and events (e.g. pop-up centres), job fairs and/or running dedicated programmes to build positive attitudes towards working and learning, while challenging perceived barriers and overcoming the risks of social and digital exclusion. This might include active placements, work experience and inspirational activities through trusted role models and community organisations (e.g. NGOs such as CLAE and Ons Heemecht), combined with networking activities that seek to build positive attitudes towards engagement in learning, education and employment and wider support, e.g. childcare. Where guidance services are adapted, they will need to be kept under review by the MO to establish how effective they are at engaging different vulnerable groups and enhancing their learning and career outcomes.

Opportunity 2: Improving financial incentives for adult learning

The assessment of learning patterns in the Luxembourg economy highlights significant variation among different groups of individuals and by different types of employers. It also highlights the prevalence of some persistent skills shortages, inhibiting economic prospects (see, for example, the shortages discussion in

Priority Area 3). This has affected Luxembourg's relative training position with other leading nations and its learning performance lagging EU targets. Indeed, lower levels of training can be observed among lower-qualified individuals, those who are older, and who work in lower-skilled jobs, in smaller businesses, and in low-training sectors, for example. If patterns of learning and skills investment are to be addressed, it is important to understand what market failures have led to employers and individuals under-investing in skills to the detriment of their long-term economic prospects. Across OECD countries, various financial incentives exist in the "potential" policy toolkit (see Table 3.4) to overcome barriers and incentivise greater skills investment in adult learning to enhance individual and business opportunities and prosperity.

It has been useful to reflect with stakeholders on the different financial incentives used in Luxembourg and how they seek to encourage more training. The challenge is that different obstacles will be prevalent in different work and business contexts, and multiple barriers often occur, with barriers changing over time, which may still limit the effectiveness of any financial incentives overall. Having reflected on the issues raised, several proposals for improvement within the Luxembourg skills system are offered. These aim to enhance the targeting of current financial incentives to varying individual and employer needs and hence their sensitivity and strength as incentives to inspire greater learning. By so doing, the over-riding aim is to ensure financial support is targeted in the best way and improves the shape of learning moving forward, creating greater opportunities for all in the Luxembourg economy. As such, it seeks to better fulfil a key strategic aspiration of the Luxembourg skills system. In particular, Luxembourg could improve targeting better financial incentives to individual and employer needs.

Targeting better financial incentives to individual needs

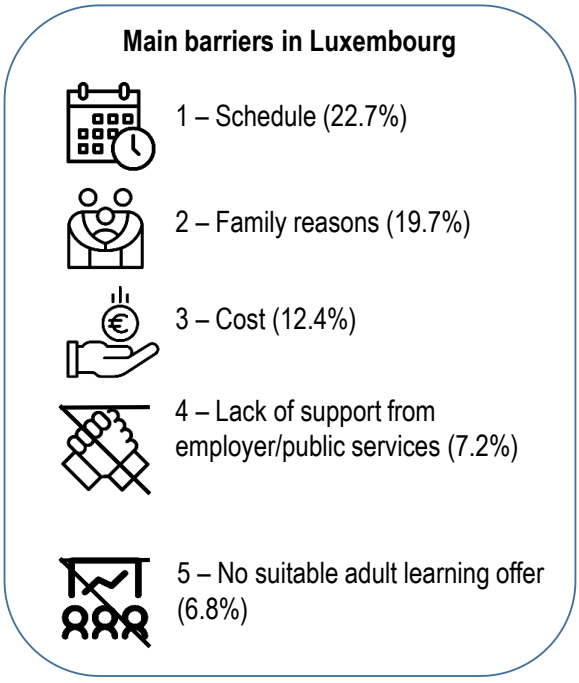
In the context in which there are still some significant barriers to *all* individuals adopting lifelong learning in Luxembourg's economy, which undoubtedly threatens future recovery and inclusive growth, there are some important issues to consider around the design and use of financial incentives moving forward. The problems are particularly accentuated for certain vulnerable groups, who often experience multiple barriers and therefore are under-represented in training. This section reviews the current array of individual financial incentives within Luxembourg and puts forward proposals on where there is a need to further enhance training opportunities for all. Key goals are to strengthen incentives by personalising the offer to respond more effectively to the barriers different individuals face and to test the feasibility of bolstering the individual's choices and motivations to train by tying individual rights more closely to the individual's needs.

It is first necessary to ensure that the current financial incentives better support all types of adults to learn, including vulnerable groups under-represented in training. With ongoing megatrends and economic shocks, polarising labour markets and changing skills requirements in the Luxembourg economy, there is an increased need to understand the underlying divisions and inequities in accessing learning among the working population, which will only worsen if left unaddressed. The effects were outlined in Chapter 2, particularly among some vulnerable groups. These groups are less likely to participate in adult learning programmes. They, therefore, are more exposed to ongoing economic changes and, in the absence of support to reskill and upskill support, the growing risks of unemployment, labour market exclusion and long-term periods of economic inactivity. Such individuals include, among others, young people, women, the low-qualified, older workers, the self-employed, those in lower-skilled roles, smaller business and low-training sectors and those already unemployed. This pattern is replicated across OECD countries and therefore offers the potential for wider learning in Luxembourg (OECD, 2021[30]). COVID-19 has also accentuated social and economic divides and, as such, has amplified existing inequalities in labour market outcomes, skills and opportunities, with many of these groups working in low-skilled roles and sectors that have been hard hit by public health measures and social distancing.

Training can offer a pathway to career progression and individual prosperity but not when individuals face a range of obstacles and barriers (see Figure 3.8). If not addressed through policy interventions, such as financial incentives, for example, these barriers can impede individuals' long-term progression. While

somewhat dated, existing evidence from the AES shows that individuals in Luxembourg report a wide range of obstacles that inhibit their learning. The problems are particularly accentuated for certain vulnerable groups, who often experience multiple barriers. Cost is a significant obstacle to training and is ranked in the top three barriers most frequently reported by individuals, for example. In the current light of cost-of-living pressures in Luxembourg, it is likely that this is a continuing trend, or may even have increased, given the effects of external global shocks, such as the pandemic and Russia's war against Ukraine. Financial incentives will thus play an important role in helping to alleviate such cost pressures.

Figure 3.8. Barriers inhibiting individuals from taking up training in Luxembourg, 2016



Source: STATEC, (2022[14]) *Adult Education Survey 2016,* https://ec.europa.eu/eurostat/web/microdata/adult-education-survey.

The challenges people face, however, are more wide-ranging than financial issues and vary by individual characteristics and in different stages of their lives as their personal circumstances change. Indeed, barriers created by family responsibilities and a lack of flexibility are significant, too, especially for those in employment, among prime-age workers and women more than men. This is exemplified with reference to low-qualified individuals who report higher concerns about family responsibilities, a lack of flexibility and issues due to health and age. There are also substantial variations in motivations to learn, with levels of motivation being significantly lower for low-qualified individuals who have not systematically developed learning habits. Therefore, if policy incentives are to be effective in encouraging more lifelong learning in the future, they must respond effectively to differences in individuals' personal circumstances and support them in overcoming key challenges. Clearly, in such a context, there is room to revisit the shape and features of the current "incentives offer" for individuals across the skills system in Luxembourg, particularly the range and nature of policy instruments and how they work for different groups.

The OECD has undertaken this review with reference to the wider potential OECD policy toolkit (see Table 3.4). Demand-side incentives for individuals bring varying benefits and opportunities, which need to be weighed against several implementation and design challenges, costs and risks. This is important in considering the changes that might be made in the Luxembourg system moving forward and how and where the different instruments might be best deployed. The most common instruments available in most countries are subsidies, training and study leave and tax measures. However, their take-up and effectiveness vary, depending on different design features and variations in implementation, which will

need to be borne in mind to effectively draw lessons for the use of incentives in Luxembourg (OECD, 2017[5]). In contrast, instruments such as Individual Learning Accounts (ILAs) have remained fairly uncommon (OECD, 2019[31]), with the only current "pure" example existing in France (e.g. the Compte personnel de formation[12]). The design considerations are outlined more fully in Table 3.4. This means that the final selection and design of what policy instruments will eventually be used will require trade-offs to be made in practice.

Table 3.4. Financial incentives for individuals to enhance participation in training in OECD countries

Incentive	Description	Potential advantages	Potential disadvantages
Subsidies	Schemes that decrease costs of participation through a direct transfer of money to the individual (e.g. through a voucher), the training provider or the employer (e.g. wage compensation, grants)	• Direct, as well as highly flexible (i.e. the possibility of targeting specific groups)	• Targeting generally increases administrative costs for the government and participants • Without targeting, deadweight losses can be high
Individual Learning Accounts (ILAs)	Individual accounts provide the means for individuals to accumulate entitlements (i.e. in time or resources) at different life stages to train that can be activated when individuals actively take up the learning activities	• Potentially empowers individual choices by tying individual rights to the individual rather than a job/employer and increasing portability between jobs • Allows for direct cost sharing between government, employers and individuals	• Costly to set up supporting infrastructure and administer • Complexity agreeing shared funding mechanism between government, employers and individuals • Requires strong quality assurance framework • More difficult to use for low-skilled workers, especially where individuals are required to make a contribution
Tax incentives	Tax allowances (i.e. deductions from taxable income); tax credits (sums deducted from the tax due); tax relief (lower or zero rates) on scholarship incomes, grants and student income	• Administrative costs are lower than other schemes due to reliance on existing tax infrastructure	• Individuals must wait until after the end of the tax year to be able to claim them • They are likely to carry higher deadweight effects because they favour higher-skilled individuals • Often connects training only to existing work to ensure employer buy-in
Loans	Includes guarantees, interest rate subsidies, loan guarantees, income-contingent repayments, student loan remission and/or forgiveness	• Can increase the number of beneficiaries with respect to subsidies/grants • Can shift some of the costs to learners	• Less effective than grants in encouraging individuals on low incomes to invest in learning • Requires creating a heavy admin infrastructure
Study/training leave	Giving employees a right to study leave and enabling them to receive financial compensation while training (such as pay and guaranteeing the right to return to their jobs after completing a training course).	• Sends an important message about the importance of training • Often works through employers to ensure the relevance of training.	• It does not solve the problem of how the costs of training are going to be covered (in most countries, the government reimburses employers, e.g. wage compensation, while allowing individuals to be paid) • Likely to carry higher deadweight effects, without targeting.

Note: Not all measures can be easily classified into these categories. Measures designed to nudge behaviour on the supply side often have repercussions on the demand side and the other way around.
Source: OECD (2019[31]), *Individual Learning Accounts,* https://doi.org/10.1787/203b21a8-en; OECD (2017[5]), *Financial Incentives for Steering Education and Training*, https://dx.doi.org/10.1787/9789264272415-en.

Whilst there are a number of existing individual incentives in Luxembourg, as presented earlier in the chapter, there are questions about the balance of instruments and the specificity and agility of the Luxembourg approach to change to meet changing individual needs. The review has highlighted issues about how well the incentives are supporting those individuals currently under-represented in training and facing barriers to their participation

First, many of the instruments have entitlements that are connected to current employment and hence prioritise training relevant to the existing employer. In principle, these policies seek to reinforce the relevance of the training, assuming that if training is connected to current employment, it will be relevant to the needs of employers. However, these approaches have some limitations. For example, such incentives may limit the potential to train for those individuals working in low-training environments where conditions are less likely to be conducive for training. This includes, for example, small businesses, low-skilled work and certain low-training sectors.

In addition, the connection to current employment is unlikely to stimulate opportunities to pursue training in new and growing parts of the economy rather than existing jobs. As the labour market changes and restructures, more individuals may want to train to prepare for new careers and to support in-work transitions away from declining areas of employment. This is seen, for example, with the tax reimbursement scheme. This is intended to facilitate ongoing skills development in a current profession; thus, it largely supports training in an existing role.

Although access to schemes such as Individual Training Leave (CIF) and unpaid leave is designed to encourage training for all individuals in all types of training (whether formal, non-formal or information), this is often not what happens in practice. Evidence from the consultations reviewed, alongside the participation rates reported by MENJE, suggests that the current design risks limiting the training individuals can pursue if any training at all. For example, these incentives seek the employer's support and compensate the employer financially for the individual's absence. While employers cannot refuse a training application, they can express a negative opinion if they perceive that the employee's absence negatively threatens the operation of the company. The training can be deferred, which may be enough to limit take-up in reality.

Second, while financial incentives overall in Luxembourg work from the basis of supporting training opportunities for all types of individuals, in practice, with limited targeting of entitlements, many, in reality, work better for those relatively highly educated and pursuing training. This risks higher deadweight effects, where public funds support individuals who would have pursued training anyway. As a result, it was felt by some stakeholders that this limited the reach of incentives, particularly those in low-skilled jobs, with low-training employers and multiple barriers to training to overcome, including low motivation, as observed earlier.

The risks of deadweight, favouring the more highly qualified, can be seen, for example, with the tax reimbursement scheme, which facilitates ongoing training and professional development in a current role and progression in an existing career. However, this relies on individuals being able to fund their own training upfront, reimbursing training expenses at the end of the tax year. As such, it is more likely it will favour those individuals on higher salaries who are more able to personally subsidise such costs for a year. In addition, subsidies, such as loans and grants for higher education, while they are means-tested to provide financial support for those on low incomes, they are intended to enable those individuals already with an initial level of education to progress their skills and to continue a pre-existing education pathway.

In terms of the CIF, the funding aid from the government largely reimburses employers through a wage compensation instrument. Although the individual is supported in accessing their salary while training, they do not receive additional financial support to cover training costs and/or expenses. These may be perceived as more considerable for those in low-paid and low-skilled jobs and/or who experience fluctuating employment patterns in and out of work, including atypical workers. There are also limits with the CIF to the amount of training leave individuals can request within a certain timeframe. This amounts to 20 days in 2 years and 80 days over a career. While these limits help to contain the costs and impact of

training leave for employers, they may constrain individuals with more significant training needs, such as the low-qualified. Furthermore, CIF only funds one-third of training time and individuals must train for at least 24 hours in one spell. When training is pursued outside work at weekends and evenings to manage learning opportunities around or beyond existing work, individuals report barriers, such as conflicts with family responsibilities and scheduling, as observed earlier, which provides further challenges to take-up. The combination of these kinds of barriers results in market failures and individual under-investment in adult learning, to the detriment of their long-term employment prospects. Therefore, these types of instruments provide weaker incentives in their current form, especially to motivate lower-skilled and qualified groups without established learning habits in low-training sectors.

Third, most instruments are voluntary, meaning neither the individual nor the employer is forced to act. Therefore, their decision to engage will, in part, rely upon the effectiveness of communication and promotion activities and marketing materials encouraging take-up. Not only will this need to raise awareness, but it will need to include compelling information and hence a strong and persuasive case presented to potential participants that demonstrates the benefits of investing in skills and the value of learning. This will clearly be more important for those individuals undertaking less training and those with lower motivation to learn. Much of the marketing information that is presented on different portals currently, such as Guichet.lu (https://guichet.public.lu/en/entreprises/financement-aides.html), the INFPC learning portal (www.lifelonglearning.lu/Accueil/en) and ADEM's site (https://adem.public.lu/fr.html) focuses on how the financial incentives will reimburse and support training costs as a primary means of engagement. The information is also quite factual, with less reference to compelling case studies, selling the advantages from a personal perspective. As such, where there is limited information about the benefits, this will weaken the potential impact of the incentive, especially where face-to-face, personalised support is also limited.

The OECD assessment and discussions with stakeholders have highlighted areas where refinements to current instruments could strengthen the individual incentives to train in Luxembourg, especially for the low-qualified, vulnerable groups presently under-represented in adult learning. These perspectives have helped to shape the concrete recommendations presented in this report. The CIF scheme, in particular, was identified as a primary area of focus, given its central importance as a mechanism to support individuals' right to training. In general, there has been a desire to prioritise any improvements to contain the complexity and costs associated with change, given that many of the recommendations are likely to require changes to legislation (i.e. the Education [Code de l'Éducation nationale][13] and Labour Code [Code du Travail]).[14]

Given the nature of participation in the CIF scheme, one key area of focus concerned the CIF entitlements. In particular, the assessment considered whether they could be more personalised for certain targeted groups, such as the low-qualified, to enhance the strength of the incentives. While it was felt the 80 days entitlement to state support of continuing professional development over a career was enough generally for individuals who already had acquired a basic foundation of education and an initial platform of skills and qualifications, it could be insufficient for those less skilled and qualified and with lower motivation to learn. It was suggested that there might be benefits in allowing more flexibility as to when the 80 days training leave can be accessed over a career in the CIF scheme (suggesting more flexibility in the first and second years, for instance, beyond 20 days). For example, if a low-qualified individual could access more training leave days earlier in their career to undertake training (such as key entry programmes into sectors), it might be a more effective way to strengthen their training habits, transition into a new career pathway and by doing so improve long-term labour market prospects. There was also an interest in cutting the minimum timeframe as to when employees could apply for the scheme. Currently, an employee has to have worked for a business for at least six months. In the context of the COVID-19 pandemic and greater disruption in employment, especially for individuals in many low-skilled and low-paid services jobs, it was felt there could be significant benefits in considering requests for training, even for shorter spells of employment, to help individuals retain a foothold in the labour market. Other country examples, such as

Belgium's (Flanders) Paid Educational Leave (PEL), referred to in Box 3.7, offer insights into how such schemes can be made more flexible.

Box 3.7. Relevant international example: Financial incentives scheme

Belgium (Flanders)

Flanders' Paid Educational Leave (PEL) scheme enables employees in the private sector working full- and part-time to take part in training through the provision of training leave (calculated annually), which does not need to relate to current work. It connects individuals to government-backed in-demand courses. Employees continue to receive their wages during their leave, up to a limit of EUR 3 047 per month (2021/22), and employers receive compensation from the regional government. Since PEL is a right for all private sector workers, employers cannot refuse employees' requests, but the leave must be planned in advance. Employees' and employers' responsibilities are enshrined in law. Flexible ceilings governing the duration of leave fall into two categories: professional/vocational courses allow a maximum period of 240 hours of PEL per year (equivalent to 30 8-hour working days); and general courses allow for no more than 160 hours of PEL per year. Half of the salaries paid during training are subsidised by the state, and the other half is paid from a special levy imposed on all employers in the private sector, irrespective of whether their workers make use of the right to educational leave or not. This levy amounts to 0.04% of the payroll.

Source: CEDEFOP (2018[32]), *Paid Educational Leave in Belgium: Is legislation slipping off the track?*, www.cedefop.europa.eu/files/etv/Upload/Information_resources/Bookshop/132/6_en_piret.pdf.

Representatives for employers, such as the chambers of commerce and trade, commented on the need to manage any negative impacts of increased training leave on employers in the form of higher costs, reduced staff capacity and increasing workloads. As such, there was an interest in modelling more generous options for wage compensation above one-third of the training time for targeted groups. The intention was that this could offset the costs associated with increases in the periods of training for employers and would therefore help mitigate such effects.

To overcome barriers to individuals' ability to take up their rights to train through the CIF, some stakeholders suggested that additional "wrap-around services" and support might be needed. This was felt to be necessary to empower all individuals to make choices, especially those experiencing multiple barriers that are more difficult to overcome, including challenges managing family issues, such as caring responsibilities, difficulties achieving flexibility in their work schedules and managing health conditions. Additional measures put forward included broadening financial incentives through the CIF scheme to cover wider costs and/or expenses related to training participation, such as managing family responsibilities and health issues, for example. It was felt that these could be targeted to those individuals in most need based on personal characteristics, such as their income and/or qualification levels. In addition, there was thought to be value in linking the promotion of the CIF to more targeted and customised guidance, coaching and mentoring to help these individuals develop a personal route map to overcome their personal barriers, see training as part of a longer-term and career plan and put together CIF applications to facilitate the take-up of such opportunities.

In the context of concerns with a general lack of awareness around the different incentives, stakeholders also suggested the need to revisit and improve the promotion of the financial incentives available. While it was acknowledged that information was freely available on a range of portals and public platforms, it was felt more could be done to more proactively draw attention to the range of support and facilitate take-up. Multiple communication channels were identified, not only making full use of online tools and different

social media channels but enhancing messages and communications deployed by key partners in the skills system to reach individuals within their different communities and networks. This included the MO and its partners in delivering the guidance services.

Furthermore, stakeholders also underlined the importance of evaluation and obtaining better data on the take-up and use of the incentive schemes. It was felt that evaluative research needed to focus on assessing the impact and benefits of the incentives to individuals and their future earnings and careers. Crucially, it was considered important to differentiate between different characteristics of individuals to identify where public investments had the greatest impacts. Not only would this be valuable in enabling future refinements and improvements to the scheme, but it would help enhance information on the value of investments, which would aid future marketing.

In the context of ongoing megatrends and changes in future employment requirements, there is an urgent need to reform the existing package of financial incentives within Luxembourg and consider the potential for new measures that more proactively respond to and support urgent upskilling needs. This is especially important in the context of new, emerging and rapidly transforming parts of the economy, where new incentives can inspire individuals to pursue learning more proactively in high-demand skill areas and support employers in meeting growing employment demands. Improvements to the package of financial incentives can be made to stimulate the take-up of training in these high-demand skills areas, especially among adults. By encouraging earlier take-up, they can allow for training lead times and hence work to ensure the system has sufficient time to prepare for the future and avoid growing skills shortages.

The Luxembourg economy is seeing significant transformations in jobs and, in turn, employment and skills requirements (as highlighted in Chapter 1). The adoption of skills-biased technologies and workplace innovations is increasing employer demands for high- and medium-skilled workers in critical skills in Luxembourg's economy and potentially also increasing demand for transversal and technical capabilities in the future. CEDEFOP forecasts for Luxembourg suggest a continuing growth in high-skilled workers from 44% of the labour market to 54% by 2030, extending roles in areas such as professional, scientific activities, ICT and finance and insurance (CEDEFOP, 2020[1]). However, forecasts also point to growing demand in middle-skilled roles, such as in skilled trades, technicians and associate professionals, and highlight risks of growing deficiencies.

This is already materialising with industry bodies (professional chambers and others, such as the Federation of Artisans [FDA] and the Federation of Luxembourgish Hospitals [FHL]) reporting recruitment difficulties in middle- and low-skilled jobs due to rapid economic growth and an ageing workforce (discussed further in Chapter 4). Indeed, it is forecast that over three-quarters of the new jobs up to 2030 will be created by replacement demand due to people leaving their roles through retirement, for example. CEDEFOP questions whether the scale of growing demands can be fully met by sourcing international, cross-border workers. This places an equal focus on reskilling, upskilling and lifelong learning within the existing workforce (CEDEFOP, 2020[1]). Those workers who are low-qualified, with outdated skills, and/or who do not keep their skills up to date, become more at risk of displacement within the labour market and, with that, detachment and long-term exclusion. While the CEDEFOP forecasts rely on the Labour Force Survey and hence do not consider the extent of cross-border workers moving to Luxembourg for work, they do highlight some underlying tensions within the Luxembourg economy that need to be addressed, nevertheless.

At a time of continuing industrial restructuring and economic transformation in the future labour market, there is a strong case to deploy new financial incentives to help shape the training response to economic shocks, not only including the recent effects of COVID-19 but as a regular response to ongoing megatrends and/or future events. As Luxembourg improves the co-ordination of its LMI, potentially via a regular national skills needs survey (see more in Recommendation 4.4 in Chapter 5), this can help to more systematically track and identify skills in high demand over time. This, in turn, can drive more responsive and labour-market-relevant adult provision, as outlined in Chapter 2. The Government of Luxembourg has

already recognised the urgency of understanding and addressing future labour market changes. This is demonstrated by the government's Research and Innovation Strategy, for example, and its work to support innovation and growth through a number of industry clusters, including the digital economy, the creative industries, advanced manufacturing and the green economy (MESR, 2020[33]).[15] It has also been an important dimension of the work of ADEM's Future Skills Initiative (as presented earlier), which has sought to start investigating the most pressing skills needs of careers of the future in some of these key priority sectors and how they might be met in the years ahead.

Where there is better use of LMI to signal those skills in high demand, this, in turn, raises issues about how the package of financial incentives for individuals can be adapted to better support the take-up of training and transitions to these areas. It is possible that targeted subsidies, such as vouchers, could be developed and used in the future once high-demand skills areas have been identified to encourage individuals to take up training in these growing skills. Where there is under-investment by low-qualified individuals working in low-skilled roles in sectors with low-training provision, *targeted* vouchers would "empower" individuals by encouraging them to take responsibility for their own education and training choices. Such a scheme can help cover the additional costs of training, which are persisting as a significant impediment through wider current incentive schemes (as shown earlier). Given that the voucher for skills in high demand would be identified and therefore backed by the government and industry through issuing the vouchers, it would provide a basis to put an individual on growing employment pathways with stronger prospects. This, therefore, could serve the dual prospects in enhancing individuals' future prospects and helping to meet industry needs, too. Schemes are being run internationally that offer insights about how financial incentives might be designed to work with the broader, targeted packages of support within Luxembourg. Some of these, like the WorkAdvance scheme in the United States, have been delivered through dedicated recruitment and guidance agencies to more proactively identify and recruit individuals to critical skills career advancement programmes in high demand and hence to ensure vouchers are effectively deployed (Box 3.8). Active recruitment has also been a good way to raise the motivation and engagement of individuals.

Box 3.8. Relevant international example: Critical skills needs scheme

United States

The WorkAdvance programme is a career advancement initiative designed to prepare individuals for quality jobs in high-demand industries, improving their prospects while meeting employers' critical skills needs. The scheme, run in the United States, uses vouchers alongside wider measures to simultaneously meet individual needs (for upskilling and good work) and employer needs (such as addressing critical skills shortages). The WorkAdvance model uses a proactive recruitment and employment agency model to identify individuals and support them through training and into work. There is also a strong sector focus on critical careers in high demand. Advisors manage the deployment of vouchers via a range of activities, including: screening applicants against critical careers; funding pre-employment training; critical skills training; sector placements; and post-employment retention and progression services. The vouchers are used to help participants access and complete recognised training aligned with critical needs and secure employment. Additionally, some providers have also offered broader wrap-around and supportive services.

Source: Gasper, J. and K. Henderson (2014[34]), *Sector-focused career centres evaluation: Effects on employment and earnings after one year*, www.nyc.gov/html/ceo/downloads/pdf/CEO-Sector_Based_Approaches_Evaluation_Report-2014_final.pdf; WorkAdvance (2022[35]), *The WorkAdvance Way: Connecting Tulsans with Quality Careers*, www.workadvance.org/about/the-workadvance-model.

In recognition of the challenges of incentivising sufficient take-up in adult learning and tackling persistent variations in training across the economy, stakeholders were also interested in investigating the potential

of ILAs (or compte personnel de formation) in the future skills system. This aimed to explore the feasibility of piloting an ILA scheme to amplify individual choice and hence to further strengthen individual rights to train. In a future economy where individuals are more likely to change jobs, the ILAs, in principle, by linking rights to the individual, have the potential to "empower" individuals to choose their own training. In turn, this can enable them to consider areas outside of their current employment, thus allowing greater portability between jobs. In addition, where there have been problems within Luxembourg with varying quality standards for adult learning programmes, the ILA can act as an additional incentive to training providers to raise the quality of their training. This is usually because the credits and entitlements earned through the ILA scheme are often activated when individuals pursue high-quality, industry-endorsed and government-backed training programmes. Providers are then likely under such a scheme to be more incentivised through the ILAs to seek recognition to deliver these high-quality accredited training programmes, raising the platform of skills delivery more generally.

However, when practical implementation issues were more fully considered through the evidence and discussed with stakeholders during this project, it became clear that the ILA could not be seen as an immediate priority within Luxembourg. International research provides an assessment of such schemes' strengths and weaknesses, and there is much complexity attached to their design, implementation and development of the wider infrastructure to support delivery (OECD, 2019[31]). The assessment pointed to particular challenges in agreeing on sustainable funding mechanisms and appropriately targeted individual incentive instruments, which are crucial to get right to ensure even participation in the scheme. For example, ILAs have a poor track record of reaching low-qualified individuals, especially where co-financing schemes are deployed. Furthermore, stakeholders in Luxembourg noted the tendency for over-representation among higher-skilled individuals, risking replicating existing schemes' trends (as highlighted above). Where countries have moved towards ILA schemes, the most common model has involved using vouchers targeted at individuals, so that they can still empower individual choice but contain the costs and difficulty of managing and administering a fuller scheme. The OECD found very few examples of the pure scheme currently in use; consequently, the ILAs are still uncommon (OECD, 2019[36]). Given that wider recommendations within this current strategy can provide a basis to put in place important foundation stones for a future ILA scheme (such as the centralised training register providing data on training participation patterns of individuals, Recommendation 4.7 in Chapter 5), it is recommended that it is not progressed as an immediate priority, but that its potential is kept under review (that is if and when to run a pilot) as a future action within the long-term strategy for adult learning (see Recommendation 1.1 in Chapter 2).

Recommendations

- **2.6. Enhance the customisation and targeting of current financial incentives to better support vulnerable groups.** This would include targeting low-qualified individuals, many of whom are older, work in jobs requiring lower levels of education and sectors with lower training provision and have atypical work arrangements (e.g. part-time, temporary, freelance). Some also have special health needs. More flexibility should be allowed as to when the 80 days of training leave can be accessed over a career for the low-qualified in the CIF scheme (e.g. more training leave days earlier in one's career to improve labour market prospects). Efforts should be made to enhance the paid training leave above one-third of the training time and adjust the wage compensation accordingly to facilitate access to training. Further, additional financial incentives should be provided to cover wider costs and/or expenses related to training participation. MENJE should develop an evaluation programme to assess the impact of investment in adult learning over time to strengthen the business case for training and future targeted financial incentives.

- **2.7. Regularly review and develop customised and targeted vouchers to stimulate the take-up of training for future skills in high demand.** When employers and employees are more systematically involved in the identification of critical/high-demand skills needs for the future (see Recommendation 1.6. in Chapter 2 and Recommendation 3.2 in Chapter 4), potentially as part of a regular national skills needs survey (see Recommendation 4.4 in Chapter 5), this can inform which critical/high-demand skills the voucher issued to individuals should cover. The government should work with training and industry partners to determine voucher amounts for recognised training programmes that cover critical skills needs in high demand. Voucher amounts should also be tailored to individual needs, with higher amounts given to vulnerable groups (e.g. low-qualified individuals who want to pursue a higher qualification level related to a skills need in high demand). In developing the scheme, the government should explore the advantages of developing upfront agreements with providers willing to provide courses in high-demand skills areas. These courses should link to any future curriculum review of labour-market-relevant provisions (Chapter 2). The guidance system should provide information about the voucher and how to use it. There may be benefits in developing an enhanced recruitment and guidance service to offer more personalised support to vulnerable groups to more proactively select and place them in critical, high-demand skills and employment programmes. The potential offered by any enhanced service will need to be considered with the MO and ADEM-OP.

Targeting better financial incentives to employer needs

Given the scale of the skills investment needed to boost lifelong learning in the future, this OECD review has also considered how financial incentives targeted at individuals are working alongside those targeted at employers. Improvements in the co-ordination of policy instruments targeting individuals and employers offers much potential by combining their individual effects and creating more positive conditions to enhance engagement in training overall – that is, through the actions of both employers and individuals. With training provision varying significantly by sector and size of employers (see Chapter 2), this section reviews the current array of financial incentives for employers within Luxembourg and puts forward proposals on where there is a need to go further to tackle employers' under-investment in skills. Without attention, this limits business development and their culture for learning and risks undermining businesses' productivity and long-term economic prospects, as well as those of their employees. There is a need to strengthen current incentives so that they are more targeted to the needs of different employers and can more effectively work to overcome market failures and barriers to training. This includes testing the feasibility of new incentives to support greater business networking and collaboration in response to ongoing challenges in the future of work and, by so doing, extending the scale and reach of impact.

It is first necessary to ensure that the current financial incentives for employers are sufficiently encouraging all types of businesses to train, which is a central strategic goal of the current Luxembourg skills system. This includes considering how they are working, particularly for smaller businesses and those in low-training sectors that have traditionally under-invested in skills. Any steps to optimise skills investment within businesses will need to start from understanding variations in employer training patterns in the Luxembourg context and the specific barriers and market failures inhibiting investment within Luxembourg businesses. This perspective may then help to revisit the shape and features of the current "incentives offer" for employers across the skills system in Luxembourg and how it might also be improved alongside individual incentives.

More specifically, this suggests that higher levels of investment in sectors such as finance and healthcare services, where there are strong training traditions in the economy (as outlined in Chapter 2), will require a different response to businesses where training is lower in areas such as construction, ICT, wholesale, retail and hospitality. Considerations will also be needed with regard to differences in training investment

by business size, with smaller employers reporting significant challenges in Luxembourg inhibiting their training intentions and behaviour. Finally, wider research offers a broad framework for reviewing the incentives, drawing attention to the range of market failures that exist in principle. See, for example, Table 3.5 (UKCES, 2009[37]).

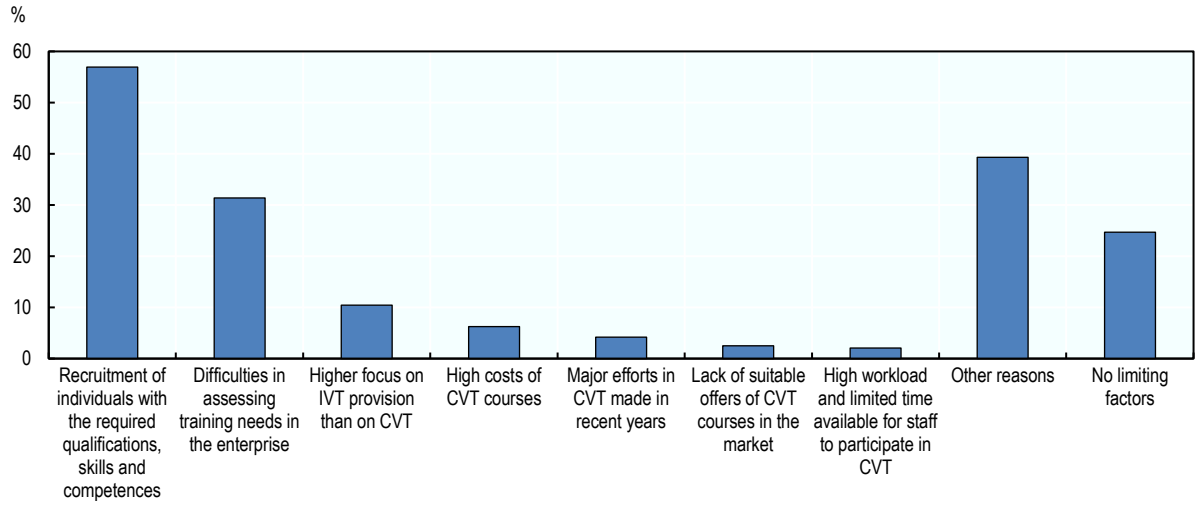
Table 3.5. Potential market failures/barriers to employer investment in skills

Market failure	Definition
Capital market imperfections	Organisations may find financial institutions are reluctant to lend money for investment in training.
Short-termism	Evidence shows that it typically takes a long time to recoup the benefits of investment in training. Firms that choose or are required by institutional investors to make profits calculated over a short period may find it more difficult to justify investment in training.
Co-ordination failure	A group of firms could achieve a more desirable equilibrium but fail to because they do not co-ordinate their decision making or actions. So, firms can settle at a lower output equilibrium to preserve competitive advantage, despite skills investment being a common, public good.
Bounded rationality	Traditional/biased beliefs and assumptions may constrain a firm's decision making so that they are happy with the existing skill levels of their staff. Faced with partial information, managers may not accurately judge the full costs and benefits of training investment and will be guided and constrained by what they know.
Imperfect information	Evaluating the benefits of training is difficult, so training tends to be viewed as a cost, which can discourage investment. Employers may find the vocational educational, training and skills system difficult to access and understand and, so, disengage.
Poaching	Some firms may not train their staff if they can simply recruit workers trained by other organisations. In turn, this can discourage organisations from investing in training if they fear losing trained workers to other firms.
Transaction costs	The cost to firms of sourcing and organising training may be perceived as too great.
Staff motivation to train	Staff may need to perceive a personal benefit of training to be motivated to participate.
Access to suitable training provision	Firms that have specific training needs, operate in sectors with few training suppliers or are based in remote geographical locations may find it difficult to find suitable external training providers.
Releasing staff to train	Enabling staff to leave the workplace to undertake formal training is identified as a particular problem for small firms.
Economies of scale	The greater the number of staff to be trained, the lower the costs of investment in training per head.
Spillover benefits of training between firms	Firms may indirectly benefit from training done by others, for example, through creating a pool of skilled workers for the labour market or through shared knowledge about the supply, costs and benefits of training.

Source: UKCES (2009[37]), *Review of Employer Collective Measures: Final Report*, https://webarchive.nationalarchives.gov.uk/ukgwa/20140108123937mp_/http://www.ukces.org.uk/assets/ukces/docs/publications/evidence-report-10-employer-collective-measures-final-report.pdf.

For low-training employers in Luxembourg, various barriers and market failures have led to a persistent under-investment in skills and training that undoubtedly risks their long-term productivity. Employer surveys, such as the Continuing Vocational Training Survey (CVTS), provide a sense of the main barriers affecting employers in Luxembourg where they saw no need for training and where training investments were limited – at least below the optimum, they wanted to and/or should provide. Figure 3.9 outlines the range of barriers inhibiting training reported by employers in Luxembourg.

Figure 3.9. Share of employers in Luxembourg reporting barriers to providing training, 2020



Note: IVT refers to initial vocational training; CVT refers to continuous vocational training.
Source: STATEC, (2022[38]), Continuous Vocational Training Survey 2020, https://statistiques.public.lu/en/enquetes/enquetes-entreprises/professionnelle-education.html.

StatLink https://stat.link/dw9cto

While training costs are a significant barrier, they have not been the most common issue reported in recent times. Therefore, financial incentives need to be balanced alongside other factors to ensure greater future success. Indeed, more Luxembourg businesses report that they do not train because: they prefer a strategy where the business actively recruits individuals with the required qualifications, skills and competences already (57%); and they have difficulties assessing training needs in the enterprise (31%). With reference to market failures (as outlined in Table 3.5), this suggests a significant share of businesses are avoiding investment in training by relying on recruiting and perhaps poaching already skilled staff from other businesses (confirming some of the earlier stakeholder assessments reported in Chapter 2). These behaviours are indicative of a situation in which those employers that are not investing in training are intentionally benefiting from the spillover effects from those firms that are, without sharing the cost of those investments themselves – thus reinforcing concerns over a climate of poaching. Furthermore, around one-quarter of businesses that are not training report no limiting factors. The range of barriers taken together also point to behaviours and attitudes on the part of employers relating to: challenges with respect to releasing staff for training due to work pressures; potential issues of bounded rationality and short-termism where businesses are not convinced of the long-term business benefits and returns on making investments in skills; imperfect information and co-ordination failure where businesses are not aware of relevant training and do not work together to share what they know; and management capability issues where businesses report challenges assessing their training needs.

With these issues in mind, again, this opportunity examines employer financial incentives in Luxembourg more closely with reference to the wider potential policy measures in the global toolkit (outlined earlier in this chapter). While, in principle, a wide range of measures can be deployed (as seen in Table 3.6), in practice, the take-up of instruments is more limited due to the various considerations around their design and implementation, such as complexity and costs. Indeed, in terms of the global picture, direct subsidies form the vast majority of incentives for employers used across countries and wider measures, such as public procurement tools, tax measures, payback clauses and training funds, are far less common. Drawing insights from the deployment of different tools in other countries has enabled consideration of the varying opportunities and challenges of Luxembourg adopting different demand-side measures for employers in the future to stimulate more optimum levels of skills investment and training (see Table 3.6).

Table 3.6. Financial incentives for employers to provide training in OECD countries

Incentive	Description	Potential advantages	Potential disadvantages
Subsidies	Schemes that decrease the costs of participation through a direct transfer of money to the employer (e.g. through a voucher) or the training provider	• As for individuals, direct, as well as highly flexible (i.e. the possibility of targeting specific groups or outcomes)	• As for individuals, targeting generally increases administrative costs for the government and participants • Without targeting, deadweight losses can be high
Tax incentives	Tax allowances (i.e. deductions from taxable income); tax exemptions (income that is exempted from the taxable base); tax deferrals (the postponement of tax payments); tax relief (lower rates for some taxpayers or activities)	• As for individuals, administrative costs are lower than other schemes due to reliance on existing tax infrastructure	• Monitoring can be difficult and costly • They tend to result in large deadweight losses because they are a relatively blunt measure
Training levies/funds	Used in some countries as a way to pool resources from employers and earmark them for expenditure on training	• Help overcome "poaching" concerns • Allow increased contribution by employers	• Buy-in from employers is critical for the success of levy-like schemes • Large employers tend to benefit disproportionately from them • Employers could spend money on training without too much thought, resulting in low-quality provision
Payback clauses	Contractual arrangements that permit employers to recover at least part of their investment in training if the trained employee leaves soon afterwards	• Reduce the risk of a loss of investment in training	• Well-suited for employees enrolling in formal education and training programmes, but not so for those engaging in non-formal learning • Less suitable for small companies that do not tend to invest in expensive training
Public procurement	Making the award of public contracts to firms conditional on the provision of certain types of training	• Not costly for the government to provide	• It shifts the burden of training provision onto the employers • It might "distort" the procurement process in an unforeseen way

Note: Not all measures can be easily classified into these categories. Measures designed to nudge behaviour on the supply side often have repercussions on the demand side and the other way around.
Source: OECD (2017[5]), *Financial Incentives for Steering Education and Training*, https://dx.doi.org/10.1787/9789264272415-en.

While a number of different demand-side employer instruments in Luxembourg are available, as presented earlier in this chapter, which signals significant state support for employers currently, as with the assessment of individual instruments, a closer examination has highlighted areas for potential improvement. In practice, these improvements have tended to focus primarily on the Co-funding Programme with employers, given its central importance within the Luxembourg skills system to stimulate employer investment in training alongside the CIF.

First, in line with the global picture, most of the instruments offered are subsidy-based. This means a key focus of incentives is to change skills investment and training behaviour among employers by decreasing the costs of training for employers if they meet certain conditions, thus providing a financial incentive to take part. However, where there are limitations in how much schemes are targeted and/or ring-fenced, they have not been able to substantially shift divisions between high and low-training employers over time. This suggests a need to modify the schemes package of incentives more for different business communities. So, in the case of the co-financing scheme, the financial incentives are taken advantage of more by existing high-training employers. Hence, the measures offered are less likely to shift the training behaviour of low-training employers. This points to the risks of deadweight highlighted in Table 3.6, where a share of the funds is being deployed by those who would have trained anyway.

This is perhaps most evident in the higher rates of co-investment going to sectors that are already higher trainers seen earlier, such as finance and insurance and professional, scientific and technical activities, rather than lower training areas such as construction, accommodation and food services, and creative areas like the arts, entertainment and recreation.

Furthermore, looking at the latest data published in 2021 for 2018, while there are more favourable funding caps in the co-financing scheme to preserve more funds for smaller employers to train, many of whom will not have strong traditions of training,[16] this is restricted to only micro-businesses with nine employees or less. There is limited differentiation between small, medium and larger businesses (i.e. with ten employees and over). As a consequence, this is not translating into high levels of engagement with the co-financing scheme among smaller employers more generally (as outlined in the INFPC data earlier[17]) and is doing little to change their levels of training. So, for example, for micro-businesses (with 1-9 employees), training aid reaches only 3.2% of these smaller employers in the economy, although there is some variation across sectors. In contrast, the businesses with 250-999 employees in receipt of the funds represent 87.3% of larger employers in the Luxembourg economy. Furthermore, the recent cuts in the overall subsidy rate from 20% to 15% have aggravated the position of small businesses, as seen earlier. Indeed, the decrease in funds per employee has been greatest for those with 10-19 employees and has exceeded the overall average decline. As such, there is a need to adapt financial incentives for employers to strengthen incentives with low-training employers.

Second, once again, as for the individual incentives, most instruments are voluntary so that employers have discretion about whether or not to take part, and their engagement will be affected by levels of awareness and perceptions of value. This, therefore, places more of an onus on the effectiveness of communication activities, the mechanisms for employer engagement and promotion of the financial tools and business case for investment, and whether these are fit for purpose. Currently, participation in the scheme is dominated by previous, repeat applicants. So, for example, over 90% of applicants are repeat applicants for employers with over 250 employees. While the share of new applicants increases for smaller businesses, it still means that nearly two-thirds are repeat applicants for those businesses with fewer than 20 employees. This is a further indicator of the limits of the reach of the scheme and its ability to broaden take-up.

The OECD assessment and consultations with stakeholders have identified where there is potential to strengthen the current employer incentives to drive future improvements in business investment in skills and training in Luxembourg. The co-funding scheme was the primary area of focus given its importance to date in supporting employers' training within the skills system and concerns to prioritise improvements and contain development costs. A key intention has been that this can shape concrete recommendations for consideration by INFPC in managing the fund in the future.

Given the high concentration of government funding in the co-financing scheme, a significant focus has been on examining the potential for more targeting of the financial incentives, especially to support smaller employers to train. In light of the overall cuts in funding rates from 20% to 15% since 2017 and the disproportionate impact on smaller businesses, it was felt that there was a strong case for raising the state-funded financial incentives for employers with fewer than 20 employees to at least 20% of the cost of the investment in training in any operating year. Overall costs could then be contained for larger businesses at the current rate of 15%. It was noted that smaller employers cannot benefit from the economies of scale that larger businesses achieve and hence cover the administrative and management costs involved. This was felt to be a significant factor behind the low penetration of the fund among small businesses in the wider economy. Although it was recognised that such reforms would require legislative changes, they were thought to offer significant long-term benefits to make such a step worthwhile.

In addition, concerns were also raised around the complexity of administration and associated costs of submitting an application to the fund. It was reported that various phases of the process could act as a deterrent to submitting a full application and add to processing costs. The challenges were thought to be more considerable for smaller businesses without dedicated staff, resources and hence expertise internally, such as specialist human resources (HR) and finance teams to help with the management of the application and wider administration. As funds were not supplied through the scheme until after training was completed, this was thought to be an additional deterrent for smaller businesses needing to financially source and meet the extra costs upfront. It was reported that a few years ago, delays could be over two

years. While it was acknowledged that the INFPC was working to simplify and digitise the administrative process, which was welcomed, these developments were known to have a long lead time to delivery and with the first stages of implementation not expected until 2024, it was still felt that parallel improvements in the process and additional support for the smaller businesses would be necessary.

Schemes in other countries provided ideas on improvements that could be introduced within the Luxembourg co-funding scheme. One concrete suggestion involved breaking up the subsidy payments as is done in the scheme in Belgium (Box 3.9). This would involve providing 50% advance payment of the subsidy directly to the small and medium-sized enterprise (SME) upon submission of their training plans and 50% as a reimbursement upon completion of training plans. In addition, it was thought important to consider broader areas to provide extra financial support to smaller businesses, such as broadening the scope of eligibility for co-financing and including wider ancillary costs, such as the costs of completing documentation, developing internal training plans and assessing skills needs, etc.

Box 3.9. Relevant international example: Public training subsidies for employers

Belgium

The Adaptation Credit scheme in Belgium is used to financially support the specific training employers provide for their workers to keep their skills up to date. Employers receive public contributions to their training costs, i.e. to cover fees and other costs related to education and training. The credit adaptation is an hourly flat-rate financial intervention per worker signing the agreement. This is higher for SMEs – EUR 9 for SMEs (i.e. for companies with fewer than 250 employees and whose annual turnover does not exceed EUR 50 million or the annual balance sheet total does not exceed EUR 43 million). The subsidy is capped at EUR 80 000 per company per two-year period, within budgetary limits set annually. For SMEs, 50% of the grant is transferred directly to a company upon submission of training plans (advance payment) and 50% upon completion of training plans (reimbursement). SMEs in a development area receive higher funding. The Public Employment Service runs the scheme, but specialist external advisors are supplied for smaller employers to provide additional support and advice in developing their training plan and submitting their applications.

Source: Le Forem (2022[39]), *Crédit-Adaptation*, www.leforem.be/entreprises/aides-financieres-credit-adaptation.html; CEDEFOP (2022[40]), *Financing adult learning database: Adaptation credit*, www.cedefop.europa.eu/en/tools/financing-adult-learning-db/search/adaptation-credit.

In the context of concerns about the reach of the programme (i.e. only 10% of the economy on average) and a general lack of awareness among employers around the different incentives, stakeholders also had views on the need to revisit and improve the communication and promotion of the financial aids available. While it was acknowledged that information was freely available on a range of portals and public platforms, such as the Business Portal of the government site guichet.lu (https://guichet.public.lu/en/entreprises/financement-aides/aides-emploi-recrutement-formation/formation-professionnelle-continue/fpc-entreprise.html), INFPC's site (www.lifelong-learning.lu/Accueil/fr), and ADEM (https://adem.public.lu/en/employeurs/demander-aides-financieres.html), it was felt more could be done to more proactively draw attention to the range of support and facilitate take-up specifically on the practicalities and benefits of training. One key area for improvement was seen to be through extended face-to-face advice for smaller businesses. A key aspect of this related to what INFPC could generally do around promoting and raising awareness of the funds. This needed to extend beyond existing practices. These include regular communication activities, using multiple social media channels, a telephone helpline, and a general training programme for employers working with the House of Training's *"Co-financing of in-company training".* In particular, there was also interest in INFPC exploring the means to provide additional funds to offer more customised services. This might include enhancing specialist business

support for SMEs on training by sector, tailoring training to different industry needs and providing a more consistent offer across sectors (learning from what works in the future concerning moves to more customised support). Again, it was noted that schemes in other countries, such as Belgium, already provided such services.

With questions about how to improve business advice, this underlined the important role of professional chambers and the range of respected business associations and industry bodies that act within Luxembourg as key business brokers and intermediaries. Much potential is perceived for employer intermediaries to act as champions and distribution channels in the future for information and communicating messages about skills and training priorities to their members and respective communities, particularly with smaller employers who lack resources and time.

Given their different sector expertise and interests, they clearly have a key role to play in tailoring information and advice in a way that can be heard and enhance the value of training. They can also help navigate employers through the skills system to identify incentives that will be the most beneficial and offer wider services, such as undertaking skills diagnostics, developing training plans and finding relevant skills provision. This is particularly relevant for some of the harder-to-reach employers and non-trainers. Certainly, providing information and advice is already a key aspect of the work of the different chambers representing their industry members – the CC, the CdM and the LWK. See, for example, the CdM's tool for financial aid for businesses (www.yde.lu/aides/aides-aux-entreprises/aide/cofinancement-de-la-formation-continue-d-entreprise) and the CC's House of Entrepreneurship (www.houseofentrepreneurship.lu/nos-services/), which provides a range of support to smaller businesses. Information and advice also extend, however, to wider business associations, a number of whom have put their backing behind national skills initiatives with key implications for sectors to encourage greater business engagement, such as ADEM's Future Skills Initiative. These have included, for example, the FDA, the Institut de Formation Sectoriel du Bâtiment (IFSB), the UEL, the ABBL, the Association of the Luxembourg Fund Industry (ALFI) and the FEDIL.

That said, there is believed to be much benefit in extending the specialist training advisory service through more targeted funds and deepening its networking potential and reach. As the financial incentives are adapted and change over time, there is an opportunity for any enhanced advisory network to play a more active role in refining messaging around these tools and keeping businesses abreast of ongoing changes and their implications.

Furthermore, stakeholders also underlined the importance of evaluation and obtaining better data on the take-up and use of the financial incentive schemes. While it was acknowledged that the co-funding scheme did regularly produce information about the nature of take-up of the programme, such as the Public Cofinancing Brief – Formabref, produced by INFPC's Training Observatory (INFPC, 2021[41]), it was felt that more evaluative research was needed to improve the insights and knowledge about the impact and return on investment of any publicly funded training. This was seen as vital evidence that could strengthen the case for investment and hence promote the value of investing in training to the business community. In particular, this played a key role in underlining the need for co-investment and cost sharing between industry and the state. In addition, there was also the recognition that stronger evaluative information would help understand the effectiveness of any refinements of the scheme and, as such, would provide a better steer on what activities and support were working.

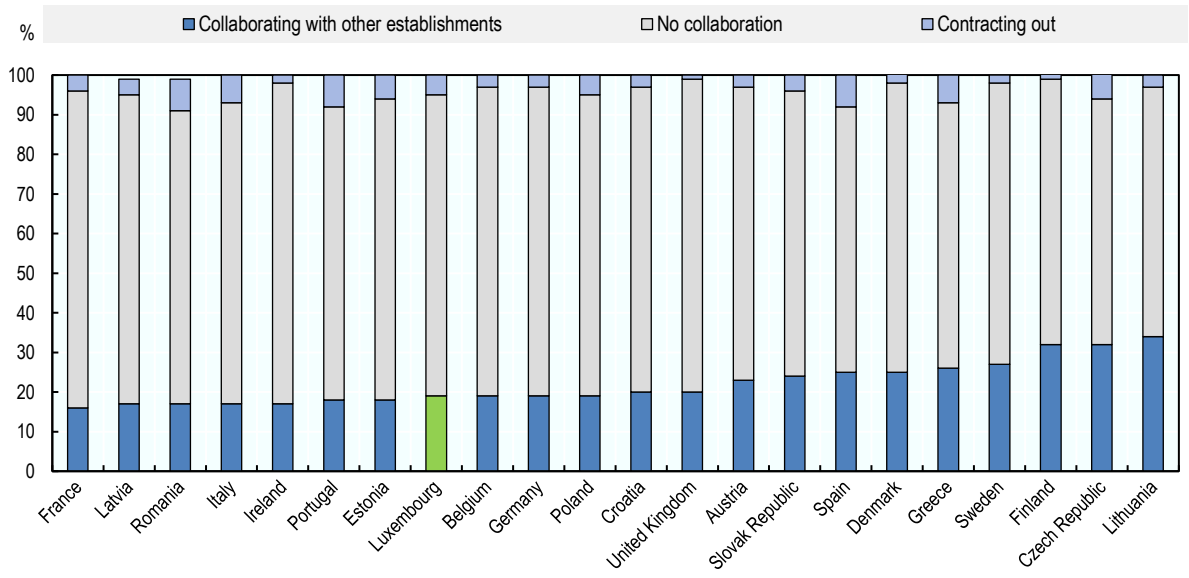
When looking beyond the current financial incentives for employers, there is a wider question as to whether the existing package of incentives could be strengthened to amplify and extend their effects in parts of the economy where there is persistent under-investment in skills within business communities, such as by sector. Indeed, the OECD assessment has found that most of the current employer-facing financial incentives deployed within Luxembourg focus on engagement with individual businesses; there are limited group applications. There is a chance that this may be constraining the full potential of incentives utilising collective policy measures (UKCES, 2009[37]). These seek to promote greater collaboration among

business communities over skills, where there are common interests, and as such depend on encouraging the conditions for co-funding, balancing risks and cost sharing between businesses, in communities with common skills needs, rather than competition and poaching. These include a range of collaborative policy levers, including financial incentive measures such as training funds (CEDEFOP, 2008[42]). These are usually co-designed and agreed upon among business networks, offering wider benefits for skills innovations, knowledge transfer and peer learning as cost-effectiveness. As such, there is an interest in how public-led incentives, such as the co-funding scheme, could work alongside interventions and support that are more industry-led.

The European Company Survey (ECS) has provided further information on the extent of collaboration among businesses more generally within the Luxembourg economy and where there is room for collaborative working to be enhanced (Figure 3.10). The survey has differentiated between collaborative relationships that are formal and contractual (such as outsourcing) and those that are collaborative regardless of their formal status. It can be seen that while in most European countries, the majority of businesses do not generally collaborate with other employers as part of their general business activity (i.e. from around 60% to 80% of employers), there are relatively higher proportions of businesses in Luxembourg that are not operating collaboratively (i.e. around 75%). As such, Luxembourg lags the leading countries, such as Finland, Lithuania and Sweden. Collaboration was seen most in traditional sectors, such as construction and manufacturing, and least in service areas, such as hospitality and financial services. Collaboration was also greater in larger establishments than smaller and headquarters and subsidiary sites rather than single establishments. The survey further supports the importance of national governments working to enhance business networking, as it shows that those establishments that collaborate with other establishments perform better.

One mechanism Luxembourg has deployed in the past to stimulate levels of investment in skills across broader business communities, which may offer potential moving forward as a means to tackle common barriers affecting lower training sectors through collaboration, is sector training funds. These have been evident in the finance, health and construction sectors, for example.

Figure 3.10. Share of businesses collaborating with other businesses, selected countries, 2019



Source: Eurofound and CEDEFOP (2019[43]), European Company Survey - Data visualisation, https://www.eurofound.europa.eu/surveys/data-visualisation/european-company-survey-data-visualisation.

StatLink https://stat.link/wdy45v

These collective measures are important demand-side, industry-led investment measures (UKCES, 2011[44]) aimed at enhancing the relevance of services provided to employers. They can be combined with government funding to create public-private partnerships but are often only privately funded. The core aim is collaboration and sharing the costs and benefits of engagement. By so doing, the objective is to raise the overall level of employer participation and, in turn, the platform of skills investment and performance across that community. In turn, this offers greater potential to extend the reach and support for businesses and their employees in scale across broader communities, especially working to enhance the involvement of smaller businesses where the costs of engagement are greater. This can reduce individual market failures, such as the risks of poaching, bounded rationality and short-termism and provides a means to enhance economies of scale for smaller businesses and hence tackle wider co-ordination failures.

Initially, a core focus of such initiatives has been enhancing the availability of technical and specialist training for businesses, but increasingly approaches are broadening. Indeed, collective funds are extending into wider areas of training in transversal, digital and management skills and broader business support covering issues such as the adoption of digital technology, innovations in organisational and work design and business practices such as recruitment, retention and deployment of staff (OECD, 2021[45]). Relatedly, different schemes are seeking to inspire business improvements, not only through practical and online tools, research and guidance, and workshops and events but supporting knowledge sharing, dissemination and networking based on best practice case study examples and links to knowledge experts and peers.

There are examples of such developments within Luxembourg through the establishment of a series of sector-specific training and competence centres, which have aimed to strengthen partnerships with businesses and wider partners in the skills system. These activities, too, have initially specialised in technical areas of training but are moving into broader areas of skills and business development and management. These include the House of Training, which incorporated the Banking Institute in 2015; the Widong Centre, established in 2002 as a training institute to support the healthcare sector; and the IFSB and Craft Competence Centres, which are serving the needs of the construction sector.

The strengths of such an approach can be illustrated through a closer look at the construction sector. This is of particular interest as it has a long history and has been able to evolve its approach over time, with the sector training fund first being created in 2002. Vitally, it was formed out of a collective agreement between the sectoral business federations and trade unions. Employers across the sector were then required to contribute financially based on a collective agreement, which mandated them to act and immediately broadened engagement. In return, employers receive subsidies towards their training costs, access to R&D (Research and Development) and specialist training in the sector. The IFSB first delivered this. Following its success, further competence centres for the wider parts of the industry have been created, resulting in a wide-ranging training catalogue serving the training needs of the sector as a whole. A key part of the process was establishing funding at a competitive level relative to other schemes – for example, setting the employer contributions at a rate of 0.5% of the payroll was at a lower rate than similar schemes in border countries, such as France (1%) and Belgium (1.5%). A key part of its effectiveness has been based on a transparent relationship between funding and the services and products that employers can buy, therefore creating the conditions for longer-term stability through industry investment. The amount of the contribution is calculated from the payroll certificates to aid management using information processed annually by the Joint Centre for Social Security (CC, 2018[46]).[18]

Given the core goal expressed by Luxembourg partners to create a more integrated skills system, and the need for sustainable partnership models based on a commitment from all parties (including shared investment), this reinforces the potential of extending collective incentives. As such, the OECD has explored through consultations with stakeholders, concrete areas where these sector-focused approaches might be revisited and extended, thus contributing to a more balanced and optimum skills investment picture across the economy moving forward, supported through co-investment. While these kinds of collaborative industry-focused schemes have evolved internationally as well as within Luxembourg in

response to varying economic developments and business needs, the schemes as a collective offer significant insights. This is not least around feasibility, key design features and what has the potential to work in the future within Luxembourg. Indeed, stakeholders referenced the sector initiatives within Luxembourg as examples of good practices on which to build and a need to learn from levy schemes for income generation. Wider insights can also be drawn from international research (see Table 3.7).

Table 3.7. Types of levy schemes in OECD countries

Levy scheme	Description
Revenue-generating schemes	These are the simplest form of levy. In essence, they collect funds by operating more like a tax. Generally, they are aimed more at raising funds for publicly provided training. However, because use of the funds is not usually clearly hypothecated with the business community contributing to the fund, visibility of value for money and relevance is limited. As such, their strengths as incentives to change employers' training behaviour is constrained.
Levy-exemption schemes or train-or-pay schemes	These usually impose a fee or tax on employers to fund training within a business community, which is reduced if the employer undertakes their own training activities. The reduction is usually proportionate to the scale of their own training investment. An alternative form of the scheme is the cost-reimbursement scheme, in which firms pay a compulsory levy but can claim expenses back for any training costs they incur annually.
Levy-grant schemes	These collect funds from business communities, which are then reallocated back to the contributing community. Due to this, the incentive for employers to invest in training is strong. This means not only can employers see ways to get their contributions back if they apply to the fund for resources, but they also can get grants larger than the levy they paid, where the allocations proportionate to needs. As such, the schemes can also help address labour market needs by making grants conditional on training in specific skills. One example of this model is the training funds in Italy.
Hybrid schemes	While there are three broad types of levy schemes – based on the principle of collecting funding contributions from many within a community and then pooling those to finance initiatives and services for that community – many countries often have hybrid schemes drawing on features of many (e.g. funds in Ireland, Hungary and Spain).

Source: OECD (2017[5]), *Financial Incentives for Steering Education and Training*, https://dx.doi.org/10.1787/9789264272415-en.

As a result, there is significant potential to test their feasibility moving forward, especially in new, growing parts of the economy, such as ICT and the digital sector, the creative industries, advanced manufacturing and wider parts of the green economy. As seen earlier, however, it will be key in designing any new training funds, to work with key partners within the institutional landscape. Crucially, this will need to include relevant business associations and sector bodies operating across key business communities. It will also need to link with respective unions and employee representative bodies (such as CSL and CHFEP). It will require working beyond the traditional mechanisms to reach new, highly innovative and evolving parts of the economy, especially where there are growing numbers of micro-businesses, freelancers and atypical modes of working, such as in the creative industries and the green economy.

In reviewing existing Luxembourg schemes and drawing insights from international programmes, it was felt that the levy-grant schemes, which have been used in Luxembourg before, offered the most potential as a collective incentive for income generation (examples of levy schemes from which there may be opportunities to learn are provided in Box 3.10). Such schemes have been shown to incentivise employer engagement where they are co-designed and implemented by the business communities themselves, as funds raised enable the design and delivery of industry-led and hence more relevant initiatives, products and services. That said, it is key that tools are clearly *hypothecated* so that the deployment of pooled funds is *visible* to employers and *valued*, which will help to ensure ongoing co-investment and employer engagement.

Wider research from the OECD (2017[5]) has shown how training funds can be effectively developed to serve different types of business communities – through sectors, supply chains and in different locations. Indeed, Italy[19] and Ireland provide specific illustrative examples. These studies highlight the benefits. Indeed, international funds offer significant potential to shape practices in businesses that have been

traditionally hard to reach. For example, they have brought significant benefits to smaller businesses by: sharing the cost of training and enhancing economies of scale; mitigating financial constraints by pooling resources and expertise; shaping collective more sector-relevant training solutions for sector-based communities; and facilitating access to technically trained employees who can move within the funded network, including during periods of training to cover staff absences – thus reducing the risks of poaching (OECD, 2017[5]). A further country example illustrating the policy measures that could be useful in addressing SME worker absence during training is provided by Denmark (Box 3.10).

Box 3.10. Relevant international examples: Designing effective training funds

Ireland

Ireland's National Training Fund (NTF) is financed largely through an employer levy. This is managed and allocated through an enterprise-led funding agency called Skillnet. Skillnet operates as a facilitator and funding agency for enterprise-led training networks across the country, providing half the total cost for network activities. This has created the Training Networks Programme (TNP) and hence played a key role in strengthening local skills ecosystems and learning networks with businesses. There are currently 65 Skillnet training networks active in Ireland as part of this programme. They are funded through a mixture of government funding and the NTF. The employer levy amounts to 0.9% of the reckonable earnings of employees in certain employment classes. The TNP is aimed at more effectively raising the engagement of employers in training by ensuring improved access to more industry-specific/transferable skills development and updating the knowledge of their workforce. Activities are organised in four pillars: partnerships to encourage training participation at the sector level; growing the skills base by giving workers access to lifelong learning opportunities; developing local learning responses; building training in enterprises by continuously identifying and promoting best practices and quality in all aspects of the design, delivery, evaluation and dissemination of enterprise training. In 2016, 14 263 firms received employee training through Skillnet-funded networks. A survey of employers suggested that half of the training undertaken through the Skillnet networks would probably not have happened without the programme and that most employers would not have found similar quality training.

Denmark

Denmark has a training subsidy scheme called the Arbejdsgivernes Uddannelsesbidrag (AUB). Under the Danish system, companies can receive a public subsidy for hiring a long-term unemployed person to replace an employee on training and benefit from public assistance in recruiting such replacement workers. The employment period should last from a minimum of 10 hours to a maximum of 26 weeks, and replacement workers can receive a short training before starting work. Employers receive a hiring subsidy for every hour an employee is in training, and an unemployed person is employed as a substitute. The replacement person is selected through the local job centre and receives a wage paid by the employer. Positive effects are normally registered also for unemployed/replacement workers, who often receive training (a few weeks or longer) in order to fill vacant jobs. The scheme potentially offers a solution to the problem of worker absence for purposes of training, addressing the need to replace the employee, as well as helping the employer meet the costs of the replacement. However, the success of this measure depends on close co-operation between a business and the job centre to find good skills matches for replacements.

Source: OECD (2020[47]), *Increasing Adult Learning Participation: Learning from Successful Reforms*, https://doi.org/10.1787/cf5d9c21-en; OECD (2021[45]), *Incentives for SMEs to Invest in Skills: Lessons from European Good Practices*, https://doi.org/10.1787/1eb16dc7-en.

Given the ongoing transformations in a dynamic future economy due to the effects of unexpected shocks and long-running megatrends, there is also value in using financial incentives to encourage workplace innovation to overcome market failures and to drive an appropriate upskilling response. These types of interventions aim to support the ongoing development, upskilling and use of the skills of the workforce over time to make better use of technology and innovations in ways of working attached to climate change and the need for low-carbon practices. This might benefit, therefore, from a closer connection to the Luxembourg growth clusters (outlined earlier). In this context, there is an interest in using financial incentives not only to support the costs of skills investment but to build wider management capacity and the culture for continuing business and skills development and learning attached to the future of work. The long-term intention is that this can improve working conditions and better drive ambitions around skills demand and investment.

The European Commission has promoted workplace innovation for many years (Pot, 2016[48]) (Box 3.11). A key policy objective has been to improve the management of businesses, in particular, through the adoption of more people-centred high-performance working practices (HPWPs) that enhance business performance, individual progression and working lives (Belt and Giles, 2009[49]). Workplace innovation programmes are gaining traction in many countries as an effective mechanism to respond to continuous developments around the future of work. The core aim is to encourage businesses in scale to support lifelong learning and invest in their workforces and to ensure that jobs are sufficiently redesigned and workers are effectively redeployed to use their skills effectively. Furthermore, drawing lessons from innovation theory, programmes are increasingly focusing on supporting workplace innovation through collaboration where business communities with common interests ("communities of practice") are encouraged to secure improvements through co-funding, cost sharing and knowledge exchange. This, in turn, can support the conditions for more sustainable management and skills improvements as a vital means to amplify adoption across business communities, extend the reach of programmes and hence, their positive impact.

Box 3.11. What is workplace innovation

Workplace Innovation (WI) has a long tradition within the European Commission as a basis to drive enhancements in business productivity, job quality, social inclusion, skills development and skills use in response to future of work developments. It has thus played a key role in stimulating skills demand and supply. WI aims to support companies to innovate around skills through connections to researchers and policy makers and more targeted research, knowledge transfer and experimental interventions (European Commission, 2014[50]). It, therefore, encompasses HPWPs aimed at securing better work organisation, job design, employee engagement and management practices. But there is also interest in strengthening wider connections to innovative ecosystems and wider knowledge experts from industry and professional areas, such as management, organisational design and skills. WI programmes are found in many countries at the national and regional levels, including in Belgium, France, Germany, Korea, the Netherlands, the Nordic countries and Singapore. The European Commission continues to support WI through project work and the European Workplace Innovation Network.

Source: European Commission (2022[51]), *Workplace innovation*, https://single-market-economy.ec.europa.eu/industry/strategy/innovation/workplace-innovation_en; Totterdill (2020[52]), *Are we really serious about securing enhanced productivity through our people?*, www.lancaster.ac.uk/media/lancaster-university/content-assets/documents/lums/work-foundation/reports/PeterTotterdillFinalspring2020forpublication.pdf.

The recent ECS, carried out jointly by the European Foundation for the Improvement of Living and Working Conditions (Eurofound) and CEDEFOP in 2019 (CEDEFOP, 2019[53]), aimed to explore the degree to which the businesses in different European countries were adopting HPWPs. Based on how the workplace practices combined, four groups of establishments were identified that differ in the extent to which they invest in employees and involve them in decision making, and hence are better performing as they seek to innovate and prepare for the future. According to this assessment, Luxembourg had a higher proportion of middle-performing businesses than high-performing, high-investment businesses (Figure 3.11). This was seen to be an important indicator of the degree to which businesses can proactively manage workplace change. As such, it has started to identify areas for development and business improvement.

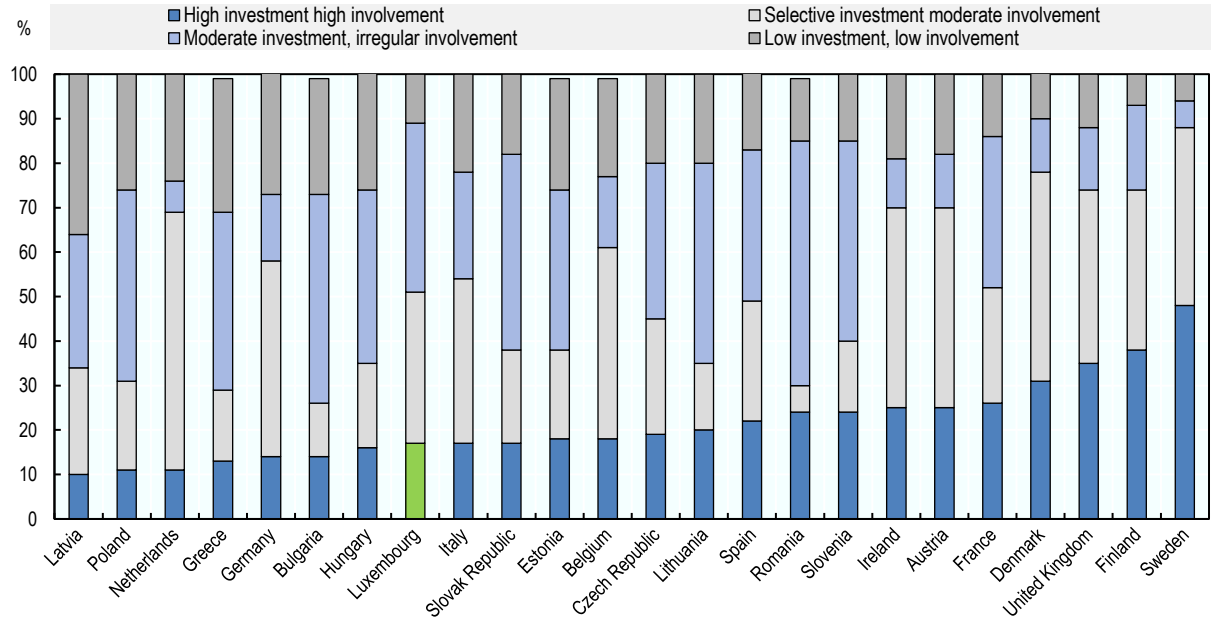
The OECD Skills Strategy project provides an opportunity to drive more ambitious, future-focused, demand-led activity and to enhance management practices among communities of businesses in Luxembourg in the future. This could also have the added benefit of building management capacity and a culture for learning more widely, extending the reach in particular to low-training businesses.

In that context, there is potential to develop and deploy a new Future Workplace Innovation and Upskilling Fund for this purpose. It could be aimed at encouraging employers working together in targeted business communities, whether defined by sectors (and hence Luxembourg growth clusters), supply chains and/or geographic locations, to come up with solutions that tackle specific and common workforce development problems they face in response to the future of work. As such, it provides a vital basis for communities of businesses with a common skills interest to work together to tackle workplace challenges restraining effective skills development and use and, by so doing, enhance both business and wider economic performance. The fund could support a range of research and development projects in skills, encouraging experimentation, piloting and new interventions. In particular, it could be designed to drive improvement by supporting knowledge exchange and sharing ideas about what works through co-operative coaching, mentoring and learning networks.

Again, there are international examples from which to learn and draw lessons about the initiatives that could be taken forward in Luxembourg. One example is the UK Futures Programme developed by the UK Commission for Employment and Skills (Box 3.12). This was a bottom-up initiative that aimed to provide employer-led solutions to overcome problems in skills development and skills use. Within this initiative, large companies were encouraged to collaborate with smaller companies and wider industry and technical experts to find skills solutions that were most relevant to their communities. By encouraging businesses and partners to work together and pool resources and expertise, a key aim was to build sustainable benefits for the community in the form of productivity benefits and more good work.

Such a fund could also offer insights for future public programmes to build on previous demand-side projects. One specific programme in Luxembourg that stakeholders suggested would be useful to build upon was the recently piloted Digital Skills Bridge Programme. This pilot project, launched by the MTEESS and ADEM, ran from May 2018 to November 2019. It tested the support services that would be the most beneficial to businesses to help them upskill and reskill their workforce to better adjust to (digital) transformations. The project provided a package of technical and financial support in the belief that any integrated package of support was beneficial to engagement and success. Financial aid was a central aspect of the engagement process.[20] The experience gained and lessons learned have been used by ADEM to orient its future service offer more widely, but currently, this does not yet extend to replicating the wider rollout of this type of more intensive scheme.

Figure 3.11. Share of employers invested and involved in adopting high-performance workplace practices, selected countries, 2019



Source: Eurofound and CEDEFOP (2019[43]), European Company Survey - Data visualisation, https://www.eurofound.europa.eu/surveys/data-visualisation/european-company-survey-data-visualisation.

StatLink https://stat.link/gmifo2

Box 3.12. Relevant international example: Sector-focused innovation in workforce development

United Kingdom

The Government of the United Kingdom established the UK Commission for Employment and Skills (UKCES) in 2008 to address concerns about low skills investment by employers. It was led by around 30 commissioners, including large and small employers across a wide range of sectors. From 2008 to 2017, it implemented different initiatives testing a range of financial and non-financial policy measures, co-designed with employers to enhance skills. One was the UK Futures Programme (UKFP). The UKFP operated from 2014 to 2016 and cost GBP 5 million. Its objective was to research, develop, pilot and scale innovative solutions to tackling current and emerging workforce development issues in key sectors. The programme encouraged a research and development (R&D) approach to skills development in the workplace, testing “what works” in addressing people problems. It sought to share the risks of inaction and to inspire experimentation and improvements at work. It also aimed to address market failures. To succeed, financial proposals from business had to match public funding. The competitions covered workplace themes such as: developing leadership and entrepreneurship; skills for innovation; improving progression pathways; management and leadership in networked organisations; incentivising moves to modern construction; and tackling inequality at work.

Source: Government of the United Kingdom (2014[54]), *UKCES investment funds*, www.gov.uk/government/collections/ukces-investment-funds.

Recommendations

- **2.8. Target more of the financial incentives within the existing co-financing scheme to support smaller employers to train**. While there are more favourable funding rates already in the co-financing scheme to incentivise more smaller employers, and these have raised funding rates per employee for employers with fewer than 20 employees up to 2017, SME participation rates and the reach of the scheme overall remains constrained. The goal should be to raise the state's targeted financial incentives for employers with fewer than 20 employees (currently only available for employers with 1-9 employees) to at least 20% of the cost of the investment in training in any operating year. The scope of eligibility for co-financing should be broadened by including ancillary costs, such as the costs related to developing training plans, skills assessments, etc. The current state advisory service could be extended by providing additional funds to INFPC to enhance specialist sector-focused business support for SMEs around fund administration and training, working with recognised industry associations (e.g. professional chambers) and drawing on expert advisers. It will be key to strengthen the engagement, messaging and promotional activities to raise smaller employers' awareness of the benefits, and value, of training as well as costs. The government (e.g. MENJE) should develop an evaluation programme to assess the impact of training investment over time to strengthen the case for training and future targeting of the scheme.
- **2.9. Design and pilot collaborative training incentives (such as sector training funds) for targeted networks of businesses to overcome market failures of under-investment in skills.** Sector funds could be funded through levy-exemption schemes and grant schemes and co-designed and implemented by the employer communities themselves through sector bodies. Sector funds can support more industry-relevant programmes and reallocate subsidies to provide free or low-cost training. Sector funds also enhance the sharing of good practices, build sector capacity and raise productivity. Luxembourg could draw on the experience of industry partners in construction and finance who have already co-designed sector funds financed by employers in their sectors. Sector fund pilots could be targeted to new growing parts of the economy such as the digital sector, the creative industries, healthcare and parts of the green economy (e.g. green construction, power).
- **2.10. Create with industry partners a Future Innovation Upskilling Fund for employers to support strategic and proactive workforce upskilling through workplace transformations.** The fund would aim to encourage employers, working collaboratively with experts, to come up with solutions that tackle specific business and workforce development problems, driving improvements through experimentation in adopting HPWPs that drive better skills development, upskilling and use. These practices include work organisation and job design (e.g. skills diagnostics and workforce analysis, workforce strategy development and planning, workforce job enrichment, job rotation, teamwork and mentoring) and management practices (e.g. training provision, succession and career planning, flexible work hours, employee participation). The government should manage the fund (e.g. MTEESS and the Ministry of Economy) and distribute the financial incentives to employer networks in priority sectors. This fund could build on the experiences of the previous publicly funded programme, the Digital Skills Bridge pilot programme.

Overview of recommendations

Guiding and incentivising skills choices is critical for individuals, firms and society in Luxembourg to adapt and thrive in a world of changing and rising skills demands. Two opportunities have been selected indicating where guidance and incentives of skills choices can be strengthened:

1. improving guidance services for adult learning
2. improving financial incentives for adult learning.

This chapter presented ten recommendations in order to seize these opportunities in the area of adult learning provision. A high-level overview of the recommendations can be found in Table 3.8. This selection is based on input from a literature review, desk research, discussions with the Luxembourg National Project Team, and broad engagement with a large variety of stakeholders, including two workshops in Luxembourg and various related meetings and group discussions.

Two recommendations have been selected that should be considered to have the highest priority based on potential impact, relevance in the current context in Luxembourg, as well as the overall support for implementation. To strengthen the guidance and incentives of skills choices, the OECD recommends that Luxembourg should:

- Develop an engagement strategy to more actively involve employer and employee representatives in guidance services (Recommendation 2.2)
- Target more of the financial incentives within the existing co-financing scheme to support smaller employers to train (Recommendation 2.8).

Table 3.8. High-level overview of recommendations to guide and incentivise skills choices in Luxembourg

Policy directions	Recommendations	Responsible parties
Opportunity 1: Improving guidance services for adult learning		
Evaluating and regularly updating the content of guidance services	2.1. Develop a regular research programme to keep the content of guidance relevant, drawing on evaluative research about the operation of the guidance service and nationally co-ordinated labour market information	• The MO through the Forum Orientation • Contributions of labour market information from ADEM, IGSS, employer and employee representatives
	2.2. Develop an engagement strategy to more actively involve employer and employee representatives in guidance services	• The MO through the Forum Orientation • Employer and employee representatives
Strengthening the co-ordination and delivery of guidance services	2.3. Revise Luxembourg's National Strategic Plan for career guidance to ensure its vision and strategic priorities are relevant for the future	• The MO through the Forum Orientation • Individual guidance partners
	2.4. Improve quality assurance of guidance services	• The MO through the Forum Orientation • Guidance experts/consultants • International network of guidance professionals
Widening access to guidance services	2.5. Customise guidance services to the needs of different vulnerable groups (e.g. the low-qualified, cross-border workers, the unemployed, older workers and those with health needs), combining awareness raising with tailored, enhanced advice to widen access	• The MO through the Forum Orientation • Additional actors competent for each vulnerable group, e.g. local community groups
Opportunity 2: Improving financial incentives for adult learning		
Targeting better financial incentives to individual needs	2.6. Enhance the customisation and targeting of current financial incentives to better support vulnerable groups	• MENJE, MTEESS (lead roles) • CIF consultative committee
	2.7. Regularly review and develop customised and targeted vouchers to stimulate the take-up of training for future skills in high demand	• MENJE, MTEESS • Relevant ministries, government agencies • Employer and employee representatives

Policy directions	Recommendations	Responsible parties
Targeting better financial incentives to employer needs	2.8. Target more of the financial incentives within the existing co-financing scheme to support smaller employers to train	• MENJE (lead role) • Co-funding consultative committee
	2.9. Design and pilot collaborative training incentives (such as sector training funds) for targeted networks of businesses to overcome market failures of under-investment in skills	• Employer and employee representatives • MENJE, MTEESS • Co-funding consultative committee • Relevant ministries, government agencies
	2.10. Create with industry partners a Future Innovation Upskilling Fund for employers to support strategic and proactive workforce upskilling through workplace transformations	• MENJE, MTEESS and MECO (lead roles) • Employer and employee representatives

Note: MO: Maison de l'orientation; ADEM: Agence pour le développement de l'emploi; IGSS: Inspection générale de la sécurité sociale; MENJE: ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse; MTEESS: ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire; CIF: Congé individuel de formation ; MECO: ministère de l'Économie.

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Notes

1 The MO's co-ordination services were formally backed in law in 2017.

2 At the time of writing, this was based at a more permanent address at the MENJE building at 29 Rue Aldringen.

3 For more details, see the Learning Portal at www.lifelong-learning.lu/Accueil/en. It is maintained by the INFPC. The Government's secure, interactive platform, "MyGuichet.lu", can be accessed at https://guichet.public.lu/en.html.

4 See, for example, the list of business associations listed on the Government portal at https://guichet.public.lu/en/organismes/organismes_entreprises.html.

5. See, for example, more information regarding employer support at the Learning Portal at www.lifelong-learning.lu/Detail/Article/Aides/Aides-formation-en-entreprise/en (maintained by the INFPC) and the business portal on guichet.lu. at https://guichet.public.lu/en/entreprises/financement-aides.html.

6. The changes in the Labour Code through new articles L. 542-1 reduced state aid for co-financing applications for the 2018 financial year (introductory deadline: 31 May 2019). See https://legilux.public.lu/eli/etat/leg/loi/2017/08/29/a798/jo.

7. For more information, see https://adem.public.lu/en/employeurs/futureskills/services-skillsbridge-adem.html.

8. These included, for example, Horesca, CdM, FEDIL and CC, to name a few.

9. The Pädagogische Hochschule Niederösterreich is a public institution for training, further education and teacher training.

10. For more information, see www.euroguidance.eu/guidance-system-in-luxembourg.

11. More information can be found at https://schoulfoire.lu.

12. For more information, see www.oecd.org/els/emp/individual-learning-accounts.pdf.

13. See https://legilux.public.lu/eli/etat/leg/code/education_nationale/20210606.

14. See https://legilux.public.lu/eli/etat/leg/code/travail/20211129.

15. See, for example, the industries supported by the government through the Luxembourg Cluster Programme at www.luxinnovation.lu/innovate-in-luxembourg/luxembourg-cluster-initiative/.

16. See, for example, patterns of employer investment in training from the CVTS Survey in Chapter 2.

17. For example, see INFPC (2021[15]).

18. More information is also available at CEDEFOP (2016[11]), CC (2018[46]) and on industry websites such as www.cdc-gtb.lu/cotisations/.

19. More information on the Italian scheme can be found at OECD (2019[55]).

20. For each participating company, MTEESS co-financed a maximum of 12 days of technical assistance for workforce analysis and planning; 1 day of personal coaching per participating employee; a maximum of 35% of the training expenses; and 90% of the salary expenses during the training period. For more information, see https://adem.public.lu/en/employeurs/futureskills/projet-pilote.html.

4 Attracting and retaining foreign talent to fill skills shortages in Luxembourg

Attracting and retaining foreign talent is increasingly important in determining countries' current and future prosperity. This chapter explains the importance of attracting and retaining foreign talent to fill skills shortages in Luxembourg and provides an overview of current practices and performance. It then explores two opportunities for attracting and retaining foreign talent to fill skills shortages in Luxembourg: facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs; and facilitating the integration of foreign talent and their families into Luxembourg's society and labour market.

The importance of attracting and retaining foreign talent to fill skills shortages

Attracting and retaining foreign talent is increasingly important in determining countries' current and future prosperity. In this chapter, and similarly as in Luxembourg's Roadmap for the development of a National Talent Attraction, Development and Retention Strategy (Ministry of the Economy, 2021[1]) (hereafter, "Talent Attraction Roadmap") adopted in July 2022 by the Government of Luxembourg (Conseil de gouvernement, 2022[2]), "foreign talent" is understood as all foreign individuals who do (or could, if hired from abroad) help fill shortages in Luxembourg's labour market, instead of restricting the term "talent" to individuals with a particular level of education.

In Luxembourg, attracting and retaining foreign talent has long been essential for the country's economic growth and competitiveness (STATEC, 2022[3]). The second smallest European Union (EU) member state by population, with a dynamic economy and a strongly growing labour market[1] (domestic employment grew by 33% between 2012 and 2022) (STATEC, 2022[3]), Luxembourg remains uniquely dependent on workers from outside its national borders. Some 74% of Luxembourg's labour force is made up of foreign workers residing inside or outside of Luxembourg (STATEC, 2022[3]). In addition, cross-border workers, who commute to Luxembourg daily from neighbouring regions in Belgium, France and Germany account for approximately 47% of Luxembourg's labour force (STATEC, 2022[3]).

The importance of attracting and retaining foreign talent in Luxembourg is further underscored by the recruitment difficulties reported by Luxembourg's employers, who struggle to find the needed candidate profiles within national borders (Chamber of Commerce, 2019[4]; Chamber of Skilled Trades and Crafts, 2019[5]). Evidence from sectoral studies developed by Luxembourg's national employment agency, (Agence pour le Développement de l'Emploi, ADEM), shows that shortages can be found in traditionally high-skilled occupations,[2] such as computer engineers or legal experts, as well as certain traditionally medium- and low-skilled occupations,[3] such as cooks, head waiters or craft workers (ADEM, 2022[6]) (see also Chapter 1). 40% of chief executive officers (CEOs) in Luxembourg identify the "(in)availability of key skills" as a potential threat to their organisations' growth prospects, ranking among the five most pressing business, economic, policy, social and environmental threats (PwC, 2021[7]) (see Chapter 1). At the same time, according to data from Luxembourg's General Inspectorate of Social Security (IGSS), less than half of foreign workers who started working and living in Luxembourg in 2015 were still residents in Luxembourg in 2020, on average, suggesting that retaining foreign talent to help fill skills shortages could be further improved.

Skills shortages imply costs for firms and the economy as a whole. Firms experiencing skills shortages may be constrained in their ability to innovate and adopt new technologies, thus reducing their productivity and overall contribution to economic performance (OECD, 2019[8]). If left unaddressed, skills shortages could pose an obstacle to full recovery from the COVID-19 pandemic and future economic growth, making it essential that Luxembourg can attract and retain the foreign talent it needs.

This chapter is structured as follows: the following section provides an overview of current practices facilitating the attraction and retention of foreign talent in Luxembourg. The next section assesses Luxembourg's performance in attracting and retaining foreign talent. The last section conducts a detailed assessment and provides tailored policy recommendations in two opportunities for attracting and retaining foreign talent to fill skills shortages: facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs; and facilitating the integration of foreign talent and their families into Luxembourg's society and labour market.

Overview and performance

Overview of Luxembourg's current practices for attracting and retaining foreign talent

No single institution in Luxembourg is solely responsible for facilitating the attraction and retention of foreign talent. Instead, the roles and responsibilities are divided across different ministries, departments and agencies (Table 4.1).

Table 4.1. Key governmental actors in Luxembourg facilitating the attraction and retention of foreign talent

Key actors and their respective areas of responsibility

Actors	Areas of responsibility
Ministry of Economy (MECO)	• Is responsible for the attraction of companies, investment and talent to Luxembourg • Co-ordinates an inter-ministerial committee tasked with developing and co-ordinating Luxembourg's National Talent Attraction, Development and Retention Strategy • Implements policies to make Luxembourg an attractive destination for migrants through managing financing schemes for innovation and promoting research and development (R&D) • Attracts start-ups and talent with new ideas, develops incubators and investment vehicles • Interfaces with all sectors and clusters in the Luxembourg business and research arena and beyond
Ministry of Foreign and European Affairs (MAEE)	• Handles requests concerning the free movement of persons, and third country nationals' (TCNs) entry, residence and work rights in Luxembourg • Finances scholarships for international students • Co-ordinates the design and implementation of Luxembourg's nation-branding strategy
Agence pour le développement de l'emploi (ADEM) (under the purview of the Ministry of Labour, Employment and the Social and Solidarity Economy, MTEESS)	• Supports labour migration management by carrying out the labour market test • Facilitates international job matching by publishing employers' declared vacancies on the European Employment Services (EURES) portal, running Luxembourg's one-stop-shop labour migration portal together with EURES Luxembourg, and participating in international job fairs on behalf of Luxembourg • Holds information events for spouses of foreign workers
Ministry of Higher Education and Research (MESR)	• Finances merit-based scholarship programmes to international students • Oversees the recognition of foreign higher education (HE) qualifications
Ministry of Finance (MFIN)	• Designs and implements Luxembourg's fiscal incentives aiming to attract and retain foreign talent • Oversees Luxembourg for Finance (LFF) and the Luxembourg Financial Industry Federation (PROFIL). LFF leads the attraction of talent to Luxembourg's financial centre and has launched the movetolux campaign (https://movetolux.com/)
Ministry of Family Affairs, Integration and the Greater Region (MFAMIGR)	• Oversees Luxembourg's integration policy • Serves as the point of contact for municipalities on all integration issues and offers support and financial aid for the implementation of the Communal Integration Plans
Ministry of Education, Children and Youth (MENJE)	• Facilitates the integration of children of foreign nationals into Luxembourg's education system • Oversees the recognition of foreign qualifications at the level of general or vocational secondary education.

Talent attraction is a key part of the mandates of MECO, as well as MTEESS (see more on MTEESS below). MECO is responsible for attracting investment to Luxembourg, financing innovation and research programmes and interlinking with private sector companies (Ministère de l'Économie, 2019[9]). Good access to talent is a key enabler for the better and stronger competitiveness of Luxembourg's economy, as well as for research and innovation activities. Improving the capacity to attract, retain and develop the skills of skilled workers at all educational levels, as well as researchers and innovators, is one of the key challenges for all business leaders. A key motivation for MECO is to mobilise all engaged stakeholders within a national co-ordination and collaboration effort. MECO also co-ordinated an inter-ministerial working group (referred to in this chapter as the "Talent Attraction Working Group"), tasked with developing

the Talent Attraction Roadmap, and now co-ordinates an inter-ministerial committee (referred to in this chapter as the "Talent Attraction Committee") tasked with drafting a common national strategy on talent attraction, development and retention, after making this a priority in the Government's Coalition Agreement 2018-2023 (Government of Luxembourg, 2018[10]) (see more below).

MAEE is responsible for Luxembourg's migration policy and regulating access to Luxembourg's territory and labour market. MAEE's Directorate of Immigration is in charge of handling requests concerning the free movement of persons (EU citizens and their family members) and concerning third country nationals' (TCNs) entry (i.e. non-EU citizens), residence and work rights in Luxembourg (i.e. applications for temporary authorisations to stay, residence/work permits, visas, etc.).

MAEE also has a network of diplomatic and consular bodies in several countries around the world, which are responsible for handling visa applications of TCNs, among other tasks. In countries where Luxembourg is not directly represented, the duties of the diplomatic or consular bodies, including visa processing, are assumed by other EU member states on Luxembourg's behalf (Ministry of Foreign and European Affairs, 2022[11]).

While all citizens of the European Union and their family members (who are also EU citizens) have the right to live and work in Luxembourg, TCNs who wish to stay in Luxembourg for more than 90 days to carry out a salaried activity need to apply to MAEE for a permit. Furthermore, each TCN wishing to carry out a salaried activity in Luxembourg needs to have signed an employment contract before coming to Luxembourg and submit a copy of the employment contract to the MAEE when requesting a permit to enter Luxembourg (Government of Luxembourg, 2018[12]).

MAEE is also in charge of processing all residence permit applications, including EU Blue Cards, which are work permits for highly skilled individuals (i.e. individuals with HE qualifications or with at least five years of professional experience of a level comparable to HE qualifications)[4] from third (i.e. non-EU) countries (European Commission, n.d.[13]). The EU Blue Card is Luxembourg's only residence permit for workers with a specific level of skills. In Luxembourg, TCNs become eligible for the EU Blue Card if they possess: 1) HE qualifications or at least five years of relevant professional experience of a level comparable to HE qualifications; 2) a job offer for highly qualified work (corresponding to International Standard Classification of Occupations [ISCO] Level 1 and 2) with remuneration at least equivalent to 1.5 times the amount of the Luxembourg average gross annual salary; or 3) a job offer with remuneration at least equivalent to 1.2 times of the Luxembourg average gross annual salary if they secured employment in a high-skilled profession identified to be in shortage (Government of Luxembourg, 2019[14]; European Commission, n.d.[13]). For applicants, the main difference from the permit for salaried activity is that the EU Blue Card can be issued without the usual labour market test (see below).

In addition, MAEE is involved in facilitating the attraction of international students to Luxembourg and co-ordinating Luxembourg nation-branding efforts abroad. MAEE has an agreement with the University of Luxembourg to finance scholarships for international students, available to exchange students from the University of Luxembourg's partner universities and to a limited number of regular students at the master's level (Ministry of the Economy, 2021[1]; EMN, 2018[15]). In addition, a dedicated unit at the MAEE is tasked with co-ordinating the design and implementation of Luxembourg's nation-branding strategy, aiming to raise international awareness about Luxembourg's assets (Government of Luxembourg, 2018[10]; 2013[16]).

MTEESS plays a role in facilitating foreign talent's access to Luxembourg's labour market via ADEM. In Luxembourg, ADEM is responsible for carrying out the labour market test. Labour market tests, a frequent component of labour migration management procedures, assess whether a particular job could be performed by a job seeker available in the national labour market before allowing the existing vacancy to be filled by a foreign worker (OECD, 2014[17]). In Luxembourg, each employer wishing to recruit a TCN has to first declare the vacancy to ADEM (unless the TCN is eligible for the EU Blue Card). All jobs must be posted with ADEM for three weeks before an employer can recruit a TCN unless the job and TCN meet

Blue Card requirements. (ADEM, 2020[18]). After three weeks without a relevant candidate, the employer has to request a certificate from ADEM allowing the recruitment of a TCN. The certificate is one of the mandatory documents that must be submitted to MAEE by the non-EU national worker to enter and work in Luxembourg (Government of Luxembourg, 2018[12]).

ADEM is also actively involved in facilitating international job matching. When declaring a vacancy to ADEM, employers may agree to have the job offer published on the online portal of the network of European Employment Services (EURES). The EURES portal allows EU nationals and non-EU residents with work rights to upload their curriculum vitaes (CVs) in a common database. Through national EURES advisors, EU employers can also publish their vacancies and receive candidate information from the national EURES advisor. ADEM also has a number of dedicated EURES advisors (EURES Luxembourg) who co-ordinate and provide EURES services in Luxembourg. Together with EURES Luxembourg, ADEM also runs Luxembourg's one-stop-shop online labour migration portal "Work in Luxembourg" (https://work-luxembourg.public.lu/en.html), represents Luxembourg in international job fairs and holds information events for spouses of foreign workers.

MESR plays a role in facilitating the attraction of international students to Luxembourg and the integration of highly qualified foreign workers into the labour market. Through "excellence grants", MESR finances scholarship programmes for international students with excellent academic credentials enrolled at the University of Luxembourg at the bachelor, master or PhD level (Ministry of the Economy, 2021[1]). MESR also finances a hardship fund for international students studying in Luxembourg and experiencing financial difficulties. Students can benefit from the excellence grants and hardship fund as long as they do not already receive state financial aid for higher education (AideFi). In addition, MESR is in charge of recognising higher academic qualifications obtained abroad (European Migration Network, 2019[19]).

The Ministry of Finance (MFIN) is responsible for designing and implementing Luxembourg's financial incentives to attract and retain foreign talent in Luxembourg. In 2014, MFIN introduced a special tax regime for highly qualified foreign employees (the "impatriate regime"). Under the impatriate regime, highly qualified foreign-born residents recruited to work in Luxembourg can be offered a range of tax-free financial contributions from their employers, covering selected recurring and non-recurring expenses (see Opportunity 1 for more details). With the 2021 budget revision, the impatriate regime has also allowed employers to grant eligible foreign employees a bonus that is exempted from tax up to 50% (Ministry of the Economy, 2021[1]). MFIN also oversees Luxembourg for Finance (LFF) and the Luxembourg Financial Industry Federation (Fédération des professionnels du secteur financier, PROFIL). LFF leads the attraction of talent to Luxembourg's financial centre and has recently launched a talent attraction campaign, "movetolux" (Luxembourg for Finance, 2022[20]).

MFAMIGR, through the Integration Department, established in early 2020, oversees Luxembourg's integration policy. MFAMIGR oversees the implementation of Luxembourg's two key integration programmes, the Welcome and Integration Contract (Contrat d'accueil et d'intégration, CAI) and the Accompanied Integration Pathway Programme (Parcours d'intégration accompagné, PIA). In addition to implementing CAI and PIA, MFAMIGR works closely with municipalities and offers a whole range of support services for the implementation of integration projects at the local level, in particular, support through the process of implementing the Pakt vum Zesummeliewen (Pact of Living Together), previously known as Communal Integration Plan (Plan communal integration, PCI) (OECD, 2021[21]). In Luxembourg, the municipality is the first point of reference for anyone arriving in the country or moving to another locality. With the Pakt vum Zesummeliewen, the municipality, the Association of Luxembourg Cities and Municipalities (Syndicat des villes et communes luxembourgeoises, SYVICOL) and MFAMIGR commit to working closely through a multi-year and dynamic process that focuses on communication, access to information and the participation of all people who live or work in the area of the municipality.

MENJE also plays a role in Luxembourg's integration efforts by facilitating the integration of children of foreign talent into the country's education system and the integration of foreign workers with lower than

HE qualifications into the labour market. MENJE's Department of Schooling for Foreign Children (Service de la scolarisation des enfants étrangers, SECAM) provides comprehensive assistance for foreign-born children who wish to continue their studies in Luxembourg at the post-primary level. To enrol in one of Luxembourg's public post-primary schools, foreign children have to go through SECAM's dedicated School Reception Unit for newly arrived pupils (Cellule d'accueil scolaire pour élèves nouveaux arrivants, CASNA), which assesses children's academic and linguistic knowledge. SECAM also co-ordinates Luxembourg's network of public international schools, offer of insertion classes for newly arrived foreign students, and requests for using the services of inter-cultural mediators, who assist newly arrived students and parents (Government of Luxembourg, 2021[22]). Through its Department for the Recognition of Diplomas, MENJE is also responsible for recognising academic or professional education qualifications obtained abroad at the level of general or vocational secondary education (Government of Luxembourg, 2021[23]). In recent years, MENJE also made efforts to extend the network of international schools and introduced cross-border apprenticeships in collaboration with France and Germany (see Chapter 3).

With roles and responsibilities divided across different ministries and departments, Luxembourg recognised that the governance of its foreign talent attraction, development and retention efforts could be improved. The government's Coalition Agreement 2018-2023 mentions in the "Competitiveness" section that in order to address the skill shortages across Luxembourg's sectors, Luxembourg needs a comprehensive national talent attraction, development and retention strategy (referred to in this chapter as the "Talent Attraction Strategy"). The Coalition Agreement states that the objectives of the strategy should be threefold: 1) attract foreign talent to bring the needed skills and professional experience to Luxembourg; 2) improve Luxembourg's capacity to retain those talents; and 3) develop the needed skills within Luxembourg going forward (Ministry of the Economy, 2021[1]). To support the development of the strategy, the government proposed to create an inter-ministerial working group tasked with co-ordinating the efforts of all relevant ministries and administrations involved in talent attraction and retention efforts (Government of Luxembourg, 2018[10]).

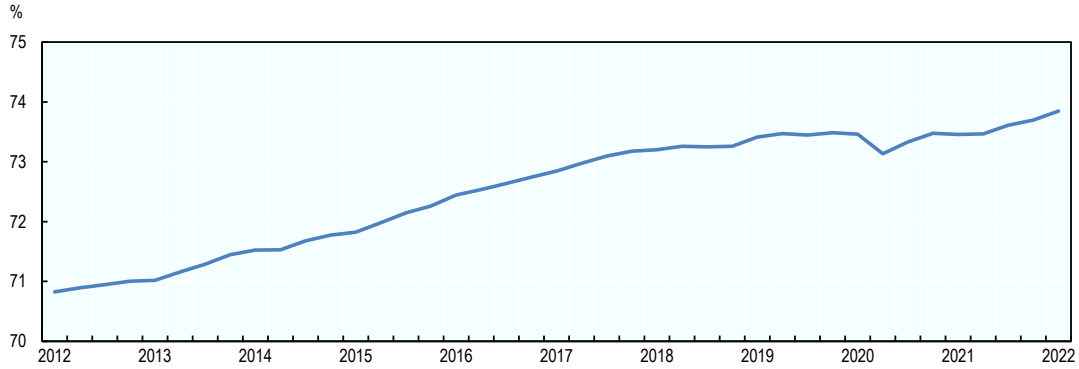
The inter-ministerial Talent Attraction Working Group was co-ordinated by the Ministry of Economy and included representatives of the Ministry of Finance; the Ministry of Education, Children and Youth; the Ministry of Higher Education and Research; the Ministry for Digitalisation; the Ministry of State (Department of the Media and Communications); the Ministry of Foreign and European Affairs (Directorate of Immigration); and the Ministry of Labour and Employment (represented by ADEM). The working group also included representatives from the Agency for the Development of the Financial Centre (Luxembourg for Finance), a public-private partnership between the Government of Luxembourg and the Luxembourg Financial Industry Federation seeking to connect international investors to the range of Luxembourg's financial services, as well as Luxembourg's National Innovation Agency (Luxinnovation), in charge of helping to attract international investment to Luxembourg. The working group was seeking input for its work from non-governmental stakeholders, in particular from the Chamber of Commerce (Chambre de Commerce, CC) and the Chamber of Skilled Trades and Crafts (Chambre des Métiers, CdM), as well as employee representatives (Chambre des salariés, CSL). The working group has developed the Talent Attraction Roadmap, which will form the basis for Luxembourg's national Talent Attraction Strategy (Ministry of the Economy, 2021[1]). To implement the Talent Attraction Strategy, the government council decided in July 2022 to put in place a permanent inter-ministerial Talent Attraction Committee under the joint responsibility of the Minister of Economy and the Minister of Labour and Employment in close dialogue with the Minister of Education, Children and Youth, which is chaired by MECO, and, as of Q4 2022, composed of the former members of the Talent Attraction Working Group.

Luxembourg's performance in attracting and retaining foreign talent

As foreshadowed above, Luxembourg has long depended on foreign talent to sustain its economic performance (Figure 4.1). In 2022, 74% of Luxembourg's labour force was foreign nationals residing in or outside Luxembourg (Figure 4.1). Between 2012 and 2022, the share of foreign workers

(i.e. non-Luxembourgish residents and cross-border workers) increased by approximately 3 percentage points (Figure 4.1).

Figure 4.1. Share of foreign workers in Luxembourg's labour force, 2012-22



Note: Foreign workers refers to non-Luxembourgish resident workers and cross-border workers.
Source: STATEC (2022[24]), Domestic payroll employment by citizenship and country of residence - seasonally adjusted data, https://lustat.statec.lu/vis?pg=0&df[ds]=release&df[id]=DF_B3005&df[ag]=LU1&df[vs]=1.0&pd=2012-Q1%2C2022-Q1&dq=Q.&ly[cl]=TIME_PERIOD&ly[rw]=RESIDENCE&lc=en&tm=seasonally%20adjusted%20&vw=tb.

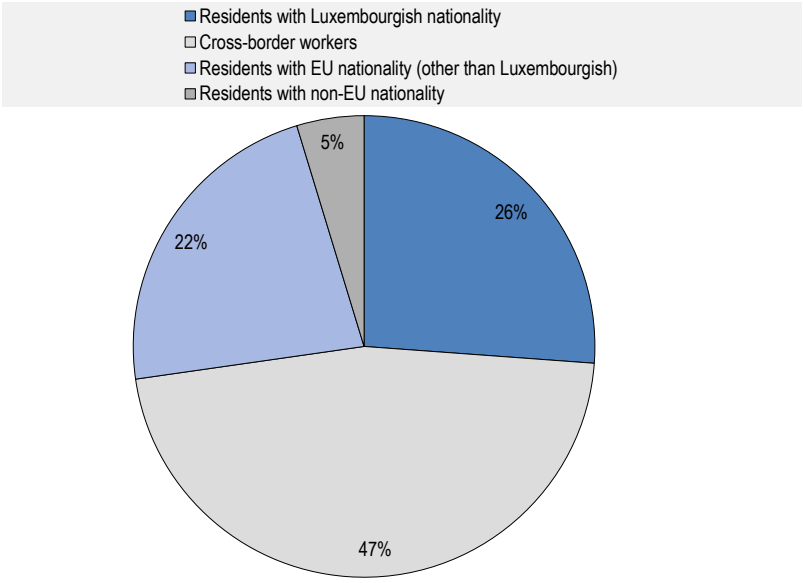
StatLink https://stat.link/wqspn8

Cross-border workers are the largest group of foreign workers, accounting for approximately 47% of Luxembourg's labour force (Figure 4.2). Residents with an EU nationality other than Luxembourgish make up 22% of the labour force (Figure 4.2), with French, Portuguese and Italian being the three most common nationalities among foreign newcomers to Luxembourg (OECD, 2021[25]). TCNs (i.e. residents with non-EU nationality) account for a much smaller share of Luxembourg's labour market, around 5% (Figure 4.2). However, TCNs have also been the fastest-growing group of foreign talent in Luxembourg's labour force, with their numbers more than doubling between 2012 and 2022 (Figure 4.3). With the population in the Greater Region already being significantly affected by population ageing, which is expected to further accelerate in the future (Greater Region population aged over 65 is expected to increase by almost 40% by 2050) (Durand, 2020[26]) (see Chapter 1), TCNs are likely to become an increasingly important source of foreign labour for Luxembourg in the future.

Luxembourg's high reliance on foreign talent manifests itself across all sectors. With the exception of public administration, a majority of employees in each of Luxembourg's ten largest sectors is made up of residents with non-Luxembourgish nationality and cross-border workers (Figure 4.4). For example, while 91% of the workforce in the construction sector is made up of residents with non-Luxembourgish nationality and cross-border workers (3% non-EU residents, 30% EU residents [other than Luxembourgish nationals], 58% cross-border workers), the same is true for more than 82% of the workforce in the finance and insurance sector (6% non-EU residents, 28% EU residents [other than Luxembourgish nationals], 48% cross-border workers) (Figure 4.4).

Luxembourg's labour market attracts more foreign-born workers into high-skilled occupations (ISCO groups 1-3) than medium- and low-skilled occupations (ISCO groups 4-8 and ISCO 9, respectively). Approximately 57% of foreign-born workers in Luxembourg (including cross-border workers) work in high-skilled occupations (i.e. managers, professionals, technicians and associate professionals) (Figure 4.5). Foreign-born resident EU and non-EU workers are more likely to be employed in high-skilled occupations than cross-border workers. While around 52% of cross-border workers in Luxembourg work in a high-skilled occupation, 63% of foreign-born resident workers with EU or non-EU nationality do the same. The share of foreign-born resident workers in high-skilled employment in Luxembourg is also high in international comparison and significantly above the OECD average (33%) (OECD/European Union, 2018[27]).

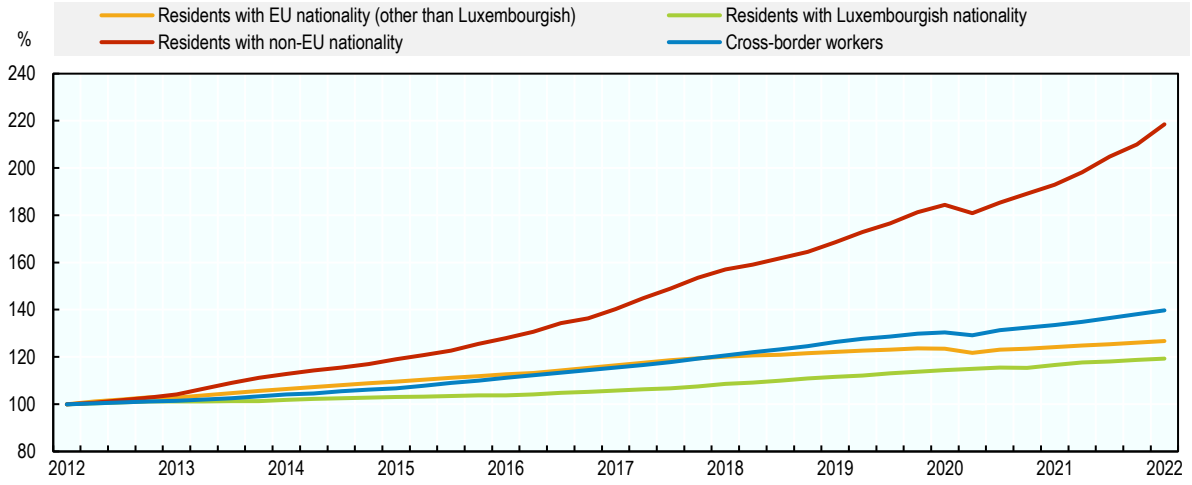
Figure 4.2. Share of workers in Luxembourg's labour force by nationality and place of residence, 2022



Source: STATEC (2022[24]), Domestic payroll employment by citizenship and country of residence - seasonally adjusted data, https://lustat.statec.lu/vis?pg=0&df[ds]=release&df[id]=DF_B3005&df[ag]=LU1&df[vs]=1.0&pd=2012-Q1%2C2022-Q1&dq=Q.&ly[cl]=TIME_PERIOD&ly[rw]=RESIDENCE&lc=en&tm=seasonally%20adjusted%20&vw=tb.

StatLink https://stat.link/73zaev

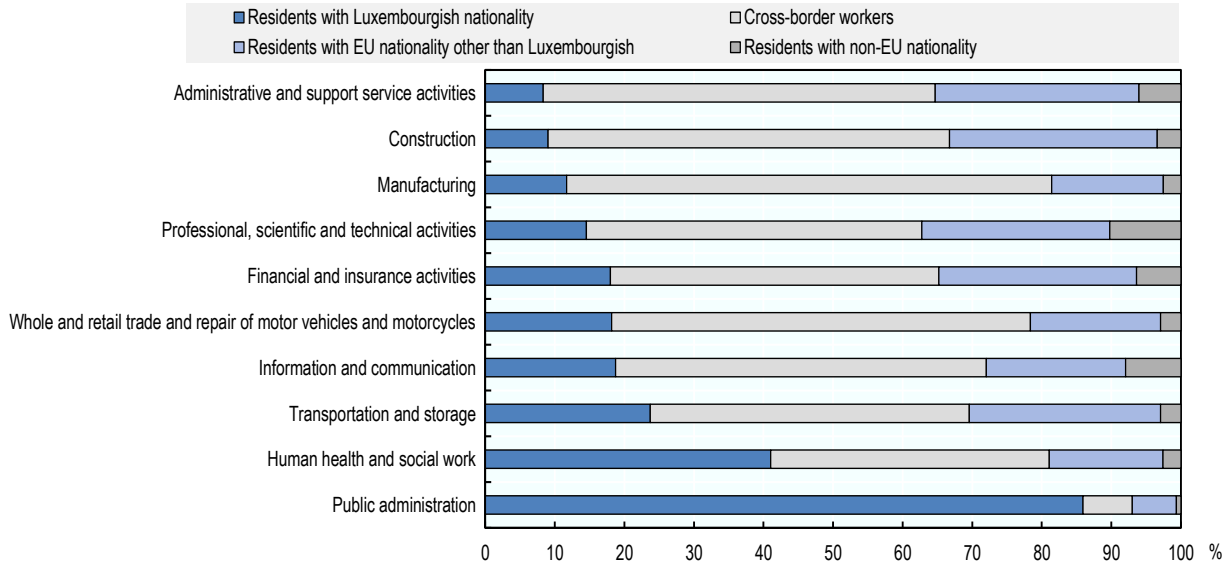
Figure 4.3. Percentage increase in the number of workers in Luxembourg's labour force by nationality and place of residence, 2012-22



Note: Index Q1 2012 = 100, s.a.
Source: STATEC (2022[24]), Domestic payroll employment by citizenship and country of residence - seasonally adjusted data, https://lustat.statec.lu/vis?pg=0&df[ds]=release&df[id]=DF_B3005&df[ag]=LU1&df[vs]=1.0&pd=2012-Q1%2C2022-Q1&dq=Q.&ly[cl]=TIME_PERIOD&ly[rw]=RESIDENCE&lc=en&tm=seasonally%20adjusted%20&vw=tb.

StatLink https://stat.link/15nyit

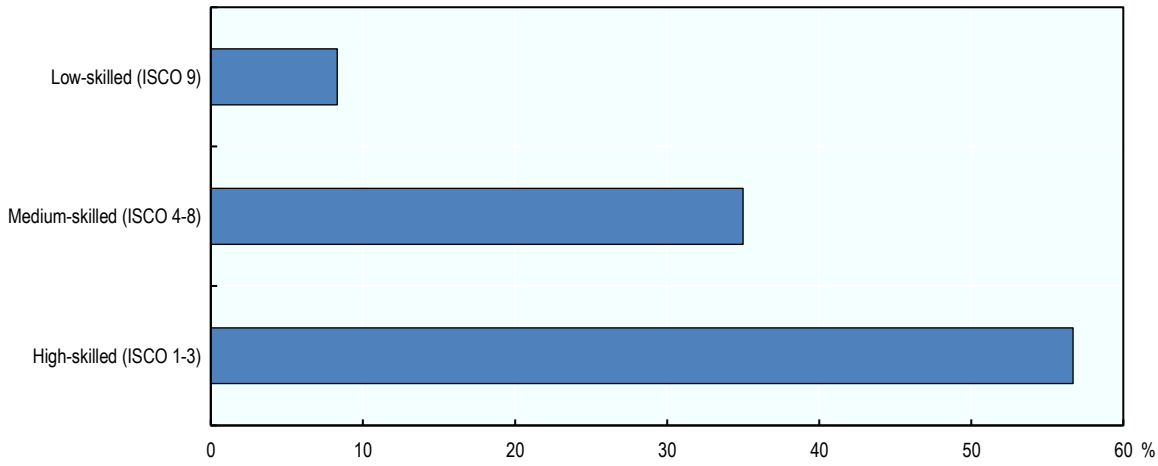
Figure 4.4. Share of employees by nationality and place of residence in Luxembourg's ten largest sectors, 2022



Note: Luxembourg's ten largest sectors refer to the ten sectors with the largest number of active employees. Employees with non-determined nationalities are excluded from the calculations.
Source: IGSS (2022[28]), General Inspection of Social Security - Open Data Portal [Inspection générale de la sécurité sociale - Portail Open Data], https://data.public.lu/fr/organizations/inspection-generale-de-la-securite-sociale/.

StatLink https://stat.link/5o0t2k

Figure 4.5. Foreign-born population in employment in Luxembourg (including cross-border workers) by occupation group, 2020



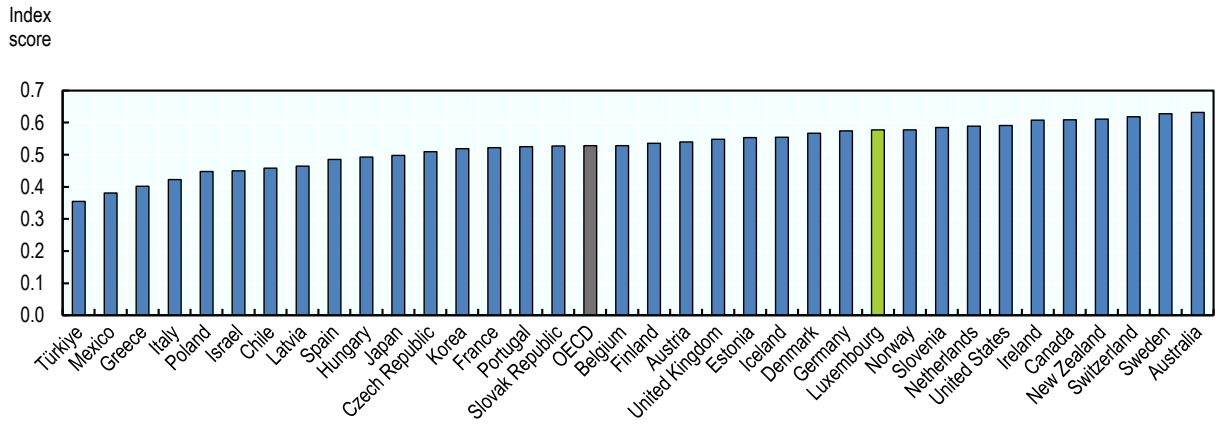
Source: OECD calculations based on the EU Labour Force Survey (EU-LFS) 2020, https://ec.europa.eu/eurostat/web/microdata/labour-force-survey.

StatLink https://stat.link/su7r06

The large number of foreign-born workers in Luxembourg's labour market suggests that Luxembourg is already an attractive destination for foreign talent. At the same time, the evidence above shows Luxembourg is also relatively successful in attracting foreign talent into the occupations suffering from some of the most pressing skills shortages (i.e. high-skilled occupations) (OECD, 2018[29]), which is positive. There are many "pull factors" that help Luxembourg attract foreign talent, including high quality of life, a safe living environment and attractive incomes (OECD, 2021[30]). Nonetheless, assessing Luxembourg's attractiveness internationally, there is opportunity for improvement, which should be leveraged to enable Luxembourg to remain competitive in the intensifying "global race for talent". The OECD Indicators of Talent Attractiveness (ITA), which assess and benchmark countries' attractiveness to foreign talent, show that while Luxembourg performs above the OECD average, it remains outside the top ten OECD countries most attractive to foreign talent with higher education (HE) qualifications, and lags top performers, such as Australia and Sweden (Figure 4.6).

Figure 4.6. OECD countries' overall attractiveness to foreign talent, 2019

OECD Indicators of Talent Attractiveness index scores for overall attractiveness calculated for workers with master's/PhD degrees

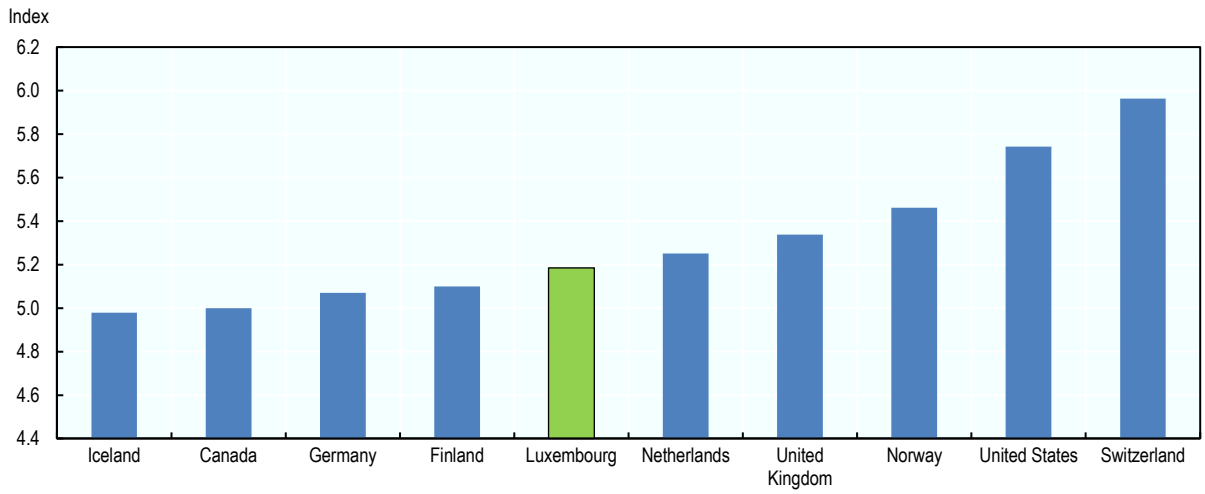


Note: The OECD Indicators of Talent Attractiveness score seven dimensions: quality of opportunities; income and tax; future prospects; family environment; skills environment; inclusiveness; and quality of life.
Source: Based on OECD (2019[31]), Talent Attractiveness: How does your country compare in each dimension?, www.oecd.org/migration/talent-attractiveness/how-does-your-country-compare-in-each-dimension.htm.

StatLink https://stat.link/qw5p21

While Luxembourg could further improve its capacity to attract foreign talent, retention will be equally important to ensure that Luxembourg can benefit from the skills and talent it receives from abroad in the long term. According to the World Economic Forum Global Competitiveness Index, capturing the views of business representatives across 140 countries, Luxembourg ranks among the top ten OECD performers in retaining talent (Figure 4.7). Yet, there is still room for improvement to catch up with top performers such as Switzerland and the United States. As mentioned above, IGSS data show that only around 44% of Luxembourg's residents with an EU nationality (other than Luxembourgish) who started working and living in Luxembourg in 2015 were still living in Luxembourg in 2020, while the figure stands at 42% for non-EU nationals residing in Luxembourg during the same period.

Figure 4.7. Top ten performers in the Global Competitiveness Index, 2018



Note: Capacity to retain talent ranges from 1 to 7, whereby 1 = worst, 7 = best. The values are based on findings from the World Economic Forum Executive Opinion Survey, capturing the views of business representatives across 140 countries on the following question: "Does your country retain talented people?"
Source: World Economic Forum (2018[32]), Global Competitiveness Report 2017-2018, http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data.

StatLink https://stat.link/xf8g51

To support the retention of foreign talent, integration into society and the labour market is essential (OECD, 2020[33]). While Luxembourg has developed targeted policy tools supporting the integration of foreign talent, their take-up could be improved. For example, Luxembourg's offer of language training (Luxembourgish, French, English, German and others) for foreign talent could be further strengthened, and integration support for spouses of foreign talent could be more ambitious and systematic. Finally, there is space to better facilitate the transition of former international students into Luxembourg's labour market (see more below).

Opportunities to improve attracting and retaining foreign talent to fill skills shortages

The extent to which Luxembourg succeeds in attracting and retaining foreign talent is a reflection of a range of individual, institutional and systemic factors. However, two key opportunities for improvement have been identified based on a literature review, desk analysis, and data and input from officials and stakeholders consulted in conducting this OECD Skills Strategy.

Luxembourg's main opportunities for improvement in the area of attracting and retaining foreign talent to fill skills shortages are:

1. facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs
2. facilitating the integration of foreign talent and their families into Luxembourg's society and labour market.

Opportunity 1: Facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs

In the context of the skills shortages felt across Luxembourg's economy (see this chapter's first section), it is essential that Luxembourg further improves its performance in recruiting foreign talent that can help meet the needs of its labour market. In addition, Luxembourg is but one of many countries affected by skills shortages. As other countries compete for foreign talent to meet their own skills needs in the context of the global race for talent (European Commission, 2021[34]; Miao, 2021[35]), it will be key for Luxembourg to step up and target its talent attraction efforts going forward.

Luxembourg could better facilitate the recruitment of foreign talent in line with its labour market needs by:

- improving the accessibility of Luxembourg to foreign talent
- supporting the affordability of living of foreign talent in Luxembourg
- strengthening the information provision for, and exchange between, foreign talent and Luxembourg's employers.

Improving the accessibility of Luxembourg to foreign talent

Accessibility of countries in terms of migration policies and admission procedures (e.g. visa and permit processing times) is an important factor in determining countries' overall attractiveness to foreign talent. While countries might be exceptionally attractive in terms of work and/or study opportunities, migration policies and admission practices may constrain migrants' access and can hence undermine the attractiveness of the host country in question (Tuccio, 2019[36]; Ortega and Peri, 2013[37]; OECD, 2019[38]).

As mentioned above, all EU citizens and their family members (who are also EU citizens) enjoy freedom of movement within the European Union, giving them the right to work and reside in Luxembourg. On the other hand, TCNs are subject to Luxembourg's immigration procedures, depending on the length and purpose of their stay.

TCNs who wish to come to Luxembourg to carry out a salaried activity for more than three months must have already signed an employment contract with an employer in Luxembourg and follow a number of steps before entering the country. First, TCNs have to apply for a temporary authorisation to stay at the MAEE. Second, after having obtained the temporary authorisation to stay, those subject to visa requirements also have to request a type D visa. The application for a temporary authorisation to stay must be submitted on paper either to the Immigration Directorate of the MAEE, a diplomatic or consular representation of Luxembourg, or a diplomatic or consular mission representing Luxembourg. The time required for a response from the MAEE after an application for a temporary authorisation to stay has been submitted can generally take up to four months (maximum threshold defined by MAEE) (Government of Luxembourg, 2018[12]), with some stakeholders reporting even longer waiting times. In the case of a favourable reply, the TCN receives a "temporary authorisation to stay" sent by post. If TCNs also require a visa, the visa processing times need to be added to the processing times required for the temporary authorisation to stay.

Many stakeholders consulted for this review pointed out that the length of the admission procedures complicates the recruitment processes for foreign talent and poses obstacles to employers waiting to hire a TCN in a shortage occupation.

International evidence on work permits shows that the maximum processing time in Luxembourg is higher than statutory times in most OECD countries for which data are available, where the median statutory limit is 90 days. Luxembourg could thus take steps to improve the efficiency of its immigration procedures and consider digitalising visa and permit application and processing. In Sweden, evidence shows that paper processing takes at least twice as long for work applications as online applications (OECD, 2011[39]). The digitalisation of application and processing procedures would also allow foreign talent to track the status

of their admission files as they are being processed. This would help further decrease the processing time and increase the transparency of Luxembourg's immigration procedures. When digitalising the visa and permit application and processing, Luxembourg should comply with data protection standards and consider making the procedures available in English, French and German. Luxembourg could take inspiration from Australia (Box 4.1), one of the front-runners in digitalised admission procedures. Nonetheless, digital procedures should not completely replace, but rather supplement, paper-based procedures to take into account the needs of applicants who might not have computer or broadband access.

Box 4.1. Relevant international example: Digitalised admission procedures

Online e-visa applications have become commonplace in several OECD countries, including Australia, Canada, Chile, New Zealand, the Republic of Türkiye and the United Kingdom.

Australia

Australia has been undertaking active efforts to support the digitalisation of admission procedures, including by launching an online visa applications platform in 2013. The platform, called ImmiAccount, can be used for submitting, tracking or modifying visa applications or for checking the details of existing visas. Nine years after the introduction of ImmiAccount, over 12 million users have created an account on the platform.

In addition, Australia also developed the Electronic Travel Authority (ETA) visa mobile application and the Visa Entitlement Verification Online (VEVO) system. The ETA visa mobile application can be used to apply for a short-term visa. The VEVO system enables visa holders to check their visa details and conditions and send proof of their visa conditions, where necessary (e.g. to employers, landlords, etc.), among others.

To further incentivise individuals to submit visa applications on line, Australia prioritised processing visa applications lodged on line in 2019/20. In addition, online submission of applications for certain types of visa (e.g. the Work and Holiday visas, with the exception of Chinese applicants) was made mandatory. The automated correspondence services to visa applications and holders have been continuously improved and assisted online visa submission services have been promoted.

As of 31 December 2021, 99% of all temporary visa applications and 93% of permanent visa applications were lodged electronically in Australia, compared to 78% (temporary visa applications) and 74% (permanent visa applications) in 2014-15.

Source: European Migration Network (2022[40]), *The use of digitalisation and artificial intelligence in migration management: Joint EMN-OECD Inform,* www.oecd.org/migration/mig/EMN-OECD-INFORM-FEB-2022-The-use-of-Digitalisation-and-AI-in-Migration-Management.pdf; Department of Home Affairs (2022[41]), *The Administration of the Immigration and Citizenship Programs;* https://immi.homeaffairs.gov.au/programs-subsite/files/administration-immigration-program-9th-edition.pdf; Department of Home Affairs (2022[42]), *Subclass 601 Electronic Travel Authority,* https://immi.homeaffairs.gov.au/visas/getting-a-visa/visa-listing/electronic-travel-authority-601#Eligibility; Department of Home Affairs (2019[43]), *Check visa details and conditions,* https://immi.homeaffairs.gov.au/visas/already-have-a-visa/check-visa-details-and-conditions/check-conditions-online.

Beyond improving the efficiency of admission procedures, the extent to which migration policy reflects labour market needs could also be strengthened. As mentioned above, before being able to hire a TCN, the employer must declare the vacancy to ADEM, which has three weeks to check whether a suitable candidate cannot be found on the national labour market (i.e. carry out a labour market test) (ADEM, 2020[18]). Exemption from the labour market test only exists if both the job and the TCN meet requirements for the EU Blue Card, a special residence permit for workers with HE qualifications from third countries (as discussed above).

However, as employers in Luxembourg are reporting shortages of talent (also) in occupations not necessarily requiring HE qualifications (Chamber of Commerce, 2019[4]; Chamber of Skilled Trades and Crafts, 2019[5]), Luxembourg could consider ways of better reflecting such concerns in migration policy. In the past, Luxembourg used to compile a list of shortage occupations, which ADEM and Luxembourg's employers drew up. The shortage occupation list was developed, drawing mainly on ADEM's vacancy and job seeker data, while employers were consulted to validate ADEM's findings. The shortage occupation list was used for purely informative purposes and to help ADEM better target the design of its training offer for job seekers. However, the shortage occupation list was never linked to migration policy and ceased being produced after a number of years.

Going forward, Luxembourg authorities could consider the introduction and regular updating of a shortage occupation list for talent admission purposes, covering occupations with an ISCO Level from 3 to 9 (ISCO Levels 1 and 2 being already covered by the list giving access to the EU Blue Card). As in most other countries, the preparation of this list should be based on a discussion between national authorities responsible for migration policies, sectoral representatives and ADEM (as the holder of the vacancy data). Having agreed on the occupations to be included on the list, Luxembourg could then consider exempting them from the labour market test. Germany followed a similar approach for a number of years before its labour migration policy was recently liberalised even further, and the labour market test was fully abolished (Box 4.2). While some stakeholders consulted during this review were in favour of fully abolishing the labour market test in Luxembourg too, following Germany's former approach of compiling a shortage list of occupations used as a basis for exemptions from the labour market test (Box 4.2) would provide a more gradual solution to reflecting labour market needs in Luxembourg's migration policy. Similarly, sector agreements in New Zealand serve to better facilitate the recruitment of temporary migrant workers in selected sectors (Box 4.2).

Box 4.2. Relevant international example: Shortage occupation lists for labour market test exemptions

Germany

Until 2020, the Federal Employment Agency, in co-operation with the Federal Ministry of Labour and Social Affairs, drew up the "positive list" based on an analysis carried out on skilled labour shortages. The positive list identified occupations where it was difficult to find skilled domestic workers.

The list was limited to professional categories for which no exemptions from the labour market test (such as exemptions granted on the basis of the EU Blue Card for highly educated workers) were possible in Germany. As long as the vocational qualifications of a job applicant in a shortage occupation were determined to be equivalent to German vocational qualifications, the Federal Employment Agency could issue approval without carrying out the usual priority examination (i.e. the labour market test).

In March 2020, the Skilled Immigration Act further liberalised the labour migration policy by abolishing the labour market test for all skilled workers (defined as workers possessing at least two years of vocational training or a similar qualification) with an employment contract, making the positive list redundant.

New Zealand

From 2022 onwards, selected sectors in New Zealand will be able to negotiate an agreement with the government to facilitate smoother recruitment of temporary migrant workers.

Sectors eligible for concluding these agreements include residential care, meat processing, dairy, forestry, road freight transport, tourism and hospitality, construction, and horticulture and viticulture. These sectors in New Zealand tend to hire large numbers of temporary migrant workers.

Sector agreements will facilitate hiring temporary migrant workers in specified occupations for the duration of the agreement by putting in place special procedures (e.g. exemptions from the labour market test, more generous visa terms, etc.). The agreements will also include plans for employing more New Zealanders in the respective sectors in order to reduce reliance on foreign temporary workers in the long term. Sector agreements will be valid for up to three years. Employers will not have the option to opt out of the sector agreements and use other schemes.

The introduction of sector agreements in New Zealand is a further step towards facilitating low-skilled migration via sector-based policies, which gradually gained prominence after the introduction of the "construction and infrastructure skill shortage list" after the 2010 Canterbury earthquake.

Source: Vollmer, M. (2015[44]), *Determining Labour Shortages and the Need for Labour Migration in Germany,* www.bamf.de/SharedDocs/Anlagen/EN/EMN/Studien/wp64-emn-bestimmung-fachkrafteenpaesse-und-bedarfe.pdf?__blob=publicationFile&v=15; Government of Germany (2021[45]), *How can I recruit a qualified professional from abroad? What employers needs to know* www.make-it-in-germany.com/fileadmin/MiiG_Unternehmen/PDFs/Unternehmen/Unterstuetzung_finden/BMWi_Leitfaden-fuer_Arbeitgeber_EN_02.2021.pdf; OECD (2020[46]), *International Migration Outlook 2020,* https://dx.doi.org/10.1787/ec98f531-en.

Beyond TCNs, it is important to highlight that cross-border workers also face significant challenges accessing Luxembourg and its labour market on a daily basis. As highlighted above, cross-border workers are a key source of Luxembourg's labour supply, constituting around 47% of the labour force (Figure 4.2). Moreover, while cross-border workers (with EU nationality) are not subject to immigration procedures, they are affected by significant mobility challenges hampering their daily commutes to Luxembourg and impacting their quality of life (Fick, Gonzales and Oliveira, 2022[47]).

The average time spent commuting by a cross-border worker working in Luxembourg amounts to almost 2 hours per day, compared to the average of 1.07 hours in the case of a French worker working in France, for example (LISER, 2018[48]). On the one hand, the longer commuting times of cross-border workers are a reflection of having to travel longer average distances to work compared to their compatriots, who both live and work in the country of origin (LISER, 2018[48]). On the other hand, the lengthy commuting times also reflect Luxembourg's mobility challenges, with over-saturated roads and traffic jams that (not only) cross-border workers are facing at peak hours. In turn, the mobility challenges have been significantly exacerbated by the increasing number of cross-border workers coming to work in Luxembourg in recent years (an increase of 40% between 2012 and 2022), most of whom travel to work by car (Thevenot, 2021[49]). In this context, it is not surprising that the time that car users in Luxembourg spend in traffic jams per year is the 15th highest in the world (Schulz, 2020[50]).

Luxembourg should consider ways of better facilitating cross-border workers' daily access to its labour market. Stakeholders consulted in the context of this project have agreed that improving access to Luxembourg's labour market for cross-border workers is one of the most important policy directions that should be considered to better attract the foreign talent Luxembourg needs. While it is important that Luxembourg's talent attraction strategies do not "drain" talent from the Greater Region, it is also critical that cross-border transport and, thereby, access to Luxembourg's labour market improves, which will have benefits for both cross-border and resident populations.

In this context, it is welcome that the Strategy for Sustainable Mobility (Modu 2.0), launched by the Ministry of Mobility and Public Works of Luxembourg in (2018[51]), introduced several measures to facilitate smoother cross-border transport. Among others, the measures include: the launch of an online car-pooling portal and an eponymous mobile application, "CoPilote"; support for the testing of autonomous cross-border vehicles; the development of "park and ride" spaces in Luxembourg's border regions; and a EUR 4 billion investment in the railway network between 2013 and 2025 (Ministry of Mobility and Public

Works, 2018[51]). Measures for improving cross-border transport, including via sustained support for greater uptake of car pooling (e.g. through the foreseen development of car-pooling motorway lanes (Ministry of Mobility and Public Works, 2020[52])) and further strengthening the railway network, should continue to feature high on Luxembourg's political agenda.

Luxembourg would also benefit from more numerous co-working spaces (i.e. work environments with shared facilities, services and tools designed to accommodate employees from different firms as well as self-employed individuals) (Hogarty, 2021[53]; Ward, 2020[54]) near its borders. Co-working spaces near the borders could help reduce commuting times for at least those cross-border workers for whom working from a co-working space could be feasible in practice. In light of this, it is positive that Luxembourg's Ministry of Energy and Spatial Planning is supportive of the idea of developing border co-working spaces, such as a co-working space currently being developed in Esch Belval, near the French border (LIST, 2019[55]; Bauldry, 2018[56]).

In addition, stakeholders consulted during this review agreed that employers could more frequently consider allowing greater flexibility in their employees' working hours. Luxembourg's legal framework makes it possible, under certain conditions, for workers in Luxembourg to work beyond the generally applicable limit of 8 hours a day (i.e. 40 hours a week), while it is possible to set lower limits via collective agreements (Government of Luxembourg, 2020[57]). Where feasible, greater flexibility in working hours would help spread the volumes of (not only) cross-border commuters more evenly across the day and/or week.

Finally, Luxembourg could also better facilitate cross-border teleworking to help reduce cross-border workers' commuting times and alleviate pressure on transport infrastructure. The fact that the uptake of teleworking skyrocketed during the COVID-19 crisis (OECD, 2021[58]) helped create significant momentum for considering an expansion of teleworking opportunities for workers in many countries on a more permanent basis. According to Luxembourg's Chamber of Employees (CSL), while 22% of employees in Luxembourg reported teleworking every day or several times a week in 2020, it was 28% in 2021 (CSL, 2020[59]; 2021[60]). However, cross-border workers in Luxembourg engage in teleworking less than Luxembourg's residents. In 2021, 31% of employees residing in Luxembourg teleworked every day or several times a week, while the same was true for 28% of cross-border workers from France, Belgium (23%) and Germany (22%) (CSL, 2021[60]). While these differences could be at least partly accounted for by the extent to which cross-border workers are employed in jobs conducive to teleworking, stakeholders in consultations underlined that the potential tax and social security implications associated with cross-border teleworking also pose important obstacles. Therefore, expanding cross-border teleworking possibilities will require active collaboration between the Government of Luxembourg and the neighbouring countries. In this context, Luxembourg can further build on a recent, successful collaboration with the French Government, whereby the Franco-Luxembourg Intergovernmental Commission agreed to raise the maximum number of days that French cross-border workers employed in Luxembourg can spend teleworking from France without tax implications from 29 to 34 days per year (Oget, 2021[61]).

Recommendations

- **3.1. Improve the efficiency of talent admission processes through greater digitalisation**. MAEE should initiate the process of digitalising application and processing procedures for visas, residence and stay permits while complying with national data protection standards. Greater digitalisation of admission processes would simplify, speed up and make the application filing process more transparent and reduce average processing times. Furthermore, when digitalising the visa and permit application and processing, Luxembourg could consider making the procedures available in English, French and German while paying particular attention to strong data protection standards.

- **3.2. Elaborate a list of shortage occupations for talent admission purposes, updated regularly.** The preparation of this list should be based on a discussion between national authorities responsible for migration policies, sectoral stakeholders and ADEM, as the latter collects and holds Luxembourg's vacancy data. MAEE should consider exempting the occupations placed on the shortage list from the labour market test to better account for labour market needs in labour migration policy.
- **3.3. Facilitate cross-border workers' daily access to Luxembourg's labour market by further facilitating cross-border transport, supporting the creation and use of co-working spaces near the borders, increasing the flexibility of working hours and expanding teleworking possibilities.** Measures for improving cross-border transport, including via sustained support for greater uptake of car pooling and further strengthening the railway network, should continue to feature high on Luxembourg's political agenda. Luxembourg should also further support the creation and use of co-working spaces near the borders. Where feasible, Luxembourg's employers could give greater consideration to allowing more flexible working hours for employees. In addition, the Government of Luxembourg should further build on the collaboration with neighbouring countries to expand teleworking possibilities for cross-border workers during and beyond the recovery from the COVID-19 pandemic.

Supporting the affordability of living of foreign talent in Luxembourg

Affordability of living is an important factor impacting the quality of life that countries can offer to residents and workers (OECD, 2021[30]). In the case of foreign talent, the affordability of living in a host country can influence the quality of life that the country could potentially offer, affecting, in turn, the overall attractiveness of the country as a potential emigration destination.

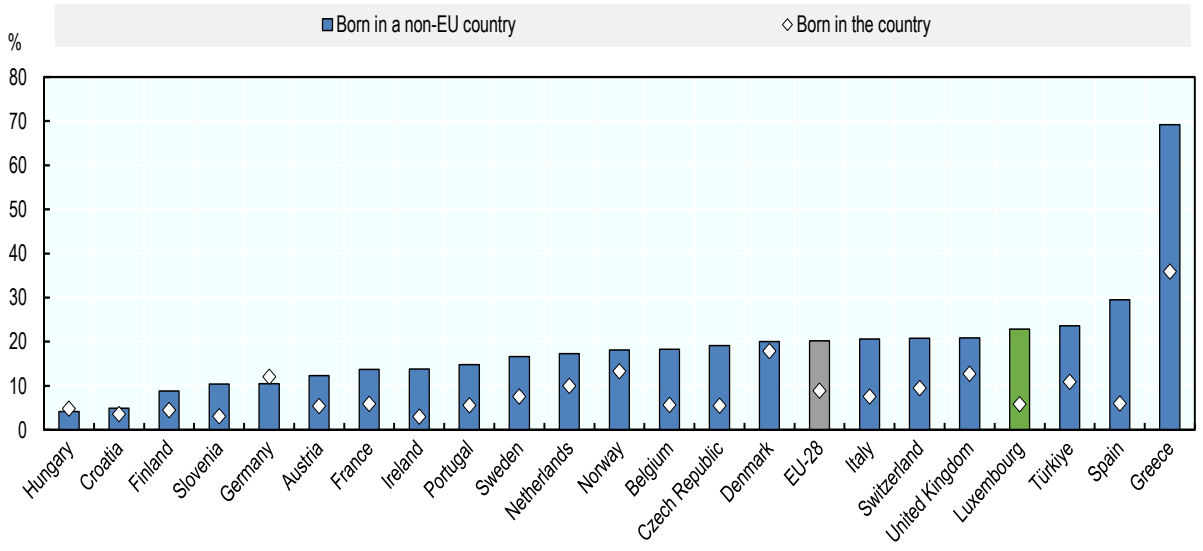
Affordability of living is a reflection of several determinants, including income. In Luxembourg, the household disposable income (gross, including social transfers in kind) is the second highest across OECD countries (OECD, 2022[62]), constituting an important pull factor for foreign talent. While incomes are relatively high in Luxembourg, price levels are also above the OECD average (OECD, 2022[63]). Housing prices, in particular, have been increasing rapidly since the start of 2019 for both new and existing dwellings. On average, prices have risen by 9.7% per year over the last five years, almost double the EU average of 4.9% (OECD, 2022[64]). The sharp increases in housing prices have worsened most household affordability ratios. Price-to-income ratios, which can be considered as a measure of the affordability of housing, are well above their long-term trends, suggesting that the affordability of housing in Luxembourg is deteriorating (OECD, 2022[64]). On an index combining cost of living and rents, Luxembourg is the fifth-most expensive country to live in, after Bermuda, Hong Kong (China), Singapore and Jersey (OECD, 2022[64]).

Evidence shows that foreign-born individuals, and especially those born in a non-EU country, are more impacted by the housing cost burden in Luxembourg than the native-born population. The housing cost burden rate for TCNs in Luxembourg is 17 percentage points higher than that of the native-born population, which is one of the largest differences in the European Union, second only to Spain and Greece (Figure 4.8).

Stakeholders have agreed that the high cost of housing is a key challenge that can discourage foreign talent from considering Luxembourg as a potential emigration destination. In a 2018 survey by Morgan Philips, 51% of employers in Luxembourg identified the cost of living, and especially housing, as one of the principal obstacles to Luxembourg's attractiveness in the eyes of foreign talent (HR ONE, 2018[65]).

As mentioned above, Luxembourg has financial incentives designed to attract foreign talent, which can also help shoulder the high costs of living in the country. Under the tax regime for highly qualified foreign-born resident workers (the impatriate regime) implemented by the MFIN, foreign-born highly qualified (i.e. possessing in-depth technical expertise or having at least five years of sector-specific experience) workers recruited to live and work in Luxembourg can be offered, under certain conditions, a range of direct, tax-free financial contributions from the employer. The contributions cover certain recurring as well as non-recurring expenses (Government of Luxembourg, 2021[66]). Among others, eligible expenses can include: the cost of moving to Luxembourg and furnishing a new home; the difference between the tax and housing burden in Luxembourg and the employee's home country; rent; utilities; or children's school fees, all subject to certain conditions. Employers can deduct such expenses for tax purposes (Government of Luxembourg, 2021[66]). With revisions to the impatriate regime in 2021, employees can now benefit from such advantages for eight years, replacing the previous limit of five years (LPG, 2020[67]).

Figure 4.8. Share of individuals aged 15-54 that spend over 40% of their household disposable income on rent, selected countries, 2019



Source: OECD (2021[21]), Le fonctionnement du système d'intégration et ses acteurs au Grand-Duché de Luxembourg, www.oecd.org/fr/migrations/Le-fonctionnement-du-systeme-dintegration-et-ses-acteurs-au-grand-duche-de-Luxembourg.pdf, based on Eurostat data.

StatLink https://stat.link/1miyp6

Favourable tax treatment of foreign newcomers is relatively unusual in OECD countries, except in countries with very high tax rates. In Luxembourg, while the tax wedge[5] is higher than the OECD average (OECD, 2021[68]), high living costs might also be considered an additional, strong disincentive for migration. Moreover, it should be acknowledged that favourable tax treatment can create equity concerns by treating workers with different skill levels differently, as well as foreign and domestic workers (OECD, 2011[69]).

In Luxembourg, stakeholder consultations revealed that the impatriate regime is not widely known. In addition, certain stakeholders suggested that the eligibility conditions for benefitting from the impatriate regime became too restrictive with its 2021 revision. To become eligible for the impatriate regime, the employee must now declare a gross annual income of at least EUR 100 000 (LPG, 2020[67]), a considerable increase from the previous minimum threshold of EUR 50 000. The revised minimum income threshold of the impatriate regime is set even higher than the minimum income threshold required for highly qualified workers to become eligible for the EU Blue Card (see above).

MFIN plans to carry out an evaluation of the impatriate regime, which is positive and should be supported. It is important that MFIN uses the evaluation to thoroughly assess the regime's impact (e.g. to see how the impact of the revised impatriate regime compares to the impact of the regime's previous version). MFIN should let adequate time pass before the evaluation is carried out to allow for the accurate capture of the regime's impacts, particularly as the early years of the implementation of the revised regime were disrupted by the COVID-19 pandemic.

Kleven et al. (2013[70]) showed that the preferential foreigner tax introduced in 1991 in Denmark doubled the number of highly paid foreigners relative to slightly less paid ineligible foreigners. However, in most other OECD countries with similar incentives, evidence of tax benefits affecting migrants' choices is weak. In Korea, fiscal incentives for highly skilled immigrants implemented in 2003 included tax-free allowances of up 40% of salary to cover cost of living, housing, home leave and education. In Italy, highly skilled foreign workers and returning Italians have benefited from a reduced income tax since 2015. The taxable income exemption increased from 50% to 70% in 2019, up to 90% for individuals settling in southern Italy. It lasts at least five years and up to ten years for those having purchased a residential real property (Rossi, 2019[71]).

It is not clear whether these personal tax incentives have influenced individuals' migration choices. In Korea, for instance, the number of highly skilled foreign workers remained relatively low; therefore, incentives started to be gradually withdrawn in 2019 (OECD, 2019[72]).

Based on the results of the evaluation, MFIN should implement appropriate revisions to the regime (i.e. changes to the range and nature of benefits to be granted, the timeframe during which they should be granted, as well as the eligibility conditions for the regime), in addition to determining the need for raising better awareness of the regime.

Independent of the results of the evaluation of the impatriate regime, Luxembourg should improve the general affordability of living in the country, which would especially benefit foreign talent not eligible for the impatriate regime under its current or previous minimum salary threshold. More specifically, Luxembourg should take active steps to expand its supply of affordable housing (OECD, 2019[8]; 2022[64]). Creating more abundant affordable housing opportunities might particularly facilitate the recruitment of foreign talent into medium-skilled shortage occupations and/or into more junior roles, where wages tend to be generally lower than in senior, high-skilled jobs. Going forward, attention should also be paid to the distribution of affordable dwellings across Luxembourg to avoid a too-high concentration of foreign-born individuals in certain areas, which is detrimental to social cohesion and their social integration (OECD, 2021[21]). Recent OECD Economic Surveys (OECD, 2019[8]; 2022[64]) provide recommendations for expanding the supply of affordable housing in Luxembourg, which is not discussed in greater detail here, so as to allow to zoom in onto skills-related issues.

Recommendation

- **3.4. Review the nature, range, and timeframe of, and eligibility conditions for, the benefits granted under the impatriate tax regime based on the results of the regime's planned evaluation**. MFIN should use the planned evaluation of the impatriate tax regime to thoroughly assess the regime's impact. Based on the results of the evaluation, MFIN should implement appropriate revisions to the regime (i.e. changes to the range and nature of incentives to be granted, the timeframe during which they should be granted, as well as the eligibility conditions for the regime), in addition to determining the need for raising better awareness of the regime. Independent of the outcomes of the evaluation of the impatriate regime, Luxembourg should take active steps to improve the general affordability of living in the country, especially by expanding the supply of affordable housing. The latter would especially benefit foreign talent not eligible for the impatriate regime under its current or previous minimum salary thresholds.

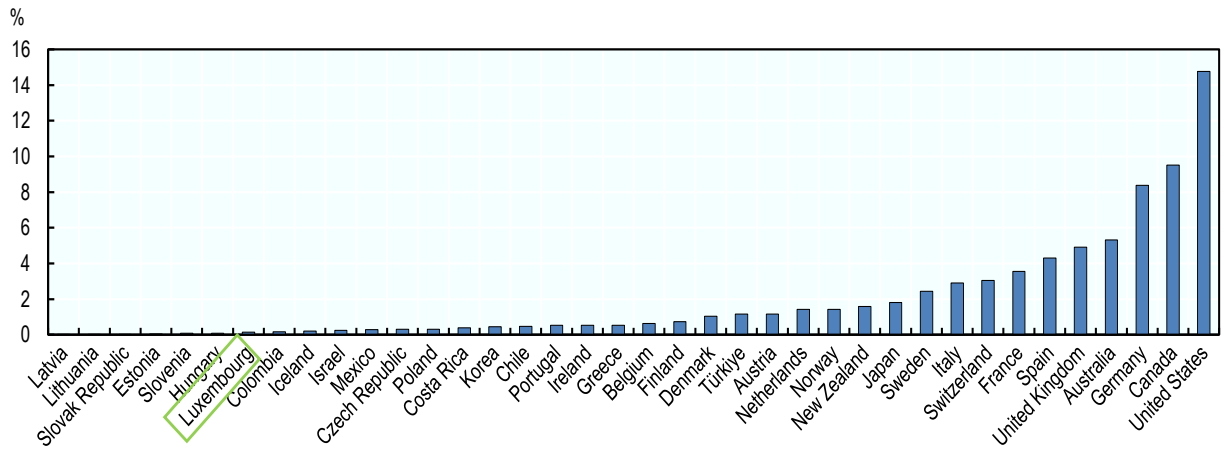
Strengthening the information provision for, and exchange between, foreign talent and Luxembourg's employers

Information barriers are one of the key potential obstacles that can hamper international recruitment processes (OECD, 2019[38]). First, in the process of choosing between potential emigration destinations, the image or "brand" that potential migrants associate with a specific country is one of the first factors that starts to shape their migration decisions (Nadeau and Olafsen, 2015[73]; Silvanto, Ryan and Mcnulty, 2015[74]). Second, the availability and transparency of information on employment opportunities, job-hunting strategies, working conditions, available migration schemes, as well as the rights associated with the migration status for the principal migrant and possible family members can significantly facilitate or hamper migration decisions of prospective foreign talent. In addition, the availability and transparency of information on the administrative and legal procedures involved in international recruitment, on the means and tools through which employers can find suitable foreign talent, as well as the abundance of opportunities for in-person information exchange with foreign talent, can significantly influence employers' decisions to engage (or not) in an international hiring process in the first place (OECD, 2019[38]).

Stakeholders consulted during this project highlighted that Luxembourg lacks a strong "nation brand". The general awareness of Luxembourg as an attractive emigration destination is low, while certain negative stereotypes (e.g. being a "tax haven") can still be associated with Luxembourg abroad. In the Gallup World Poll (2015-21), less than 1% of respondents with HE qualifications who wish to emigrate identified Luxembourg as their preferred emigration destination, significantly lagging leading countries such as the United States (15%) or Canada (9.5%) (Figure 4.9). Similarly, insufficient awareness of Luxembourg and its assets was identified as the primary obstacle to attracting foreign talent by 62% of employers in Luxembourg surveyed by Morgan Philips in 2018 (HR ONE, 2018[65]).

Figure 4.9. Preferred emigration destinations, Gallup World Poll, 2015-21

Share of respondents in the Gallup World Poll wishing to emigrate identifying their preferred destination



Note: Survey data cover the emigration preferences of individuals with higher education qualifications.
Source: Gallup World Poll (2015-21), updated from (OCDE, 2017[75]).

StatLink https://stat.link/vidrf7

As mentioned above, a dedicated unit (hereafter, the "nation-branding unit") at the MAEE is in charge of developing and implementing Luxembourg's nation-branding efforts. In 2013, an inter-ministerial and inter-institutional co-ordination committee, co-ordinated by the MAEE, was set up to devise and implement a coherent nation-branding strategy for Luxembourg, with the view of better promoting the country's assets abroad. Through a participatory process involving a wide array of Luxembourgish stakeholders, the committee defined three key values (reliability, dynamism and openness to others) that should be used to promote Luxembourg internationally. It also developed Luxembourg's visual identity and slogan ("Luxembourg – Let's Make it Happen") as well as a publicly accessible online communications toolbox (with audiovisual material, data, etc.) that can help inform all individual as well as institutional presentations of Luxembourg.

Considering that creating a recognisable nation brand is a long-term process, it is positive that Luxembourg adopted a new nation-branding Action Plan 2021-2025 to build on the previous nation-branding efforts. The Action Plan identifies key foreign countries in which Luxembourg should improve its reputation or increase general awareness based on "image studies" (i.e. surveys) conducted abroad. The Action Plan also foresees the implementation of several promising activities to strengthen the image of Luxembourg abroad through participation at international events (e.g. the World Expo) and targeted communication through social networks and in foreign media, among others. In addition, the Action Plan outlines concrete steps for monitoring Luxembourg's reputation abroad, including through the continuation of image studies in more foreign countries, monitoring foreign press and the open web, as well as the eventual design of an interactive dashboard based on indicators allowing for the systematic monitoring of Luxembourg's reputation abroad (Ministry of Foreign and European Affairs, 2021[76]).

While the importance of nation branding is acknowledged in Luxembourg's Talent Attraction Roadmap (Ministry of the Economy, 2021[1]), the collaboration and co-ordination between the nation-branding unit and Luxembourg's inter-ministerial Talent Attraction Committee could be improved. Greater collaboration and co-ordination would allow the members of the Talent Attraction Committee to learn about the level of awareness and nature of perceptions of Luxembourg in key foreign countries and how to accurately and consistently promote Luxembourg's key values in their own foreign talent attraction activities. In Lithuania, for example, nation-branding and talent attraction efforts are closely linked (Box 4.3).

Box 4.3. Relevant international example: Synergies between nation branding and foreign talent attraction efforts

Lithuania

In 2020, Lithuania adopted its nation-branding strategy, "Strategy for presenting Lithuania abroad 2020-2030". The strategy aims to provide a common basis for coherently and effectively promoting Lithuania through actions of governmental actors involved in four areas identified to be of national importance by the nation-branding strategy: economy, culture, governance and talent attraction.

The strategy was developed based on consultations with key strategic stakeholders and the public in the country, as well as awareness and reputation research conducted in eight foreign countries. The consultations in Lithuania helped to understand which strategic image of Lithuania presented abroad would ensure the strongest support from its citizens. The external research helped Lithuania better understand the level of awareness of Lithuania in their key source markets. Lithuania also developed a foreign media monitoring system to support the implementation of its nation-branding strategy. While preparing the strategy, together with co-operating institutions, Lithuania agreed on key source markets where general awareness of the country or favourability should be increased. Depending on the goals identified in each country, specific key performance indicators were formulated for each goal.

Promoting Lithuania as an attractive place to live and work among foreign talent is one of the strategy's four priorities. The strategy summarises the key barriers and enablers related to attracting talent to Lithuania in target foreign countries based on the awareness and reputation research. It also provides recommendations for improving the visibility and coherence of communication related to Lithuania's talent attraction efforts, which are led by Invest Lithuania (Lithuanian Investment Promotion Agency managed by the Ministry of the Economy and Innovation) through the Work in Lithuania initiative.

Source: City National Place (2021[77]), *Building a data-centric nation branding strategy,* www.citynationplace.com/building-a-data-centric-nation-branding-strategy; Government of Lithuania (2020[78]), *Strategy for presenting Lithuania abroad 2020-2030*, https://lrv.lt/uploads/main/meetings/docs/1788539_imp_900b199b13ce657f8cce6fe74337e6fc.pdf.

Luxembourg could also strengthen its information provision on working and living opportunities in Luxembourg available to foreign talent, as well as the information on international recruitment processes for employers. In this regard, it is positive that LFF recently launched the "movetolux" campaign, which focuses on talent attraction to the financial sector, as mentioned above (Luxembourg for Finance, 2022[20]).

The Work in Luxembourg portal (work-in-luxembourg.lu) aims to serve as a one-stop-shop portal with information for foreign talent potentially interested in working in Luxembourg. The Work in Luxembourg portal is run by EURES Luxembourg and was recently redesigned, with a new version launched at the start of 2022. The portal features selected information on upcoming online job-matching events held by EURES Luxembourg, which will be hosted on the portal. On the portal, foreign talent is invited to register and upload their CVs, which become visible to employers legally established in Luxembourg. When declaring their vacancies to ADEM, Luxembourg's employers can ask to have their vacancies published on the Work in Luxembourg portal free of charge. The vacancies become publicly visible on the portal. The portal also enables direct communication between registered users and employers via dedicated chat and video platforms. In addition, it includes information about Luxembourg's labour market, society, and immigration procedures, sourced from several websites of Luxembourg's government agencies (e.g. ADEM, MAEE, etc.) (ADEM and EURES Luxembourg, 2022[79]). Such a one-stop-shop portal, which is usually part of proactive talent attraction strategies in several OECD countries, is welcome.

However, the Work in Luxembourg portal provides little information for employers potentially interested in hiring foreign talent. Employers looking for information on international recruitment need to separately search for information on ADEM's general website or within ADEM's Guide for Private Sector Employers, which provides a brief overview. ADEM could consider integrating advice for employers on its website, following the example of Estonia (Box 4.4). Information should be regularly updated to reflect changes to relevant policies (e.g. immigration, tax, etc.) affecting international recruitment procedures. The Work in Luxembourg portal would also be ideally placed to promote the financial measures that employers can make use of to attract foreign talent (e.g. the impatriate regime), the awareness of which is low (see above). To further increase the Work in Luxembourg portal's potential and improve its visibility and reach, a link to the portal could be featured on the main website of the Grand Duchy of Luxembourg (luxembourg.lu). In Estonia, for example, the Work in Estonia portal is featured on Estonia's main website (estonia.ee), which synthesises the key information about living and working in the country.

Box 4.4. Relevant international example: One-stop-shop labour migration information portals

Estonia

In Estonia, the "Work in Estonia" portal provides tailored information to both prospective foreign employees and employers considering hiring foreign talent.

The portal includes abundant information and support for employers considering hiring an employee on the international market, including, among others: 1) information on tools and platforms for finding suitable foreign candidates; 2) an international hiring checklist; 3) an interactive roadmap for international recruitment; 4) a relocation guide and sample administrative documents in Estonian and English, which can be shared with newly hired foreign employees; and 5) information on foreign recruitment meet-ups where Estonian companies share experiences on the international recruitment process.

Source: Work in Estonia (2021[80]), *Services for employers,* www.workinestonia.com/for-employers/.

In addition, links between the Work in Luxembourg portal and websites run by sectoral stakeholders dedicated to foreign talent attraction in specific sectors should be established. For example, LFF has been running a communications campaign on living and working in Luxembourg to attract foreign talent into Luxembourg's financial sector and has a dedicated website section promoting working and living in Luxembourg, which could be featured on the Work in Luxembourg portal (Luxembourg for Finance, 2022[81]). Furthermore, the Talent Attraction Committee could be a suitable mechanism for taking stock of the existing online platforms in Luxembourg dedicated to attracting foreign talent, which could be included on the Work in Luxembourg portal.

Information on the available platforms through which Luxembourg's employers can find suitable foreign talent should be equally improved. As described above, all employers who submit their vacancies to ADEM are asked to post their job offers on the EURES portal (which is public, as opposed to ADEM's job board, which is only available to registered job seekers).

The Luxembourg section on the EURES portal is currently Luxembourg's most comprehensive job portal, with 5 544 open vacancies (as of 29 June 2022). In addition, employers in Luxembourg can independently consult the EURES portal to access a large pool of readily available candidates. As of November 2021, around 800 000 CVs were available on the EURES portal (European Commission, 2021[82]). All candidates on the EURES portal are EU citizens or EU residents and, therefore, not subject to immigration processes if hired by an employer in Luxembourg. However, stakeholders consulted during this review indicated that the general awareness of the EURES portal among employers in Luxembourg is low, and its potential is thus not fully utilised. Going forward, Luxembourg should actively raise awareness of the EURES portal among employers, including by featuring EURES and guidance for using it prominently on the Work in Luxembourg portal.

Luxembourg could also consider alternative methods beyond online information tools and strategies, and create opportunities for direct information exchange between foreign talent and employers. International job-matching events (e.g. international job fairs) provide in-person opportunities for promoting a host country's available job opportunities among foreign talent and help reduce the information barriers between employers and prospective foreign employees by allowing them to meet in person (OECD, 2019[38]).

Certain actors in Luxembourg are active in creating their own opportunities for direct information exchange with foreign talent. For example, in 2019, the Luxembourg House of Financial Technology (LHoFT) held recruitment fora, masterclasses and workshops across Europe where students, fintech companies and large financial institutions had the opportunity to meet and discuss recruitment opportunities in Luxembourg (LHoFT, 2019[83]). Some of Luxembourg's audit companies also hold recruitment days at universities abroad. In 2019, Luxembourg, represented by ADEM, also participated in international job fairs in Lisbon and Paris for the first time. However, the participation of Luxembourg's employers was weak. Moreover, ADEM reported difficulties persuading most employers to participate in international job fairs, despite the reported skills shortages across Luxembourg's sectors.

To improve employers' interest in in-person international job-matching opportunities, ADEM could consider targeting sector-specific international job fairs, which are likely to attract applicants with relevant, sector-specific education and/or professional background and/or interests, and invite a selection of employers representing the respective sectors to attend. In addition, organising targeted international job-matching programmes in Luxembourg could provide an alternative opportunity for improving the information provision and exchange between foreign talent and employers and could help bring foreign talent closer to employers in Luxembourg. In this context, Luxembourg could take inspiration from New Zealand's LookSee Wellington Programme (Box 4.5), developed to respond to pressing information and communication technology (ICT) shortages. The potential appeal of similar initiatives in Luxembourg could be tested with employers in the framework of an employer survey that ADEM is planning to carry out, in order to learn about the tools and practices that Luxembourg's employers would welcome the most in recruiting foreign talent to help fill skills shortages.

Box 4.5. Relevant international example: Targeted international job-matching events organised in the host country

New Zealand

In New Zealand, the Wellington Regional Economic Development Agency (WREDA) and the Wellington Council, in collaboration with the Haines Attract Recruitment Agency, created the LookSee Wellington Programme in 2017. Through the programme, funded by WREDA and the Wellington Council, meetings with prospective employers with roles matching a candidate's skills were arranged, and flights and accommodations were covered.

In its first year, the programme received 48 000 applications from all over the world, which were pre-screened to select 1 000 candidates for consideration by registered Wellington employers. Employers then nominated the applicants they wanted to interview for mid- to senior-level positions in ICT-related roles. Out of the 100 selected candidates, the majority were offered and accepted job opportunities by Wellington's employers.

In 2019, the second round – and the last round before the outbreak of the COVID-19 pandemic – of the LookSee programme was launched. This time, LookSee Wellington was rebranded LookSee Tech and expanded nationwide. In comparison to LookSee Wellington, LookSee Tech was designed on a rolling basis, with up to 100 pre-selected candidates invited for a week of pre-arranged job interviews and cultural activities in New Zealand every month. The candidates were pre-selected by drawing on the database developed during the implementation of LookSee Wellington. While LookSee Tech did not cover participants' flights and accommodation costs, individuals hired through the programme each received a reimbursement of USD 1 000. LookSee Tech was funded and implemented by Haines Attract and New Zealand's information technology (IT) recruitment provider, Absolute IT.

Source: Winter, C. (2017[84]), *First LookSee Wellington offers accepted, more to come, WREDA says,* www.stuff.co.nz/business/94290232/first-looksee-wellington-offers-accepted-more-to-come-wreda-says; Wright, H. (2019[85]), *LookSee 2.0 targets tech skills shortages - junket excluded,* http://istart.co.nz/nz-news-items/looksee-targets-nz-tech-skills-shortage/.

Finally, information provision for, and exchange between, foreign talent and Luxembourg's employers (as well as Luxembourg's other foreign talent attraction efforts) would benefit from better co-ordinated governance arrangements, as highlighted by stakeholders consulted in this project. Developing strong co-ordination and collaboration links among the different public authorities as well as the main stakeholders from business and employee associations is key. In this context, the establishment of the inter-ministerial Talent Attraction Committee constitutes a step in the right direction. It is positive that the Talent Attraction Committee has been awarded a permanent status, and is tasked with co-ordinating the different talent attraction, development and retention efforts in Luxembourg (starting with overseeing the implementation of the Talent Attraction Strategy).

Recommendations

- **3.5. Strengthen synergies between nation branding and foreign talent attraction strategies.** Interaction between Luxembourg's nation-branding unit at the Ministry of Foreign and European Affairs (MAEE), and the inter-ministerial Talent Attraction Committee, could be improved. Closer involvement of representatives of the nation-branding unit in the work of the Talent Attraction Committee would, among others, allow the Talent Attraction Committee to learn more about the level of awareness and nature of perceptions of Luxembourg in key foreign countries, and about how to accurately and consistently promote Luxembourg's key values in talent attraction activities aimed at foreign audiences (e.g. economic missions, international job fairs, etc.). The nation-branding unit could also by these means better integrate talent-related aspects in international promotion activities.
- **3.6. Expand the provision of information on international job-matching processes and opportunities by further improving the Work in Luxembourg portal, and by raising awareness of the EURES portal**. Information for employers, which could facilitate international recruitment (e.g. on migration regulations, foreign employee on-boarding and integration, available financial support measures for hiring foreign talent, etc.) could be integrated on the Work in Luxembourg one-stop-shop portal (work-in-luxembourg.lu/fr/). To improve visibility and outreach, consideration could also be given to prominently featuring the portal on the main website of the Grand Duchy of Luxembourg (luxembourg.lu). In addition, links between the Work in Luxembourg portal and websites run by sectoral stakeholders dedicated to foreign talent attraction to specific sectors should be established. ADEM should also actively raise awareness of the EURES portal among employers. ADEM could actively encourage employers to make use of the EURES portal to find suitable foreign candidates during job days and other employer events, as well as in the context of the ADEM/Union des Entreprises Luxembourgeoises (UEL) partnership. EURES, and guidance for using it, could also be featured prominently in a separate section on the Work in Luxembourg portal.
- **3.7. Support opportunities for direct information exchange between foreign talent and employers by participating in targeted international job fairs and by considering the organisation of international job-matching programmes.** Luxembourg's participation in targeted international job fairs should be supported in order to encourage employers from the respective sectors to participate. A list of reputable sector-specific international job fairs could be established and regularly updated. To help bring foreign talent closer to employers in Luxembourg, organisation of targeted international job-matching programmes (such as in New Zealand [see Box 4.5]) within Luxembourg could also be considered. The potential appeal of similar initiatives in Luxembourg could be tested with employers in the framework of an employer survey that ADEM is planning to carry out, in order to learn about the tools and practices that Luxembourg's employers would welcome the most in recruiting foreign talent to help fill skills shortages.

Opportunity 2: Facilitating the integration of foreign talent and their families into Luxembourg's society and labour market

As the impacts of global megatrends, combined with the rapid growth of Luxembourg's economy, contribute to the exacerbation of skills shortages in Luxembourg's labour market, designing effective policies for attracting foreign talent is essential. As highlighted above, the importance of well-designed and proactive talent attraction efforts is further magnified in the context of the intensifying global race for talent. However, all policies seeking to attract foreign talent must go hand in hand with sustained efforts aimed at

retaining foreign talent in order to reap the full benefits of the contributions that foreign talent can make to Luxembourg's economy and society.

Luxembourg can better facilitate the integration of foreign talent and their families into society and labour market by:

- supporting the integration of foreign talent into Luxembourg's society
- facilitating the integration of foreign talent's spouses into Luxembourg's labour market and society
- facilitating the transition of former international students into Luxembourg's labour market.

Supporting the integration of foreign talent into Luxembourg's society

Effective social and cultural integration is key for the retention of foreign talent. Foreign talent's sense of belonging to society, access to information, and participation in the host country's local and national political and community activities significantly influence decisions about remaining in a host country in the long term. Harvey (2014[86]) points out that in the long term, as the global race for talent intensifies, foreign talent will prefer locations that enable them to integrate better, if all other things are equal.

As mentioned early in this chapter, the Welcome and Integration Contract (CAI) is one of Luxembourg's two key integration programmes, together with the Accompanied Integration Pathway (PIA) Programme. While PIA was designed specifically for applicants for international protection, CAI is intended for all foreign-born individuals legally settled in Luxembourg who are at least 16 years old. A strictly voluntary programme, CAI offers financial support for language training in at least one of Luxembourg's three official languages (Luxembourgish, French and German). It is offered by training providers approved by MENJE or by the National Institute of Languages (Institut national des langues, INL) directly, as an interactive civic training on Luxembourg's history, traditions and common values alongside an "orientation day" that allows participants to familiarise themselves with administrative procedures in Luxembourg (OECD, 2021[21]).

Integration programmes similar to the CAI exist in most OECD countries but are generally open only to newcomers, and in Europe, most often only to TCNs. In this respect, Luxembourg's CAI is a unique case since it is open to all EU nationals, TCNs, newcomers and foreign individuals who have been living in Luxembourg for a longer period of time. Despite these advantages, only 1 664 individuals signed a CAI in 2019, while more than 20 000 immigrants enter Luxembourg permanently each year (with about three-quarters of them from EU countries) (OECD, 2021[21]). Even though the 20 000 immigrants entering Luxembourg each year also include children who are non-eligible, the take-up of CAI remains low nonetheless.

The low take-up of CAI might not be an issue per se, assuming that most foreign-born individuals in Luxembourg do not have a real need to access its services. For example, there is evidence showing that 90% of immigrants in Luxembourg report being proficient in one of Luxembourg's official languages (OECD, 2021[21]). While immigrants' respective proficiency levels in Luxembourg's three official languages (Luxembourgish, French and German) cannot be determined, it is reasonable to assume that most immigrants might report fluency in French or German, but only a small share is fluent in Luxembourgish. Luxembourgish, however, is considered the key language for social and cultural integration in Luxembourg (TNS Ilres, 2018[87]). Such evidence suggests that even immigrants fluent in French or German could significantly benefit from CAI. Moreover, evidence shows that those immigrants who might benefit the most from CAI (e.g. individuals with low levels of education) are under-represented among CAI participants. For instance, non-tertiary educated immigrants comprised one-third of CAI participants, representing 44% of recent migrants.

Raising awareness of the benefits CAI can offer immigrants should thus be strengthened, especially in areas outside Luxembourg's capital. While foreign residents of the canton of Luxembourg represented on average 39% of the country's foreign population between 2011 and 2020, they accounted for 61% of the participants in the CAI over the same period (OECD, 2021[21]). In this context, it is positive that different

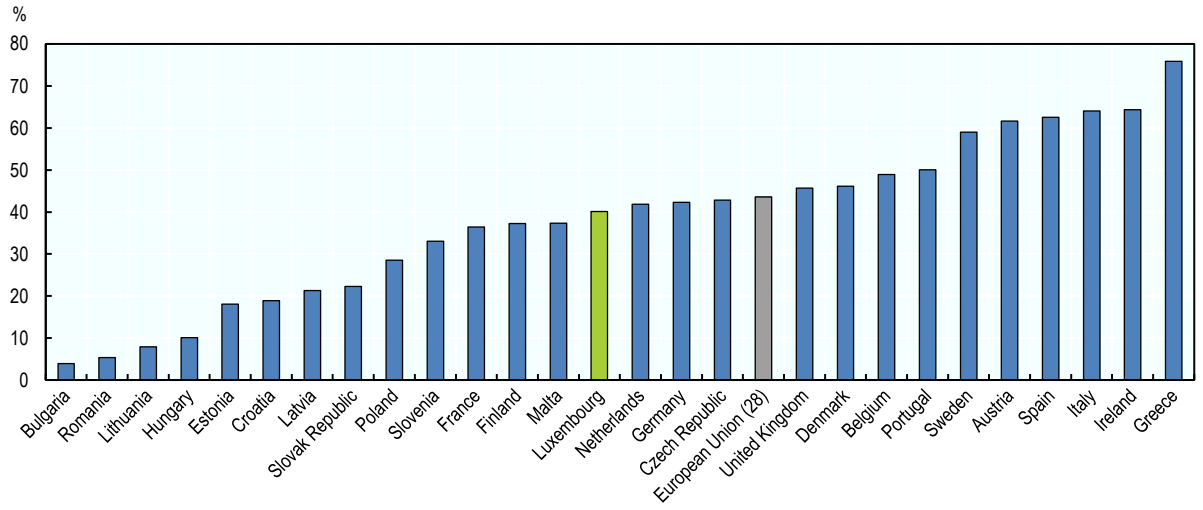
initiatives to improve communication around CAI, including at the regional level, are currently being undertaken in Luxembourg.

At the local level, communication on CAI could be further strengthened when newcomers register in their municipality upon arrival. In addition, efforts to increase exchanges between former CAI participants willing to share their experience and potential CAI beneficiaries can serve to further improve CAI's uptake (OECD, 2021[21]). Developing targeted communication through social media would also be useful. In addition, the benefits of CAI could be better promoted among international students to support their retention and eventual transition into the labour market (see below), as well as among workers in the private sector who could benefit from targeted communication directly in the workplace. In addition, CAI could be featured prominently on the Work in Luxembourg portal to help potential newcomers to Luxembourg's labour market learn about its benefits early on in the recruitment process.

As mentioned above, facilitating participation of foreign talent in the political processes of the host country might also be an important factor impacting the decision of foreign talent to remain in the host country or not. It is, therefore, positive that in 2021, the Government of Luxembourg submitted a proposal to the parliament to open voting rights in local elections to foreigners as soon as they arrive in the country. Before this, foreigners had to spend at least five years in Luxembourg before they could vote in the local elections. The new law was passed in July 2022.

Despite many positive efforts undertaken in Luxembourg to support the integration and, thereby, retention of foreign talent, it is surprising that the share of native-born population reporting having interacted at least once a week with immigrants (defined here as individuals living in Luxembourg but born outside of the European Union) in their neighbourhood (40%) is lower than the EU average (almost 44%) (Figure 4.10), particularly in view of the large number of foreign-born population residing in Luxembourg (It is therefore important that Luxembourg improves its efforts to strengthen the inclusiveness of its society, by promoting exchanges between foreign-born and native-born individuals, inter-cultural dialogue and combating ethno-racial and/or cultural stereotypes.

Figure 4.10. Share of native-born individuals who interact at least once a week with immigrants in the neighbourhood, EU countries, 2018



Note: Immigrants are defined here as individuals living in a country but born outside of the European Union. The figure shows data for EU countries prior to the departure of the United Kingdom from the EU in 2020.
Source: OECD/European Union (2018[27]), Settling In 2018: Indicators of Immigrant Integration, https://dx.doi.org/10.1787/9789264307216-en.

StatLink https://stat.link/ysrqb7

In order to increase citizen participation and strengthen the interaction of citizens at the local level, Luxembourg has strengthened its integration activities in co-operation with municipalities. As mentioned above, a new programme, the Pakt vum Zesummeliewen (Pact of Living Together), has been introduced, where municipalities sign a charter together with MFAMIGR and SYVICOL. The charter is based on a participative approach where citizens are encouraged to participate at the local level in workshops to define priorities related to integration and to translate them into concrete activities. About one-third of Luxembourgish municipalities will have signed the charter by 2022, showing strong involvement on the part of municipalities, as the programme was only launched in 2021.

Moreover, Luxembourg has measures for promoting inter-cultural exchanges, integration and diversity within companies. The Diversity Charter Lëtzebuerg, part of the European platform of Diversity Charters, encourages firms to commit to promoting diversity in their companies through concrete actions that go beyond legal obligations (Charte de la Diversité Lëtzebuerg, n.d.[88]). The Diversity Charter has been signed by more than 150 companies, a much higher number than in similar initiatives in neighbouring countries (OECD, 2021[21]).

Further efforts to support exchanges between native- and foreign-born individuals in Luxembourg include inter-cultural initiatives and related social events, which are most frequently co-ordinated by municipalities, associations and non-governmental organisations (NGOs). For example, “We want to show you our heritage” (Mir wëllen iech Ons Heemecht weisen) is a Luxembourgish NGO that organises inter-cultural events and workshops for refugees to get to know locals and vice versa. (Onsheemecht, n.d.[89]). Moreover, the Liaison Committee of Associations of Immigrants (Comité de Liaison des Associations d'Étrangers, CLAE) organises the annual Festival of Migration, Culture and Citizenship, aiming to promote integration of foreign-born population in Luxembourgish society, and to strengthen its overall inclusiveness (OECD, 2021[21]). The festival includes numerous debates, a book fair and an art exposition. Each year the festival is promoted by NGOs in Luxembourg, and counts on strong participation by civil society, including some of Luxembourg’s trade unions (European Commission, 2019[90]).

Going forward, it is important that inter-cultural events, such as workshops and festivals, are supported and promoted by all stakeholders in Luxembourg. Beyond supporting inter-cultural events to promote inter-cultural exchanges between native-born and foreign-born populations, Luxembourg could also consider introducing more ambitious, dedicated peer-to-peer integration programmes in which both native-born and foreign-born populations play an active role, and which exist in a number of OECD countries (Box 4.6). Inter-cultural exchanges should also be facilitated between foreign-born populations themselves, as well as between residents and non-residents in Luxembourg.

Box 4.6. Relevant international example: Peer-to-peer integration programmes for foreign talent

Ireland

In Ireland, the Fáilte Isteach (“Welcome in”) programme of the NGO “Third Age” is designed to teach English to immigrants through the recruitment of volunteers from the older Irish population.

Fáilte Isteach was piloted in 2006 to help new immigrants in Ireland develop their English language skills since lacking such skills made integration into the local community more difficult. The programme was launched nationally two years later.

The aim of Fáilte Isteach is not only to help migrants develop the necessary English language skills in a welcoming and inclusive fashion but equally to engage older volunteers in meaningful activities whereby their skills, expertise and contribution to the wider community are recognised. The programme also facilitates the establishment of new social relations and promotes inter-cultural learning and acceptance.

At present, Fáilte Isteach encompasses 127 tutor groups spread across 104 locations in Ireland, counting over 1 200 volunteer tutors and 3 200 migrant students. Over 96 000 hours of free English language tuition are delivered annually.

Sweden

In Sweden, the Kompis Sverige ("Friend Sweden") is a non-profit association that connects established Swedes with new arrivals to Sweden on a voluntary basis.

New and established Swedes are "matched" based on several criteria, such as place of residence, professional and educational background, and common interests. They initially commit to staying in touch (physically or virtually if physical meetings are not possible) for six months, during which Kompis Sverige checks in regularly with both parties and provides support where necessary. After six months, seven out of ten participants in the programme state that they want to continue to remain in touch.

Kompis Sverige offers a large number of free-of-charge social activities to facilitate and encourage meetings between new and established Swedes. The activities are organised across eight Swedish cities or on line and help the new arrivals practice the Swedish language and allow for a mutual exchange of thoughts and experiences by all participants.

Source: OECD (2021[21]), *Le fonctionnement du système d'intégration et ses acteurs au Grand-Duché de Luxembourg,* www.oecd.org/fr/migrations/Le-fonctionnement-du-systeme-dintegration-et-ses-acteurs-au-grand-duche-de-Luxembourg.pdf; Fáilte Isteach (n.d.[91]), *About*, www.thirdageireland.ie/failte-isteach/about; Kompis Sverige (2022[92]), *Kompis Sverige,* https://kompissverige.se/.

Finally, to facilitate a greater degree of interaction between native-born and foreign-born populations while supporting the successful integration of foreign talent in society and the labour market, language is one of the key enabling conditions (OECD/European Union, 2018[27]; OECD, 2021[93]). As mentioned above, 90% of immigrants in Luxembourg report fluency in one of the country's official languages (OECD, 2021[21]), which is positive. However, it is reasonable to assume that the data reflect a high share of immigrants fluent in French or German, rather than in Luxembourgish. While French is the legal language and key language for successful integration in the labour market, and German is used more in the media and publishing, the Luxembourgish language is key for successful social and cultural integration in the Luxembourgish community.

Luxembourgish, which became the national language in 1984, has gradually gained importance, including in writing, and is increasingly seen as the language of the country's political and cultural identity. It is spoken by three-quarters of the population and by 94% of young people aged 16-24 (TNS Ilres, 2018[87]; OECD, 2021[21]). Luxembourgish is the language most used for communication in everyday activities in private life (TNS Ilres, 2018[87]), including in households (STATEC, 2019[94]), and fluency is necessary to obtain naturalisation (OECD, 2021[21]). In 2018, 70% of Luxembourgish speakers considered Luxembourgish the main language of integration (i.e. the key language for successfully integrating into society and everyday life) against 24% of non-speakers (TNS Ilres, 2018[87]).

The Government of Luxembourg actively promotes the learning and use of the Luxembourgish language. In 2018, MENJE created the Centre for Luxembourgish Language (Zenter fir d'Lëtzebuerger Sprooch) to set spelling and grammar norms and promote the use of the language (Toussaint, 2021[95]). In 2022, the INL rolled out an online self-learning platform for learning Luxembourgish, accessible in four languages (www.llo.lu) (INL, 2022[96]; Forman, 2022[97]).

Over the last ten years, the number of learners learning Luxembourgish in Luxembourg has been on the rise (RTL, 2022[98]).

To support foreign talent in strengthening their language skills (including but not limited to the Luxembourgish language), Luxembourg has several key measures in place, including (but not limited to)

leave for linguistic purposes, government-sponsored language training provided within the framework of the CAI (as mentioned above), language training sponsored by ADEM or other actors, subsidies for employers who offer language courses to their employees and individual training leave. In addition, the House of Guidance, INL and language schools offer an individual orientation and evaluation of language skills.

The leave for linguistic purposes, introduced in 2009, is overseen by MTEESS and intended to offer the working population of Luxembourg the opportunity to learn or improve the Luxembourgish language. Each beneficiary is entitled to maximum of 200 hours of linguistic leave, divided into 2 stages of 80-120 hours, respectively, throughout their career (Government of Luxembourg, 2016[99]). Two categories of workers can legally benefit from the leave for linguistic purposes: 1) private sector employees who work in Luxembourg and who have been employed by the same employer established in the country for at least six months at the time of application; or 2) people who have been self-employed in Luxembourg for at least six months. There is no age limit, or residence condition, to be eligible for the leave for linguistic purposes (i.e. cross-border workers can also apply).[6] Furthermore, there is no specific condition regarding the employee's employment contract type for the purposes of being eligible for linguistic leave.

However, MTEESS data show that the uptake of linguistic leave has been modest. In 2021, 212 individuals benefitted from linguistic leave. Between 2009 and 2022, fewer than 3 800 individuals benefitted from linguistic leave. The uptake of linguistic leave has been particularly low in the culture, insurance and banking sectors, according to MTEESS data.[7] Even though Luxembourgish is not strictly required to work in these fields, the command of Luxembourgish remains important for social integration purposes. Therefore, MTEESS should work with employers (e.g. the UEL) to raise awareness of the opportunities for learning Luxembourgish available under linguistic leave, with a view to incentivising greater uptake. Linguistic leave could also be featured prominently on the Work in Luxembourg portal (see above) to help potential newcomers to Luxembourg's labour market learn about language training options early on in the recruitment process.

Under CAI, the target group of which are all foreign nationals legally settled in Luxembourg who are at least 16 years old (as mentioned above), Luxembourg subsidises language training in one of Luxembourg's three official languages (Luxembourgish, French and German) until the A.1.1 level in the Common European Framework of Reference for Languages (CEFR) is reached. Going forward, Luxembourg could consider extending the scope of subsidised training by increasing the proficiency level needed to receive the CAI subsidy. Across OECD countries, integration programmes tend to subsidise language training for foreign talent until A2/B1 level is reached, on average (see Box 4.7).

Beyond raising awareness of linguistic leave and extending the scope of subsidised training under CAI, stakeholders consulted for this review in Luxembourg highlighted that the supply of language training courses needs to be expanded to accommodate the demand, and their monitoring (with respect to collecting data on the profile of learners, satisfaction, course completion, learners' labour market outcomes, etc.) reinforced. Going forward, Luxembourg could also consider offering a wider set of tailor-made language training courses – including in a digital format (OECD, 2021[21]) – targeting the needs of specific groups (e.g. job-related language training, language training better targeted to individuals' current language levels, etc.). Box 4.7 details several examples of other countries' approaches to language training for foreign talent.

Box 4.7. Relevant international example: Extensive and targeted language courses for foreign talent

Many OECD countries offer generous support when it comes to language courses for foreign talent. For example, in Finland, immigrants can take up to 2 100 hours of Finnish or Swedish, while Australia, Canada, Denmark and Sweden impose no limit. In France, the Contrat d'intégration républicaine (CIR) includes 400 hours of French (600 if a literacy course is required).

In Quebec (Canada), where the official language is French, the Ministry of Immigration, Francisation and Integration offers many different learning opportunities without or at little cost. This offer includes French courses before arrival (costs can be reimbursed at entry); the core French speaking programme (1 320 hours full-time); special courses for immigrants with no or low literacy and education (1 100 hours full-time); special courses for immigrants with low numeracy or IT skills; part-time courses with many different hours options; on-the-job language trainings; and occupation- or sector-specific language trainings. All courses are open to both permanent and temporary migrants and may include financial assistance to cover participation in the courses, transportation and childcare.

At the same time, more and more countries are targeting a minimum language level to be reached rather than focusing on a minimum number of hours of learning. Across the OECD, the target level for integration programmes is around CEFR A2/B1 on average. Italy gives newcomers two years to reach the A2 level. Austria, Germany, Greece, and the United Kingdom all target B1. The recent trends in integration policies in the OECD point towards a trend of further increasing these levels, recognising that lower levels may be insufficient for allowing immigrants to participate fully in society. The Netherlands and Norway, for example, are expected to soon adjust their own targets to B1.

To better incentivise participants to reach a minimum language level, certain countries make use of financial incentives. Austria reimburses 50% of course costs for migrants who reach A2-level German within 18 months. Denmark gives back the deposit that migrants have to pay for language learning upon completion of the course. Participants can carry over this deposit to new courses as long as they want to continue them. If participants reach a B1 level, a financial bonus is granted. In addition, a tax-free "Danish language bonus" of 6 242 Danish krones (DKK) (in 2019), is available to refugees and family reunited with refugees who do not receive social benefits and have passed a Danish language course level 2 or higher. Municipalities receive subsidies when a refugee or family member obtains employment, starts education or passes a final test in Danish. For each eligible migrant to pass a final test in the Danish language, the municipality receives a subsidy of DKK 33 959 (in 2019).

Some OECD countries have also implemented a more tailor-made modular approach to language courses to better match the offer with individual needs. For example, in Denmark and Finland, immigrants are individually assessed and guided towards the learning path that better fits their language proficiency and initial degrees. In both countries, learning is organised through successive modules with more and more advanced learning goals. Sweden and Germany also offer step-by-step modules for immigrants with personal or professional projects. In addition, Germany offers dedicated learning paths for young people, parents and women.

Source: OECD (2021[21]), *Functioning of the integration system and its actors in the Grand Duchy of Luxembourg,* www.oecd.org/fr/migrations/Le-fonctionnement-du-systeme-dintegration-et-ses-acteurs-au-grand-duche-de-Luxembourg.pdf; OECD (2020[33]), *Integrating Immigrants to Stimulate Innovation in Quebec, Canada,* https://doi.org/10.1787/2b41b9e8-fr.

Recommendations

- **3.8. Raise awareness of the benefits of the Welcome and Integration Contract (CAI).** The awareness-raising activities should be targeted especially to areas outside of Luxembourg's capital, to workers in the private sector and to international students at Luxembourg's universities in order to facilitate the students' eventual transition into the labour market (see section below). CAI could also be featured prominently on the Work in Luxembourg portal (see section above) and would benefit from the development of a social media communications plan. MFAMIGR should further support the recently launched initiatives promoting CAI at the regional level and through the creation of a network of CAI ambassadors. Consideration could also be given to establishing a network of former CAI participants willing to share experiences with participating in the programme.
- **3.9. Create better opportunities for inter-cultural exchanges.** Inter-cultural initiatives and activities, such as migration festivals and workshops, should be supported to promote inter-cultural exchanges between native-born and foreign-born populations. Such exchanges should also be facilitated between foreign-born populations themselves, as well as between residents and non-residents in Luxembourg. Consideration could also be given to introducing dedicated, peer-to-peer integration programmes actively involving both native-born and foreign-born individuals.
- **3.10. Strengthen language training for foreign talent by raising awareness of the linguistic leave, extending the scope of subsidies for language training under CAI and boosting the supply and monitoring of language courses.** MTEESS should work with employers (e.g. the UEL) to raise awareness of the opportunities to learn Luxembourgish available under linguistic leave to incentivise greater uptake. Linguistic leave could also be featured prominently on the Work in Luxembourg portal. The subsidies for language training provided under CAI should be further extended by MFAMIGR to incentivise foreign talent to improve their language skills to an even higher level. In addition, the supply of language training in Luxembourg should be expanded to accommodate the demand, and the monitoring of the training (with respect to collecting data on the profile of learners, satisfaction, course completion, learners' labour market outcomes, etc.) reinforced. In monitoring the training, Luxembourg could make use of the suggested establishment of a centralised training register (see Chapter 5).

Facilitating the integration of foreign talent's spouses into Luxembourg's labour market and society

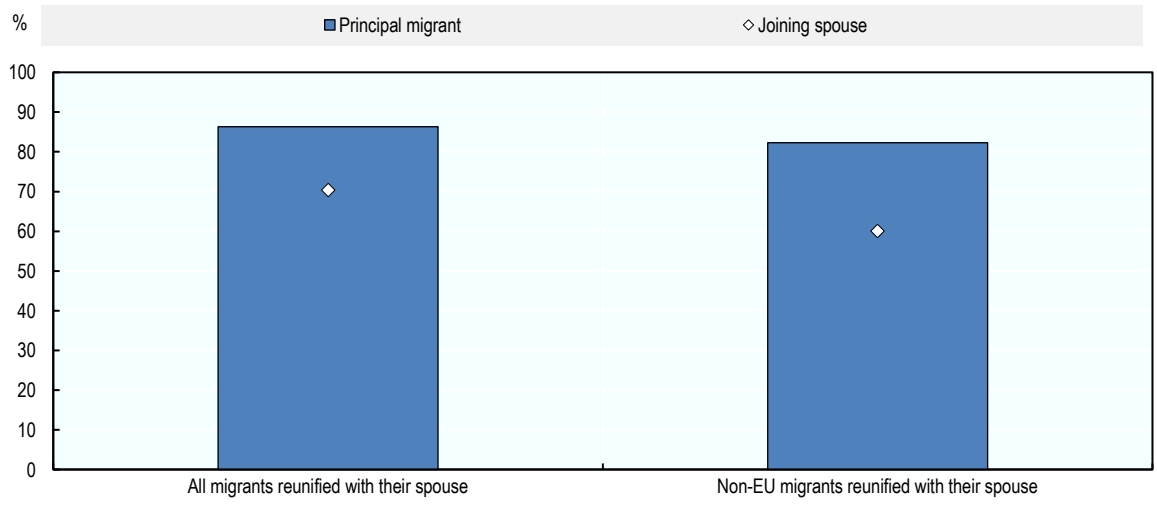
Labour market opportunities and social integration of spouses can have important impacts on the decision of the principal migrant to remain in the host country of choice (OECD, 2016[100]; Hornak and Doan, 2019[101]). While the employment prospects and integration support for spouses might not be a decisive factor in the choice of a foreign worker's temporary emigration destination, it is unlikely that the principal migrant will decide to remain in a country where such opportunities are limited in the long term. Evidence from the Netherlands shows that the probability of a foreign-born worker staying in the Netherlands 5 years after arrival is 18 percentage points higher for an individual with a partner who is working relative to those with a partner who is unemployed or inactive (OECD, 2016[100]). At the same time, spouses of foreign talent constitute an untapped source of talent that Luxembourg could benefit from to address skills shortages.

According to the EU Labour Force Survey, 75% of married working-aged migrants (EU and non-EU born) lived with their spouses between 2016 and 2020 in Luxembourg. Moreover, the residence permits annually issued to family members, including spouses, make up the most important share (31%) among all types of resident permits issued to TCNs. The number of permits issued to family members is even higher than

the number of permits issued to foreign workers from third countries. In 2020, the Ministry of Foreign and European Affairs (MAEE) issued 1 486 first permits for the purposes of family reunification, while 1 205 permits were issued to salaried workers (Ministry of Foreign and European Affairs, 2021[102]).

In Luxembourg, more could be done to support the integration of foreign spouses into the labour market and society. The employment rate of foreign spouses in Luxembourg is 16 percentage points lower than the employment rate of the principal migrant whom they accompany. The difference is even higher for non-EU migrants, where the spouse employment rate lags the employment rate of the principal migrant by more than 22 percentage points (Figure 4.11).

Figure 4.11. Employment rates of principal migrants and their spouses in Luxembourg, 2020



Note: Migrants refer to foreign-born residents in Luxembourg. Principal migrants refer to foreign-born residents in Luxembourg who arrive in Luxembourg first in their household.
Source: OECD calculations based on the EU Labour Force Survey (EU-LFS) 2020, https://ec.europa.eu/eurostat/web/microdata/labour-force-survey.

StatLink https://stat.link/es6j1g

In the first half of 2022, TCNs' spouses did not have automatic access to Luxembourg's labour market. Spouses of foreign workers from third countries wishing to carry out a salaried activity in Luxembourg had to apply for the salaried worker residence permit, which also served as a work permit. However, unless the spouse accompanying the third country worker had been residing in Luxembourg for one year or more, the spouse was still subject to the labour market test when looking for employment. Against this background, it is positive that the MAEE has been preparing a reform to lift the requirement of the labour market test for spouses of foreign workers from third countries, which, at the time of writing, was foreseen to come into force towards the end of 2022 and which should be duly implemented. In almost two-thirds of OECD countries, spouses of foreign workers who are permanent residents are automatically granted full access to the labour market (OECD, 2017[103]). Almost half of OECD countries also grant full access to the labour market to family members of temporary foreign workers with a renewable permit (OECD, 2017[103]).

While formal access to Luxembourg's labour market should be simplified for spouses of third country workers with the foreseen exemption from the labour market test, spouses of both EU and third country workers could benefit from more systematic support and information on work opportunities and daily life in Luxembourg. In recent years, as mentioned above, ADEM has held a small number of information events for spouses of foreign workers. In addition, a group of private sector actors established the Luxembourg

International Dual Career Network (IDCN) in 2018 to provide guidance and information to spouses of international employees of IDCN's corporate members (IDCN, 2018[104]). Going forward, Luxembourg could consider establishing more comprehensive programmes offering systematic support to spouses of all foreign workers in their integration in Luxembourg's labour market and society. In Finland and Estonia, programmes supporting the integration of foreign workers' spouses into the labour market and society include regular workshops and networking events, social and cultural meet-ups, individual work-related counselling and peer-learning mentoring (Box 4.8).

Box 4.8. Relevant international example: Integration programmes for spouses of foreign workers

Finland

In Finland, the Spouse Programme is an initiative run by the city of Helsinki. The programme is implemented within the context of the Talent Boost programme of the Ministry of Economic Affairs and Employment (TEM) and the Ministry of Education and Culture (OKM) of Finland. During 2020-21, the programme was funded by the European Social Fund.

The Spouse Programme offers professional and community support for spouses of foreign workers living in Helsinki, Espoo or Vanta for less than two years. The content of the programme is tailored to newly arrived spouses, but also welcomes those living in Finland for more than two years. The programme lasts one year and starts with on-boarding events, where spouses can learn about settling in Finland, Finnish (working) culture and employment services, and participate in workshops for designing CVs and cover letters and social activities such as sightseeing, among others.

Following the onboarding events, the programme provides spouses with further opportunities to participate in workshops, networking events and meet-ups on a monthly basis. As part of the programme, spouses living in Helsinki also have access to a career coaching service, offering individual career support provided by a professional career coach. After one year, spouses can remain in the programme as Spouse Programme Ambassadors.

Estonia

In 2019, Estonia initiated the Re-invent Yourself programme, with the aim of supporting the integration of foreign spouses into the labour market and society. Shortly after the completion of the programme, more than half of the participants had found a job or other professional activities, while many participants highly recommend the programme.

The four-week programme aims to make the transition to living and working in Estonia easier by providing a number of different activities. There are dedicated training sessions helping foreign spouses kickstart their entrepreneurship careers, learn about the local business culture or about business networking. Networking meetings with local professionals, human resource managers and recruiters help spouses understand the labour market in Estonia and establish individual business contacts. In addition, individual career and networking consultations delivered by Töötukassa (Estonia's Public Employment Service) support spouses in planning their careers and establishing business contacts in the fields of their professional interests.

All events of the Re-invent Yourself programme are held in English, and the programme is free of charge for participating spouses. Participating spouses are expected to attend all of the programme's sessions.

Source: Spouse Programme (2022[105]), *For Spouses,* https://spouseprogram.fi/for-spouses/; Work in Estonia (2022[106]), *Re-Invent Yourself,* www.workinestonia.com/reinvent-yourself/#articleblock-Registrationofinterestfor2022groups.

Recommendation

- **3.11. Develop comprehensive integration programmes for accompanying spouses of foreign talent**. The programmes could include regular networking events, social and cultural meet-ups, individual work-related counselling, peer-learning mentoring or support in application processes for the recognition of foreign qualifications. The programmes could be developed and implemented through a collaboration of a number of governmental actors, including MAEE, MFAMIGR, ADEM and departments responsible for the recognition of foreign qualifications at MENJE and MESR, as well as relevant NGOs in Luxembourg.

Facilitating the transition of former international students into Luxembourg's labour market

In knowledge-based economies, attracting and retaining international students can help expand the highly educated workforce. Even though students themselves reap most of the gains, mainly through higher earnings, student migration can positively affect economic growth in both sending and receiving countries (Chevalier, 2022[107]). In Luxembourg, the importance of facilitating a smooth transition of international students into the labour market is further magnified by shortages in high-skilled occupations (see the first section of this chapter).

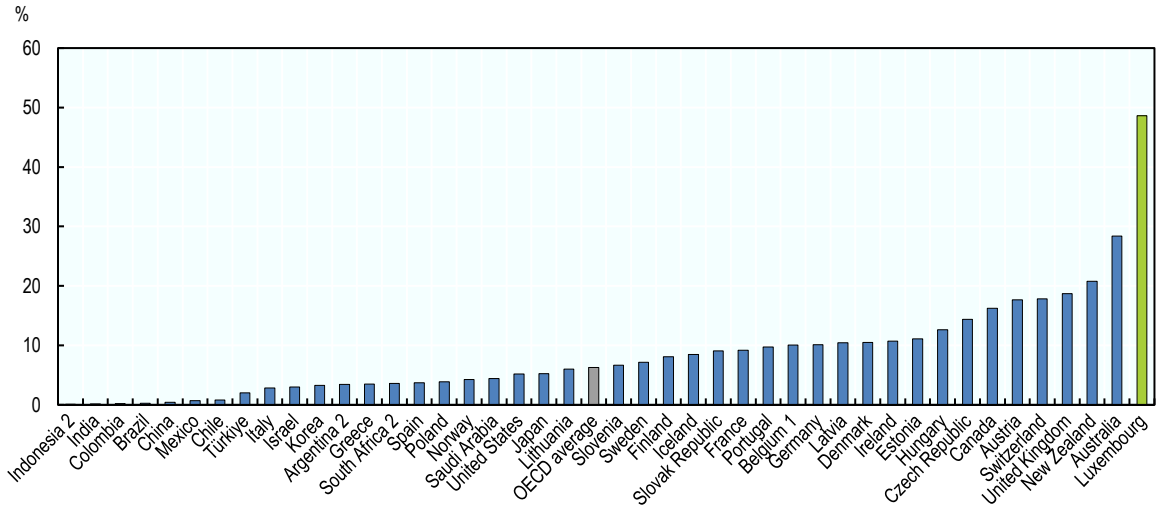
The share of international students in Luxembourg's higher education system (49%) is the highest in the OECD (Figure 4.12). Students from non-EU countries represent one-third of all international students. The presence of international students is particularly pronounced at the master's and PhD levels, where international students make up 78% and 87% of the total student body in Luxembourg, respectively (OECD, 2021[108]).

The extent to which international students succeed in transitioning into the labour market can be approximated based on graduate tracking data collected by the University of Luxembourg (UoL)[8] via its recently concluded "employment study" of graduates (see Chapter 5). The results of the employment study show that between 2014 and 2019, 52% and 49% (lower-bound estimate)[9] of master's graduates from the European Union (excluding Luxembourg) and from third countries respectively, have succeeded in finding employment on Luxembourg's labour market following the completion of their studies. The figure stands at 31% and 36% (lower-bound estimate) for PhD graduates during the same time period. Therefore, there is still room for improvement in facilitating the transition of international students into Luxembourg's labour market.

To allow international students to establish employment links even before the completion of their studies, students' formal access to Luxembourg's labour market during their studies could be improved. The authorised number of working hours of HE students (irrespective of nationality) during studies is limited to 15 hours a week for bachelor, master and PhD students, which is low by international comparison (Figure 4.13). Luxembourg could thus consider increasing the authorised number of working hours for bachelor, master and PhD students. Career guidance services at HE institutions should highlight to students that their studies remain a priority, and students should carefully evaluate the workload that they are capable of taking on.

Figure 4.12. Incoming student mobility in higher education, by level of study, 2019

International or foreign student enrolment as a percentage of total enrolment in higher education, selected countries



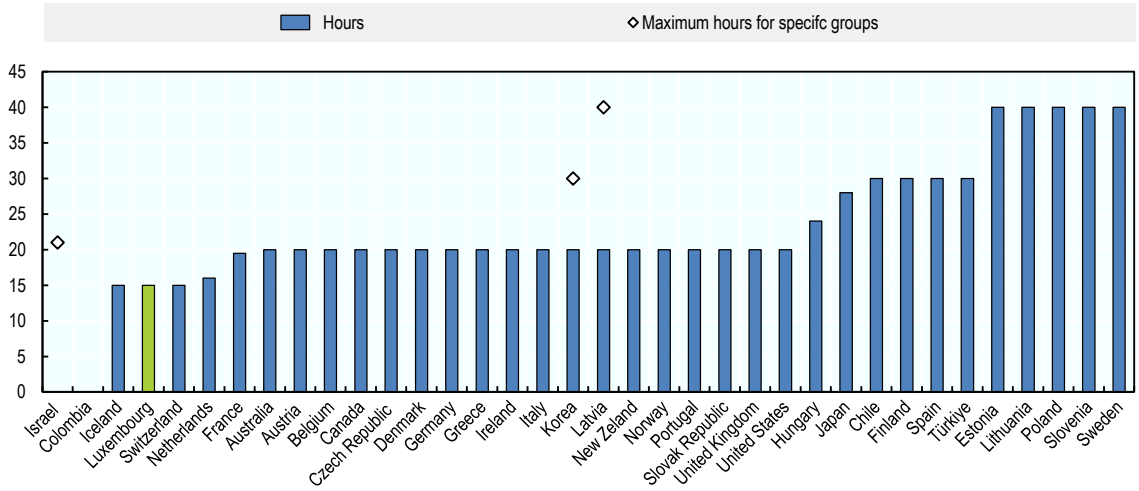
Note: Higher education includes short-cycle higher education programmes.
1. Data on short-cycle higher education programmes are based on nationality and refer to the Flemish community only.
2. Year of reference 2018.
Source: OECD (2021[108]), Education at a Glance 2021: OECD Indicators, https://dx.doi.org/10.1787/b35a14e5-en.

StatLink https://stat.link/0kv963

Moreover, Luxembourg has no career guidance or counselling services specifically designed to help current international students establish links with Luxembourg's labour market during their studies in order to support their eventual transition to employment. The UoL runs several initiatives to help all current and former students, regardless of nationality, enhance their employability. Through its Career Centre, the UoL aims to support students in their job search with a wide range of services (e.g. an online platform that connects recruiters and students, counselling, organisation of workshops and dedicated events, such as jobs fairs, etc.). The UoL's Internships service acts as an intermediary between students and employers and provides advice to students on career choices while ensuring that students are adequately supported during their placements. Partnerships have been concluded in this regard with several institutional and high-level professional partners, such as the "Big Four" (Deloitte, PricewaterhouseCoopers, Ernst & Young, and KPMG) (EMN, 2018[15]).

In addition to general career guidance and counselling support available to all students, the development of services dedicated specifically to international students should be considered. International students tend to face larger barriers in their transition to the host country's labour market than native-born students, including insufficient language skills, lack of knowledge of the host country's employment opportunities, job-hunting strategies and workplace culture. Several OECD countries have taken active steps to help international students and graduates address such challenges. In the United States, the University of California, Berkeley, is among many universities that dedicate career guidance services to international students (Box 4.9). In Japan, the public employment service has signed an agreement with a local university to explain the Japanese recruitment process to international students in a bid to encourage them to work in the country (Box 4.9). To facilitate developing dedicated career guidance services for international students in Luxembourg, UoL should strengthen the capacity of its career guidance service, which is currently constrained.

Figure 4.13. Maximum number of hours per week that international students in higher education are authorised to spend working (during the semester), OECD countries, 2022



Note: The figure includes OECD countries for which data are available. In Australia, international students can work 40 hours per fortnight. In Denmark, the limit is 20h/week for BA/MA students and full-time for PhD students. In Israel, only international students in high-tech related fields of study can request part-time employment in relevant companies during their studies. In the United States, employment is only allowed on campus or in an off-campus worksite affiliated with the institution. In Latvia, the limit is 20h/week for BA students and 40h/week for master's/PhD students. In Korea, the limit is 20h/week for BA students and 30h/week for master's/PhD students. The data for Denmark, Portugal and Spain refer to non-EU students, whereas there is no limit on maximum number of working hours alongside studies for EU and domestic students. Estonia, Lithuania, Poland, Slovenia and Sweden set no limits on the maximum hours of working alongside studies.
Source: OECD (2022[109]), *International Migration Outlook 2022*, https://doi.org/10.1787/30fe16d2-en.

StatLink https://stat.link/bf3lxp

Box 4.9. Relevant international examples: Targeted career guidance services for international students

United States

The University of California, Berkeley, provides various types of dedicated career guidance services for international students. For example, it has a dedicated Career Counsellor for International Students, who provides support to international students in several areas, including career exploration, job/internship search and graduate school preparation. International students can access further support via the Career Centre Workshops and Programmes, which are specialised programmes created to meet the unique challenges faced by international students in their career, job and internship search processes. International students are encouraged to attend the programmes and other relevant events related to their professional interests.

The University has also developed an e-newsletter dedicated to international students, called the CareerMail for International Students, which allows international students to learn about upcoming career workshops, immigration-related workshops and employer events, as well as job and internship vacancies, among others.

The University's International Student Career Action Plan provides step-by-step guidance over a four-year period on the necessary steps (e.g. meeting with a career counsellor, applying for employment authorisation, etc.) that international students could undertake in order to help them achieve their professional or academic plans (e.g. find employment at the end of their studies, get accepted into graduate school, etc.). The Action Plan also provides resources about work authorisations for international students with F-1 and J-1 visas.

Japan

In 2020, Sophia University, a private university in Tokyo, and Japan's public employment service Hello Work in Tokyo's ward of Shinjuku, signed an agreement to explain Japanese recruitment processes to foreign students in order to support the students' eventual integration into the Japanese labour market.

The co-operation is meant to provide a policy response to a low share of international students joining the Japanese labour force after graduation. According to the Ministry of Health, Labour and Welfare of Japan, around 65% of international students said they would like to work in Japan following the completion of their studies. Yet, only about 35% of graduates succeeded in securing employment. The reason for this appears to be an insufficient familiarity with Japanese job-hunting processes. In Japan, the recruitment processes of many employers tend to take place around the same time each year, with companies hiring prospective graduates in bulk. Therefore, to secure a job, university students should be engaging in active job-hunting while they are still enrolled in their studies, for example by attending relevant job fairs and interviews.

Source: UC Berkeley (2022[110]), *International Students*, https://career.berkeley.edu/IntnlStudents/IntnlStudents; The Japan Times (2020[111]), *University allies with Hello Work to help foreign students find jobs,* www.japantimes.co.jp/news/2020/11/06/national/university-job-office-help-foreign-students-find-employment-japan/.

Luxembourg should support the transition of international students into the labour market through dedicated career guidance services from the beginning of their studies rather than solely towards the end of their studies. In the case of PhD students (both native-born and international), Luxembourgish labour law stipulates that they can spend a maximum of five years of employment on fixed-term contracts in academia or research, after which young researchers who have not secured a permanent contract at their research institution have to leave Luxembourg to be able to continue their career in academia or research. Therefore, it is important that international PhD students are prepared for this reality from the beginning of their studies and have sufficient time, information and support to acquaint themselves with prospective non-academic employment opportunities available in Luxembourg's labour market. At the same time, support services should help international students close the "skills awareness gap" – i.e. the lacking recognition of the skills the students do have, or how to translate these skills to the workplace (Council of Canadian Academies, 2021[112]).

Luxembourg could also better support international students who do not succeed in finding employment during their studies. Empirical evidence suggests that open migration policies and labour markets, whereby students can remain in the host country post-study are crucial for successfully attracting international students (Chevalier, 2022[107]). While international students from the European Union face no legal constraints preventing them from seeking employment in Luxembourg after completing their studies, it had not been the case for TCNs until 2018. In 2018, the introduction of a job-search visa made it possible for third country HE graduates from master's or PhD programmes to remain in Luxembourg for nine months following the completion of their studies in order to look for employment or set up a business (Government of Luxembourg, 2021[113]).

Data from the MAEE suggests that the uptake of job-search visas among international students has been low. Since their introduction in 2018, the MAEE received only 40 applications for the job-search visas, 26 of which in 2019, which accounts for approximately 11% of international students from third countries who completed a master's or a PhD degree that same year (OECD, 2021[108]). Given the relatively high

share of international students entering the labour market after graduation (see the above estimate based on the UoL data), this low uptake may be due to a high number of direct transition to work after graduation. Other reasons for the low uptake might include difficulty finding housing without having an employment contract and lack of language skills to succeed in Luxembourg's multilingual labour market. That notwithstanding, such reasons cannot fully explain such low numbers of job-search visa issuances. Luxembourg should thus consider better raising awareness of the recently introduced job-search visas, to encourage a larger proportion of third country HE students to find employment and remain in Luxembourg.

Equally, Luxembourg should examine the extent to which the nine-month job-search visa limit does not act as an obstacle to international students (TCNs) successfully integrating into Luxembourg's labour market following the completion of their studies. Based on the results of such an assessment, Luxembourg could consider prolonging the validity of job-search visas beyond nine months. In France, former international students are allowed to remain in the country to seek employment or set up a business 12 months after graduation (Campus France, 2021[114]), while this possibility is open for 18 months to international graduates in Germany (Government of Germany, 2021[115]). In France, the increase in the validity period of job-search visas from 6 to 12 months in 2013 raised the number of job-search visas from around 5 500 in 2013 to 13 000 in 2015, i.e. 33% of the number of TCN students who graduated with a master's or PhD degree (OECD, 2021[108]). Two-thirds of job-search visas resulted in a change of status towards a labour migration category (OECD, 2017[116]).

Finally, in the long term, Luxembourg could support a smoother transition of international (as well as native-born) HE students into the labour market by better supporting the alignment of the HE offer to labour market needs. Stakeholder interviews have pointed out that Luxembourg makes little use of incentives for better aligning the HE offer to labour market needs. Such incentives can take the form of funding arrangements (e.g. linking funding to graduates' employment outcomes) or regulatory mechanisms (e.g. making accreditation of study programmes conditional upon their labour market relevance) (OECD, 2017[117]). In Luxembourg, labour market relevance is taken into account in the accreditation processes of study programmes of private HE institutions, whereas study programmes offered by the UoL are automatically accredited (European Quality Assurance Register for Higher Education, n.d.[118]). In addition, public funding is allocated to the UoL (the only state-funded university in Luxembourg) based on a performance-based funding formula, yet without taking graduate employability into account. In comparison, a number of OECD countries use incentives to better align the HE offer to labour market needs. In Estonia, for example, graduates' employment outcomes are taken into account in the funding of HE institutions (Box 4.10).

Box 4.10. Relevant international example: Financial incentives for supporting alignment between the higher education offer and labour market needs

Estonia

In Estonia, a new funding model of higher education was introduced in 2017. Under the new funding model, up to 20% of HE funding began to be allocated through performance-based funding. The performance-based funding is based on six performance criteria.

Among the performance criteria, the largest weight (35%) is assigned to the proportion of students graduating on time, given that Estonia has been struggling with low HE completion rates. However, 20% of the performance-based funding is tied to the proportion of graduates who are employed or continuing to study at the master's or PhD level, and 15% to the share of students studying in "priority fields" (i.e. fields of study identified to be of national importance in Estonia). Other performance-based funding criteria include: the proportion of foreign (10%) and mobile (10%) students, and revenues from educational activities (10%).

Data collected one year after the introduction of the reform showed slight improvements in the proportion of students studying in "priority fields", as well as in the proportion of students graduating on time, an increase in the proportion of foreign students studying at Estonian universities, and of Estonian students participating in mobility abroad.

Source: OECD (2017[117]), *In-Depth Analysis of the Labour Market Relevance and Outcomes of Higher Education Systems: Analytical Framework and Country Practices Report,* www.oecd.org/education/skills-beyond-school/LMRO%20Report.pdf; European Commission (2017[119]), *Education and Training Monitor 2017*, https://op.europa.eu/en/publication-detail/-/publication/38e7f778-bac1-11e7-a7f8-01aa75ed71a1/language-en; European Commission (2018[120]), *Education and Training Monitor 2018: Country analysis*, https://education.ec.europa.eu/sites/default/files/document-library-docs/volume-2-2018-education-and-training-monitor-country-analysis.pdf.

At least in part, the limited emphasis on the labour market relevance of the HE offering in Luxembourg is driven by data-related challenges. Therefore, it will be important for Luxembourg to work on strengthening the governance of skills data (see Chapter 5 for detailed recommendations). Moreover, given that certain stakeholders consulted in the framework of this project expressed concerns about the introduction of regulatory and/or financial incentives potentially impacting university autonomy in Luxembourg, MESR should initiate discussions with UoL about the potential use of such incentives, and work closely with UoL in determining the scope, nature and timeframe of potential policy changes.

Recommendations

- **3.12. Support international students in establishing connections with Luxembourg's labour market during their studies by increasing the authorised number of hours for working alongside studies and developing targeted career guidance services.** MESR could consider increasing the number of hours that HE students in Luxembourg (both native-born and international) are allowed to spend working during their studies beyond 15 hours a week. UoL should also consider developing targeted career guidance services (e.g. information sessions on legal ways to work during/after studies, language requirements and workplace culture in Luxembourg's labour market, available integration and language support – see Recommendation 3.8, networking sessions with international alumni, etc.) for international students. The career guidance services should be provided continuously from the beginning of international students' studies. To facilitate developing dedicated career guidance services for international students, UoL should strengthen the capacity of its career guidance service.
- **3.13. Expand opportunities for former international students from third countries to legally remain in Luxembourg to look for a job following the completion of their studies.** MAEE should raise awareness of the recently introduced job-search visa for HE students from third countries to strengthen their take-up. MAEE, in collaboration with other ministries, should also examine the extent to which the nine month job-search visa limit does not act as an obstacle to international students (TCNs) successfully integrating into Luxembourg's labour market following the completion of their studies. Based on the results of such an assessment, MAEE should consider extending the validity of the job-search visas beyond nine months.
- **3.14. Support the alignment of the higher education offer to labour market needs by considering introducing funding and/or regulatory incentives.** MESR should initiate discussions with UoL about the use of funding (e.g. taking into account graduates' employability in the performance-based funding of the UoL) or regulatory incentives (e.g. making accreditation of study programmes conditional on their labour market relevance), where relevant, and work closely with the UoL in determining the scope, nature and timeframe of potential policy changes. To help inform the design and implementation of the proposed incentives, strengthening the governance of Luxembourg's skills data (see Chapter 5) will be crucial.

Overview of recommendations

Attracting and retaining foreign talent to fill skills shortages is essential for sustaining Luxembourg's economic competitiveness and supporting future prosperity. Two opportunities have been selected indicating where Luxembourg's foreign talent attraction and retention efforts could be further strengthened:

1. facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs
2. facilitating the integration of foreign talent and their families into Luxembourg's society and labour market.

This chapter presented a total of 14 recommendations in order to seize these opportunities in the area of foreign talent attraction and retention. A high-level overview of the recommendations can be found in Table 4.2. This selection is based on input from a literature review, desk research, discussions with the Luxembourg National Project Team, and broad engagement with a large variety of stakeholders, including two workshops in Luxembourg, and various related meetings and group discussions.

Two recommendations have been selected that could be considered to have the highest priority based on potential impact, relevance in the current context in Luxembourg, as well as overall support for implementation. To attract and retain foreign talent to fill skills shortages, the OECD recommends that Luxembourg should:

- Elaborate a list of shortage occupations for talent admission purposes, updated regularly (Recommendation 3.2)
- Strengthen language training for foreign talent by raising awareness of the linguistic leave, extending the scope of subsidies for language training under CAI and boosting the supply and monitoring of language courses (Recommendation 3.10).

Table 4.2. High-level overview of recommendations to attract and retain foreign talent to fill skills shortages in Luxembourg

Policy directions	Recommendations	Responsible parties
Opportunity 1: Facilitating the recruitment of foreign talent in line with Luxembourg's labour market needs		
Improving the accessibility of Luxembourg to foreign talent	3.1. Improve the efficiency of talent admission processes through greater digitalisation	• MAEE • MinDigital
	3.2. Elaborate a list of shortage occupations for talent admission purposes, updated regularly	• ADEM, MTEESS • MAEE • MECO • Employers
	3.3. Facilitate cross-border workers' daily access to Luxembourg's labour market by further facilitating cross-border transport, supporting the creation and use of co-working spaces near the borders, increasing the flexibility of working hours and expanding teleworking possibilities	• Government of Luxembourg • Employers
Supporting the affordability of living of foreign talent in Luxembourg	3.4. Review the nature, range, and timeframe of, and eligibility conditions for, the benefits granted under the impatriate tax regime based on the results of the regime's planned evaluation	• MFIN
Strengthening the information provision for, and exchange between, foreign talent and Luxembourg's employers	3.5. Strengthen synergies between nation branding and foreign talent attraction strategies	• MAEE • MECO
	3.6. Expand the provision of information on international job-matching processes and opportunities by further improving the Work in Luxembourg portal, and by raising awareness of the EURES portal	• ADEM • EURES • MECO • MFIN • MAEE

Policy directions	Recommendations	Responsible parties
	3.7. Support opportunities for direct information exchange between foreign talent and employers by participating in targeted international job fairs and by considering the organisation of international job-matching programmes	• ADEM • MAEE • MECO
Opportunity 2: Facilitating the integration of foreign talent and their families into Luxembourg's society and labour market		
Supporting the integration of foreign talent into Luxembourg's society	3.8. Raise awareness of the benefits of the Welcome and Integration Contract (CAI)	• MFAMIGR • University of Luxembourg • ADEM
	3.9. Create better opportunities for inter-cultural exchanges	• MFAMIGR
	3.10. Strengthen language training for foreign talent by raising awareness of the linguistic leave, extending the scope of subsidies for language training under CAI and boosting the supply and monitoring of language courses	• MTEESS • MFAMIGR • MENJE
Facilitating the integration of foreign talent's spouses into Luxembourg's labour market and society	3.11. Develop comprehensive integration programmes for accompanying spouses of foreign talent	• MFAMIGR, MAEE (lead) • ADEM, MENJE, MESR
Facilitating the transition of former international students into Luxembourg's labour market	3.12. Support international students in establishing connections with Luxembourg's labour market during their studies by increasing the authorised number of hours for working alongside studies and developing targeted career guidance services	• MTEESS • University of Luxembourg
	3.13. Expand opportunities for former international students from third countries to legally remain in Luxembourg to look for a job following the completion of their studies	• MAEE • MTEESS
	3.14. Support the alignment of the higher education offer to labour market needs by considering introducing funding and/or regulatory incentives	• MESR • University of Luxembourg

Note: MAEE: ministère des Affaires étrangères et européennes; MinDigital: ministère de la Digitalisation; ADEM: Agence pour le développement de l'emploi; MTEESS: ministère du Travail, de l'Emploi et de l'Économie sociale et solidaire; MECO: ministère de l'Économie; MFIN: ministère des Finances; EURES: European Employment Services; MFAMIGR: ministère des Affaires familiales, de l'Intégration et de la Grande Région; MENJE: ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse; MESR: ministère de l'Enseignement supérieur et de la Recherche.

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Notes

1. While the COVID-19 crisis has unsurprisingly slowed down Luxembourg's employment growth, the number of new hires in Luxembourg surpassed pre-pandemic levels already in Q3 2020 (see Chapter 1). The data do not distinguish between new job creations, jobs retirements and job replacements (STATEC, 2022[3]).

2. High-skilled occupations are defined as occupations in ISCO groups 1-3. These occupations tend to require tertiary education qualifications (ILO, 2012[121]).

3. Medium- and low-skilled occupations are defined as occupations in ISCO groups 4-9. These occupations tend to require education qualifications below the tertiary level (ILO, 2012[121]).

4. Only certain EU members allow for relevant professional experience to be taken into account in the assessment of eligibility of foreign-born workers for the EU Blue Card, while the number of years required can sometimes vary (e.g. Malta requires ten years of professional experience) (European Commission, n.d.[13]).

5. Tax wedge is defined as the ratio between the amount of taxes paid by an average single worker (a single person at 100% of average earnings) without children and the corresponding total labour cost for the employer. The average tax wedge measures the extent to which tax on labour income discourages employment. This indicator is measured in percentage of labour cost (OECD, 2021[68]).

6. Between 2009 and 2022, almost 58% of beneficiaries of linguistic leave were cross-border workers.

7. Uptake of linguistic leave has also been modest among workers in Luxembourg's public administration and municipalities, which is understandable, as both are dominated by Luxembourgish nationals.

8. The University of Luxembourg is Luxembourg's only public HE institution, with the UoL student population representing 99% of total student population in higher education in Luxembourg (Eurostat, n.d.[121]).

9. Lower bound estimate is used due to missing information in the UoL employment study (see Chapter 5 for more details). A different methodology comparing annual education permits issued in the previous year with data collected on the type of permits issued to former education permit holders shows that almost 40% of non-EU students in Luxembourg changed their education permit to a different one (including post-study work) in 2019, compared to 30% in the OECD on average (OECD, 2022[109]). These results, measuring changes in immigration status based on administrative data covering only non-EU students at the bachelor, master's and PhD levels as well as students who have not obtained a diploma, are not fully comparable with the data from the UoL. The UoL data covers both EU and non-EU students who have obtained a master's or a PhD diploma and measures entry into employment.

5 Strengthening the governance of skills data in Luxembourg

Strong governance of skills data is essential for helping policy makers and stakeholders navigate the complexity and uncertainty associated with the design and implementation of skills policies. This chapter explains the importance of skills data governance in Luxembourg and provides an overview of current practices and performance. It then explores two opportunities for strengthening skills data governance in Luxembourg: improving the quality of Luxembourg's skills data collection; and strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg.

The importance of strengthening the governance of skills data

Strong skills data governance is essential for helping policy makers and stakeholders navigate the complexity and uncertainty associated with the design and implementation of skills policies. Skills policies are complex as they fall at the intersection of multiple policy fields, including education, labour market, innovation, industrial and migration policy. At the same time, skills policies are developed in the context of substantial uncertainty as they are significantly impacted by megatrends, such as globalisation, automation, digitalisation, demographic change and climate change (OECD, 2019[1]), many of the implications of which are being accelerated by the COVID-19 pandemic. In the context of uncertainty and rapid change, strong skills data governance facilitates the provision of timely and relevant information, which is necessary for ensuring that governments and stakeholders can effectively design and implement skills policies and make informed choices leading to better skills outcomes. Such evidence-based policy making can also help to strategically target investments and generate higher returns on skills investments.

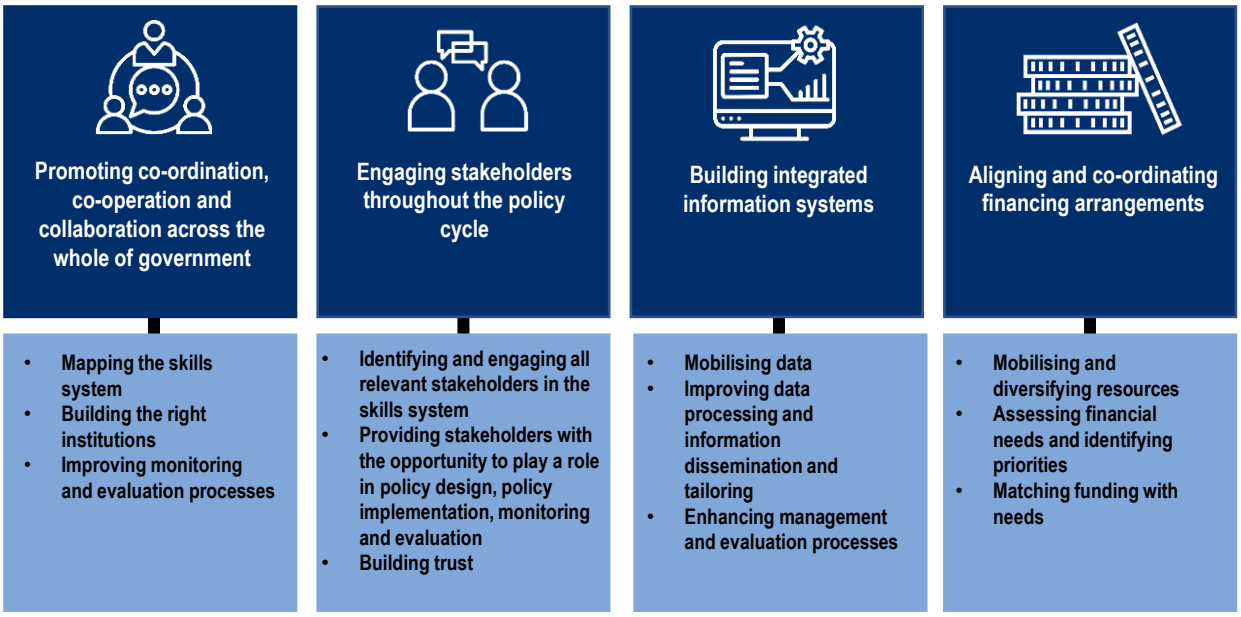
In this chapter, skills data is understood as all data relevant for skills policy making, most importantly, education and training data and labour market data. Strong governance of skills data refers to: 1) collecting skills data effectively and efficiently (i.e. collecting high-quality data and coordinating within government and with non-governmental stakeholders in the data collection process, respectively); and 2) facilitating the analysis, exchange and co-ordination of skills data (e.g. via data interoperability, data exchange platforms, etc.). Using skills data (and information on education and training opportunities) effectively and efficiently for career guidance is explored in Chapter 3.

Strong skills data governance provides the foundation for the successful design and implementation of skills policies and programmes in all of Luxembourg's skills policy priority areas described in this Skills Strategy. Skills data are important for better aligning the adult education and training offer to fast-changing labour market needs (see Chapter 2) and informing the design and implementation of guidance and financial incentives that help steer skills choices (see Chapter 3). In addition, skills data are necessary to generate information on current and future skills needs, which is key for recruiting the right foreign talent (see Chapter 4).

In the long run, strong skills data governance supports building integrated skills information systems (Figure 5.1),[1] as strong data governance helps mobilise data and enhance data management and evaluation processes. In Luxembourg, the importance of strong skills data governance is further underscored by the fact that relying solely on national skills data sources, in most cases, does not fully capture the complexity of Luxembourg's skills system due to the high reliance on labour sourced from the Greater Region (see Chapter 4).

This chapter is structured as follows: the following section provides an overview of the current skills data governance practices in Luxembourg. The next section describes Luxembourg's skills data governance performance. The last section conducts a detailed assessment and provides targeted policy recommendations in two opportunities for strengthening the governance of skills data in Luxembourg: improving the quality of Luxembourg's skills data collection; and strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg.

Figure 5.1. The four building blocks of strong skills system governance



Source: Adapted from OECD (2019[1]), *OECD Skills Strategy 2019: Skills to Shape a Better Future*, https://dx.doi.org/10.1787/9789264313835-en.

Overview and performance

Overview of Luxembourg's current skills data governance practices

Collection of skills data in Luxembourg

In Luxembourg, a wide variety of data relevant for the analysis and research of skills policies is being collected by both governmental and non-governmental actors, including both administrative (Table 5.1) and survey data (Table 5.2).

Table 5.1. Key sources of administrative skills data in Luxembourg

Responsible institution	Data type	Description of key variables	Frequency of updates
Joint Social Security Centre (CCSS)	Labour market (occupations, earnings)	Data on occupations and workers (ISCO) at the moment of hiring, including information about the sector, occupation, contract type and duration, place of residence and earnings of residents and cross-border workers	Rolling basis
Agency for the Development of Employment (ADEM)	Labour market (vacancies and job seekers)	Data on vacancies by economic activity (NACE) and occupation (ROME); data on job seekers by gender, age, duration, resident status, education level, etc.; data on matching between job seekers and vacancies	Rolling basis
Sectoral institutions (e.g. ABBL, HORESCA Federation, etc.)	Labour market (vacancies)	Data on vacancies from sectoral institutions' private job boards	Rolling basis
European Centre for the Development of Vocational Training (CEDEFOP) / Luxembourg Institute of Socio-Economic Research (LISER)	Labour market (vacancies)	Data on vacancies from private job portals by sector (NACE), occupation (ISCO), and specific skills requirements (ESCO/O*NET)	Rolling basis

Responsible institution	Data type	Description of key variables	Frequency of updates
Ministry of Higher Education and Research (MESR)	Education and training (participation)	Data on graduates (ISCED 2011 Level 5-8) by gender, age, level of education and field of study	Rolling basis
Ministry of National Education, Children and Youth (MENJE)	Education and training (participation)	Data on graduates (ISCED 2011 Level 1-4) by gender, age, level of education and field of study Data on training participation of workers through the training co-financing requests of companies	Rolling basis
ADEM	Education and training (participation)	Data on job seeker training participation by broad training sector, level of education and duration of training	Rolling basis
Public and private education and training providers	Education and training (participation)	Data on participation in education and training (ISCED 2011 Level 1-8, non-formal adult learning) by field of study/course type (among others)	Rolling basis
Training Observatory of the National Institute for the Development of Continuing Vocational Training (INFPC)	Education and training (outcomes)	Data on outcomes of IVET graduates by professional qualification (School – Active life transition or TEVA study) (OF, INFPC, 2019[2])	Every year
	Companies' training practices	Access to training and companies' training effort (OF, INFPC, 2022[3])	Every year
University of Luxembourg (UoL)	Education and training (outcomes)	Data on outcomes (first and current employment collected through LinkedIn and graduates' academic supervisors) of graduates (ISCED 2011 Level 7-8) by field of study	One-off

Note: ABBL: Luxembourg Banker's Association; HORESCA: National Federation of Hoteliers, Restaurateurs and Café Owners of the Grand Duchy of Luxembourg; ISCO: International Standard Classification of Occupations; NACE: Statistical classification of economic activities in the European Community; ROME: Operational Directory of Trades and Jobs; ESCO: European Skills, Competences, Qualifications and Occupations Classification; ISCED: International Standard Classification for Education; IVET: Initial vocational education and training.

The Joint Social Security Centre (CCSS) is Luxembourg's key source of data for analysing the structure of its national labour market and its evolution. Employers are required to make a declaration to the Common Centre for Social Security when they wish to recruit a new employee. Data collected by CCSS include information on the employee's occupation at the moment of hiring, sector, the type of contract and duration and the employee's place of residence.

Luxembourg's public employment service (ADEM) is its key data source on vacancies and job seekers. ADEM collects data on job vacancies by economic activity (NACE[2]) and occupation (ROME[3]), as well as on job seekers by gender, age, duration, resident status and education level. ADEM vacancy and job seeker data make it possible to analyse the jobs available and the occupations sought by job seekers, as well as the mismatch between the two. In addition, vacancy data are also collected by certain sectoral institutions in Luxembourg, such as the Luxembourg Banker's Association (ABBL) (financial sector) and the HORESCA Federation, which run their own job boards. The job board of the HORESCA Federation also contains data on job seekers in the HORESCA (hospitality) sector. In addition, data on vacancies are contained on Luxembourg's private job portals, which are web-scraped and centralised by the European Centre for the Development of Vocational Training (CEDEFOP)'s Skills-OVATE (online vacancy analysis tool for Europe) tool. Co-ordination between Luxembourg and CEDEFOP is facilitated by the Luxembourg Institute of Socio-Economic Research (LISER), serving as a national contact point for CEDEFOP.

Administrative data on participation in general education (ISCED 2011 Level 1-8) are collected centrally by the Ministry of Education, Children and Youth (MENJE) and the Ministry of Higher Education and Research (MESR). These data also cover enrolment, new entrants and graduates and are reported to international institutions for the purpose of tracking data and indicators on education systems (OECD, 2021[4]). Data on adult education and training participation are collected in a decentralised manner by key public providers (e.g. the National Centre for Continuing Vocational Training [CNFPC], University of Luxembourg Competence Centre [ULCC], etc.), sectoral institutions providing training (e.g. ABBL, Chamber of Commerce [CC], Chamber of Skilled Trades and Crafts [CdM], Chamber of Employees [CSL],

etc.), as well as private training providers. In addition, ADEM collects data on job seekers' training participation.

Administrative data on education and training outcomes in Luxembourg are produced and collected, respectively, by the National Institute for the Development of Continuing Vocational Training (INFPC) and the University of Luxembourg (UoL). In addition, the Training Observatory of the INFPC regularly collects data on outcomes of initial vocational education and training (IVET) as part of the School – Active Life Transition (TEVA) annual study by linking data from MENJE, MESR and CCSS and on companies' training practices.

At the higher education (HE) level, the UoL carried out a one-off graduate tracking exercise in 2021, which collected information on graduates' first and current employment via LinkedIn and through graduates' academic supervisors.

Luxembourg's collection of administrative skills data (Table 5.1) is further complemented by skills data collected through surveys (Table 5.2).

Table 5.2. Key skills-related surveys in Luxembourg

Source	Name	Description of key variables	Frequency of updates
National Institute for Statistics and Economic Studies (STATEC)	Labour Force Survey (STATEC (2022[5]))	Employment status; occupation code (ISCO 4-digit); education level; formal and non-formal education and training participation (except guided on-the-job training) of **resident workers only** in the last four weeks	Every year
	Adult Education Survey (STATEC, (2022[6]))	Formal and non-formal education and training and informal learning participation in the last 12 months; time spent on education and training; obstacles to participation, guidance and financial support	Every 4-5 years
	Continuing Vocational Training Survey (STATEC, (2022[7]))	Firms' provision of continuing vocational training (job training, planned training, job rotation or training by exchanges with other services, study visits, self-directed learning, attendance at conferences, workshops, fairs and lectures), firms' payments for training, etc.	Every 5 years
	Structure of Earnings Survey (STATEC, (2022[8]))	Occupation codes (ISCO 3-digit) of workers (including cross-border workers), including earnings	Every 4 years
Training Observatory of the National Institute for the Development of Continuing Vocational Training (INFPC)	Training Offer (Observatoire de la formation and INFPC, (2021[9]))	Adult learning offer and practices of adult learning providers	Every 3 years
	Continuing Vocational Education and Training (CVET) studies	Qualitative and quantitative assessment of CVET accessibility and participation of employees	Ad hoc
University of Luxembourg (UoL)	Graduate Outcomes Survey	Outcomes (self-reported employment status, earnings, perceived mismatch, use of skills on the job) of tertiary graduates by field of study, date of conclusion of studies, etc.	Every year
Luxembourg Banker's Association (ABBL)	Not specified	Difficulties and duration of recruitment by job type in the financial sector	One-off survey in 2018
Business Federation Luxembourg (FEDIL)	Qualifications of tomorrow – in Industry (FEDIL, (2021[10])) / in ICT (FEDIL, (2018[11]))	Future workforce and qualification needs in the manufacturing and ICT sector	Every 2 years
Competence Centres of the Building Services Engineering and Completion Engineering (CdC-GTB/PAR)	Not specified	Skills and training needs by level of education and by job type among employers in the construction sector	Twice a year

Source	Name	Description of key variables	Frequency of updates
Chamber of Commerce (CC)	Barometer of the Economy "Thematic Focus: Recruitment" (CC, (2019[12]))	Skills shortages (occupational) and recruitment difficulties of firms across sectors	One-off (2019)
	Barometer of the Economy "Thematic Focus: Skills and training (CC, (2021[13]))	Provision of firm-based training across sectors	One-off (2021)
Chamber of Skilled Trades and Crafts (CdM)	Survey on Firms in the Crafts Sector	Future workforce needs and expected skills gaps of firms in the crafts sector	One-off to date (2019) with a new version currently ongoing in 2022
Chamber of Employees (CSL)	Quality of Work Index (CSL, (2021[14]))	Quality of work and questions on participation in adult learning	Every year

The National Institute for Statistics and Economic Studies (STATEC) is in charge of administering Luxembourg's household surveys relevant for the analysis of skills policies. The European Union Labour Force Survey (LFS), implemented in Luxembourg, collects, among others, information on respondents' (residents only) employment status (employed/unemployed/inactive), occupation (ISCO code), as well as participation in formal and non-formal education (except for guided on-the-job training) in the last four weeks. With the European Union (EU) Adult Education Survey (AES) implemented in Luxembourg, STATEC collects, among others, information on public participation in formal and non-formal education and training and informal learning in the last 12 months. Information on obstacles to training participation and time spent on education and training is also available via AES. STATEC is equally in charge of carrying out the Continuing Vocational Training Survey (CVTS), which measures enterprises' activity in the provision of continuing vocational education and training (CVET), and the Structure of Earnings Survey (SES), which collects data on earnings of all firms with at least ten employees in all sectors by economic activity (NACE) and occupation (ISCO). Similarly to LFS and AES, both CVTS and SES are EU surveys, which STATEC implements in Luxembourg.

The Training Observatory of the INFPC collects data on the learning offer of adult learning providers through a regular survey and launched another survey in 2021 on the provision of CVET in small companies. In addition, the UoL conducts an annual survey of its graduates, collecting self-reported data on graduates' education and training outcomes (e.g. employment status, earnings, perceived mismatch, use of skills on the job, etc.).

In addition to surveys administered by governmental actors, non-governmental and sectoral actors in Luxembourg actively collect data on workforce needs, recruitment challenges and firm-based training provision for some of the sectors of Luxembourg's economy through their own surveys.

The ABBL conducted a one-off survey with member companies on the difficulties and duration of recruitment in the financial sector in 2018. The Competence Centre of the Building Services Engineering and Completion Engineering (GTB/PAR), which provides training to craft companies, conducts a survey twice a year to enquire about the skills/training needs among employers in the construction sector. The survey collects information on skills and training needs by level of education and by job type. In addition, the Business Federation Luxembourg (FEDIL) conducts a survey every two years on the manufacturing and information and communication technology (ICT) sectors' future qualification needs.

The CC, in collaboration with the Luxembourg Institute for Social Research (Institut Luxembourgeois de Recherches Sociales, ILRES), a private survey company, carries out its annual Barometer of the Economy study that collects information on the key concerns among Luxembourgish employers. Each Barometer of the Economy has a different thematic edition. In 2019 and 2021, the thematic editions enquired about employers' recruitment difficulties, and firm-based training provision, respectively. In addition, the CdM conducted a survey in 2019 on skilled labour needs and shortages in the crafts sector, supplemented by a qualitative analysis based on interviews with company managers from the various groups of craft activities. The survey was repeated in 2022.

Since 2013, the CSL, in collaboration with the UoL, has conducted the Quality of Work Index survey on an annual basis with questions on employees' working conditions and the quality of work in Luxembourg. Topics cover work demands and workloads, working hours, co-operation between colleagues, possibilities for further training and advancement, participation in decision making in businesses, and more.

Analysis, exchange and co-ordination of skills data in Luxembourg

Several key institutions in Luxembourg engage in the analysis, exchange or co-ordination of the collected skills data (as mentioned above). These institutions include ADEM, the General Inspectorate of Social Security (IGSS), INFPC, STATEC and the Labour Market and Employment Research Network (Réseau d'études sur le marché du travail et de l'emploi, RETEL). In addition, the "Trends" working group, established between ADEM and the Union of Luxembourg Companies (UEL), helps increase the transparency of existing skills data and to further consolidate and improve them.

ADEM publishes labour market analyses regularly, including analyses of vacancies reported to, and job seekers registered with, ADEM (ADEM, 2022[15]). In 2022, ADEM also elaborated sectoral studies, which analyse labour market trends across seven sectors in Luxembourg. Based on ADEM vacancy data, the sectoral studies were developed in collaboration with employers to provide information about Luxembourg's growing, declining and emerging occupations, as well as labour shortages and surpluses, among others (ADEM, 2022[16]).

IGSS engages in the analysis and publication of labour market data. On a regular basis, IGSS publishes data on labour market trends in Luxembourg (including net employment creation trends by sector, age, gender, nationality, and place of residence, among others) (IGSS, 2022[17]). Every month, IGSS also publishes a snapshot of Luxembourg's labour market situation (including the size of the labour force and labour force growth comparison with the preceding year, among others) (IGSS, 2022[18]).

INFPC's Training Observatory conducts research in the field of education and training to support policy makers, employers and education and training providers in improving education and training policies and practices. The Training Observatory analyses employees' access to employer-sponsored training, firms' training activities and the state's financial contribution to firms' training plans, among others. The Training Observatory is a member of ReferNet, the European network of reference and expertise on vocational education and training (INFPC, 2021[19]).

STATEC carries out and publishes relevant analyses often (but not only) on the basis of the surveys it administers (see Table 5.2). For example, relevant publications have presented the results from the AES (STATEC, 2018[20]) and the CVTS (STATEC, 2018[21]) for Luxembourg.

Data exchange and collaboration between IGSS, ADEM and STATEC are supported via RETEL. RETEL was established to commission new, and centralise existing, labour market research in Luxembourg. RETEL aims to support the development of synergies between the work of various governmental entities and stakeholders engaged in Luxembourg's primary labour market data collection and the analysis of labour market data. Through its work, RETEL seeks to foster an efficient and transparent approach to data-driven production of labour market information and evaluation of labour market policies in Luxembourg (Government of Luxembourg, 2018[22]).

MESR launched an initiative to set up a National Data Exchange Platform (NDEP) in Luxembourg to facilitate smoother data exchanges, covering data in various fields beyond skills. The NDEP project is developed in co-operation with various other governmental institutions in Luxembourg (see more in Opportunity 2).

Finally, to increase the transparency of the existing skills data (as summarised in Table 5.1 and Table 5.2) and further consolidate and improve them, Luxembourg established the Trends working group within the framework of the long-term collaborative effort between ADEM and UEL (ADEM/UEL, 2021[23]). Apart from ADEM, the Trends working group includes various members of the UEL, including representatives of

the ABBL, CC, CdM, Luxembourg Trade Confederation (CLC), Federation of Artisans (FDA), FEDIL, Competence Centre for Building Services Engineering (GTB) and the HORESCA Federation (ADEM/UEL, 2021[23]).

Luxembourg's skills data governance performance

As foreshadowed at the beginning of this chapter, strong skills data governance requires that skills data collection processes are effective and efficient (i.e. skills data collection is well-coordinated, resulting in the generation of high-quality data) and that skills data exchanges are easily facilitated.

Skills data governance in Luxembourg could be strengthened on several fronts. First, there is room to improve the quality of Luxembourg's skills data collection in terms of accuracy (i.e. the degree to which the data correctly estimate or describe the quantities or characteristics they are designed to measure) (OECD, 2011[24]), coverage (i.e. completeness of the data) and granularity (i.e. level of detail) (OECD, 2014[25]), as well as to expand the range of skills data collected.

Moreover, there is space to better facilitate skills data co-ordination and exchanges both within the government and with relevant stakeholders in Luxembourg. With the labour market extending beyond national borders, Luxembourg could equally benefit from building stronger synergies with international data sources, especially to better understand the changing skills supply and demand in the Greater Region (see Chapters 1 and 4 for a discussion of the strategic importance of the Greater Region for Luxembourg).

The cross-border nature of Luxembourg's labour market further complicates skills data governance processes. As almost half of Luxembourg's labour force is constituted by cross-border workers (see Chapter 4), Luxembourg does not participate in the OECD Survey of Adult Skills (Programme for the International Assessment of Adult Competencies, PIAAC). As a result, Luxembourg cannot benefit from the survey's assessment of the literacy, numeracy and problem-solving skills possessed by adults or how adults use their skills at home, at work and in the wider community. Similarly, other international surveys that Luxembourg takes part in (e.g. the EU LFS, AES, etc.), which, among others, provide information on the occupational distribution of Luxembourg's workforce or participation in adult education and training, cover residents only. It is possible to include cross-border workers in the analysis of Luxembourg's occupational distribution after combining variables in the LFS, but only with certain caveats (e.g. limited disaggregation is possible). A similar exercise is not possible in the context of the AES.

Existing skills data governance challenges affect Luxembourg's skills assessment and anticipation (SAA) exercises.[4] For example, given that ADEM's sectoral studies (see above) were based solely on ADEM vacancy data, which themselves face important coverage challenges (due to the incomplete declaration of job vacancies by employers; see more in Opportunity 1), the results of the sectoral studies have to be interpreted with caveats, bearing in mind the limitations of the data sources used.

In addition, Luxembourg's SAA exercises tend to be restricted to identifying current skills needs (e.g. by analysing skills demanded in job vacancies) and changing labour market conditions (e.g. growth or decline of certain occupations). However, little is done to anticipate Luxembourg's future skills needs. Stakeholders have indicated that, to a large extent, the absence of skills anticipation exercises is linked to the quality and co-ordination challenges of Luxembourg's existing skills data sources.

It is welcome that the recently established Trends working group led by ADEM and UEL (see above) has recognised many of the skills data challenges highlighted above and intends to work collaboratively on solving them. In addition, LISER has similarly made improving the "data infrastructure and, in particular, access to high-quality data in and for Luxembourg" one of its core objectives (LISER, 2020[26]).

Opportunities for strengthening the governance of skills data in Luxembourg

The performance of Luxembourg's skills data governance arrangements reflects many factors. These include individual and institutional factors and broader socio-economic factors (i.e. Luxembourg's heavy reliance on cross-border labour). However, two key opportunities for improvement have been identified based on a literature review, desk analysis and data, and input from officials and stakeholders consulted in conducting this OECD Skills Strategy.

The OECD considers that Luxembourg's main opportunities for improvement in the area of skills data governance are:

1. improving the quality of Luxembourg's skills data collection
2. strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg.

Opportunity 1: Improving the quality of Luxembourg's skills data collection

As foreshadowed earlier in this chapter, Luxembourg collects a wide variety of quantitative and qualitative data, which can be used to inform the design of skills policies, including labour market data and education and training data. These data sources, and their combination, can provide different types of insights essential for skills policy making.

Labour market data (e.g. social security data, vacancy data, etc.) are commonly used as proxies for the analysis of evolving skills needs because they allow for the observation of growth or decline in employment in specific occupations (OECD, 2016[27]). Vacancy data collected by public employment services (PES) can also provide valuable information on skills needs and shortages by facilitating the analysis of the changes in the number of declared and (un)filled vacancies and the duration of vacancy filling, among others (McGrath and Behan, 2017[28]). In addition, insights from employer surveys can be used to complement administrative data to assess skills needs and shortages by providing information not available in administrative datasets.

Education and training data (e.g. on attainment, participation, outcomes, expenditure, curricula, etc.) provide important information on the access, quality and relevance of the supply of education and training opportunities. This information helps policy makers identify challenges and opportunities in the skills system and target programmes and funding where the expected impacts will be highest.

To improve its quality, Luxembourg's skills data collection could benefit from:

- improving the accuracy, coverage and granularity of Luxembourg's labour market data
- expanding the range and strengthening the granularity of Luxembourg's education and training data.

Improving the accuracy, coverage and granularity of Luxembourg's labour market data

As shown in Table 5.1 and Table 5.2, Luxembourg collects a wealth of labour market data, which provides valuable information on the evolving skills needs in Luxembourg's economy. However, to allow data users (both in and outside of the government) to unlock the full potential of Luxembourg's labour market data, Luxembourg should work on addressing the accuracy, coverage and granularity challenges of certain labour market data sources.

Luxembourg's social security data, collected by the CCSS, are Luxembourg's only source of occupational data covering both Luxembourgish residents and cross-border workers. Given that cross-border workers account for 46% of Luxembourg's labour market (see Chapter 4), the importance of CCSS data cannot be overstated. CCSS data can inform the assessment of the occupational distribution in Luxembourg's labour market and serve as a proxy for assessing current skills needs by making it possible to observe growth or

decline in specific occupations. Should Luxembourg consider developing exercises for anticipating future skills needs (as supported by stakeholders consulted in the context of this project), such as Canada's Occupational Projection System (COPS) (Government of Canada, 2017[29]) or the United Kingdom's Working Futures projections (Warwick Institute for Employment Research, n.d.[30]), CCSS data would be valuable for producing occupational projections (i.e. projections showing the expected future number of workers to be employed in different occupations, thereby producing insights about the future occupational growth or decline).

However, CCSS occupational data face important accuracy challenges due to incorrectly declared occupational codes by employers or their service providers (e.g. payroll managers or outsourced accounting firms). As mentioned above, each newly hired employee has to be reported to the CCSS (Government of Luxembourg, 2021[31]). When making the declaration to CCSS, the occupation of the new employee needs to be specified via a code defined in the International Standard Classification of Occupations (ISCO). However, there is evidence suggesting that in many cases, companies' payroll managers or accounting firms to whom payroll management can be outsourced input incorrect ISCO codes in the employment declarations (ADEM/UEL, 2021[23]), making CCSS data unusable for the analysis of Luxembourg's labour market at the occupational level.

During a data check carried out in 2016, the IGSS found that the ISCO codes were entered correctly in about only 30% of cases. More specifically, IGSS found that a large share of occupations belonging to ISCO groups 1-3 (managers, professionals, and technicians and associate professionals, respectively) were reported under ISCO group 4 (clerical support workers). In part, the reason for inputting incorrect ISCO codes stems from the French translation of the ISCO classification, where the name of ISCO group 4 is translated as "administrative employees" (employés administratifs), which does not fully reflect the meaning of the original English name "clerical support workers".

In order to support employers and their service providers in declaring the correct ISCO codes, IGSS published an online guide in French, where the distinction between the ISCO groups was clearly delineated. IGSS also sent out a letter to employers to highlight the existence of the problem, underscoring the importance of correctly declaring the ISCO codes. Moreover, CCSS developed an occupational code search engine on its website, accessible in French, aiming to help identify the correct ISCO codes more easily. However, it was discussed in stakeholder consultations that in a recent data check, IGSS found that these communication efforts did not yet have the desired effect, as the share of ISCO codes declared correctly had not improved.

Occupational data (declared via ISCO codes) is used for purely analytical purposes in Luxembourg, which means that employers do not have a strong incentive to ensure that the declared ISCO codes are correct. Going forward, Luxembourg could incentivise employers to declare correct occupational codes by designing practical tools, which would have clear value-added for employers without increasing employers' administrative burden. For example, based on the CCSS data, CCSS and IGSS could design an online occupations dashboard, where employers would log in and track the occupational structure and evolution within their company, together with additional features (e.g. employee salary distribution, age profiles, etc.). Such a dashboard could bring significant benefits, especially to small and medium-sized enterprises (SMEs), which tend to have constrained administrative capacity for human resources (HR) management. Furthermore, to increase the value-added of the dashboard, employers in Luxembourg could be, in the long term, asked to regularly update the declared ISCO codes, given that the codes are currently not being updated at all.

To further facilitate ISCO code declarations, CCSS could improve the search functions of the existing occupational code search engine. For example, the occupational coding tool developed by the University of Warwick in the United Kingdom features probability scores reflecting the perceived match between the keywords input into the tool and the suggested occupational codes, as well as descriptions of tasks of the occupations suggested to match one's search, entry routes, associated qualifications and related (similar)

job titles (Box 5.1). To support the user-friendliness of the occupational coding tool, CCSS could develop a chatbot allowing real-time responses to queries of employers or their service providers who might be unsure of which occupational code to declare. CCSS could also consider making the search engine accessible in English in addition to French, given the challenges related to correctly translating the ISCO codes from English to French highlighted above. In the long run, making the search engine accessible in German and Luxembourgish could also be considered, given the variety of languages used in Luxembourg and its labour market (see Chapter 4).

Box 5.1. Relevant international example: Occupational coding tool

United Kingdom

In the United Kingdom (UK), the Warwick Institute for Employment Research at the University of Warwick developed the Computer Assisted Structured Coding Tool ("Cascot") capable of occupational coding and industrial coding to the UK standards developed by the UK Office for National Statistics. The standards are the Standard Occupational Classification (SOC) and the Standard Industrial Classification (SIC).

Cascot assigns a code to a piece of text and calculates the degree of certainty (denoted by a score from 1 to 100) of the assigned score being correct. When Cascot encounters text that does not allow it to clearly match it with any specific occupation or industry, it will attempt to suggest a code but will limit the assigned score to below 40 to signal the uncertainty associated with the suggestion made.

Cascot also features descriptions of tasks of the occupations suggested to match one's search, entry routes, associated qualifications and related (similar) job titles. A multilingual version of Cascot (Cascot International) is available in 15 languages, including French and German. Cascot International facilitates occupational coding to the ISCO 08 classification and a relevant national occupational classification, where available.

Cascot has been evaluated by comparing the tool's suggestions with a selection of manually coded data of high quality. The results showed that 80% of records received a score greater than 40, and of these, 80% were matched to manually coded data. The performance of Cascot is dependent on the quality of input data.

Source: Warwick Institute for Employment Research (2018[32]), *Cascot: Computer Assisted Structured Coding Tool,* https://warwick.ac.uk/fac/soc/ier/software/cascot/details/; Warwick Institute for Employment Research (2018[33]), *Cascot International,* https://warwick.ac.uk/fac/soc/ier/software/cascot/internat/.

While the existing awareness-raising activities mentioned above (i.e. developing an online guide, sending a letter to employers) undertaken by CCSS/IGSS are steps in the right direction, they could be further strengthened. Information on common mistakes in inputting ISCO codes, as well as an overview of the existing resources and tools for helping employers select the correct ISCO code (e.g. the proposed occupations dashboard, CCSS' occupational code search engine, IGSS' online guide, etc.) could be regularly distributed to employers and the existing guidance tools more prominently featured on IGSS/CCSS websites. CCSS/IGSS could expand their awareness-raising activities to include associations of human resources (HR) professionals (e.g. POG – HR Community of Luxembourg) and associations of payroll experts (e.g. Luxembourgish Association of Accounting and Tax Consultancies, ALCOMFI) to target actors directly in charge of employment entry declarations. Employer representatives (e.g. UEL) should equally play a key role, and promote the importance of, and existing support tools for, correctly declaring new hires to the CCSS among employers. In addition to undertaking efforts to strengthen the accuracy of CCSS data, IGSS and other stakeholders in Luxembourg should still make use of the data to the extent possible (e.g. for the analysis of general growth trends across occupations).

Beyond addressing accuracy issues with social security occupational data, there is space to improve the coverage and granularity of Luxembourg's vacancy data. In Luxembourg, a legal obligation exists for employers to declare all job vacancies to ADEM. Employers can report vacancies online via guichet.lu (Luxembourg's e-government platform) or by filling out a PDF form which needs to be sent to ADEM via email or post. A vacancy declaration can be completed in English, French or German (ADEM, 2021[34]). Despite these efforts, a comparison of the number of vacancies declared to ADEM to the number of actual recruitments (based on employment entry declarations to the CCSS) shows that the vacancies reported to ADEM cover less than 30% of all actual job creations in Luxembourg's labour market (ADEM, 2021[35]). The number of declared vacancies also varies by sector. For example, while the estimated average share of job vacancies reported to ADEM was approximately 35% in the ICT sector between January 2020 and January 2021, the figure stood at 18% in the construction sector (ADEM, 2021[35]). While a certain degree of caution should be used when interpreting the results of the comparison of vacancy and recruitment data, since not every recruitment is preceded by a job posting, it can still provide a rough estimate of the coverage of the vacancy data. Given the relatively low number of vacancies reported to ADEM, it can be challenging to use ADEM vacancy data to reliably assess Luxembourg's labour market needs and shortages.

Stakeholders have mentioned several potential reasons for the relatively low number of vacancies reported to ADEM. For example, employers, and especially SMEs, without a dedicated HR department might struggle to find the time and resources to report job vacancies. Stakeholders have also suggested that certain employers do not see great value in reporting vacancies to ADEM since the pool of candidates (registered job seekers) is often unlikely to match the exact requirements of the declared vacancy. Moreover, some recruitments are based on informal referrals rather than officially created and published job postings.

It should be noted that ADEM has taken a number of concrete steps to incentivise employers to improve job vacancy reporting rates. Penalties for enforcing the mandatory vacancy reporting obligation are not applied, and ADEM prefers to use positive incentives instead (Goffin, 2015[36]). For example, ADEM has simplified the vacancy reporting forms (Goffin, 2015[36]) and has been running awareness-raising campaigns for employers within the framework of the ADEM/UEL partnership, underscoring the fact that vacancy reporting is as important for analytical as for recruitment purposes. ADEM also sends its employer service staff to visit companies and highlight the added value of regular vacancy reporting (Goffin, 2015[36]). Moreover, ADEM has started offering the possibility to automatically import a vacancy from a company's job database to ADEM, which several large employers have already implemented. In addition, ADEM has begun creating partnerships with certain private local job portals to automatically import their online job advertisements (OJAs) into ADEM's job board. Finally, ADEM has been developing a range of new services, so it is more attractive for employers to approach ADEM. For example, in April 2021, ADEM's job board was for the first time opened to job seekers who are not registered with ADEM (ADEM, 2021[37]). The results of such efforts are yet to be seen.

Data from OJAs, as already partly explored by ADEM, could serve as a useful additional source of vacancy data for Luxembourg, as OJA data capture even those vacancies not declared to ADEM, but that appear on private job portals. CEDEFOP's Skills-OVATE tool uses web-scraping techniques to collect OJAs from private job portals, public employment service portals, recruitment agencies, online newspapers and corporate websites (CEDEFOP, 2021[38]). In addition, Skills-OVATE provides a granular view of skills most sought after by employers in their vacancies, classified according to the European Skills, Competences, Qualifications and Occupations (ESCO) classification (see more below). While Skills-OVATE data for Luxembourg cover online private job boards, it does not include ADEM's vacancy data. This is because Skills-OVATE only sources information from publicly accessible job boards, and ADEM's job board was not public when the Skills-OVATE tool was designed. Since then, however, ADEM has agreed to publish its vacancies (with employers' permission) on the publicly accessible European Employment Services

(EURES) job board, with the view of supporting EU job mobility. Therefore, a large share of ADEM's vacancies is now accessible on the EURES public job board and can be scraped by Skills-OVATE.

LISER, the national contact point for CEDEFOP, should thus consider reopening conversations with ADEM about including their vacancy data in the Skills-OVATE tool. This would allow for more comprehensive information on both occupational and skills needs trends in Luxembourg by having access to data from vacancies declared both to ADEM and at Luxembourg's private job portals. As Skills-OVATE is updated four times a year, skills needs information could be obtained regularly. Partnering with CEDEFOP would equally help ensure that the data does not contain duplicate vacancies (i.e. vacancies declared both to ADEM and on private job boards) using the tools CEDEFOP had developed. Making greater use of OJA data could help improve both the coverage and granularity of Luxembourg's vacancy data. Nonetheless, ADEM should still strive to increase the share of job postings created and declared by employers. As noted above, since not every recruitment is preceded by a job posting, even greater use of OJA data might not provide a comprehensive picture of Luxembourg's labour market needs.

Going forward, ADEM could consider further expanding the range of support tools and services for employers to strengthen the incentives for employers to approach ADEM to declare job postings. For example, ADEM could develop an online vacancy dashboard for employers, similar to the occupations dashboard (see above), based on vacancy data reported to ADEM. Upon logging in, the vacancy dashboard could give the employer an overview of the vacancies (open and filled) over time within the company and how quickly different vacancies are being filled. In the future, consideration could be given to further developing the technical functions of the vacancy dashboard, for example, to calculate the "attractiveness scores" (i.e. probabilities of finding a suitable candidate for each vacancy based on ADEM's job seekers database) of each vacancy. Stakeholders consulted in the context of this project agreed that employers, especially SMEs, would benefit from such an online vacancy dashboard. In addition, CCSS and ADEM could work on creating links between CCSS employment entry declarations and ADEM vacancy declarations (see more on ADEM vacancy declarations below) to make the reporting process more straightforward for employers. For example, a vacancy reported by an employer to ADEM could be assigned a unique identifier, which, once a suitable candidate has been found for the advertised job posting, could be used to pre-fill the CCSS employment entry declaration.

Evidence shows that the capacities of small employers to engage in formal recruitment, and thereby vacancy reporting, tend to be restricted the most owing to resource constraints or organisational culture (European Commission, 2018[39]). Therefore, to incentivise SMEs to approach ADEM and encourage higher vacancy reporting rates, ADEM could consider developing dedicated support services for SMEs. For example, ADEM could provide support to SMEs in drafting job postings according to their needs, on top of providing additional services (e.g. sign-posting the available reskilling/upskilling opportunities for SME employees). Box 5.2 details the recruitment and support services provided to SMEs in Germany by way of example.

Box 5.2. Relevant international example: Recruitment and support services for SMEs

Germany

In Germany, the public employment service (Bundesagentur für Arbeit) helps SMEs set up vacancies and recruit new personnel. Additionally, SMEs can receive financial support for new recruits who do not yet meet the competence standards for their work. The Bundesagentur also publishes "Faktor A", a magazine and podcast targeted at SMEs with articles focused on recruitment and training, leadership development, as well as the future of work.

The parent organisation of the Bundesagentur, the Federal Ministry of Labour and Social Affairs (Bundesministerium für Arbeit und Soziales), provides the "Leveraging the human factor programme" (unternehemensWert: Mensch, uWM), a consulting service funded via the European Social Fund that supports SMEs in developing long-term human resource strategies. uWM's consulting services focus on personnel management, skills development, equal opportunities and diversity. Government grants cover up to 80% of the consulting costs for companies with fewer than 10 employees, while companies with 10-249 employees can receive grants for up to 50% of their costs.

In Berlin, the Organisation for Education and Participation (Gesellschaft für Bildung und Teilhabe mbH or GesBiT) and the Senate Department for Integration, Labour and Social Affairs (Senatsverwaltung für Integration, Arbeit und Soziales) maintain an Office for Qualification Consulting for SMEs. The consulting services offer SMEs advice on assessing companies' skills needs, available reskilling/upskilling opportunities, as well as recruitment and funding opportunities of which they may be unaware.

Source: Investitionsbank Berlin (2021[40]), *2021/2022 Business Support Guide*, www.businesslocationcenter.de/fileadmin/user_upload/Wirtschaftsstandort/files/foerderfibel-en.pdf; OECD (2020[41]), *Preparing the Basque Country, Spain for the Future of Work*, https://doi.org/10.1787/86616269-en.

Employer representatives in Luxembourg should equally play a role in encouraging higher vacancy reporting rates via active awareness-raising. Members of the UEL (including associations, federations and confederations and chambers of commerce) could raise awareness about the importance of vacancy reporting in their engagement activities with employers (e.g. information sessions, newsletters, prominent featuring on their respective websites, etc.).

In order to further improve the assessment of skills needs, Luxembourg's vacancy data could be further enriched by insights on skills and workforce needs collected by directly surveying employers. As outlined above, several surveys of employers' current and future workforce needs have been carried out by several non-governmental stakeholders (e.g. ABBL, CC, CdM, FEDIL, etc.) in Luxembourg in recent years. CdM and FEDIL implement employer surveys regularly. However, due to the varying structure of questions, sector coverage, frequency of implementation and definition of skills/workforce needs, each survey provides only a piece-meal picture of employers' skills needs. In addition, stakeholders for this review mentioned that too many surveys risk creating "survey fatigue" among employers in Luxembourg, given the size of the country and the administrative and time burden associated with completing each survey.

Going forward, Luxembourg should review the existing employer surveys, in tandem with administrative data on skills needs (e.g. ADEM and Skills-OVATE vacancy data; see Recommendation 4.2) to identify information that: 1) would add value to Luxembourg's labour market data collection but is currently not available in administrative datasets; and 2) is collected by existing employer surveys irregularly, inconsistently or not at all. For example, while Luxembourg's administrative datasets currently do not hold information on future skills needs, CdM and FEDIL surveys collect such insights but only cover three sectors (crafts, industry and ICT). The review of administrative data and existing employer surveys would help Luxembourg assess the need to introduce a national, cross-sectoral employer survey of skills needs and/or gaps. Such a national survey should reduce the need for multiple employer surveys in the long run and mitigate against the risk of "survey fatigue" in Luxembourg. Box 5.3 describes how the United Kingdom implements a nationwide Employer Skills Survey. In developing such a national employer survey, Luxembourg could follow CEDEFOP's (2013[42]) "User guide to developing an employer survey on skill needs", where relevant.

Box 5.3. Relevant international example: Nationwide employer survey

United Kingdom

Since 2011, the United Kingdom has carried out large-scale, cross-sectoral surveys of employers' skills needs. The United Kingdom's employer survey is one of the largest employer surveys in the world. The survey is essential for the work of the Department for Education in England (UK) and its partners within national and local government.

The latest completed iteration of the survey was carried out in 2019 via telephone interviews and asked employers questions about: 1) recruitment difficulties and skills lacking from applicants; 2) skills lacking from existing employees; 3) underutilisation of employees' skills; 4) anticipated needs for skill development in the next 12 months; 5) the nature and scale of training, including employers' monetary investment; and 6) the relationship between working practices, business strategy, skill development and skill demand.

Across different sectors, the survey enquired about employers' skills needs at the level of occupations as well as specific skills (e.g. management, leadership, digital, people or specialist job-related skills).

The success of the survey depends on the willingness of employers to participate. More than 81 000 randomly selected employers across England, Northern Ireland and Wales took part in the survey in 2019. The underlying datasets are available through the UK Data Service by special licence access.

The next iteration of the survey, to be published in 2023, was commissioned to three market research agencies by the Department for Education (DFE) in England, the Welsh Government and the Northern Ireland Executive, and covers England, Wales and Northern Ireland. Again, the survey will be conducted via telephone interviews. If selected, employers can choose the time of their interview. Each employer participating in the survey will be asked if they would like to receive a summary report with the survey findings once the survey has been completed.

The survey results will be published on the gov.uk website in 2023.

Source: Government of the United Kingdom (2020[43]), *Employer Skills Survey 2019*, www.gov.uk/government/collections/employer-skills-survey-2019; Department for Education (2022[44]), *Employer Skills Survey 2022*, www.skillssurvey.co.uk/index.htm.

Finally, to further improve the granularity of Luxembourg's labour market data collection, Luxembourg could benefit from tools that make it possible to link the information on occupations in vacancies declared by employers to specific skills. In the future, ADEM plans to move towards skills-based matching, where job seekers would be matched with occupations best suited to their skills, which could facilitate a closer match. However, ADEM's current job-matching system does not yet facilitate skills-based matching. At present, ADEM matches job seekers to vacancies by matching the occupation (ROME) code associated with a specific vacancy, with the occupation (ROME) code indicated to be of interest by a job seeker, as well as according to language or education requirements, among other criteria.

Several OECD countries make it possible to link occupations and skills by using skills-based occupational classifications. For example, O*NET in the United States is a database containing detailed information about the knowledge requirements of more than 800 occupations. In Canada, the National Occupational Classification describes the world of work and occupations, including the skills required by each of the 500 occupational unit groups (OECD, 2016[27]). In 2021, Australia launched its own comprehensive skills classification, identifying around 600 skills profiles for occupations in the Australian labour market based on the O*NET database (National Skills Commission, 2021[45]). In 2017, the European Commission introduced the ESCO classification, which links occupations and skills relevant for the EU labour market and education and training (Box 5.4).

Box 5.4. Relevant international example: Skills-based occupational classification

The European Skills, Competences, Qualifications and Occupations classification (ESCO)

The European Skills, Competences, Qualifications and Occupations classification (ESCO) is the European multilingual classification of skills, competences and occupations.

ESCO offers a "common language" on occupations and skills that can be used by a wide variety of stakeholders to help connect people with jobs, employers and education and training providers and promote job mobility across Europe.

ESCO works as a dictionary, describing, identifying, and classifying professional occupations and skills relevant for the EU labour market and education and training. As of 2022, ESCO provided descriptions of 3 008 occupations and 13 890 skills associated with these occupations, translated into all official EU languages, as well as Icelandic, Norwegian, Arabic and Ukrainian.

For each occupation, ESCO defines an occupational profile, listing (among others) the skills considered relevant for this occupation. With respect to skills, ESCO distinguishes between skills, competences and knowledge. Skills refer to the "ability to apply knowledge and use know-how to complete tasks and solve problems"; competences are understood as the "proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development"; and knowledge is defined as "body of facts, principles, theories and practices that is related to a field of work or study". For example, working as a civil airline pilot requires the competence to combine knowledge on emergency procedures and equipment malfunctions with skills on reading position coordinates and following the air route.

ESCO is free and available as linked open data.

Source: European Commission (2022[46]), *What is ESCO*, https://esco.ec.europa.eu/en/about-esco/what-esco; European Commission (2022[47]), *ESCOpedia,* https://esco.ec.europa.eu/en/about-esco/escopedia/escopedia.

In Luxembourg, no common, comprehensive skills classification is currently used. Links between occupations and specific skills in Luxembourg's labour market have been defined only for occupations in certain sectors and a non-coordinated manner. In some sectors, the content of occupations is described in collective agreements. For example, the collective agreement covering the banking sector describes the tasks, knowledge and technical skills, among others, required for occupations (ABBL, ALEBA, OGBL and LCBG-SEFS, 2018[48]). In addition, some sectors, such as crafts (CdM, n.d.[49]), have developed more detailed skills profiles for their occupations based on research carried out in working groups or through labour market monitoring (ADEM/UEL, 2021[23]). The limitation of the skills classifications developed at the sectoral level is that they are not linked to a recognised national or international occupational classification (e.g. ISCO), which confines their potential use to the internal needs of the sector. Moreover, the definition of "skills" used by the different classifications varies between sectors, while most sectors in Luxembourg have not developed skills classifications at all (ADEM/UEL, 2021[23]).

Stakeholders in Luxembourg have agreed that rather than developing its own common skills classification, ADEM should consider leveraging and adapting existing and internationally interoperable skills classification for classifying its own vacancy data. The ESCO classification (Box 5.4), designed to reflect the specificities of the EU labour market, might be particularly well-suited to Luxembourg's needs. The ESCO skills classification permits establishing direct links with occupational information classified according to the ISCO classification or indirect links with classifications that map onto ISCO (such as ROME), which are used in many EU member states (European Commission, 2021[50]), including Luxembourg.

ADEM would not be the first public employment service to adopt ESCO. In 2018, Iceland became the first country to adopt ESCO on a national level when the public employment service started using ESCO to revamp its job board (Box 5.5). To facilitate skills-based matching, ESCO is now being used by PES in seven countries (Albania, Finland, Greece, Iceland, Ireland, Israel and Malaysia) (European Commission, n.d.[51]). Most recently, ESCO has been adopted by Greece (Box 5.5). Beyond adopting ESCO at ADEM to support skills-based matching, ESCO could be equally used to help systematically define learning outcomes of adult learning courses, which would have important benefits for Luxembourg's education and training data collection (see the section below on education and training data; also see Recommendation 1.3 in Chapter 2).

Box 5.5. Relevant international example: Adopting the ESCO classification by a public employment service

Iceland

Iceland became one of the first countries to introduce the ESCO classification at a national level.

In 2018, ESCO started being used by the public employment service to revamp job platforms in the country, hitherto relying on the ISCO-88 classification for job matching.

Using the ESCO classification has helped Iceland to more effectively link employers with the right job applicants. As a result, employers are able to better communicate their needs and job seekers better able to see what exactly employers are looking for in applicants.

The use of ESCO also facilitates that job vacancies are described more accurately, thanks to the provision of multilingual information on the knowledge, skills and competences required for the job. The multilingual feature of ESCO has been particularly useful for Iceland, given that more than 10% of Iceland's labour force is foreign-born.

Greece

The Greek Public Employment Service, OAED (Manpower Employment Organisation), adopted ESCO in 2021. It is the first Greek organisation to adopt ESCO.

To adopt ESCO, OAED has implemented the "MATCHING" (Mapping Arrangements and Transcoding Change In Greece) project, co-funded by the European Programme for Employment and Social Innovation (EaSI). The project included training for OAED's employment counsellors (among others), peer learning from other relevant national and European organisations, as well as undertaking awareness-raising activities about ESCO.

ESCO is intended for use by: 1) OAED's staff members to analyse the profiles of job seekers and details of job vacancies through OAED's Integrated Information System; and 2) OAED's clients (job seekers and employers) through OAED's e-Services. Job seekers will be able to annotate their curriculum vitaes (CVs) with ESCO skills, and employers will be able to more accurately describe their job offers.

Source: European Commission (2018[52]), *How ESCO supports the Public Employment Service of Iceland,* https://audiovisual.ec.europa.eu/en/video/I-162745; OAED (2021[53]), *OAED adopts the new ESCO classification of occupations and skills,* www.oaed.gr/storage/oaed-logo/enimerotiko-entipo-esco-matching-en.pdf; European Commission (2022[54]), *The adoption of ESCO by the Greek Public Employment Service (OAED),* https://esco.ec.europa.eu/en/news/adoption-esco-greek-public-employment-service-oaed.

However, certain caveats will need to be kept in mind. For example, stakeholders have expressed concerns about the extent to which ESCO accurately reflects the skills requirements of certain occupations (especially occupations heavily reliant on digital skills). Nonetheless, for comparison, the inclusion of digital skills in the O*NET classification is even more limited. In fact, digital skills covered by the O*NET classification are limited to: 1) knowledge of computers and electronics; and 2) programming skills

(Lassébie et al., 2021[55]). Stakeholders in Luxembourg have broadly agreed that despite certain shortcomings, ESCO was the most suitable skills classification, which could be adapted for use in Luxembourg's context.

Recommendations

- **4.1 Improve the accuracy of occupational social security data by creating targeted incentives for employers, strengthening existing guidance tools for identifying the correct occupational codes, and conducting targeted awareness raising.** IGSS and CCSS could design an online occupations dashboard using CCSS data, where employers could track the occupational, salary and/or demographic structure and evolution within their company. CCSS and ADEM could also work on creating links between CCSS employment entry declarations and ADEM vacancy declarations, whereby parts of CCSS declarations could be automatically pre-filled based on ADEM declarations to make the reporting process more straightforward for employers. Further, CCSS should improve the search functions of the existing occupational code search engine (e.g. by including descriptions of tasks related to occupations, developing a chatbot for real-time responses to queries, etc.) and consider making the search engine accessible in English, in addition to French. IGSS and CCSS should feature the existing guidance tools (i.e. the proposed occupations dashboard, occupational code search engine, etc.) more prominently on their respective websites and, in collaboration with employer representatives (e.g. UEL), design a regular reminder outlining the "common mistakes" of, and existing guidance tools for, identifying the correct occupational codes. In addition, IGSS and CCSS could expand their awareness-raising activities to include associations of HR professionals or payroll experts to target actors directly in charge of employment entry declarations. In turn, employer representatives (e.g. members of the UEL) should equally underline the importance of correctly declaring new hires to the CCSS in their own engagement activities with employers. In addition to undertaking efforts to strengthen the accuracy of the CCSS data, IGSS and other stakeholders in Luxembourg should still make use of the data to the extent possible (e.g. for the analysis of general growth trends across occupations).
- **4.2. Explore the possibility of including ADEM's vacancy data in CEDEFOP's Skills-OVATE tool.** With ADEM's vacancy data now published on a publicly accessible job board, CEDEFOP (via LISER) should explore the possibility of including ADEM data in CEDEFOP's Skills-OVATE tool. As a result, it would be possible to regularly obtain information on occupational and skills trends in Luxembourg based on vacancy data from both ADEM's own job board and online private job boards. The risk of counting certain vacancies twice (i.e. vacancies declared both to ADEM and on private job boards) would be minimised through CEDEFOP tools developed specifically for such a purpose.
- **4.3. Increase the share of job postings created and reported by employers to ADEM, by designing targeted incentives and services for employers, especially SMEs, and through employer-led awareness raising.** ADEM could develop an online vacancy dashboard based on vacancy data declared to ADEM, which could provide employers with an overview of their vacancies (open and filled) over time and how quickly they are being filled. ADEM could also consider developing dedicated support services for SMEs (e.g. support with drafting job postings according to SMEs' needs, sign-posting the available reskilling/upskilling opportunities for SME employees, etc.), whose capacities to engage in vacancy reporting tend to be restricted the most. Employer representatives (e.g. members of the UEL) should also further raise awareness about reporting vacancies to ADEM in their engagement activities with employers, in addition to highlighting the importance of correctly declaring new hires to CCSS (see Recommendation 4.1).

- **4.4. Review existing employer surveys, together with administrative data on skills needs to help assess the need for a national employer survey.** Luxembourg should review the existing employer surveys carried out by non-governmental actors, in tandem with reviewing administrative data on skills needs (e.g. ADEM and Skills-OVATE vacancy data; see Recommendation 4.2) to identify information which: 1) would add value to Luxembourg's labour market data collection but is currently not available in administrative datasets; and 2) is collected by existing employer surveys irregularly, inconsistently or not at all. The review of administrative data and existing employer surveys would help Luxembourg assess the need for introducing a national, cross-sectoral employer survey of skills needs and/or gaps. Such a national survey should reduce the need for multiple employer surveys in the long run and mitigate against the risk of "survey fatigue" in Luxembourg.
- **4.5. Adopt a skills-based occupational classification to link occupations to skills.** ADEM should adopt a comprehensive and internationally recognised skills classification to facilitate matching job seekers to vacancies. For this purpose, ADEM could consider the use of ESCO, which links occupations to specific skills. ESCO could be equally used to help systematically define learning outcomes of adult learning courses, which would have significant benefits for Luxembourg's education and training data collection (see Recommendation 1.4 and Recommendation 4.8).

Expanding the range and strengthening the granularity of Luxembourg's education and training data

Luxembourg's skills data collection includes a variety of education and training data that provides valuable information on Luxembourg's skills supply (see Table 5.1 and Table 5.2). Going forward, stakeholders consulted during this review agreed that Luxembourg's education and training data collection could be further expanded, and the granularity of the existing data further strengthened.

Data on education and training outcomes help shed light on the alignment of the education and training offer and the demands of the labour market (OECD, 2016[27]), helping policy makers to better tailor the education and training offer to labour market needs while supporting individuals in making informed skills choices (see Chapter 3 for an extended discussion on guiding and incentivising skills choices in Luxembourg). The key opportunities for strengthening Luxembourg's data on education and training outcomes exist at the levels of higher education (HE) and adult learning.

At the HE level, graduate tracking is overseen and implemented by the University of Luxembourg. UoL is Luxembourg's only public HE institution, with the UoL student population representing 99% of the total student population in higher education in Luxembourg (Eurostat, n.d.[56]).[5] Since 2018, UoL has been collecting data on graduates' (former master's and bachelor's students) outcomes. UoL uses a graduate survey, implemented six months after graduation, asking graduates about their employment status, earnings, perceived skills mismatch, and use of skills on the job, among others. The survey is extended to all graduates (former master's and bachelor's students). Around 30% of contacted graduates typically respond. As of 2022, UoL planned to include PhD graduates in the survey as well.

In 2020, UoL expanded its graduate tracking exercise by conducting a one-off "employment study" of graduates' employment pathways using LinkedIn data. Based on LinkedIn data and anecdotal evidence from graduates' supervisors, UoL was able to collect information for approximately 55% of its graduates (former master's and PhD students) having graduated between 2015 and 2019. UoL assembled a team of consultants who manually checked graduates' LinkedIn profiles, while academic supervisors provided insights on graduates' employment pathways based on their knowledge. The evidence from academic supervisors was checked via desk research and only used if validated. Information on bachelor's students was not collected due to time and resource constraints.

While UoL's graduate tracking efforts are steps in the right direction, more could be done. For example, current graduate tracking efforts do not make it possible to gather data on how long it takes HE students to find a job post-completion of their studies, which could be useful (not only) to better facilitate the transitions of former international students into the labour market (see Chapter 4). It is also important to note that UoL's survey results rely on self-reported information by graduates, while the survey's response rate could be further increased. Moreover, the use of LinkedIn data for the purposes of the employment study can impact the representativeness of the graduate tracking results. Evidence suggests that low-income individuals and those outside of the workforce tend to be under-represented on LinkedIn, while LinkedIn tends to be used frequently by individuals in knowledge-intensive sectors such as management, marketing, HE and consulting (Blank and Lutz, 2017[57]; van Dijck, 2013[58]). In addition, via the employment study, UoL gathered information on graduates' first and current job titles and employers through LinkedIn, missing out on collecting other valuable data, such as information on earnings. As of early 2022, UoL does not plan to repeat the employment study.

Going forward, UoL could consider using administrative data for the purposes of graduate tracking and combining it with existing survey data (OECD, 2019[59]). Administrative data can provide a longitudinal view of graduates' outcomes and could provide evidence on the time graduates take to transition into the labour market. Box 5.6 details how England (United Kingdom) combines administrative and survey data in its graduate tracking of HE graduates. In Luxembourg, administrative data (e.g. CCSS data) could provide comprehensive information (e.g. on the employment status, sector and earnings of graduates),[6] at least for graduates who have remained in Luxembourg following the completion of their studies.[7]

Presently, the use of administrative data for graduate tracking in Luxembourg is precluded by the lack of necessary legal basis, which is required under the EU General Data Protection Regulation (GDPR). However, in the context of the development of the NDEP (see Opportunity 2), Luxembourg is aiming to grant the necessary legal basis to the NDEP, thereby making the use of administrative data possible for graduate tracking purposes.

Should NDEP be capable of establishing connections to administrative databases of other countries, especially in the Greater Region (see Recommendation 4.14), the collection of information about outcomes of HE students receiving financial aid from the Government of Luxembourg but studying outside Luxembourg[8] or graduates who had studied in Luxembourg but left the country after the completion of their studies, could equally be facilitated.

To complement administrative data with information that is not available in administrative databases (e.g. how useful the university experience was in preparing graduates for the labour market, skills used on the job, etc.) (OECD, 2019[60]), UoL could link administrative data to its existing graduate survey by using unique identifiers. It could also consider expanding the survey to gather information from former international students about reasons for leaving Luxembourg post-completion of their studies in order to support efforts to better foster the transition of former international students into Luxembourg's labour market (see Chapter 4). LinkedIn data could be considered as an additional source of information to cross-check the UoL graduate survey and administrative data and fill potential gaps in the latter two.

Box 5.6. Relevant international examples: Higher education graduate tracking

England (United Kingdom)

England tracks the outcomes of HE graduates by combining administrative and survey data.

The Longitudinal Employment Outcomes (LEO) dataset links school census, Further Education, Higher Education Statistics Agency and Her Majesty's (HM) Revenues and Customs data to obtain information on graduates' employment and earnings. From 2019/20, a Graduate Outcomes Survey (GOS) of HE graduates was commissioned to complement LEO. LEO and GOS are linked via unique identifiers, creating a merged dataset.

Conducted 15 months after graduation, GOS is a census survey that complements LEO by collecting self-reported, qualitative information from graduates about their job roles (e.g. their duties and responsibilities) and the extent to which they use the skills developed during their studies. GOS is managed by the Higher Education Statistics Agency and is carried out by a combination of online and telephone interviews. Higher education institutions (HEIs) support GOS implementation by providing up-to-date contacts of their graduates.

GOS contains core and optional questions. The core questions cover: 1) job title and duties, including supervision responsibilities; 2) how the current job was found; 3) what further study have they conducted since graduation; 4) skills from their course that they are using in their work; and 5) current activities and future plans. HEIs can include optional questions in GOS for a fee.

HEIs can access the raw survey data for business planning purposes and to evaluate HEI teaching standards in the Teaching Excellence Framework in England.

Source: European Commission (2020[61]), *Graduate tracking - A "how to do it well" guide,* https://op.europa.eu/en/publication-detail/-/publication/5c71362f-a671-11ea-bb7a-01aa75ed71a1/language-en/format-PDF/source-search.

While there is space for improving Luxembourg's data on education and training outcomes of HE graduates (see above), there are no measures in place for tracking the outcomes of graduates from adult learning, either publicly or privately provided.

Tracking the outcomes of adult learners is a challenge in many OECD countries. Nonetheless, several relevant international examples could inspire Luxembourg. In Denmark (Box 5.7), data on all publicly provided adult learning courses are collected in a centralised course register and can be combined with administrative data thanks to a unique identifier number (similar to the identifier number of Luxembourg's National Registry of Physical Persons), making it possible to gain detailed information on the course participants' outcomes. In Portugal, accredited providers (both public and private) of adult learning courses delivered in the framework of Portugal's National Qualifications System (SNQ) are required to register the training activities of individual learners in the Integrated Information and Management System for Educational and Training Supply (SIGO). SIGO issues a certificate upon training completion to the learner and automatically registers training information in the learner's own educational and training record (the Qualifica Passport) (Box 5.7). Luxembourg could create a centralised training register similar to Denmark's and Portugal's. To obtain information on learners' outcomes following the conclusion of training, information in Luxembourg's centralised course register could be linked to administrative data (e.g. CCSS data on employment status, sector, earnings, etc.) through the NDEP (see Opportunity 2). When initiating the tracking of outcomes of adult learners, Luxembourg could restrict the exercise to collecting data on participants in continuous professional development (formation professionnelle continue) and professional retraining (reconversion professionnelle) courses, rather than personal development (développement personnel) courses, as the latter are not of direct labour market relevance.

After exploring the use of administrative data for the purposes of adult learning graduate tracking, should Luxembourg wish to collect additional information not available in administrative datasets (e.g. job progression, use of skills on the job, etc.), a survey of adult learning outcomes could be considered. For example, France implements a survey of adult learners' outcomes every year (Box 5.7). In Luxembourg, INFPC and STATEC could collaborate on designing and implementing such a survey.

Box 5.7. Relevant international example: Adult learning graduate tracking

Denmark

In Denmark, data on publicly provided adult and continuing education are collected centrally in the "Cross-sectional course register", managed by Statistics Denmark (Denmark's national statistical office). Data in the register are collected via the civil registration number (CPR number) to monitor the population's participation in adult and continuing education. In addition, combining the register with other administrative data makes it possible to obtain detailed information on the outcomes of course participants.

Statistics Denmark makes the register data available via its online databank and decides which data should be published. The possibility also exists to buy more detailed datasets or to access the microdata via paid access, or via researcher or ministerial agreements. These agreements outline the data security rules that must be followed. For example, data disaggregation may be limited to avoid identifying specific individuals.

In order to improve co-ordination and collaboration between Statistics Denmark and data users, Denmark's Contact Committee for education statistics organises annual or biannual meetings where representatives from selected ministries and non-governmental stakeholders can provide feedback to Statistics Denmark on data quality and any related issues.

Portugal

In Portugal, the Integrated System for Information and Management of Educational and Training Offer (SIGO) is co-ordinated by the Directorate-General for Education and Science Statistics (DGEEC) to help manage the education and training offer for adults and young people. SIGO collects information from all accredited adult learning providers (public or private) providing courses under the National Qualifications System, whether their qualifications are part of the National Qualifications Catalogue or not. Information is collected on the training activities of individual learners and the number of learners who access and complete learning programmes. When a training activity is completed, a certificate is issued by SIGO that is automatically registered in the learner's Qualifica Passport. The Qualifica Passport is a user-oriented online tool and platform that provides information on individuals' own educational and training records and directs learners to potentially relevant learning opportunities based on the qualifications they have already acquired.

While SIGO has not been designed for the sole purpose of tracking adults' outcomes, in the context of continuous improvement of SIGO, Portugal has started working on establishing links between SIGO data and social security data to be able to track adults' outcomes in the future.

France

Every year, the Ministry of Labour, Employment and Economic Inclusion of France carries out the "Survey on the future of candidates with professional qualifications" (Enquête sur le "Devenir des candidats aux titres professionnels"). The objective of the survey is to generate quantitative and qualitative information on the education and training outcomes of job seekers who had completed a course leading to professional qualification. The survey is carried out six months after the qualification

completion. The survey inquires about the former course participants' employment status (current and in the past six months), nature of the employment contract (i.e. full-time vs part-time work) where relevant, relevance of the training completed for the individuals' job, as well as the use of skills acquired during training. In 2019, the survey collected responses from more than 35 000 respondents, with the survey results being considered statistically significant.

Source: OECD (2021[62]), *Strengthening Quality Assurance in Adult Education and Training in Portugal: Implementation Guidance,* www.oecd.org/portugal/Strengthening-Quality-Assurance-in-Adult-Education-and-Training-in-Portugal-Implementation-Guidance.pdf; OECD (2018[63]), *Skills Strategy Implementation Guidance for Portugal: Strengthening the Adult-Learning System,* https://dx.doi.org/10.1787/9789264298705-en; OECD (2018[64]), *OECD Reviews of School Resources: Portugal 2018*, https://dx.doi.org/10.1787/9789264308411-en; European Commission (2018[65]), *Mapping of VET graduate tracking measures in EU Member States,* https://op.europa.eu/en/publication-detail/-/publication/00d61a86-48fc-11e8-be1d-01aa75ed71a1; Ministry of Labour (2019[66]), *Annual report 2019 - Survey on the future of candidates with professional qualifications [Rapport annuel 2019* - Enquête sur le "Devenir des candidats aux titres professionnels" *"]*, https://travail-emploi.gouv.fr/IMG/pdf/rapport_devenir_candidats_2019.pdf.

Finally, Luxembourg's education and training data collection would benefit from more granular and structured information on skills developed in adult learning courses. Clearly outlining the skills that individuals can expect to gain from a specific course and defining the skills using a "common language of skills" (i.e. following a common skills classification) would facilitate the interoperability of modular training across adult learning providers (see Chapter 2); support adult learning providers in requesting the alignment of non-formal qualifications with one of the levels of the Luxembourg Qualifications Framework (Cadre luxembourgeois des qualifications, CLQ) (MESR/MENJE, 2020[67]); and help develop automatic tools for guiding individuals towards the training courses most suitable to their needs. For example, the Luxembourg Institute of Science and Technology (LIST) has developed a skills e-assessment tool, Cross-Skill, allowing individuals to identify the skills gaps they would have to fill to move between different jobs (LIST, 2022[68]). Should LIST have access to a catalogue of training courses with learning outcomes defined in terms of specific skills, the results of such an e-assessment could be used to suggest to individuals the training courses best matched to fill their skills gaps.

Luxembourg's online portal for lifelong learning (lifelong-learning.lu at www.lifelong-learning.lu/Accueil/en), managed by the INFPC, offers adult learning providers the opportunity to register on the portal and present their courses to the public. All providers registered on the lifelong-learning.lu portal should define the "objectives" (i.e. learning outcomes) of their courses. However, the level of granularity with which adult learning providers describe the skills that individuals are expected to develop in their courses varies widely, as there is no common definition of skills that providers follow in their descriptions.

Going forward, Luxembourg's adult learning providers should be incentivised to upload their training offer and describe its learning outcomes on the lifelong-learning.lu portal. Accreditation of adult learning courses could be made conditional on publicising the training offers on lifelong-learning.lu, and on describing the course learning outcomes in a non-structured manner (i.e. not having to follow a skills-based occupational classification) yet in sufficient detail (e.g. by setting a minimum word count requirement) (see Chapter 2). Luxembourg could then consider developing an information technology (IT) tool, integrated on lifelong-learning.lu, which could use text mining and natural language processing (NLP) techniques to help providers articulate the skills developed in their programmes in a structured manner. The IT tool would analyse the non-structured descriptions of course learning outcomes specified by providers and suggest skills best suited to reflect the course content, which the providers could check and validate. The generated skills suggestions would appear on the lifelong-learning.lu portal, together with the non-structured descriptions. The generated skills suggestions should follow a common, internationally recognised skills-based occupational classification. For example, should ADEM adopt the ESCO classification for classifying its own vacancy data (see Recommendation 4.5), ESCO would be well-suited to help adult learning providers annotate the learning outcomes of their courses with specific skills, too.

Recommendations

- **4.6. Consider combining graduate surveys in higher education with administrative data.** The University of Luxembourg should consider the feasibility of using administrative data (e.g. CCSS data) for the purposes of graduate tracking. Luxembourg's foreseen NDEP (see Opportunity 2) would provide the necessary legal basis for linking administrative datasets. UoL's existing graduate survey could then be used to gather information not available in administrative databases. The survey and administrative data could be combined by using unique identifiers. UoL's existing survey could also be expanded to ask graduates about reasons for leaving Luxembourg post-completion of their studies to support efforts seeking to better foster the transition of former international students into Luxembourg's labour market (see Chapter 4). In the long run, the possibility of creating linkages between administrative datasets within and beyond Luxembourg via NDEP (see Opportunity 2) would facilitate collecting information about outcomes of HE students receiving financial aid from the Government of Luxembourg but studying outside of Luxembourg and graduates who had studied in Luxembourg but left the country after the completion of their studies.
- **4.7. Initiate tracking of adult learners' outcomes by creating a centralised training register interoperable with administrative data and by considering introducing a nationwide survey of adult learners' outcomes.** Luxembourg should start by creating a training register centralising data on participants in adult learning courses (continuous professional development and professional retraining courses) of accredited public and private providers. The data from the centralised training register could be linked through NDEP (see Opportunity 2) to administrative labour market data (e.g. CCSS data) in order to obtain information on learners' outcomes following course completion. To complement the information gathered via administrative data (e.g. employment status, sector, earnings, etc.), Luxembourg could consider introducing a nationwide survey of adult learners' outcomes to gather additional qualitative information (e.g. on job progression, use of skills developed on the job, etc.). INFPC and STATEC could collaborate in designing and implementing such a survey.
- **4.8. Incentivise adult learning providers to describe the learning outcomes of their courses in sufficient detail and develop an IT tool helping to extract structured information on skills from the learning outcomes' descriptions.** Adult learning providers in Luxembourg should be incentivised to upload their training offer on the lifelong-learning.lu portal, where they should describe and update descriptions of the learning outcomes of their courses in a non-structured manner (i.e. not having to follow a skills-based occupational classification) yet in sufficient detail (e.g. by setting a minimum word count requirement). Certification of adult learning providers with a quality label could be made conditional on publicising the training offer on lifelong-learning.lu, and on providing non-structured descriptions of the course learning outcomes (see Chapter 2). INFPC could then develop an IT tool that could be integrated on the lifelong-learning.lu portal and use text mining and NLP to help providers articulate the skills developed in their programmes in a structured manner. The IT tool would make skills suggestions to adult learning providers by analysing the non-structured learning outcomes descriptions of their courses. Adult learning providers could check and validate the suggestions made by the IT tool. The skills suggestions made by the IT tool would appear on the lifelong-learning.lu portal, together with the non-structured descriptions. The skills suggestions made by the IT tool should follow a common, internationally recognised skills-based occupational classification. The use of the ESCO classification could be considered for this purpose should it be adopted by Luxembourg's labour market institutions (e.g. ADEM) (see Recommendation 4.5).

Opportunity 2: Strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg

A strategic and co-ordinated approach to collecting and managing public and even private data are important for taking full advantage of the social, scientific, economic and commercial potential of data resources. Skills data (i.e. labour market and education and training data, among others) is no exception. All too often, skills data, whether public or private, are collected in an uncoordinated manner by the various actors gathering data for their own internal needs. However, data are of limited value if they cannot be cross-referenced with other data from different sources. The usefulness of collecting data could be further enhanced by integrating them with different types of data sources. If skills data are collected and used in silos because their existence is not known or their accessibility is limited, the return on investment made in generating these data is suboptimal.

Data producers, including governmental institutions, can foster synergies between existing skills data by making relevant datasets available for use within the government or for free use by non-governmental stakeholders through "open data" or existing data platforms. However, several barriers need to be addressed to facilitate effective data co-ordination and exchange. Such barriers include: the lack of data collected based on international data standards (semantic interoperability); the lack of standards and technological solutions for data interoperability (technical interoperability); the lack of data documentation; the lack of metadata; the lack of reusability; the lack of tools to assess and optimise the quality of available data; difficulties in assessing the value of datasets; the risk of losing competitive advantage; and intellectual property risk or risk of privacy violation (OECD, 2021[69]; European Environment Agency, 2019[70]).

Stakeholders in Luxembourg have highlighted that Luxembourg lacks a co-ordinated approach to skills data collection and management. There is low awareness of all the existing skills data sources, as well as their scope and accessibility criteria, which limits the extent to which they can be fully leveraged to inform the design and implementation of Luxembourg's skills policies. Efforts for improving Luxembourg's skills data collection and use similarly often occur in an uncoordinated fashion. In addition, skills data exchanges between government institutions and stakeholders remain limited, not least because laws and technical infrastructure allowing for such exchanges have yet to be introduced.

Moreover, Luxembourg is not taking full advantage of international skills data sources, especially those of neighbouring countries. However, exploring synergies with international data sources seems crucial for Luxembourg, given the cross-border nature of its labour market, and could help Luxembourg assess the potential skills supply and demand in the Greater Region.

Luxembourg could better foster co-ordination and synergies between skills data within and beyond its national borders by:

- strengthening the co-ordination of labour market and education and training data flows within government and with stakeholders
- building synergies between Luxembourg's and neighbouring countries' data sources to improve the skills data availability for the Greater Region.

Strengthening the co-ordination of labour market and education and training data flows within government and with stakeholders

Luxembourg does not currently have a single government body with a specific mandate to collect data on skills and co-ordinate all the actors that collect data on skills demand and supply. The institutions working on skills data currently operate with different working definitions, methods and practices that reflect their different mandates.

In Luxembourg, co-ordination can be improved between four existing "levels of institutions" involved in the skills data collection process: 1) the national statistical office (STATEC) that has the authority to access

and co-ordinate all data in the country; 2) the institutions (ADEM, CCSS/IGSS and INFPC) that collect key data on the labour market and training (with limited interoperability); 3) RETEL, which commissions new, and centralises existing, labour market research in Luxembourg (with limited capacity to carry out its role and collaborate with other institutions); and 4) stakeholders (e.g. CC, CdM, federations, private training institutes, etc.) that are collecting information on training participation in their own training courses, or employers' skills needs.

In Luxembourg, STATEC co-ordinates national reporting efforts with respect to labour market indicators (e.g. Eurostat, LFS) but does not have a specific mandate to collect data on existing skills in Luxembourg or the Greater Region area or companies' skills needs. STATEC has the authority to access any government data sources within Luxembourg as long as it operates within GDPR boundaries. However, STATEC does not compile skills data collected by stakeholders (e.g. on training participation courses organised by stakeholder associations, on employers' skills shortages, etc.). Such stakeholder data are not currently centralised nor accessible for use by government authorities or other stakeholders. Furthermore, there is no central strategy, mandate or tool to assemble different data sources, streamline different data flows or improve skills data interoperability. In view of this, Luxembourg may be inspired by Norway, whose Future Skills Needs Committee supports effective skills data co-ordination and analyses (see Box 5.8).

Box 5.8. Relevant international example: Skills data co-ordination and analysis

Norway

The purpose of Norway's Future Skills Needs Committee (Kompetansebehovsutvalget) is to provide the best possible evidence-based assessment of Norway's future skills needs to support labour market authorities' strategic planning and decision making.

More specifically, it is tasked to "generate and organise the evidence base" on Norway's future skills needs based on already available data and "stimulate the development of new evidence". For this purpose, the Future Skills Needs Committee is also able to fund its own research via its budget financed by the Ministry of Education. Concerning the types of data used, the Future Skills Needs Committee is expected to use a variety of both qualitative and quantitative data sources.

The Future Skills Needs Committee is comprised of representatives from social partners (employers and employees), the involved ministries, as well as experts, and is headed by a renowned economist (19 members, plus 3 in the Secretariat).

Since its creation in 2017, the work of the Future Skills Needs Committee has largely been based on national and international research and has resulted in three official reports. With the new mandate covering the period 2021-27, the Future Skills Needs Committee will not produce official reports but will target its work on specific topics with analyses and assessments instead.

Source: OECD (2020[71]), *Strengthening the Governance of Skills Systems: Lessons from Six OECD Countries*, https://dx.doi.org/10.1787/3a4bb6ea-en.

The ADEM/UEL Trends working group mentioned above is a promising attempt at establishing an informal platform to think collectively about ways to improve information on skills and labour market data through existing stakeholder data sources. This working group, which relies on stakeholder participation, aims to co-ordinate efforts to develop and use skills data (both government and stakeholder) in Luxembourg. It includes representatives from ADEM and the UEL covering several sectors (ABBL for finance, FEDIL for construction and ICT, etc.) and seeks to gain an overview of the various data sources that provide information on skills needs and identify ways to improve these data sources.

The partnership between ADEM and UEL involves stakeholders in developing data on skills demand and supply in Luxembourg. These institutions are mapping existing data sources but have not yet assigned specific responsibilities for data collection and do not yet have a common objective in this regard. In addition, relevant stakeholders like CCSS, MENJE, MESR and STATEC are not currently involved in this project, suggesting that a broader government approach would be desirable.

Similarly, Luxembourg would benefit from an increase of data interoperability and could clarify institutions' roles in data collection. Currently, skills data exist and are collected in a decentralised way; thus, their potential is underutilised. A government mandate, objectives and other issues related to the co-ordination could be clarified and formalised with a skills data charter (or national skills data strategy), as in the cases of the United States Department of Education or the Worldwide Initiatives for Grantmaker Support (WINGS) philanthropic network (see Box 5.9). While many government services and stakeholders actively promote and develop data collection on skills demand and supply, co-ordination can be improved. This is due to the lack of a clear government mandate on skills data collection and some shared objectives for the relevant institutions.

Box 5.9. Relevant international example: Data strategies and charters

United States - Department of Education Data Strategy

This United States (US) Department of Education (DoE) recognised the strategic and critical need for consistent governance and management of its data assets, in line with the 2018 Foundations for Evidence-Based Policymaking Act, the 2019 Federal Data Strategy, and the Federal Data Strategy 2020 Action Plan.

As a key milestone under Action 2 ("Institutionalize Agency Data Governance") of the 2020 Action Plan, the DoE established the inaugural Department of Education Data Strategy in December 2020, through its Data Governance Board. The purpose, expectations, roles and responsibilities, and procedures governing the work of the Data Governance Board are outlined in the Data Governance Board Charter. The Department of Education Data Strategy describes the department's vision for accelerating progress toward becoming a data-driven organisation and fully leveraging the power of data to advance the department's mission of ensuring equal access and fostering educational excellence for the nation's learners.

United States - Global Philanthropy Data Charter

Worldwide Initiatives for Grantmaker Support (WINGS) is a network of foundations and philanthropy networks. In 2012, the US Foundation Centre and WINGS launched the Global Philanthropy Data Charter, which was intended as a framework to guide organisations in the sector as they set out to improve philanthropy data, acknowledging the diversity of context, culture and legal framework within which these organisations operate.

WINGS and the US Foundation Centre noticed that many foundations were collecting data on their activities but in different and unstructured ways. The US Foundation Centre worked on improving the data governance in the philanthropic sector in the United States, and similarly, the WINGS network worked globally by introducing an international data charter to standardise the existing information collected by private foundations on individual private grants and improve data interoperability.

Source: US Department of Education (2019[72]), *Data Governance Board Charter,* www.ed.gov/sites/default/files/cdo/dgb-charter.pdf; US Department of Education (n.d.[73]), *Foundations for Evidence-Based Policymaking*, www.ed.gov/data; OECD (2018[74]), *Private Philanthropy for Development*, https://dx.doi.org/10.1787/9789264085190-en.

A national skills data charter, intended as a formal strategic document able to support the national co-ordination of skills data collection, could clearly set out objectives to improve Luxembourg's skills data governance going forward. The charter could allocate roles and responsibilities to the different key actors in Luxembourg's skills data system for improving Luxembourg's skills data governance while leveraging potential synergies. The charter could also be complemented by an action plan that covers specific time periods, sets out the necessary actions to be taken in the short term and envisages those to take in the medium term.

Data exchanges seem to take place only to comply with national and international reporting obligations and on a case-by-case basis to tackle specific coverage or granularity issues. For example, IGSS exchanged data with ADEM and STATEC to learn about their respective issues related to data coverage (see Opportunity 1). However, many data exchange exercises have to be supported by specific agreements (or memoranda of agreement, MOUs) to comply with GDPR restrictions, which limits the possibility of exchanging data even between government agencies. These rules, therefore, limit data exchange between public authorities. The matter could be simplified if data requests by the same agency could be grouped together or if the rights to access a certain type of data could be valid for a certain period of time or could be automatically granted to a requesting institution if the data request matches certain pre-specified requirements. This latter option to simplify bureaucracy would be equivalent to establishing "institutions' data passports".

Recently, the Ministry of Higher Education, together with five other ministries, launched a project initiative to set up a common National Data Exchange Platform (NDEP), covering all data sectors and going beyond skills. This project materialised in the form of an Economic Interest Group (EIG) in July 2022. The recruitment of human resources has started, and it is expected that the structure will become operational in the coming months, hence moving the co-ordination of national data production in the right direction.

The NDEP project involves six main government entities (MESR, Ministry of State's Department of Media, Connectivity and Digital Policy, Ministry for Digitalisation [MinDigital], Ministry of Finance, Ministry of the Economy and Ministry of Social Security's IGSS) as well as the Luxembourg Institute for Health (LIH) and LISER. It is also planned that UoL and LIST will join in the course of 2022. The NDEP project aims to set up a broad data exchange environment that provides the IT infrastructure and legal basis to facilitate data sharing between government agencies while complying with GDPR requirements. This intragovernmental partnership is currently working on refining the list of participating authorities, setting out the list of priority fields that would benefit from this platform (the top priority is health, followed by energy data) and developing the legal framework. The Ministry of State is involved, as it is responsible for the publication of the government's open data, while the other government partners have transversal responsibilities related to data governance. Other stakeholders, such as STATEC, although not part of the governance structure, will be involved in the operational activities.

The NDEP is a promising project that could help facilitate Luxembourg's skills data exchanges. The inclusion of skills as a priority for data exchange (in addition to health and energy), covering both government and stakeholder skills data on the NDEP, should thus be considered. A similar project in Estonia led to the harmonious integration of data sources of many government agencies. It could be examined as a possible model for Luxembourg to follow (see Box 5.10).

Box 5.10. Relevant international example: Data exchange solution

Estonia

The X-Road software-based solution is the backbone of e-Estonia. Estonia's e-solution environment includes a full range of services for the general public, and since each service has its own information system, they all rely on X-Road to ensure secure transfers, that all outgoing data are digitally signed and encrypted, and that all incoming data are authenticated and logged.

X-Road connects different information systems that may include a variety of services. It has developed into a tool that can also communicate with multiple information systems, transmit large datasets and perform searches across several information systems simultaneously. X-Road was designed with growth in mind, so it can be scaled up as new e-services and new platforms come online.

X-Road has the advantage that access to individual databases can be controlled and regulated, with only authorised users able to enter the databases and receive pre-defined content. Over 150 public sector institutions are connected to X-Road, and it is used indirectly by hundreds of enterprises and institutions and over 50 000 organisations.

In the field of education and skills, X-Road serves to support data exchanges between, for example, the Estonian Education Information System (EHIS) and other databases and platforms, such as the population register or the Health and Insurance Fund. Such connections have several benefits. For example, the connection between EHIS and the population register enables EHIS to access data on a student's place of residence without the need to collect such information from students themselves. In turn, the Health Insurance Fund uses EHIS data to determine who is eligible for student health insurance.

Today, the X-Road software is implemented in Finland, Iceland, Japan and other countries (see Box 5.12). Estonia and other countries that adopted the approach to exchanging public administrations' data benefitted from the introduction of common technology to facilitate the technical aspects of the data exchange.

Source: OECD (2020[71]), *Strengthening the Governance of Skills Systems: Lessons from Six OECD Countries*, https://dx.doi.org/10.1787/3a4bb6ea-en.

The authorities participating in the development of the NDEP should analyse the potential of working with guichet.lu, the official IT tool to carry out tasks with Luxembourgish administrations. The guichet.lu (https://guichet.public.lu/fr.html) platform is managed by the recently created MinDigital and the State Information Technology Centre (CTIE). It has the double function of providing information on public administration services to Luxembourgish citizens, residents and workers and of allowing them to carry out a number of administrative tasks. It is not used to collect data, except for the National Registry of Physical Persons, which is the only dataset kept by CTIE. The guichet.lu portal covers all adults resident in Luxembourg and the active population of the Luxembourgish labour market, including job seekers (who, for example, plan to move to Luxembourg). For this reason, for example, the government is using this IT tool to carry out the latest population census (2021). While the platform does not currently collect data, it has the potential and legal basis to access and connect all government data sources with unique identifiers. Therefore, the potential value-added of the guichet.lu platform in facilitating data exchange and interoperability should be considered in developing Luxembourg's NDEP.

The value of skills data sources increases when they are made available to the broader public. Direct benefits of open skills data can include, for example, reduced costs for firms related to real-time information on the skills supply and faster, improved information on career guidance for students, apprentices, or job seekers, among others. Open data increase the performance and transparency of public sector

organisations and can also be a driver for the demand for data and the development of existing and new data sources. Open data can contribute to the development of innovative services and new research models. Moreover, it can help the institutions responsible for data collection make more informed decisions based on existing resources (Carolan et al., 2016[75]; European Data Portal, 2020[76]).

Luxembourg's Ministry of State is responsible for the publication of open government data. At least some labour market and skills data are already public. The data.public.lu portal (https://data.public.lu/) currently displays a number of datasets and data flows covering several domains, such as COVID-19, public transport, etc. ADEM also shares key labour market data updated each month through this portal. However, the user-friendliness of the data.public.lu could be improved to allow for better access and the analysis of complex statistics, as, at the moment, the portal is not meant for the general public but for specific users who are comfortable with this type of open data in conducting their own analysis.

While currently co-ordination between the relevant authorities seems to be the main priority, making part of the skills data exchanged via the NDEP available for open data publication for the broader public (e.g. skills shortages and mismatches) could increase the value of data collections. If the government were to make further efforts in this direction to increase the value of existing data on skills and the labour market – and collect new data – Luxembourg could envisage greater adherence to open data principles and support further open skills data publication. New Zealand is an example of a government that has embraced a cross-government open data approach and adopted an open data charter (see Box 5.11).

Box 5.11. Relevant international example: Open data principles

New Zealand

Open data are data that are available for everyone to access, use and share. The concept of open data is not new, but it has become increasingly important to focus on making data accessible to everyone. Open data's three most important characteristics are: 1) availability and access; 2) re-use and distribution; and 3) universal participation.

Open data have many benefits when shared freely, including benefits that can be specific and pertain to a particular category (cultural, scientific, environmental, governmental). For example, benefits for researchers include: greater access to data; the ability to build upon and create new research from publicly accessible data; enhancing the visibility of one's research; the ability to verify and reproduce experiments; increased researcher authenticity; and reduced academic fraud.

By opening data, governments increase the value of data by making them more accessible to the greater public. Other arguments in favour of adopting an open data approach include:

- The use of public money to fund the data generation should also be reflected in universally available results.
- The rate of discovery in scientific research is accelerated by better access to data.
- Opening government data can lead to improving education, governments and other real-world problems by reinforcing the link between researchers and policy makers.

Arguments against adopting an open data approach include:

- Privacy concerns may require limited access to data for specific users or data subsets.
- To avoid data misuse, the publishing authorities need to invest resources in quality management, dissemination and metadata development.

New Zealand is an example of a country that has made a commitment to open data. New Zealand's Open Data Partnership provides government agencies with a set of principles and actions to guide and govern the release of open government data, which are not personal, classified or confidential (anyone can use and share them). All data should be open by default, timely and comprehensive, accessible and usable, comparable and interoperable, for improved governance and citizen engagement, and for inclusive development and innovation. New Zealand's open government data cover, for example, data related to land, health, education and population, among others.

Source: Carolan et al. (2016[75]), *Open data, transparency and accountability: Topic guide*, www.nationalarchives.gov.uk/doc/open-government-licence; Orvium (2022[77]), *What Is Open Data?;* https://blog.orvium.io/what-is-open-data/; European Data Portal (2020[76]), *The Economic Impact of Open Data Opportunities for Value Creation in Europe*; https://data.europa.eu/en/datastories/economic-impact-open-data-opportunities-value-creation-europe; Government of New Zealand (2022[78]), *Open data policies,* www.data.govt.nz/toolkit/open-data/open-data-policy/.

Recommendations

- **4.9. Designate a single entity to lead the co-ordination of Luxembourg's skills data collection and analysis efforts.** Luxembourg could identify a single national governmental body to lead the co-ordination of all national efforts to collect, analyse and publish data on skills demand and supply. Such an institution could set up and lead a national consortium that includes the main institutions that operate in this domain. This body should have a clear mandate, a feasible timeline and a proactive approach to ensure the national co-ordination on skills data collection, definitions and working practices. Institutional users of labour market data, such as INFPC, RETEL, LISER, IGSS, ADEM or STATEC, are good candidates to receive a national mandate to initiate this process of co-ordination and set up a national consortium to set out a skills data charter, an action plan and contribute to the NDEP (see below).
- **4.10. Develop a national skills data charter and an action plan with clear roles, responsibilities and procedures for government and stakeholders to co-ordinate improving the relevance and quality of skills data in Luxembourg in the short and medium term.** The national skills data charter (a formal strategic document) should support the work of the national skills data co-ordinating body by clearly setting out the objectives and specific actions to improve Luxembourg's skills data governance going forward (e.g. the types of SAA exercises to be developed, specific data sources to be improved). The charter should include the description of the data collected by each institution, together with accessibility conditions, as well as information on each actor's current or foreseen efforts (e.g. the Trends working group, NDEP, etc.) for improving Luxembourg's skills data governance. The charter should clearly allocate the roles and responsibilities of the different key actors in Luxembourg's skills data system (including STATEC, ADEM, IGSS, CCSS, MENJE, MESR, MinDigital, sectoral stakeholders, etc.) for improving Luxembourg's skills data governance going forward, while leveraging potential synergies. Main institutional data users, such as RETEL, INFPC, and LISER, should also have observer/advocacy roles. The skills data charter should also define the main governance rules and processes and should be regularly reviewed and updated based on inputs from the relevant actors involved. The charter could also be complemented by an action plan that covers specific time periods, sets out the necessary actions to be taken in the short term and envisages those to take in the medium term.

- **4.11. Support the development of the National Data Exchange Platform, and advance discussions on the inclusion of skills data among the main priorities of the project.** The NDEP project could be developed in collaboration with all the relevant actors covered by the national skills data charter (e.g. STATEC, ADEM, IGSS, CCSS, MTEESS, MENJE, MESR, MinDigital, and sectoral stakeholders). Consideration should be given to assigning unique identifiers to skills and labour market data integrated on the platform to support data interoperability. Limitations imposed by the GDPR should be mapped out in order to set up a legal framework to support collaboration between the different actors involved. The potential of the guichet.lu platform should be explored in order to connect different data sources in relation to the NDEP.
- **4.12. Establish a simplified protocol for sharing existing labour market data by introducing agency-specific "data passports" to reduce the bureaucratic burden for recurrent institutional data users.** Until the NDEP is fully operational, data passports could be assigned to institutions working on skills and labour market data to pre-approve recurrent data requests within the GDPR framework.
- **4.13. Increase the value of the existing and new skills data collections by better facilitating further publication of open data on skills.** Luxembourg could consider greater adherence to open data principles and support further open skills data publication by improving the user-friendliness of the data.public.lu portal. In the future, making part of the skills data exchanged via the NDEP available as open data could be considered.

Building synergies between Luxembourg's and neighbouring countries' data sources to improve the skills data availability for the Greater Region

The economies of Luxembourg's Greater Region are characterised by a high level of economic interdependence, including aspects relating to labour, employment, skills demand and supply. This applies to workers commuting between the four countries and businesses operating both nationally and across borders.

In the Greater Region, it is therefore important to make information on residents, workers and businesses more readily available to relevant government partners to perform routine checks, provide work permits and maintain labour market and skills data quality across borders. Furthermore, governments (and governments' data flows) need to keep pace with the increasing economic and market interdependence of the Greater Region, aiming to better estimate skills outflows and inflows in addition to skills shortages, demand, supply and mismatches.

Similarly, given that Luxembourg draws its labour supply from the Greater Region, it is necessary to consider the skills supply and demand within the Greater Region and not only that of Luxembourg when designing and implementing Luxembourg's skills policies. Although Luxembourg is a net labour importer, significant numbers of workers cross borders from Luxembourg and to Luxembourg every day (see Chapter 4). A large share of Luxembourg's workforce and job seekers (potential workforce) resides in Lorraine, Wallonia, Rhineland-Palatinate and Saarland. Skills that are not available in the Luxembourgish labour market may be available beyond Luxembourg's borders and within the Greater Region. Similarly, the Greater Region's skills demand should be considered in addition to Luxembourg's own. Skills that may be in demand in Luxembourg may also be in demand in its neighbouring regions, impacting the types of skills that Luxembourg can expect to draw upon in the future.

Luxembourg should thus further explore how it can draw upon data on skills and labour supply from Luxembourg's Greater Region (Saarland, Lorraine, Luxembourg, Rhineland-Palatinate and Wallonia). For example, France's Occupations' Observatories (Observatoires des Métiers) and the Lorraine ALFOREAS-IRTS Observatory undertake work on skills data, skills shortages and skills needs anticipation

in their respective regions. France's Ministries of National Education, Early Childhood and Sports and of Higher Education and Research collect data on graduates' profiles, including on their fields of study. In addition, the French Pôle Emploi Grand-Est collects data on job seekers, their skills and training. Similarly, Forem (Wallonia's Employment Service) and the Brussels Employment Observatory regularly publish analyses of occupations and skills shortages and work on skills needs anticipation. Germany's federal and state employment agencies collect and publish labour market indicators by qualifications. It would be important that Luxembourg, as well as its neighbours in the Greater Region, have ways of securely accessing and sharing such data with each other.

The Interregional Labour Market Observatory (IBA-OIE) regularly gathers already-existing information from the main data-collecting institutions in Belgium, France, Germany and Luxembourg and publishes indicators on the situation of the employment market in the Greater Region. IBA-OIE was created in 2001 as a network of institutes specialised in the field of employment: the INFO-Institut (advocacy and research institute), ADEM, LISER, France's Cross-Border Mission of the Grand-Est Regional Council, Grand-Est EURES/Cross-border Resource and Documentation Center, Belgium's Ostbelgien Statistics and Walloon Institute for Evaluation, Forecasting and Statistics. IBA-OIE is an institutional user of labour market data in the Greater Region. However, it does not have a specific mandate to work on skills data (e.g. sectoral shortages/excess studies) or to develop data collection. However, it represents a good example of an institution that exploits synergies between neighbouring countries' institutions and whose focus is Luxembourg's Greater Region rather than limiting its scope to the national borders.

In this context, a promising project has been developed in Luxembourg by LISER and its Data Centre, which are working on establishing a "safe room" to access Belgium, France, Germany and Luxembourg's administrative data on workers and firms. The setup of a data room would consist of a secure space to streamline and simplify organisations' workflows and to enable them to access each other's data while meeting compliance standards and ensuring high levels of security. Another project will link administrative data from Germany and Luxembourg, which would enable the analysis of employment profiles of past and current cross-border workers in these two countries. Such efforts could be scaled up and further developed. For example, Estonia and Finland have established systems allowing to exchange data across borders (Box 5.12).

Box 5.12. Relevant international example: Cross-border data exchange

Estonia and Finland

The Governments of Estonia and Finland are exchanging data across borders in an X-Road Trust Federation. Estonia and Finland, respectively, had already developed and implemented their national data exchange systems to enable interoperability across government agencies of the same country.

X-Road is an open-source software solution that provides unified and secure data exchange between organisations. It is also a digital public good, verified by Digital Public Goods Alliance. The X-Road Trust Federation is an ecosystem for cross-border data exchange allowing for interoperability between two X-Road-based data exchange layers from different jurisdictions – be these regions, federal states or countries.

By linking the two X-Road-based systems initially developed separately in Estonia and Finland, government agencies in the two countries are now exchanging relevant census and labour market data on population and businesses via the Internet across borders. Data are exchanged across borders between Estonia and Finland and between national commercial registers, tax boards and population registers. Benefits are immediately identifiable in reduced bureaucracy (workload and request processing times); public officials can access data more seamlessly, shorten waiting times, increase information availability, and grant data accuracy. Citizens, workers and businesses enjoy a more

efficiently operative public sector, have their data automatically available for the government entities they must interact with, and do not need to submit updates of personal or business information as these change in their home country.

Estonia, Finland, and other countries benefitted from the introduction of a national platform to facilitate data exchange between public agencies. The fact that the platform (and the technology) used ensured the compatibility of Estonia and Finland's systems facilitated the setup of the data exchange between the two countries.

Source: X-Road (2020[79]), *Estonia and Finland launch automated data exchange between population registers — X-Road® Data Exchange Layer*, https://x-road.global/estonia-and-finland-launch-automated-data-exchange-between-population-registers.

A joint data exchange platform for Luxembourg's Greater Region could work similarly to how the NDEP plans to function at the national level and build on the existing initiatives like LISER's "safe room" and IBA-OIE's work. A cross-border data exchange platform could foster data exchange between each country's public authorities, integrate the Greater Region's stakeholders and simplify data requests in relation to GDPR compliance. As this work would involve public institutions from different countries, it would also be more difficult to create the political stimulus to carry out this project: it would therefore need to be led by a single body, corresponding to a public authority or a consortium of public authorities in order for it to function effectively.

Recommendations

- **4.14. Develop a comprehensive mapping of the neighbouring countries' data sources on skills.** The sources mapped should be complementary to Luxembourg's sources on skills and labour supply (e.g. neighbouring regions' data on trainings, vocational education and training, HEIs and unemployed/job seekers). Luxembourg authorities and the Greater Region need to identify relevant governmental and non-governmental actors in Belgium, France and Germany that collect or might collect data on skills available within Luxembourg's Greater Region or skills demand within the region that might be attracting skills available within Luxembourgish borders. Given the large number of skills data sources available within the Greater Region, a co-ordinated effort by research institutes in the four countries could be envisaged to lead the mapping exercise. For example, similar co-ordinated research efforts have taken place at the European level through European Research Infrastructure Consortiums (ERICs). Among Luxembourgish institutions, the Ministry of Family Affairs, Integration and the Greater Region, the IBA-OIE Observatory, LISER and its data room are well placed to take the initiative on this matter.
- **4.15. Promote the establishment of a data exchange platform for skills data within the Greater Region.** Luxembourg and the Greater Region would strongly benefit from increased collaboration between the four countries' public authorities and from the institutionalisation of data exchange covering labour market data, skills and other related domains. Exchanging data and, subsequently, the increased availability of data could lead to better knowledge and smoother information flows on the labour market. As political incentives do not lie within a single country's borders, government authorities should identify (or create) a responsible body to co-ordinate efforts to improve the availability and exchange of data within the Greater Region. The potential of using Luxembourg's own foreseen NDEP for this purpose (i.e. making the platform interoperable internationally) should be explored.

Overview of recommendations

Strong governance of skills data is essential to help policy makers and stakeholders navigate the complexity and uncertainty associated with the design and implementation of skills policies. Two opportunities have been selected indicating where the governance of skills data in Luxembourg can be strengthened:

1. improving the quality of Luxembourg's skills data collection
2. strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg.

This chapter presented 15 recommendations to seize these opportunities in the area of skills data governance. A high-level overview of the recommendations can be found in Table 5.3. This selection is based on input from a literature review, desk research, discussions with the Luxembourg National Project Team and broad engagement with a large variety of stakeholders, including two workshops in Luxembourg and various related meetings and group discussions.

Two recommendations have been selected that could be considered to have the highest priority based on potential impact, relevance in the current context in Luxembourg, as well as overall support for implementation. To strengthen the governance of skills data, the OECD recommends that Luxembourg, bearing in mind its administrative capacity, should:

- Improve the accuracy of occupational social security data by creating targeted incentives for employers, strengthening existing guidance tools for identifying the correct occupational codes, and conducting targeted awareness raising (Recommendation 4.1).
- Develop a national skills data charter and an action plan with clear roles, responsibilities and procedures for government and stakeholders to co-ordinate improving the relevance and quality of skills data in Luxembourg in the short and medium term. (Recommendation 4.10).

Table 5.3. High-level overview of recommendations to strengthen the governance of skills data

Policy directions	Recommendations	Responsible parties
Opportunity 1: Improving the quality of Luxembourg's skills data collection		
Improving the accuracy, coverage and granularity of Luxembourg's labour market data	4.1. Improve the accuracy of occupational social security data by creating targeted incentives for employers, strengthening existing guidance tools for identifying the correct occupational codes, and conducting targeted awareness raising	• CCSS • IGSS • RETEL • ADEM • Employers and their representatives
	4.2. Explore the possibility of including ADEM's vacancy data in CEDEFOP's Skills-OVATE tool	• ADEM • LISER
	4.3. Increase the share of job postings created and reported by employers to ADEM, by designing targeted incentives and services for employers, especially SMEs, and through employer-led awareness raising	• ADEM • Employers and their representatives
	4.4. Review existing employer surveys, together with administrative data on skills needs to help assess the need for a national employer survey	• Trends working group (ADEM and UEL) • STATEC
	4.5. Adopt a skills-based occupational classification to link occupations to skills	• ADEM
Expanding the range and strengthening the granularity of Luxembourg's education and training data	4.6. Consider combining graduate surveys in higher education with administrative data	• University of Luxembourg • MESR
	4.7. Initiate tracking of adult learners' outcomes by creating a centralised training register interoperable with administrative data and by considering introducing a nationwide survey of adult learners' outcomes	• INFPC • STATEC

Policy directions	Recommendations	Responsible parties
	4.8. Incentivise adult learning providers to describe the learning outcomes of their courses in sufficient detail, and develop an IT tool helping to extract structured information on skills from the learning outcomes' descriptions	• INFPC
Opportunity 2: Strengthening co-ordination of, and synergies between, skills data within and beyond Luxembourg		
Strengthening the co-ordination of labour market and education and training data flows within government and with stakeholders	4.9. Designate a single entity to lead the co-ordination of Luxembourg's skills data collection and analysis efforts	Consortium of public authorities: • INFPC • ADEM • IGSS • STATEC
	4.10. Develop a national skills data charter and an action plan with clear roles, responsibilities and procedures for government and stakeholders to co-ordinate improving the relevance and quality of skills data in Luxembourg in the short and medium term.	• Consortium of public authorities
	4.11. Support the development of the National Data Exchange Platform, and advance discussions on the inclusion of skills data among the main priorities of the project.	• Consortium of public authorities • MESR
	4.12. Establish a simplified protocol for sharing existing labour market data by introducing agency-specific "data passports" to reduce the bureaucratic burden for recurrent institutional data users	• Consortium of public authorities
	4.13. Increase the value of the existing and new skills data collections by better facilitating further publication of open data on skills	• Consortium of public authorities • Ministry of State
Building synergies between Luxembourg's and neighbouring countries' data sources to improve the skills data availability for the Greater Region	4.14. Develop a comprehensive mapping of the neighbouring countries' data sources on skills	• Research institutes • MFAMIGR • IBA-OIE
	4.15. Promote the establishment of a data exchange platform for skills data within the Greater Region	• Consortium of public authorities • MFAMIGR • IBA-OIE

Note: ADEM: Agence pour le développement de l'emploi; CEDEFOP: European Centre for the Development of Vocational Training; CCSS: Centre commun de sécurité sociale; IGSS: Inspection générale de la sécurité sociale; RETEL: Réseau d'études sur le travail et l'emploi; LISER: Luxembourg Institute of Socio-Economic Research; UEL: Union des Entreprises Luxembourgeoises; STATEC: Institut national de la statistique et des études économiques; MESR: ministère de l'Enseignement supérieur et de la Recherche; INFPC: Institut national pour le développement de la formation professionnelle continue; MFAMIGR: ministère des Affaires familiales, de l'Intégration et de la Grande Région; IBA-OIE: Observatoire interrégional du marché de l'emploi.

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Notes

1. Integrated information systems are systems that collect and manage the data and information that governments and stakeholders produce, analyse and disseminate to ensure that policy makers, firms, individuals and others have access to accurate, timely, detailed and tailored information. Relevant data and information include, among others, the results of skills assessment and anticipation exercises, information on where to access learning opportunities, as well as information from evaluations of public policies (OECD, 2019[1]).

2. The Statistical Classification of Economic Activities in the European Community, abbreviated as NACE, is the classification of economic activities in the European Union (EU); NACE is a four-digit classification providing the framework for collecting and presenting a large range of statistical data according to economic activity in the fields of economic statistics.

3. The ROME is the "Operational Directory of Trades and Jobs", which was created in 1989 by the ANPE (French National Agency for Employment). It is mainly used for classification and identifying trades based on associated skills. The ROME code is often used by administrations, employment services to classify occupations, announcements and requests from employers.

4. Skills assessment and anticipation (SAA) exercises are tools to generate information about the current and future skills needs of the labour market (skills demand) and the available skills supply. SAA exercises include general labour market information systems, sectoral/occupational/regional studies and forecast-based projections, among others (OECD, 2016[27]).

5. In addition to the graduate tracking undertaken by the University of Luxembourg, certain private higher education institutions in Luxembourg undertake their own graduate tracking studies. In 2022, the Luxembourg National Research Fund also completed a one-off tracking study of PhD students in public-private partnership programmes.

6. CCSS occupational data could also be used for the purposes of graduate tracking, conditional upon improving the quality of the CCSS occupational data (see Recommendation 4.1).

7. The results of the “employment study” carried out by the University of Luxembourg (see more above) show that 53% of master’s graduates from Luxembourg, 52% of master’s graduates from the European Union (excluding Luxembourg) and 49% of master’s graduates from third (i.e. non-EU) countries have found employment in Luxembourg following graduation. The figure stands at 38% (Luxembourg), 31% (European Union excluding Luxembourg) and 36% (third countries) for PhD graduates during the same time period. Lower-bound estimates are used in both cases due to missing information in the UoL employment study (see more above).

8. In Luxembourg, both resident and non-resident students (full-time or part-time) in higher education (HE) are eligible for financial aid for higher education (AideFi), subject to certain conditions. For example, a non-resident student is eligible for AideFi as long as the student’s parent(s) has been working in Luxembourg for at least five years over a ten-year reference period preceding the AideFi application, or for at least ten years at the time of the application (Government of Luxembourg, 2021[80]). Stakeholders have indicated that tracking the outcomes of HE students receiving AideFi but studying outside of Luxembourg is a challenge.

OECD Skills Studies

OECD Skills Strategy Luxembourg

ASSESSMENT AND RECOMMENDATIONS

Skills are the key to shaping a better future and central to the capacity of countries and people to thrive in an increasingly interconnected and rapidly changing world. Megatrends such as digitalisation, globalisation, demographic change and climate change are reshaping work and society, generating a growing demand for higher levels and new sets of skills.

OECD Skills Strategy projects provide a strategic and comprehensive approach to assess countries' skills challenges and opportunities and help them build more effective skills systems. The OECD works collaboratively with countries to develop policy responses that are tailored to each country's specific skills needs. The foundation of this approach is the OECD Skills Strategy Framework, which allows for an exploration of what countries can do better to: 1) develop relevant skills over the life course; 2) use skills effectively in work and in society; and 3) strengthen the governance of the skills system.

This report, *OECD Skills Strategy Luxembourg: Assessment and Recommendations*, identifies opportunities and makes recommendations to provide labour-market relevant adult learning opportunities, guide and incentivise skills choices, attract and retain foreign talent to fill skills shortages, and strengthen the governance of skills data in Luxembourg.

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