2020
#GGSD
Forum

24 - 26 November

Securing natural capital:

Resilience, risk management and COVID-19

Summary Report

OECD
BETTER POLICIES FOR BETTER LIVES

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2020 Green Growth and Sustainable Development Forum

Securing natural capital:

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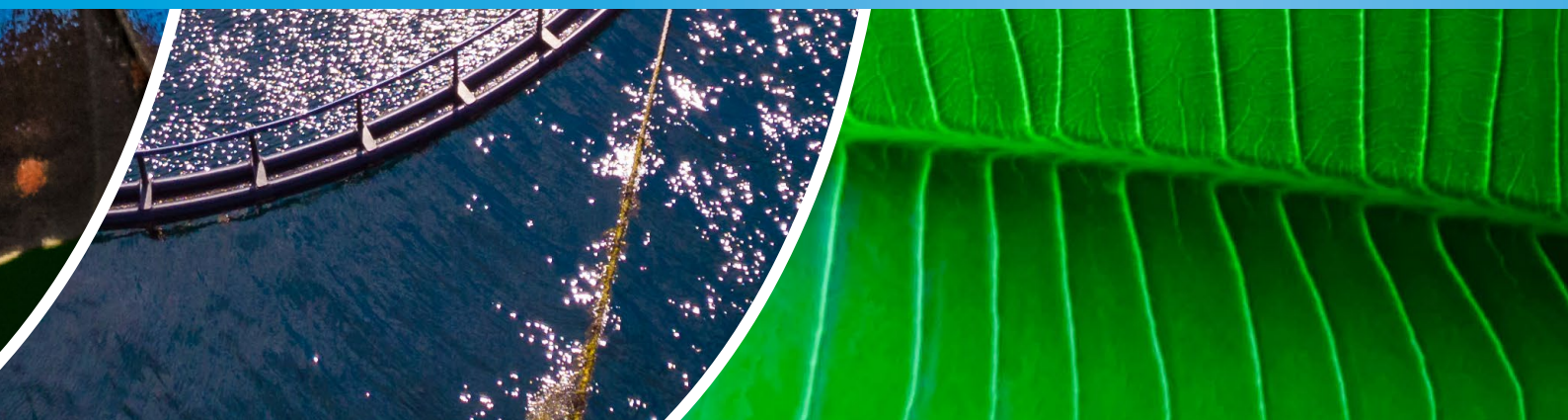
Resilience, risk management and COVID-19



Why a Forum on natural capital and COVID-19?

The COVID-19 pandemic has highlighted the vulnerabilities of our socioeconomic systems globally and exposed the risks that natural capital degradation imposes on human health, our economy, and society. Yet, natural capital, in particular the biodiversity and ecosystem services upon which we depend, is rapidly deteriorating. How to build resilience and sustainability in the recovery phase of this pandemic is becoming an overwhelmingly important topic for policy makers.

In this context, under the overarching theme of "*Securing natural capital: Resilience, risk management and COVID-19*", the Forum this year addressed the risks posed by unmitigated biodiversity loss and natural capital depletion for the resilience and sustainability of our economies and societies, and discussed how the COVID-19 pandemic is re-shaping the policy responses to cope with these issues.

The Forum sessions focused on the best practices, opportunities and challenges for enhancing the environmental sustainability of the sectors and workers who directly depend on the natural capital on land and from oceans. Furthermore, we discussed how biodiversity and natural capital can help to increase the resilience of our societies to the impact of climate change. We also focused on the existing data gaps, since "you can cannot manage what you cannot measure", and on how to mobilise finance to achieve the SDG targets on biodiversity.

Established in 2012, the Green Growth and Sustainable Development (GGSD) Forum is the main annual green growth event at the OECD. The GGSD Forum provides a space for multidisciplinary dialogue on key cross-cutting issues on the green growth agenda for which coordination across different government ministries, OECD committees, business and civil society is needed.

Background Issue Papers

Land-use policies for sustainability

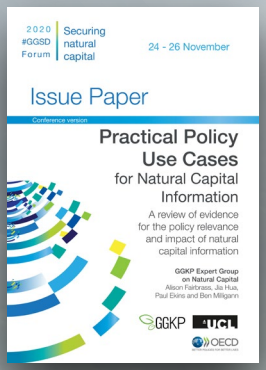
by Axelle Boulay, OECD Consultant

https://bit.ly/3nAAalm

Practical Policy Use Cases for Natural Capital Information: A review of evidence for the policy relevance and impact of natural capital information

by Alison Fairbrass, Jia Hua, Paul Ekis and Ben Milligann, GGKP Expert Group on Natural Capital

https://bit.ly/370tp7t



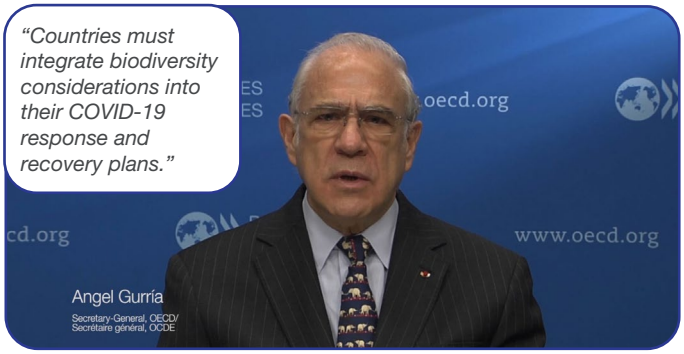
New technologies and approaches to measure ecosystem services locally and to engage local stakeholders: From concepts to real-life applications of ecosystem services modelling and decision-support tools

by Peter van Bodegom and Roy Remme, Leiden University

https://bit.ly/397hR3t

Opening Session

Angel Gurría, OECD Secretary-General, officially opened the GGSD Forum by stressing the economic dependency of our societies on ecosystems services. The OECD report *Biodiversity: Finance and the Economic and Business Case for Action* shows that ecosystem services are worth nearly 1.5 times global GDP. Moreover, protecting natural capital and biodiversity is critical for preventing future pandemics. However, global natural capital stocks continue deteriorating and several countries have introduced COVID-19 recovery measures that are harmful to biodiversity. He stressed that biodiversity loss and climate change are interlinked challenges of similar magnitude and need to be addressed together. For instance, protecting and restoring forests can facilitate



"Countries must integrate biodiversity considerations into their COVID-19 response and recovery plans."

climate change mitigation and adaptation. Two key actions can safeguard natural capital. First, biodiversity considerations need to be mainstreamed into policymaking. For instance, agricultural subsidies should be reoriented towards natural resources preservation. Second, consistent criteria and definitions are needed to ensure that natural capital is considered in investment and financing decisions. The OECD report *Developing Sustainable Finance Definitions and Taxonomies* identified several similarities in national sustainable investment taxonomies, and these could provide a basis for a common global framework. Moreover, the OECD-FAO *Guidance for Responsible Agricultural Supply Chains* helps agri-businesses and investors address risks to biodiversity in global agricultural supply chains.

What can be done?

Partha Dasgupta, Professor of Economics at Cambridge University, presented the key findings of the Independent Review of Economics of Biodiversity he is leading for the UK Treasury. The Review frames biodiversity loss as an asset mismanagement problem. Between 1992 and 2014, produced capital per head doubled and human capital increased by 13% but the stock of natural capital per head declined by nearly 40%. This accumulation of produced capital at the expense of natural assets generates extreme risk for human well-being. These risks are exacerbated by the non-linearity of ecosystems, which means nature's response to degradation is unpredictable, as shown by the COVID-19 outbreak. The solution starts with understanding that our economies are embedded and bounded by nature. Then, Prof. Dasgupgta highlighted three key actions to transform societies' relation with nature. First, we should align our consumption of natural resources with their annual supply. Current estimates suggest that 1.6 planet earths are needed to produce all the resources we consume yearly. Second, measures for economic success should give a clear and coherent picture of economic development. As GDP does not account for the depreciation of assets, countries should adopt "inclusive measures of wealth" that reflect the status of all assets, including natural capital. Finally, only a transformative change in our institutions and systems will enable these changes to occur, starting with finance and education.

Berangère Abba, Secretary of State for Biodiversity at the French Ministry of Ecological Transition, agreed that a paradigm shift in our production and consumption patterns is required to secure natural capital. Protecting biodiversity is a key priority for France, as shown by the creation of the Secretary of State on Biodiversity, the decision to host the next IUCN meeting, and the championing of the High Ambition Coalition for Nature and People, which calls for countries to set the ambitious target of effectively conserving 30% of land and sea by 2030. The next "One Planet Summit", which will be held in France, will also focus on biodiversity. France has also proposed to strengthen WHO's "One Health" approach to food safety and zoonoses control, and launched a series of global roundtables with WHO, FAO, and UNEP experts to enhance scientific knowledge sharing. Mme. Abba highlighted France's work on monitoring wildlife trade to protect both biodiversity and human health from zoonotic risks, and their multi-stakeholder's initiative against imported deforestation. Sharing the view of several other OECD countries on the importance of measuring investment impacts on nature, France will support the recently launched Task Force on Nature Related Financial Disclosure.

From left to right. top row: Rodolfo Lacy, Louise O. Fresco and Berangère Abba; lower row left to right: Partha Dasgupta and Liu Ning.

Liu Ning, Deputy Director-General and Chief Negotiator for the Convention on Biological Diversity (CBD), from the Chinese Ministry of Ecology and Environment, presented China's "ecological civilization" approach to biodiversity conservation. The national spatial planning "ecological red line" system, which will cover a quarter of land by the end of 2020, encourages sustainable utilisation of natural resources through innovative mechanisms to harness economic gains from their ecological value. Mr. Liu highlighted the critical role of governments to promote more sustainable use of natural resources in the private sector by financing and mainstreaming biodiversity across policies. He acknowledged the OECD's efforts in scaling up environment finance, especially in works such as the *Biodiversity, Finance and the Economic and Business Case for Action* and *Tracking Economic Instruments and Finance for Biodiversity*, which respectively analysed global biodiversity investments and data on the policy instruments for biodiversity. He concluded by underlining China's commitment, despite the economic impact of Covid-19, to safeguard nature through multilateralism.

Louise O. Fresco, Professor and President of the Executive Board at Wageningen University, stressed that human population is the most important capital, and that keeping it healthy and in balance with the rest of the natural environment is necessary for sustainable development. To this end, it is crucial that we secure three other capitals: biodiversity, soil and water. First, the genetic resources of animals, plants and bacteria can be important for producing food for the future and need to be conserved as part of the human collective heritage, as currently undertaken by the Treaty on Plant Genetic Resources. Gene banks are needed, in particular for species whose value is not yet fully understood; for example, bacteria and fungi. Second, as pressure on soil increases, we need to improve our land management. In this context, there is an ongoing debate among scientists on whether to separate land for food production from conservation areas, or to try to maintain as much biodiversity as possible on agricultural land. Thirdly, water scarcity is mostly a regional issue and solar panels can help to adopt efficient irrigation systems and save water. Finally, Porf. Fresco highlighted two transversal themes: (i) reducing food waste (which accounts for 6% of CO2 emissions in the EU alone) throughout the food chain, and (ii) improving our capacity to retrieve valuable components from food waste and sewerage. Innovative approaches and new financial mechanisms, including carbon banks or tradable emission permits, will be instrumental to this end.

The open discussion moderated by **Rodolfo Lacy**, the OECD Environment Director, focused on how to "build back better, greener and bluer". Panellists discussed the need to change the way economic progress is imagined. Nature is not like any other input to production; we treasure it for many reasons (e.g. aesthetic, ethical) and it is a buffer against internal and external shocks. To ensure its sustainable use, innovative instruments and policies are needed, including financial mechanisms and policies that encourage sustainable food chains. Education will also play a critical role to ensure that future generations are aware of the value of the natural capital.

Session 1
Securing natural capital on land

Alon Zask, Deputy Director General for Natural Resources at Israel's Ministry of Environmental Protection, and Co-chair of OECD Working Party on Biodiversity, Water and Ecosystems, moderated this session on policies and business practices for sustainable use of natural capital on land.

Anne Larigauderie, Executive Secretary of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), set the scene for this session by presenting key findings of recent IPBES work "*Global Assessment on Biodiversity and Ecosystem Services*", and a workshop on biodiversity and pandemics. She highlighted the unprecedented rate at which nature is deteriorating, with three quarters of land already significantly altered and one million species at risk of extinction. This trend is impoverishing numerous areas of nature's contribution to our wellbeing, ultimately making it harder to achieve several Sustainable Development Goals. Modified land use, deforestation, urbanisation, climate change and the wildlife trade are key drivers of such trends and are also among the major causes of the more frequent emergence of zoonotic diseases. Currently, national strategies rely on responding to pandemics, which is costly and often inefficient. A preventive approach, focusing on addressing the drivers of the increasing emergence of zoonoses, would be more efficient. Mme. Larigauderie concluded by highlighting that the conservation of ecosystems, deployment of nature-based solutions and adoption of more sustainable models in urban, agriculture and food systems are a major part of the transformative change required to halt biodiversity loss.

Julien Hardelin, Head of the Foresight and Strategy office (CEP), in the French Ministry of Agriculture, highlighted that a number of positive trends have been emerging in the last ten years. First, the systemic role of the agricultural sector in land use and natural capital preservation is increasingly recognised. Furthermore, ecosystem services are increasingly mapped and understood, and new more sustainable agricultural models are emerging. In this context, foresight can help identify, prioritise and analyse future agricultural trends and related challenges and better prepare for them. He acknowledged the successful case of agro-ecology in France, and highlighted studies from INRAE and AFCLIM at CEP, which focus, among other themes, on the future role of European agriculture in global value chains, and the issues connected to the broader globalisation of food systems.

Janet Williams, Head of Regulatory Science (UK and Ireland) at Bayer Crop Science, underlined the importance of food security for the UN 2030 Agenda for Sustainable Development, especially given expected population growth. Food production must be healthy, affordable and sustainable. In this context, Bayer Crop Science aims at increasing production while reducing impacts on the environment. As land is used for different purposes (e.g. infrastructure, food production and biodiversity), it is important to enhance the productivity of land allocated to agriculture. To this end, advanced technologies can play a critical role as they allow precision agricultural practices, which aim to produce more with less environmental externalities, by precise application of agrochemicals. Such technologies include smart sprayers, fertiliser applications via drones and digitalised product labels.

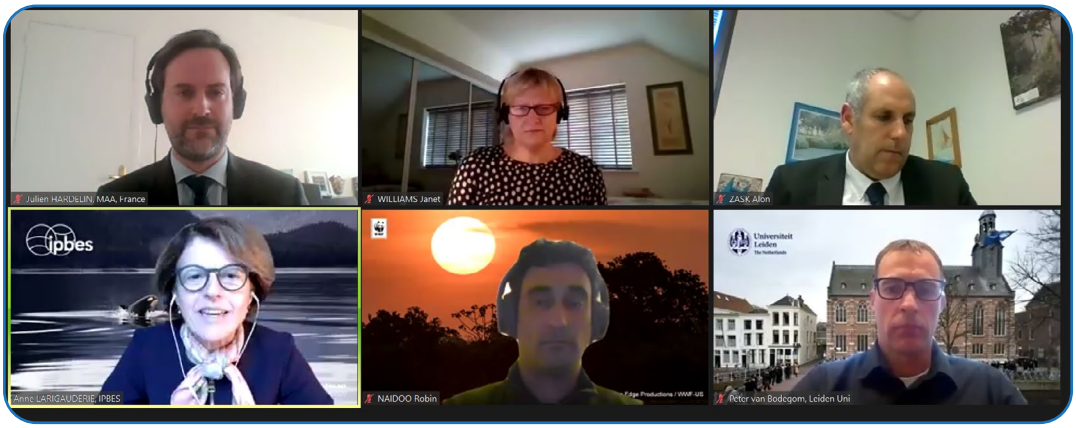
Peter Van Bodegom, Professor of Environmental Biology at Leiden University, focused on the importance of quantitatively evaluating the impact of possible approaches (e.g. nature-based solutions, new technologies) to strengthening the synergies between food production and other ecosystem services. Fortunately, high-resolution and open source data are increasingly allowing the development of more precise indicators of ecosystem services. Indicators need to meet four criteria to be adopted by stakeholders: credibility, salience, legitimacy and feasibility. Prof. Van Bodegom highlighted the importance of ensuring that such indicators are locally applicable, and of co-designing them with decision-makers and local stakeholders. He presented a recent project with the Dutch Water Board authorities that aim to develop a tool to quantify ecosystem services that could be used to discuss optimal landscape and water management with stakeholders.

Robin Naidoo, Conservation and Lead Wildlife Scientist at the WWF, argued that the most commonly used approach to conserving biodiversity has been the use of protected areas (national parks, game reserves, etc.). However, this will not suffice to achieve the expected targets of the 2021 COP15 to the Convention on Biological Diversity (CBD), i.e. conservation of 30% of the earth's terrestrial surface by 2030. Therefore, attention has turned to the role of "Other Effective Area-Based Conservation Measures" (OECMs) such as privately managed reserves, sacred forests, military lands, community-managed conservancies, and indigenous lands. Dr. Naidoo stressed the imperative of working closely with local communities and indigenous people, who often bear the costs of conservation activities, to ensure they benefit from such measures. As WWF's experience in Southern Africa and the Amazon forest shows, the involvement of these communities from the early phases of project design is instrumental to its success.

Source: IPBES, presentation by Anne Larigauderie.

The panel discussion focused on the triple challenge of the food system: ensuring food security, providing a livelihood to farmers and promoting environmental sustainability. Innovations and new technologies, such as digitalisation and automation, will play a critical role to increase agriculture productivity and sustainability. In addition, policy coherence will be a key driver, and better data and information can help to highlight the interdependencies between different policy areas, e.g. a failure to preserve soil biodiversity leads to a higher susceptibility to pests.

Discussing to what extent the COVID-19 pandemic has influenced the policy debate on biodiversity and natural capital protection, speakers noted that the awareness of the connection between new zoonosis and biodiversity loss is growing in public debate, and an increasing number of companies are pledging to protect biodiversity.



Top row from left to right: Julien Hardelin, Janet Williams, Alon Zask; bottom row from left to right: Anne Larigauderie, Robin Naidoo and Peter Van Bodegom.

Key takeaways, identified knowledge gaps and areas for further research

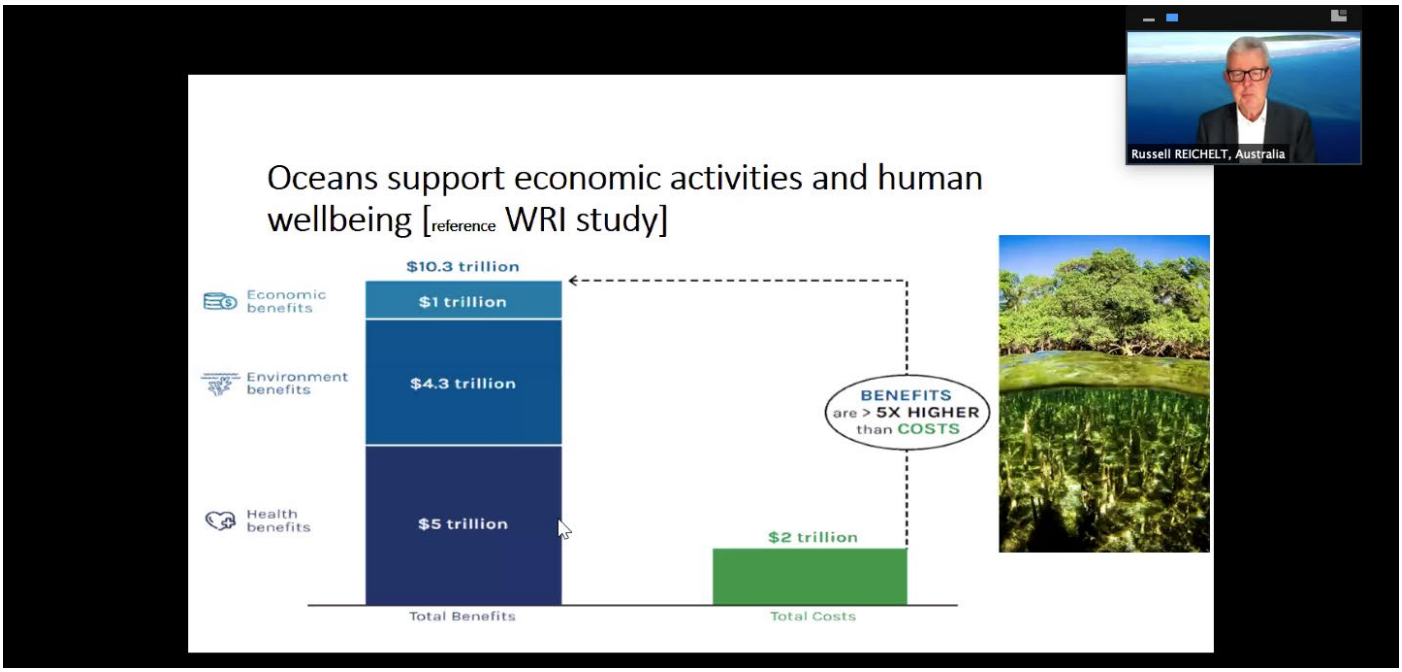
- Nature is deteriorating at an unprecedented rate and scale: 75% of the land area has been significantly altered and 90% will be altered by 2050, while more than 85% of wetland area has been lost.
- Policies and indicators for sustainable land use (national, international) tend to be more effective when they are co-designed with local communities and key stakeholders.
- The increasing awareness of the wide ramification of land-use change and biodiversity loss may help to move from reacting to pandemics, which is ineffective and costly, to working towards preventing them. WHO's "One Health" approaches may help to this end.
- Wider adoption of new technologies, including big data and automation for more precise and efficient use of agrochemicals, can help to ensure a more sustainable agriculture. High-resolution spatial data can be used to create unbiased, science-based and credible indicators for policymaking.
- Further research is needed on challenges and opportunities for the food system to meet its triple objective of improving environmental sustainability, ensuring food security, and provision of livelihoods.
- The contributions to sustainable land use and biodiversity conservation of "Other Effective Area-Based Conservation Measures" (OECMs), areas that are achieving the effective *in-situ* conservation of biodiversity outside of protected areas e.g. indigenous lands, privately owned and community-owned open areas, military lands, need to be further studied and promoted.

Session 2
Securing ocean-based natural capital

Don Syme, Counsellor (Primary Industries) Ministry of Foreign Affairs and Trade, New Zealand and Chair of the OECD Fisheries Committee, moderated this session on a sustainable ocean economy. In his introductory remarks, he highlighted the critical role of sustainable fisheries and aquaculture for sustainable ocean use and that ocean health and ocean wealth are intrinsically linked.

As scene-setter for this session, **Russell Reichelt,** Australian Sherpa for the High-Level Panel for a Sustainable Ocean Economy, underscored that a sustainable ocean economy can only be achieved by restoring and maintaining healthy oceans. Recent World Resources Institute (WRI) research demonstrates that ocean-based investments yield benefits that are five times greater than their costs: investing $2 trillion over 30 years would lead to minimum net benefits of $8.2 trillion. Four ocean-based policy interventions, "radical transformations", would reduce GHG emissions while also supporting efforts to achieve the SDGs: (a) Conserving and restoring mangrove habitats, (b) Decarbonising the international shipping sector, (c) Increasing the production of sustainably sourced ocean-based proteins, and (d) Scaling up offshore wind energy production. A rapid transition to a sustainable ocean economy would be more likely if synergies across different ocean economy sectors are realised. Dr. Reichelt shared the experiences of the Blue Economy Cooperative Research Centre in Australia, which brings together aquaculture, marine renewable energy and offshore engineering to enhance low-environmental-impact food production. He concluded by highlighting the importance of inclusiveness in sustainable ocean use and mentioned the experience of Pacific Community's Women in Maritime Program Training Centres, which provide education and job placement for women interested in working in the maritime sector.

Céline Franck, Policy Officer at the Directorate-General for Maritime Affairs and Fisheries (DG MARE), European Commission, highlighted the role on Marine Spatial Planning (MSP) to ensure a



Source: WRI, presentation by Russell Reichelt.

sustainable management of marine resources. Under the EU Directive for MSP, in 2021 all EU Member States are asked to publish their Marine Spatial Plans, which must be in line with a number of EU Environmental and green growth targets, such as the Biodiversity and Offshore Renewable Energy strategies. Marine Spatial Planning (MSP) requires a long-term and broad perspective given the cumulative consequences of different ocean resource uses. A coordinated approach is required, especially in research and knowledge sharing. Cross-border cooperation at the sea-basin level is another important enabler for the development of activities such as offshore renewables. Finally, Ms. Frank noted that the EU's DG MARE and the Intergovernmental Oceanographic Commission (IOC) of UNESCO have developed a Joint Roadmap to support the implementation of the UN Agenda 2030 for Sustainable Development with a focus on SDG 14, and have launched the joint initiative "MSPglobal" to promote cross-border maritime spatial planning.

Helena Rey De Assis, Programme Officer at the Consumption and Production Unit of UN Environment, highlighted the Covid-19 consequences on tourism, and the need for a greener economic recovery. Although coastal and marine ecosystems benefitted from reduced pressure from activities such as cruising, lower tourism revenues reduced marine protected areas' capacity to fund law enforcement and conservation actions. Unsurprisingly, illegal activities have increased and ocean conservation activities, such as coral-reef propagation, have been suspended in certain regions. She stressed that recovery packages and corporate bailouts should be structured to reduce ocean pollution and strengthen the resilience of societies and economies. To this aim, economic and legislative instruments should be based on science. The Colombian tourism strategy, which aims at increasing the protection of marine and coastal areas in line with SDG 14 and sustainable ocean use, is an interesting example of promoting a sustainable recovery of tourism.

Ariel Troisi, Chairperson of the Intergovernmental Oceanographic Commission (IOC), UNESCO, highlighted that geographical, gender and generational barriers constrain countries' ability to ensure sustainable ocean management and to reap the full benefits of new technologies. The UN *Decade for Ocean Science and Sustainable Development*, starting in 2021, will aim at a paradigm shift in how scientific knowledge is produced and used for societal benefits. The Decade is based on the concept of co-design, co-development, and co-delivery, and represents an opportunity to bridge natural and social sciences. In this context, he highlighted that capacity development activities need to be multidimensional and include formal education, infrastructure development, institutional strengthening, and raising awareness of the reciprocal influence between human and ocean. Similarly, technology transfer requires also a multidimensional approach and needs to include access to platforms, projects, guidelines and data. IOC support tools, such as the Global Ocean Science reports and the Ocean InfoHub, will contribute to matchmaking capabilities and technical requirements for sustainable ocean management.

Top row from left to right: Helena Rey De Assis, Ariel Troisi and Don Syme; bottom row from left to right: Russell Reichelt, Monica Verbeek and Céline Frank.

Monica Verbeek, Executive Director at Seas At Risk, presented the key findings of the "Blue Manifesto" - a Roadmap to a Healthy Ocean in 2030, launched by more than 100 European NGOs. The Manifesto identifies specific policy actions for the protection and restoration of natural areas, the transition to sustainable and low-impact seafood systems, and pollution reduction. Seas At Risk also produced a joint NGO paper providing examples of "win-win" investments that EU's recovery plans post-COVID must support, in order to protect the ocean and deliver positive and sustainable economic results.

Ms. Verbeek warned that initiatives for ocean use are often developed to grow the blue economy and do not pay enough attention to the cumulative impacts of multiple activities at sea. A genuinely sustainable blue economy will focus on new maritime activities such as marine renewables and blue bioeconomy, while some unsustainable activities, such as oil extraction, will need to progressively disappear. Finally, she emphasised the need to overcome the GDP growth paradigm and focus economic policymaking on wellbeing, environmental sustainability, equality and resilience. We should revisit blue economy principles and see the ocean and land-based economies as an interlinked whole.

The panel discussion focused on policy coherence and evidence-based decision making for sustainable ocean management. Institutional boundaries and silos must be overcome to achieve cross-governmental coherence. Better and more widely shared information on the consequences of oceans and coastal deterioration and on the financial returns of sustainable investments would foster synergies and partnerships. Furthermore, inclusive and participatory approaches would help to avoid delays or conflicts. Digital technologies could play a critical role in collecting and analysing data on pressures on coastal areas, better measuring environmental impacts, and allowing business models with lower environmental impacts. Sustainable ocean management can also enhance societies' resilience to a number of risks. For instance, protecting and restoring habitats, such as mangroves, can help to mitigate and adapt to climate change. An ocean economy strategy that aims at sustainably diversifying the economy can help to build resilience to future shocks. The Covid-19 has once more highlighted the vulnerability of undiversified economies, such as for countries heavily reliant on tourism.

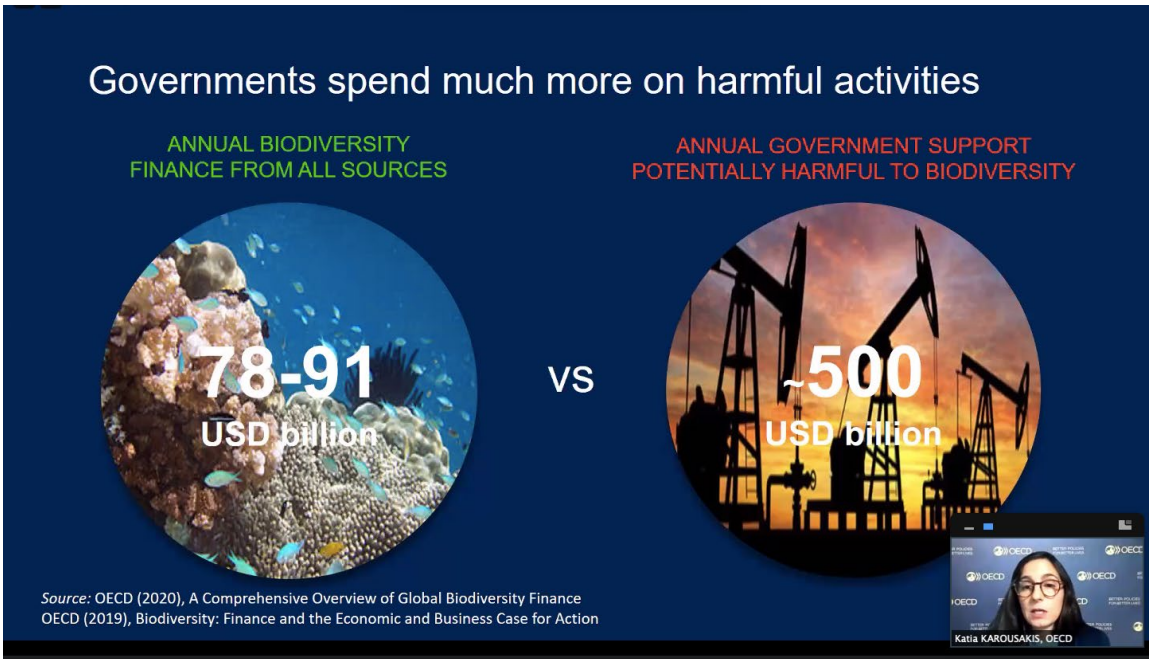
Key takeaways, identified knowledge gaps and areas for further research

- Sustainable ocean-based investments can deliver benefits five times greater than the costs, with minimum net returns of $8.2 trillion over 30 years.
- A systemic approach is needed to ensure the transformative change required for sustainable ocean management.
- Marine Spatial Planning can help to promote synergies and manage trade-offs between different activities at sea, especially when undertaken at a "sea-basin" scale.
- Promoting interdisciplinary research, increasing knowledge sharing and better data are crucial for estimating the cumulated impacts of multiple activities at sea and unlocking the required systemic innovation.
- Recovery packages should also consider the impact of the COVID-19 pandemic on the financial stability of Marine Protected Areas, which often use the income generated from tourism to fund conservation and law enforcement activities.
- Countries whose economies are over-reliant on certain sectors (e.g. tourism or fishing) are less resilient to both environmental and socioeconomic shocks. Identifying synergies between existing sectors and potential new green activities could help diversify these economies while promoting a sustainable growth.
- There is a need to continue working on communication and awareness, with a focus on the young generations and education

Session 3
Financing for natural capital

Alexander Bassen, Professor and Chair of Capital Markets and Management at the University of Hamburg, and Member of the German Council for Sustainable Development, moderated this session that focused on the challenges of integrating biodiversity considerations into investment decisions.

Katia Karousakis, Biodiversity Programme Lead at the OECD Climate, Biodiversity and Water Division, set the scene for this session by highlighting that each year governments spend approximately USD 500 billion on actions that are potentially harmful to biodiversity, while public and private biodiversity finance does not exceed USD 91 billion per year, as compared to USD 78-91 billion in favour of biodiversity. She presented three key actions to scale up biodiversity finance. 1) **Green budgeting**: the OECD Paris Collaborative for Green Budgeting, created in 2017 to align public budgets with environmental goals, can track both positive and harmful financial flows for biodiversity. So far, the EU, France, Ireland and Mexico have successfully implemented biodiversity considerations in their public budgets. 2) **Economic instruments** can promote biodiversity compatible finance: the OECD *Tracking Economic Instruments and Finance for Biodiversity* shows that the number of biodiversity-relevant taxes has been steadily increasing and that biodiversity-relevant taxes generate approximately USD 7.5 billion a year (average 2016-2018) in revenue in OECD countries. 3) Scaling up **private sector** contributions. An important step in this direction is the recently launched Task Force on Nature-related Financial Disclosure (TNFD). Responsible Business Conduct can also contribute to a biodiversity-compatible economy. For instance, the *OECD-FAO Guidance for Responsible Agricultural Supply Chains* covers a number of critical environmental matters, including environmental protection, sustainable use of natural resources, climate change and biodiversity. As concerns future work, data gaps are still hindering the assessment, tracking and reporting of biodiversity finance flows. The OECD recommends increasing the granularity of data collection in the financial reporting framework of the Convention on Biological Diversity, and create a common international framework to track private finance for biodiversity.



Source: OECD, presentation by Katia Karousakis.

Kevin Urama, Senior Director at the African Development Institute (ADI), addressed the challenges and opportunities to scale up financing for natural capital. First, accessible data on property rights, location and other key features of natural assets must be available. This is a requirement to leverage them as investment guarantees. Secondly, investors need to see a clear path to grow the value of these assets. Thirdly, countries can consider establishing sovereign wealth funds, which could store financial flows from the natural capital/natural resources, and introducing nature-based loans, which could collateralise the future income streams from natural capital. Precise natural capital accounting is critical for this. International cooperation is particularly important since natural capital assets often span over national boundaries (e.g. rivers, sea basins). Dr. Urama stressed the need for transparent collaboration among all stakeholders committed to developing natural capital finance, including citizens, firms and public institutions.

Ladislas Smia, Head of Sustainability at Mirova/ Natixis AM, shared the complexities for financial players to address biodiversity. In 2017 Mirova launched a business unit dedicated to natural capital investment that reports natural capital as an asset class. The experience shows the complexity of assessing the biodiversity impacts of projects across the value chain and the need to leverage both quantitative and qualitative evaluation approaches. At the same time, the pipeline of projects that have positive impact on biodiversity and are financially robust is still relatively small. Finally, Mr. Smia underlined that investors are still not familiar with this asset class and, therefore, blended finance mechanisms may be needed to develop private investors' confidence in this type of assets.

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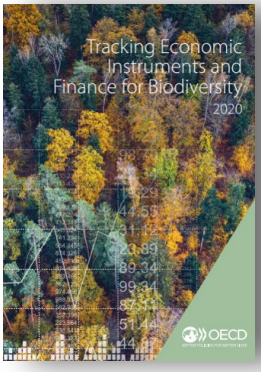

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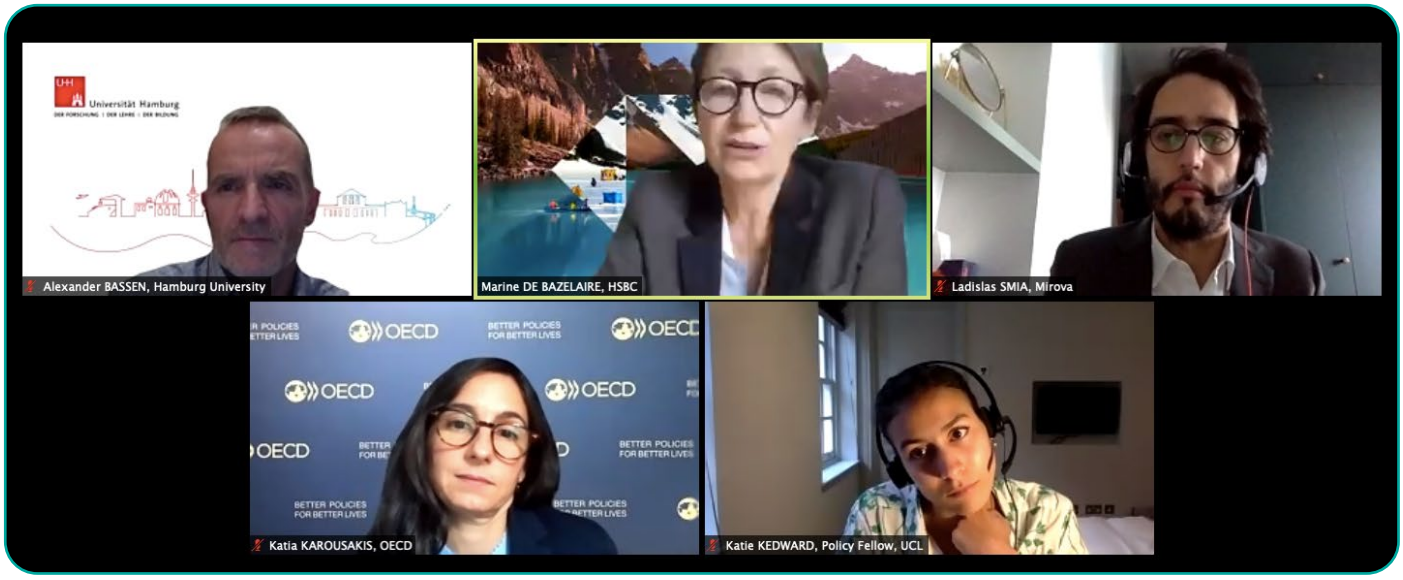
Marine de Bazelaire, Head of Sustainability, Continental Europe, HSBC, argued that biodiversity finance is the "next frontier" for the financial sector. Biodiversity loss poses a number of risks to the global economy, including physical risks (e.g. pollinator decline, soil infertility); risk of sudden changes in regulations; changes in consumer demand; reputational risks; and financial stability risks. Furthermore, she noted that the capital adequacy ratios of banks and the solvency ratios of insurers would drop substantially if the financial risks linked to climate and biodiversity were included in the calculation of stress tests. Fortunately, the financial sector is increasingly aware of these risks and, for instance, signatories of the Equator Principles have agreed to screen investments also for their biodiversity - in addition to climate - impacts. HSBC, which is committed to becoming a bank with net-zero emissions, has recently launched a joint venture with Pollination to create a natural capital fund. Finally, she agreed that the pipeline of biodiversity compatible project is still limited.

Katie Kedward, Policy Fellow at the UCL Institute for Innovation and Public Purpose (UK), argued that nature-related financial risks cannot be adequately managed through approaches based on information disclosure and quantitative risk estimates. The complex, non-linear and multidimensional nature of environmental threats pose enormous challenges to financial risk modelling. Furthermore, the granularity of analysis required to measure "nature-related risks" at the firm and asset level is extremely hard to replicate at the financial portfolio level, thus financial institutions are unlikely to be able to fully assess their real exposure to nature-related financial risks. As it is unlikely that tools to comprehensively estimate nature-related risks can be developed within the short time frame we face to avoid dramatic environmental degradation, direct, precautionary interventions from financial supervisors are necessary. For instance, central banks could discourage financing of harmful business practices by developing an exclusion list of damaging environmental activities that could inform both regulatory and monetary policy toolkits.

The open discussion reflected on how to address the existing data gaps in financial reporting. Mirova is working with data providers to explore which metrics could capture both impacts of business on biodiversity and businesses' exposures to biodiversity loss. The panellists discussed whether such data should be provided by third parties, as rating agencies routinely publish financial metrics that are used by financial players. The Informal Working Group of the Taskforce on Nature-related Financial Disclosure (TNFD), comprising over 130 experts from private and public sectors, is examining the different methodologies currently used by investors to evaluate biodiversity impacts. Taxonomies can be very important, though they can be politically controversial. Panellists also highlighted that the debate should consider both the risks and the returns of natural capital investments.



Top row from left to right: Alexander Bassen, Marine de Bazelaire, Ladislas Smia; bottom row from left to right: Katia Karousakis and Katie Kedward.

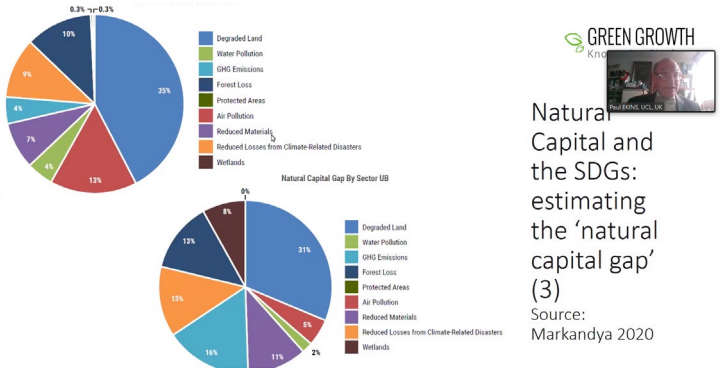
Key takeaways, identified knowledge gaps and areas for further research

- Biodiversity finance is estimated at USD 78-91 billion/year but annual government support potentially harmful to biodiversity amounts to around USD 500 billion/year.
- Further work is needed to establish a common framework to assess and track both public and private finance for biodiversity.
- Investors need to assess both the direct and indirect effects of projects on biodiversity to correctly evaluate their impacts. Qualitative and quantitative tools can be useful to this end.
- The pipeline of biodiversity-compatible and financially robust projects is still relatively small.
- Systemic risks and tipping points complicate the integration of ecological issues into standard portfolio assessment models. A "precautionary approach" would require a more active role for Central Banks and Financial Supervisors.
- The development of a separate asset class for natural capital would require better data, a clearer understanding of who benefits from its use and how we can increase its value. Furthermore, regional agreements are needed for natural assets that extend beyond national borders.
- Further work on sustainable finance taxonomies is needed to improve market transparency and facilitate the tracking of sustainable finance flows.

Session 4
Measurig natural capital and biodiversity

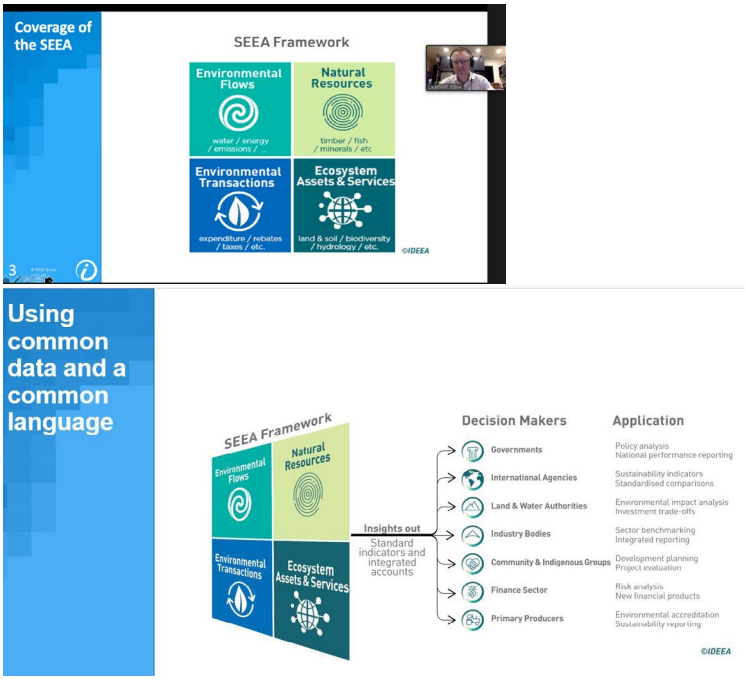
Viveka Palm, Deputy Head, Regions and Environment at Statistics Sweden and Chair of the OECD Working Party on Environmental Information (WPEI), moderated this session that focused on the challenges of measuring natural capital and biodiversity for policy-making.

Paul Ekins, Co-Chair of the Green Growth Knowledge Partnership (GGKP) Expert Working Group on Natural Capital, introduced the GGKP Natural Capital Indicator Framework (NCIF) and noted that a very significant increase in natural capital is needed to meet the SDGs. He highlighted the large literature gap on the impact of natural capital information on policy making. A recent GGKP literature review on natural capital concludes that only two publications out of 340 reviewed reported on the policy impact of natural capital information on decision making. These two papers show that natural capital interventions can be complex, expensive, time-consuming and involve intensive stakeholder participation. In addition, the opportunity-cost of environmental protection may fall on specific interest groups while benefits are often dispersed among various stakeholders and difficult to evaluate in money terms, thus complicating the political economy of nature capital intervention.



Source: Markandya 2020, presentation by Paul Ekins.

Carl Obst, Director, Institute for the Development of Environmental-Economic Accounting (IDEEA Group), Australia, was lead author of the United Nation's *System of Environmental-Economic Accounting* (SEEA). SEEA's main goal is to combine and integrate relevant environmental and economic datasets to develop a common and coherent set of information. The SEEA framework is based on four main categories: (i) environmental flows, (ii) natural resources, (iii) environmental transactions, and (iv) ecosystem assets and ecosystem services. As such, the SEEA system can also be seen under the "State - Pressure - Impact – Response" framework. A key future challenge is to ensure regular compilation of accounts to replace one-off assessments. Mr. Obst highlighted that reporting disclosure does often but not always drive behavioural changes in the private sector. Therefore, firms should shift from focusing on external disclosure and sustainability reporting towards using natural capital accounting in management decisions. Finally, he underlined that accounting principles can be applied even without monetary valuation.



Source: SEEA, presentation by Carl Obst.

Top row from left to right: Carl Obst, Glenn-Marie Lange and Joe Grice; bottom row from left to right: Viveka Palm and Paul Ekins.

Joe Grice, Chairman, UK Office for National Statistics Economic Experts, agreed with the view that while large amounts of natural capital data are available, there is little evidence on whether this is effectively influencing policymaking. Other accounting data, such as quarterly GDP figures, often dominate news coverage. Thus, the challenge is to extend the public interest in national accounts to natural capital accounting. The recent UK "*Blue Book*", which for the first time jointly reports on both GDP growth and natural capital, represents the model for the future. This is a powerful tool as it shows how GDP growth relates to the use of natural capital. Mr. Grice stressed the importance of having well-informed news media to ensure that natural capital accounting information increasingly influences policymaking. International bodies such as the OECD and the World Bank, national bodies, activists and citizens will need to play a key role in this regard.

Glenn-Marie Lange, Senior Environmental Economist at the World Bank, highlighted long standing World Bank support to develop natural capital accounting capacities in low- and middle-income countries (LMIC). LMICs may not be able to benefit from the recent increase in data collection and processing capacity due to technical or knowledge gaps. Therefore, capacity building will be crucial to ensure that these countries gain full ownership of this information. Systematic and standardised data are also important as countries are often interested in how they are performing with respect to their peers and aspirational models. To this end, she stressed the importance of building regional communities of practice where countries can share best practices and discuss key challenges.

The open discussion focused on the importance of investing in a data system for natural capital and biodiversity monitoring. The climate change debate would not have been able to progress without proper data on greenhouse gases emissions; similar information is needed for other environmental risks to ensure that international cooperation can move forward. The panel also noted that the techniques to measure natural capital assets would be the same for assets under the jurisdiction of a single or multiple countries. Some challenges emerge for the measurement of global commons, such as oceans or the atmosphere, as it is unclear who should bear the costs of reporting. The discussion also echoed the importance of ensuring that natural capital information is embedded in decision-making across society as a whole in addition to national governments. For instance, in the UK some of the most valuable applications of natural capital information have been at the local level, e.g. in the management of national parks.

Key takeaways, identified knowledge gaps and areas for further research

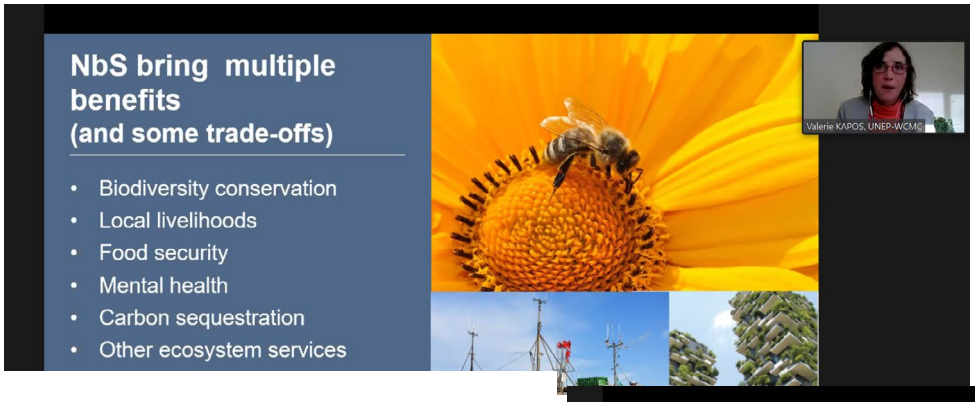
- In the growing literature on natural capital, there is limited evidence on whether and how the increasing data on natural capital has affected government decision-making.
- A key challenge is that users of natural capital information tend to create and use their own data but this proliferation of methodologies hinders the creation of a "common language".
- Regular reporting, which allows building time-series, instead of one-off exercises, is necessary for a wider use of natural capital information. Importantly, accounting may provide valuable insights even if it does not include monetary valuation.
- Releasing data and information on natural capital along with data on other key economic measures at the same time can strengthen the link between the two in the public debate.
- Regional communities of practice where countries can share their experiences, best practices and challenges are important to promote wider adoption of natural capital measurement and practices.
- The value of goods is a function of their scarcity. How to value natural capital as you approach critical thresholds and tipping points?

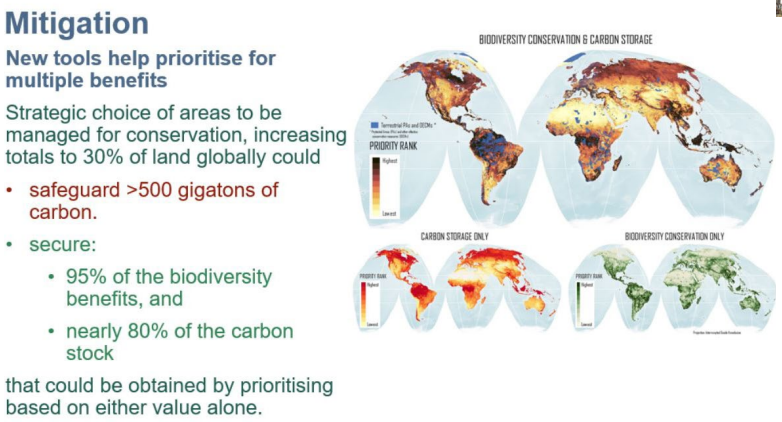
Session 5

Addressing climate and biodiversity challenges: Nature-based solutions for risk management

Sandy Sheard, Deputy Director, Economics of Biodiversity Review Team (HM Treasury, UK), moderated this session on how nature-based solutions (NbS) can increase the society's resilience climate change and maximise synergies between ecosystems and human wellbeing. Nature-based solutions can be defined as: actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.

Valerie Kapos, Head of Programme, Climate Change & Biodiversity at UNEP-WCMC, set the scene by underlining the synergies between action to address biodiversity loss and climate change, and the increasing push to address these two crises together under both the Climate Change Convention (UNFCCC) and the Convention on Biological Diversity (CDB). For instance, if the CBD draft target of protecting 30% of land is approved, then 500 GT of carbon emissions will be safeguarded while extinction risk of numerous threatened species will be reduced. Healthier ecosystems also exhibit higher resilience, thereby also increasing the resilience of communities, livelihoods, businesses and economies to a number of risks, including those connected to climate change. All this is generating an increasing "business case" for the deployment of NbS, and we may see a trend towards regulations requiring businesses to consider NbS in their planning and permitting. Importantly, NbS can be applied to a number of sectors, such as agriculture, and water supply and management. Ms Kapos concluded that greater awareness and understanding of NbS, more evidence on their





Source: UNEP/WCMC, presentation by Valerie Kapos.

effectiveness and appropriate policy framework is required to accelerate their adoption.

Tiago Oliveira, Director of the Portugal's Agency for Integrated Management of Rural Fires (AGIF), focused on reforms introduced after the 2017 wildfires that killed over 120 people and incurred over USD 1 billion in property damage. The new green approach to wildfire management focuses on prevention rather than on fire suppression: about 50% of the fire risk management budget (EUR 254 million) was allocated to prevention, education and fuel treatment activities. This strategy relies on changing people's attitude towards land, and correctly pricing natural assets. To increase the popluation's willingness to provide active management of rural areas, we devised a strategy to increase the value of natural capital in rural areas, leading to efficient risk management. In addition, as the climate becomes drier and hotter, reducing vegetation and fuel loading is increasingly necessary: pruning, stock reduction, and prescribed burning, silviculture and agroforestry are NbS used to reduce hazards. Mr Oliveira concluded that spending for fire prevention is not a cost but an investment.

Basile Van Havre, Co-Chair of the Convention on Biological Diversity's (CBD) Post-2020 Open Ended Working Group, Canada, highlighted that NbS are increasingly seen as complementary to traditional infrastructure in numerous sectors, though existing procurement procedures continue to hinder their adoption. For example, requirements on minimum sizes for infrastructural projects are often too large for NbS. To this end, there is a need to update planning, decision making (including financing), and reporting rules. Moreover, planning and reporting systems under the CBD and UNFCCC should be aligned to decrease the administrative burden on governments and facilitate synergies.

Cristina Rodriguez, Director, Climate Change Adaptation and Desertification at Peru's Ministry for Environment, described the use of NbS for climate mitigation and adaptation in Peru, a country highly vulnerable to climate change and nature-related risks. The Peruvian Nationally Determined Contributions (NDCs) include seven measures linked to NbS, co-designed with local and indigenous people. Peru's NbS participatory strategy is supported by strong regulatory and institutional frameworks: Peru's Framework Law on Climate Change (2018) and related regulation (2019) identify local and national responsibilities, and recognise the use of NbS in climate mitigation and adaptation. Peru created a High-Level Commission on Climate Change (CANCC), chaired by the Prime Minister, in which the national, regional and local governments participate. Additional tools to foster cooperation among all stakeholders include the "Platform for Indigenous Peoples and Climate Change", and the participatory process "Dialoguemos!".

Top row from left to right: Valerie Kapos, Basile Van Havre and Stewart Maginnis; bottom row from left to right: Sandy Sheard, Cristina Rodriguez and Tiago Oliveira.

Stewart Maginnis, Global Director for Nature-based Solutions Group at International Union for Conservation of Nature (IUCN), underlined the importance of developing practical operational building blocks for the implementation of NbS to respond to the growing interest in them. A functioning ecosystem is necessary at the heart of the NbS. The IUCN NbS Standards were developed to offer clear guidance to users; to enable the user to take an incremental approach from insufficient, to partial, adequate, and strong nature-based solutions. Three applications have emerged: a tool to design NbS; a screening tool to inform private and public investors; and a learning tool, especially for public agencies and NGOs. Mr Maginnis identified three key areas for future work on NbS: a) a spatial perspsective on NbS, b) policy coherence across institutions and sectors, and c) synergies between NbS other "traditional" solutions.

The open discussion explored ways to increase adoption of NbS worldwide and to ensure synergies with biodiversity. The IUCN NbS standards could play an important role since net gains to biodiversity lie at the core of their definition. Addressing the silos that separate stakeholders working on CBD and UNFCCC conventions, also within national governments, will be instrumental. Country experiences show the benefits of multidisciplinary and participatory approaches. The private sector's contribution will be utmost in the NbS scale-up. It is therefore important to ensure that investors can easily access both measures of exposure to biodiversity and risks. Panellists highlighted the growing interest of private investors in NbS. For instance, Pegasus Capital Advisors will manage an investment fund focused on mid-sized infrastructure projects in the fields of sustainable energy, waste and sanitation, and nature-based solutions in developing countries.

Key takeaways, identified knowledge gaps and areas for further research

- Nature-based solutions (NbS) can deliver multiple benefits, including biodiversity conservation, food security, mental health, resilience, climate change mitigation and adaptation.
- NbS should be seen as a complement rather than substitute to other traditional measures (e.g. "grey" infrastructure, insurance solutions).
- Governments need to ensure that all stages of infrastructure project delivery are "NbS-ready", including planning, finance, and reporting; for example by reforming procurement rules that may exclude NbS from infrastructural projects (e.g. project size may not be adapted to existing rules, wider benefits may not captured.
- Clear regulatory frameworks, definition and standards for NbS can facilitate their adoption by businesses and their evaluation as investment opportunities by financial institutions.
- Coherence across policy areas (e.g. forestry, energy, land-use) and co-ordination across different levels of government is needed to ensure that NbS are widely adopted.

Speakers

Scene-setting Session

Moderator:

Rodolfo LACY, Director, Environment Directorate, OECD

Welcome Remark:

Ángel GURRÍA, Secretary-General, OECD

Scene-setting presentation: The Economics of Biodiversity

Partha DASGUPTA, Emeritus Professor, Frank Ramsey Professor Emeritus of Economics, Cambridge University, United Kingdom

Keynote adresses: Country perspectives

Bérangère ABBA, Secretary of State for Biodiversity, Ministry of Ecological Transition, France

LIU Ning, Deputy Director-General & Chief Negotiator for Convention on Biological Diversity, Ministry of Ecology and Environment, People's Republic of China

Keynote adress: Securing natural capital - Sustainable agriculture

Louise O. FRESCO, President Executive Board Wageningen University & Research, Strategic advisory board of the FAO

Session 1

Securing natural capital on land

Moderator:

Alon ZASK, Senior Deputy Director General for Natural Resources, Ministry of Environmental Protection, Israel; Co-Chair of OECD Working Party on Biodiversity, Water and Ecosystems (WPBWE)

Scene-setter:

Anne LARIGAUDERIE, Executive Secretary, Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)

Panellists:

OECD country policy maker on agriculture policy reforms & payment for ecosystem services

Julien HARDELIN, Head, Office of Foresight & Strategy, French Ministry of Agriculture

Private sector representative on new technologies for better application and reduction of pesticides

Janet WILLIAMS, Head of Regulatory Science (UK & Ireland), Bayer Crop Science

NGO and developing country perspective

Robin NAIDOO, Senior Conservation Scientist and Lead Wildlife Scientist, WWF

The use of data to engage local stakeholders

Peter VAN BODEGOM, Professor of Environmental biology, Leiden University

Session 2

Securing ocean-based natural capital

Moderator:

Don SYME, Counsellor, Primary Industries-Ministry of Foreign Affairs and Trade, New Zealand; Chair of the OECD Fisheries committee

Scene-setter:

Russell REICHELT, Australian Sherpa on the High Level Panel for a Sustainable Ocean Economy; Board member of the Climate Change Authority

Panellists:

Tourism and sustainable ocean use

Helena REY DE ASSIS, Programme Officer, Consumption and Production Unit, UN Environment

Policy maker on Maritime Spatial Planning

Céline FRANK, Policy Officer, Blue Economy Sectors, Aquaculture and Maritime Spatial Planning, DG Mare, European Commission

Role of capacity building in the UN Decade for ocean science

Ariel TROISI, Chairperson, Intergovernmental Oceanographic Commission, UNESCO

NGO perspective

Monica VERBEEK, Executive Director, Seas at Risk

Session 3
Financing for natural capital

Moderator:

Alexander BASSEN, Professor & Chair of Capital Markets and Management, University of Hamburg; Member of German Council for Sustainable Development

Scene-setter:

Katia KAROUSAKIS, Biodiversity Programme Leader, Climate, Biodiversity and Water Division, Environment Directorate, OECD

Panellists:

International financial institution perspective on integration of green growth and natural capital in sovereign risk assessments
Kevin URAMA, Senior Director, African Development Institute (ADI)

The EU taxonomy on sustainable finance
Ladislas SMIA, Head of Sustainability, MIROVA

Financial institution representative on the risks connected to natural capital and biodiversity loss
Marine DE BAZELAIRE, Head of Sustainability, Continental Europe, HSBC

The role of central banks and financial supervisors
Katie KEDWARD, Policy Fellow, UCL Institute for Innovation and Public Purpose

Session 4
Measuring natural capital and biodiversity

Moderator:

Viveka PALM, Deputy Head, Regions and Environment at Statistics Sweden; Chair of the OECD Working Party on Environmental Information (WPEI)

Scene-setters:

Paul EKINS, Professor, UCL Institute for Sustainable Resources, University College London (UCL); Co-Chair, GGKP Expert Working Group on Natural Capital

Carl OBST, Director, Institute for the Development of Environmental-Economic Accounting (IDEEA), Melbourne, Australia

Panellists:

Measuring natural capital for national policymaking – The UK experience
Joe GRICE, Chairman, UK Office for National Statistics Economic Experts

Measuring natural capital for national policymaking – Developing country experience
Glenn-Marie LANGE, Senior Environmental Economist, World Bank

Session 5
Addressing climate and biodiversity challenges: Nature-based solutions for risk management

Moderator:

Sandy SHEARD, Deputy Director, Economics of Biodiversity Review Team, HM Treasury, UK

Scene-setter:

Links between climate change, natural capital/biodiversity loss & role of nature-based solutions
Valerie KAPOS, Head of Programme, Climate Change & Biodiversity at UNEP-WCMC

Panellists:

OECD country policymaker/expert on nature-based solutions to mitigate wildfire risk
Tiago OLIVEIRA, Director, Agency Integrated Management of Rural Fires (AGIF), Portugal.

Convention on Biological Diversity (CBD) perspective
Basile VAN HAVRE, Co-Chair for the Convention on Biological Diversity's (CBD) Post-2020 Open Ended Working Group, Canada

The role of nature-based solutions in developing countries
Cristina RODRÍGUEZ, Director of Climate Change Adaptation and Desertification, Ministry for Environment, Peru

Standards for nature-based solutions
Stewart MAGINNIS, Global Director, Nature-based Solutions Group, International Union for Conservation of Nature (IUCN)

Closing Remarks:
The Forum's key findings, identified knowledge gaps and future areas of work for the OECD will be provided by Masamichi KONO, Deputy Secretary-General, OECD

Relevant OECD Committees

The Forum's Agenda was developed in consultation with the Environment Policy Committee (EPOC)'s Working Party on Biodiversity, Water and Ecosystems (WPBWE), EPOC's Joint Working Party on Agriculture and Environment (JWPAE), Committee on Agriculture; Committee on Fisheries (COFI), Investment Committee's Working Party on Responsible Business Conduct (WPRBC), Working Party on Environmental Information (WPEI), Chemicals Committee, Committee on Tourism and the Development Assistance Committee's Environment and Development Network (DAC/ENVIRONET).

Also consulted were the "Core Committees" of the OECD's work on green growth: the Economic Policy Committee's Working Party 1 (EPC/WP1), Committee on Science and Technology Policy (CSTP) which oversees the Oceans Economy Programme, Committee on Industry, Innovation and Entrepreneurship (CIIE), Environment Policy Committee (EPOC), Committee on Statistics and Statistical Policy (CSSP) and the Green Growth Knowledge Partnership (GGKP)'s Expert Working Group on Natural Capital.

Relevant websistes

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- http://www.oecd.org/environment/resources/biodiversity
- http://www.oecd.org/environment/cc
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- http://www.oecd.org/environment/consumption-innovation
- http://www.oecd.org/economy/greeneco
- http://www.oecd.org/environment/tools-evaluation
- https://www.oecd.org/agriculture/topics/fisheries-and-aquaculture
- http://www.oecd.org/regional/greening-cities-regions
- https://www.greengrowthknowledge.org
- http://www.oecd.org/greengrowth/greening-energy
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