CAPITALS COALITION

Natural capital for biodiversity policy: what, why and how

April 2021

Context and acknowledgments

This paper aims to show the added value of natural capital approaches for achieving biodiversity policy objectives and shows how these approaches can help to deliver the biodiversity ambitions of the Post-2020 Global Biodiversity Framework. It builds on *Natural Capital for governments: what, why and how*, a narrative published in 2018 on the added value of natural capital approaches for governments, as well as on publications by Business for Nature, IPBES, WEF, the Dasgupta Review and many others.

This paper is developed in the context of the Government Dialogue on Natural Capital, supported by the Economics for Nature that is funded by the MAVA Foundation. Drafts of this paper have been discussed and commented on by representatives of countries across the globe and contains examples of applications from over twenty countries: Australia, Brazil, China, Costa Rica, France, Germany, Indonesia, Japan, Malaysia, Mexico, Myanmar, Netherlands, New Zealand, Nigeria, Peru, Philippines, South Africa, Spain, Sri Lanka, Sweden, Uganda and the United Kingdom, as well as from the African region, the European Union and BIOFIN.

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Executive summary

Aim and audience

This paper explains what natural capital is, why it is relevant for biodiversity policy, and how it can help to achieve the global goal to be carbon neutral, nature positive and equitable. It is written to inform leaders, policymakers and decision-makers that are negotiating a new deal for nature and people in the context of the 15th Conference of the Parties to the Convention of Biological Diversity (CBD) and the 26th Conference of the Parties on Climate Change. It aims to demonstrate how natural capital approaches can help to mainstream biodiversity into all decisions taken by business, financial institutions and the whole of government. The examples of government actions that are presented throughout the document show that natural capital is a proven strategic lens to integrate the value of nature in social and economic decisions for a more sustainable and just world.

Key messages

01. Our way of living is at risk and the world has to redirect its course. As set out in the update of the Zero Draft of the Post-2020 Global Biodiversity Framework, transformational change is needed to reverse nature loss and ensure nature's health and resilience to support our economics, wellbeing and livelihoods.

02. To achieve transformational change, it is useful to frame nature as an asset ('capital') and biodiversity as a characteristic of those assets that enables them to be more productive and resilient. Ecosystems are a useful way of breaking down natural assets to make their value visible in all decision-making by business, financial institutions and the whole of government.

03. Natural capital approaches frame the value of nature within the context of economic prosperity and human wellbeing. This framing empowers organizations and nations to integrate the value of nature in their decision-making by fostering a better understanding of human impacts and dependencies on nature, as well as highlighting the potential for investments in nature to help achieve the Sustainable Development Goals.

04. Government interventions are essential for accelerating and scaling up this transition because they can create the enabling environment for change. To create this environment governments possess five levers: value and embed nature; adopt targets; integrate policies; reform incentives; and empower action. By adopting and promoting a natural capital approach, governments can unlock tools and solutions that are needed to mainstream the value of biodiversity into all policies and decision-making by business, finance and government.

More than 60 examples show how natural capital approaches can inform change

This paper provides a wide range of examples of how policymakers across the globe working in diverse policy areas – ranging from conservation to planning, economy and development – use natural capital approaches to take more informed decisions that help to reverse nature loss. Together, these examples testify to the power of framing nature as an asset to promote better understanding of threats to nature as well as people's dependence on nature. They provide a compelling library of best practices to help achieve the Sustainable Development Goals and mainstream nature into the policies of the whole of governments as well as of business and finance institutions.

01

Introduction

Our way of living is at risk and the world has to redirect its course. As set out in the Update of the Zero Draft Global Biodiversity Framework, transformational change is needed to reverse nature loss and ensure nature's health and resilience to support our economies and livelihoods.

Aim and audience

This paper explains what natural capital is, why it is relevant for biodiversity policy, and how it can help to achieve the global goal to be carbon neutral, nature positive and equitable. It is written to inform leaders, policymakers and decision-makers that are negotiating a new deal for nature and people in the context of the 15th Conference of the Parties to the Convention of Biological Diversity (CBD) and the 26th Conference of the Parties on Climate Change. It aims to demonstrate how natural capital approaches can help to mainstream biodiversity into all decisions taken by business, financial institutions and the whole of government. The examples of government actions presented throughout the document show that natural capital is a proven strategic lens to integrate the value of nature in social and economic decisions for a more sustainable and just world.

Business-as-usual is no longer an option – change is inevitable

Our way of living is at risk and the world has to redirect its course. As set out in the Update of the Zero Draft Global Biodiversity Framework, transformational change is needed to reverse nature loss and ensure nature's health and resilience to support our economics, wellbeing and livelihoods.

Nature underpins all aspects of our economy, society and wellbeing. Even by conservative estimates, natural capital accounts for up to 50% of national wealth in low-income countries, while in high income non-OECD countries it amounts to an average of 30% of their wealth (World Bank, 2018). Yet traditional measures of progress, such as GDP, fail to show this underpinning value of natural capital to an economy. The way we measure progress should change fundamentally, to go beyond GDP and fully include the value provided by nature, people and society.

This is no luxury option but an essential and crucial socio-economic shift. Nature is unequivocally at risk. The IPBES global assessment report on biodiversity and ecosystem services provides an unambiguous message: "Nature and its vital contributions to people, which together embody biodiversity and ecosystem functions and services, are deteriorating worldwide. Direct and indirect drivers of change have accelerated during the past 50 years" (IPBES, 2019). We are overusing the goods and services that nature provides beyond its ability to supply those goods and services on a sustainable basis (Dasgupta Review, 2021), and this will hamper efforts to achieve international objectives such as the Sustainable Development Goals (Markandya, 2020). In increasingly globalized systems, nature loss and ecosystem collapse pose growing systemic risks to our economies, as the WEF Global Risks Report for 2020 indicates. And while this knowledge is not new, the COVID crisis has now taught us that these risks are no longer risks of the future but are an important underlying cause of threats to lives and livelihoods of millions today. The overuse of nature and the loss of biodiversity frequently increase disease transmission and evidence indicates that preserving intact ecosystems and their endemic biodiversity should generally reduce the prevalence of infectious diseases (Keesing et al., 2010).

It is essential that the world redirects its course. To reverse nature loss, societies and economies need to transform the way they operate (IPBES, 2019). In order to meet people's needs, a fundamental transformation is needed across three socio-economic systems: food, land and ocean use; infrastructure and the built environment; and energy and extractives (WEF, 2020c). To support this change the Update of the Zero Draft Post-2020 Global Biodiversity Framework has introduced a theory of change (Figure 1) that focuses on reducing the threats to biodiversity, ensuring that biodiversity is used sustainably in order to meet people's needs, and putting in place tools and solutions for effective implementation (CBD, 2020a).

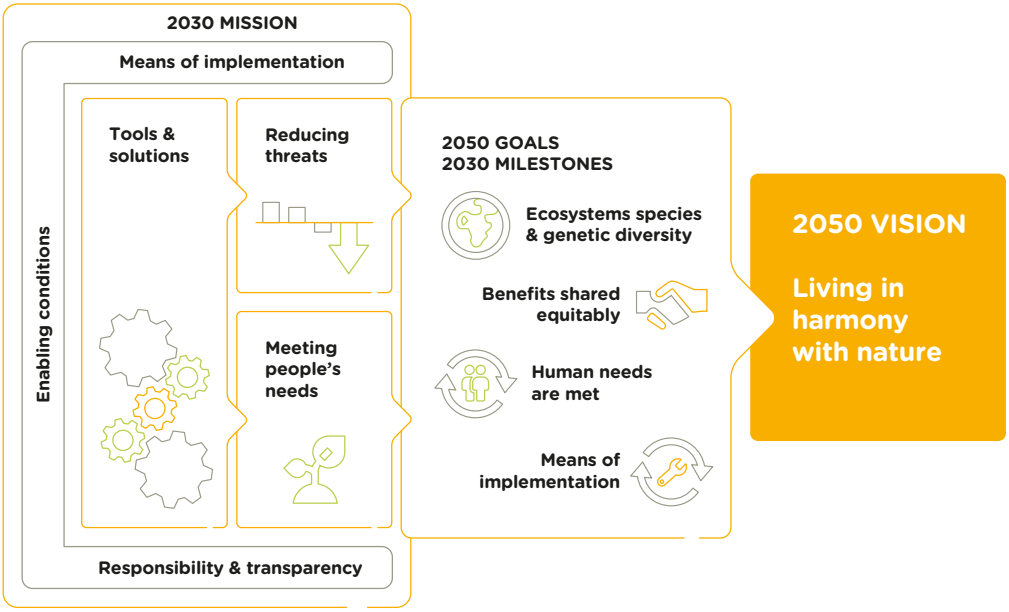

Figure 1: Theory of change of the Post-2020 Global Biodiversity Framework (source: CBD, 2020a).

The added value of framing nature as an asset to inform necessary change

To achieve transformational change, it is necessary to frame nature as an asset ('capital') and biodiversity as a characteristic of those assets that enables them to be more productive and resilient. Ecosystems are a useful way of breaking down natural assets to make its value visible in all decision-making by business, financial institutions and the whole of government.

Identifying and managing nature as one of a range of assets, or 'capitals', with an understanding of how these capitals interact can help to make the value of nature visible in decision-making across all sectors of society. Doing so integrates nature with other assets that are central in financial-economic and corporate decision-making: financial, social and human capital. It promotes seeing expenditure on nature as an 'investment' that will ensure a continuous return to society, instead of 'costs' that will draw down performance (see Box 1).

BOX 1

The use of capitals

A capitals approach considers the value of impacts and dependencies on capital assets (stocks) such as natural, social, human and produced capital. It integrates the value of nature, people, society and economy as the source for our wellbeing into decision-making and shows how these assets change over time and how investment and good management in these assets can contribute to a healthy and resilient base for our economy and society.

A capital is a resource or asset that stores and provides value to people. When invested in and managed responsibly, the asset creates value. If we draw down on the capital stock itself, we limit its ability to provide value to people and the economy, and if we degrade it too much, it can stop providing value altogether.

The four most commonly conceptualized capitals are:

- **Produced capital:** The human-made goods and financial assets that are used to produce goods and services consumed by society.
- **Natural capital:** The stock of renewable and non-renewable natural resources that combine to yield a flow of benefits to people.
- **Human capital:** The knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic wellbeing.
- **Social capital:** The networks together with shared norms, values and understanding that facilitate cooperation within and among groups.

Although it is possible to look at capitals in isolation, they are all interconnected, and should be considered using an integrated capitals management approach. In this way, all of the capitals are considered as part of a system. By applying integrated thinking, organizations will deliver their purpose to the benefit of their key stakeholders over time; they will also create and preserve value and enable better decision-making (Capitals Coalition, 2020; IIRC, 2020).

Framing nature as a capital asset by using the concept of natural capital (see Box 2), helps to mainstream biodiversity into decision-making across all sectors of society. It provides a strategic lens that enables the value of biodiversity to be integrated effectively across sectors.

Natural capital approaches complement traditional conservation policies by allowing us to understand the value of our dependence on nature in a language that is understood by businesses, financial institutions and governments. By identifying, measuring and valuing our impacts and dependencies on nature, natural capital assessments generate information on the health of natural assets as well as practical information for evaluating policy trade-offs, investment objectives and financial risk management.

Applying a natural capital approach captures the value that nature provides to people. This value primarily focuses on the benefits provided, but it is important to be aware of the non-use or intrinsic value of nature such as cultural or spiritual value, consistent with CBD decision X/3, paragraph 9(b)(ii). It is because of this that many governments underline that their natural assets are a part of their natural heritage. Value can be expressed in qualitative, quantitative or monetary terms. Monetary terms can be helpful for direct comparisons and inclusion in certain decisions, but the primary purpose of a natural capital approach is to inform decisions and therefore the appropriate format to express value should be used.

BOX 2

Natural capital: The stock of resources that delivers benefits for people

Natural capital is the stock of renewable and non-renewable resources (e.g. plants, animals, air, water, soils, minerals) that yield a flow of benefits to people (Natural Capital Coalition, 2016). The terms "capital" and "stocks" are used as metaphors to help describe the role of nature within the economy. The presence of, and interactions between, natural capital stocks generate a flow of goods and services that create value through the benefits they provide to business and society (Figure 1). The broad range of goods and services provided by natural capital include food, water, energy, shelter, medicine, spiritual connection, and the raw materials we use in the creation of products. It also provides less obvious regulating, supporting and cultural services such as clean air, flood defense, climate regulation, pollination and recreation. The flow of benefits from natural capital can be ecosystem services (benefits from ecosystems such as pollination, water, climate regulation) or abiotic services (which do not depend on ecological processes but from geological processes, such as metals, oil and gas).

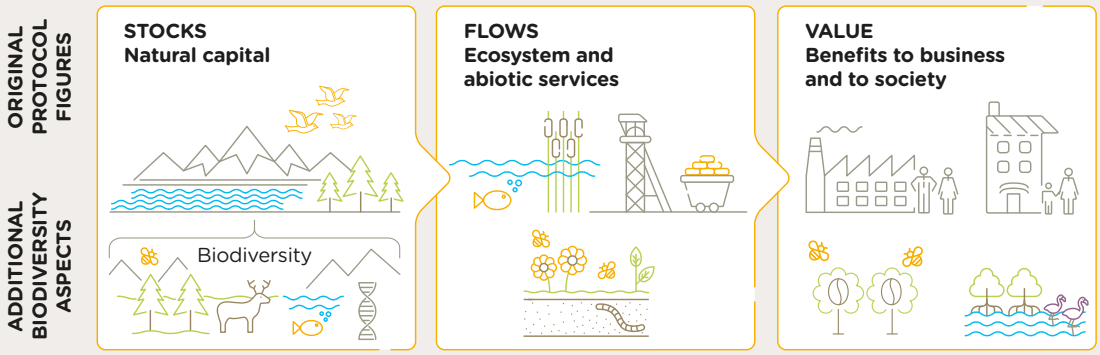

Figure 2: Relationship between biodiversity and natural capital stocks, flows, and values (Capitals Coalition and Cambridge Conservation Initiative, 2020).

Biodiversity is an integral part of natural capital stocks and underpins the goods and services that they generate. Biodiversity is the "variability among living organisms from all sources including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems" (Art. 2, CBD 1992). In essence, biodiversity describes the variety of life and can be thought of as the living component of natural capital stocks. It can refer to the level of genetic variation, the variety of species present, or the variety of groups of species or ecosystems. There is an important and complex relationship between biodiversity and the delivery of ecosystem services. Biodiversity affects the quantity, quality, and resilience of ecosystem service provision. Less biodiverse natural systems can still yield ecosystem goods and services, but they are generally fewer, of lower quality, and more vulnerable to change. In many ways, biodiversity can be seen as a measure of the quality and resilience of a natural capital stock.

Society's impacts and dependencies on biodiversity become more visible by using natural capital approaches. Economic prosperity and human wellbeing as well as the performance of almost every business depend on biodiversity and often impact it at the same time (negatively or positively). These impacts and dependencies result in risks and opportunities, and thus in costs and benefits for business and society (Figure 2). Using natural capital approaches can help frame the complexities of biodiversity into an economic language that businesses understand.

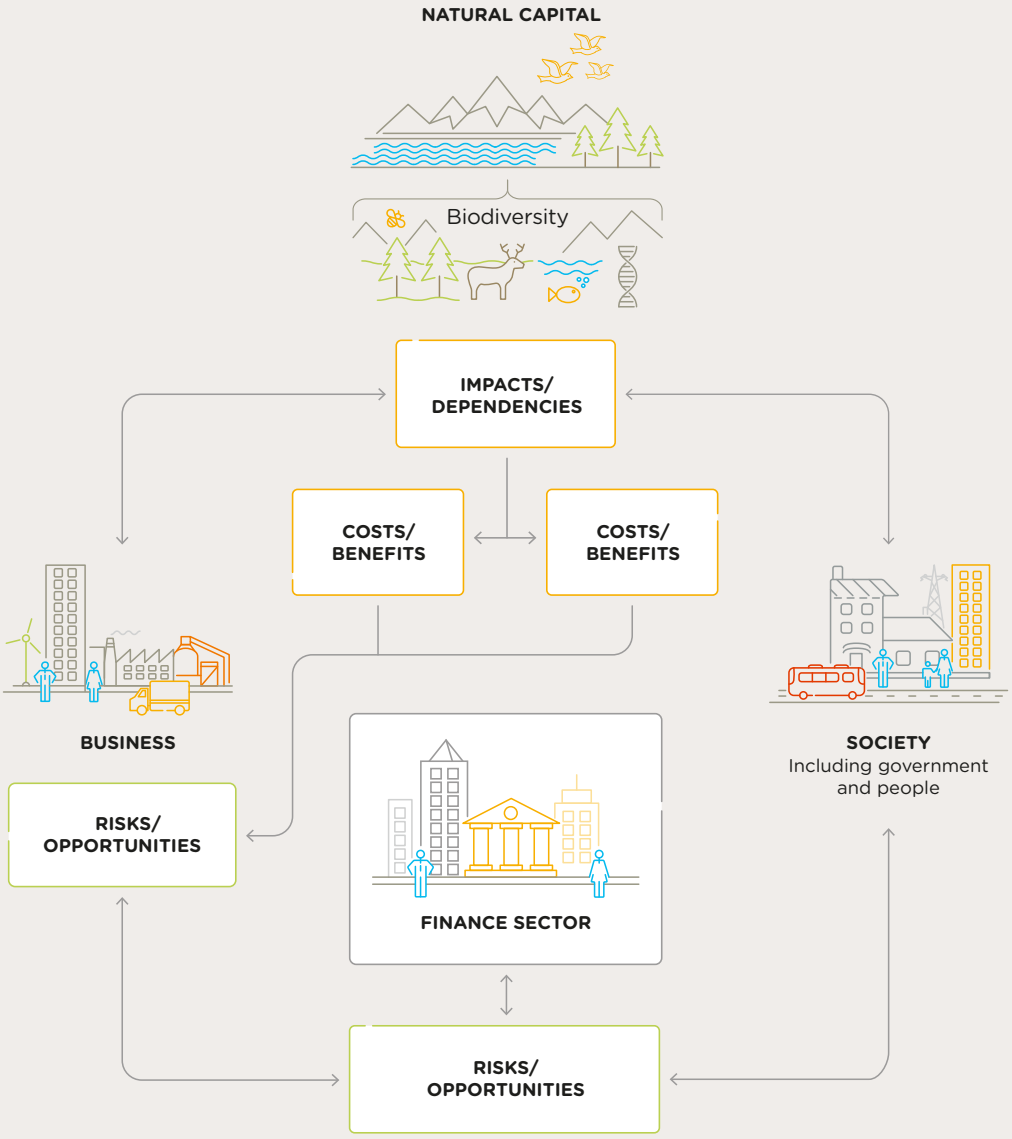

Figure 3: Biodiversity impacts and dependencies: conceptual model for business, the finance sector and society (Capitals Coalition and Cambridge Conservation Initiative, 2020).

Further reading: Natural Capital Protocol and the additional Biodiversity Guidance as well as the Natural Capital Toolkit that brings together available tools and methodologies to measure and value impacts and dependencies on nature. See also The System of Environmental-Economic Accounting (SEEA) on UNSD's website.

02

Using natural capital approaches to understand threats and needs

Natural capital approaches frame the value of nature within the context of economic prosperity and human wellbeing. This framing empowers organizations and nations to integrate the value of nature in their decision-making by fostering a better understanding of human impacts and dependencies on nature, as well as highlighting the potential for investments in nature to help achieve the Sustainable Development Goals.

Improving the visibility of nature's underpinning role for wellbeing

Natural capital approaches provide decision makers with the tools needed to identify, measure and value impacts and dependencies on natural capital and to illuminate the underpinning role of nature in our continued health, wealth, happiness, wellbeing and identity. Figure 4 illustrate this role in the context of the United Nations Sustainable Development Goals (SDGs) and presents the natural world (underpinned by healthy levels of biodiversity) as the foundation of the success of Goals relating to sustainable production and consumption, and ultimately to societal wellbeing for current and future generations.

Natural capital approaches, especially when interlinkages and trade-offs with human, social and produced capitals are included, help to better understand the interactions between different SDGs and integrate the value of nature in all decision-making. They make visible how over-exploitation of natural capital can become a threat to the economy and our wellbeing (the two top layers of the 'wedding cake'). Or, vice versa, they help to understand how investments in nature to reverse nature loss and restore ecosystem integrity contribute to achieving all SDGs. Figure 4 highlights that natural capital, or the natural resource base, underpins economic and societal prosperity. A strong sustainability approach that acknowledges that natural capital can't be substituted by human, social or produced capital should be promoted. The overall objective should remain the enhancement of all capitals, starting with the foundation of natural capital. The examples presented in this document, summarized and complemented with other examples in the Annex, illustrate how governments across the world use natural capital approaches to inform policy decisions to deal with these interactions and achieve the SDGs.

Figure 4: The Sustainable Development Goals 'wedding cake' which highlights the importance of the biosphere for society and the economy (Adapted from PBL, 2017).

Showing the threats of a degraded natural assets base

As outlined in the Update of the Zero Draft of the Post-2020 Global Biodiversity Framework, there is an urgent need to tackle the threats to our natural assets base, ranging from climate change and over-exploitation of wild species, water (fresh and marine) and landscapes, to invasive alien species and pollution by nutrients, plastic and pesticides (Targets 1 to 7, CBD, 2020). These threats not only concern wild species and protected areas, but also productive areas (e.g. agriculture) and cities (health and wellbeing). Wildfires and tropical and winter storms are clear and recent examples highlighting the threat to people from degradation of nature. Long-term depreciation of natural capital health, such as ocean acidification, air pollution or fertile topsoil loss, however, tend to be less visible and have less immediate consequences. Yet exceeding tipping points in our environment and climate may jeopardize ecosystem equilibria and result in irreversible biodiversity loss and climate change, severely impacting all facets of human wellbeing for generations. Understanding and conserving natural capital stocks and flows will help to avoid and remedy the detrimental consequences of unsustainable natural resource use. Examples from Australia, Indonesia, Peru and the Netherlands show how natural capital approaches have been applied to assess changes in natural assets due to the impacts of human activities, and to better understand the related threats to society.

Indonesia

Indonesia's Low Carbon Development Initiative illustrates clearly that without changing its development course, Indonesia will not be able to continue to grow its economy due to environmental degradation and increased scarcity of environmental goods and services (Garrido et al., 2019). The government of Indonesia has become increasingly aware that preserving and restoring natural resources is key to growing the economy sustainably and reducing pressure on natural capital. To achieve this, the Low Carbon Development Initiative for Indonesia (LCDI) explicitly incorporates greenhouse gas (GHG) emissions reduction targets into the country's Mid-Term Development Plan (RPJMN 2020-2025), along with other interventions for preserving and restoring natural resources at the regional level and for particular ecosystem types.

Peru

To show how at local levels ecosystem degradation has created equity issues associated with access to resources, Conservation International has worked with Peruvian authorities on Natural capital accounts to assess the economy-wide local effects of ecosystem degradation (Vardon et al., 2019). The study also highlighted the impacts of land degradation, the trends of threatened species, and trends, both positive and negative, in the benefits we receive from nature. Indicators from the natural capital accounts can, for example, help to understand linkages better at a local level between nature conservation and sustainable water use, allowing for more holistic resource management and policy implementation.

Australia

The Australian government is using Natural Capital accounting to help prawn fisheries businesses assess the risks and opportunities associated with the ecosystem assets they rely on. A new study funded by the Fisheries Research and Development Corporation (project 2017/175) is looking at the prawn-producing habitat (saltmarsh, seagrasses and mangroves) in Wallis Lake, on the New South Wales coast north of Newcastle, with a view to understanding how this natural capital supports the fishery's productivity and valuing its contribution through the use of natural capital accounting. The research is prepared as part of a larger national project, 'Increasing farm gate profits: the role of natural capital accounts'.

Netherlands

As a supervisor of the Dutch financial system, the Dutch Central bank (DNB) explores how sustainability issues might affect Dutch financial institutions and the financial system as a whole. In the report Indebted to nature: Exploring biodiversity risks for the Dutch financial sector (DNB & PBL, 2020) the central bank has investigated the exposure of the financial sector to different risk channels of biodiversity loss. Biodiversity loss is identified as a potential source of financial risks that threatens the availability of ecosystem services, such as wood, animal pollination and soil fertility, on which economic activities depend. Dutch financial institutions worldwide have EUR 510 billion in exposure to companies with a high or very high dependency on one or more ecosystem services. This comprises 36% of the portfolio examined. One of these ecosystem services is animal pollination. At a global level, the financial sector's exposure to products that depend on pollination amounts to EUR 28 billion.

See the Annex for these and additional applications of natural capital approaches to threats to nature (including examples from the Philippines).

Investing and using our natural assets to suit people's needs in a better way

Nature delivers multiple returns for society, ranging from environmental returns that help to harness ecological resilience, to societal returns such as public health, wellbeing and livelihoods, to economic returns such as inclusive wealth, economic benefits and innovation (Targets 8 to 20, CBD, 2020). More than half of the world's GDP (USD 44 trillion of economic value generation) is moderately or highly dependent on nature and its services and is therefore exposed to nature loss, with three large economic sectors (construction, agriculture and food and beverages) being highly dependent on nature (WEF, 2020b, p.8). This was already one of the key challenges the world was facing when COVID-19 spread and is even more necessary in the context of building back our economies better to recover from the pandemic we are all facing. As applications from Uganda, Myanmar, the United Kingdom (Scotland) and India testify, applying a capitals approach helps to provide relevant information to manage our needs from nature as well as the trade-offs in meeting them. It ensures that the necessary information is available and taken into account by decision-makers and helps to find better ways to deal with challenges such as climate change or COVID-19.

Uganda

The government of Uganda is working with the World Bank's Global Program on Sustainability to develop accounts for land, forest and wetlands ecosystems. The aim is to inform economic planning of these wetlands and ensure its ecosystem health and resilience, as well as its continued provision of services for the wellbeing of people, ranging from food production and water supply to tourism services.

A comparable approach has been followed for Senegal's Saloum Delta. Here the International Institute for Sustainable Development (IISD) implemented a pilot of the Sustainable Asset Valuation tool (SAVi) to value the economic contribution of the Saloum Delta to sustainable development, focusing on wetlands and mangroves.

Myanmar

A case study from the mangroves of the Ayeyarwady Delta shows how a natural capital approach helps to estimate the return on investment in environment, social, human and financial capital. This case focused on piloting the 3Returns Framework developed by the Green Growth Knowledge Platform and Global Green Growth Institute. The results of the pilot indicate that improved management of mangroves and green growth alternatives can enhance the wellbeing of the communities and that even limited investment in mangrove restoration provides high levels of benefits in the long-term. The work has continued with support of the World Bank Wealth Accounting and the Valuation of Ecosystem Services (WAVES) program.

United Kingdom (Scotland)

The government of Scotland is applying a four capitals approach, including natural capital, to build a strong strategy for achieving wellbeing for its citizens. On the basis of this, it is developing a robust economic strategy for Scotland that will enable a post-COVID recovery by creating a resilient wellbeing economy: one that generates strong economic growth with the concomitant creation of quality jobs, and that does so with an unequivocal focus on climate change, fair work, diversity, and equality.

India

Since 2015, the government of Andhra Pradesh state has been implementing the Zero Budget Natural Farming (ZBNF) Program with 58,000 farmers to enhance people's welfare while conserving the environment. Part of TEEBAgriFood Initiative (an UNEP programme), ZBNF consists of a set of regenerative agricultural practices that restore natural capital stocks and reduce farms' costs. Historically, India faced food insecurity and farmers incurred debts due to the high cost of the chemical input model. ZBNF appears to be an alternative that meets people's need for food, diversifies farmers' incomes with intercropping and reinforces ecosystems services. Thanks to the engagement of local government, 260,000 hectares have become part of ZBNF and soil fertility improvement, and better water retention, higher biodiversity and climate change resilience have been demonstrated.

See the Annex for these and additional applications of natural capital approaches showing how to better manage the needs of people (including examples from Australia, Netherlands, Sweden and United Kingdom).

03

Government opportunities for mainstreaming of biodiversity through natural capital approaches

Government interventions are essential for accelerating and scaling up this transition because they can create the enabling environment for change. To create this environment governments possess five levers: value and embed nature; adopt targets; integrate policies; reform incentives; and empower action. By adopting and promoting a natural capital approach, governments can unlock tools and solutions that are needed to mainstream the value of biodiversity into all policies and decision-making by business, finance and government.

Five levers of change

Transformational change can only be achieved if the way society works changes systemically. Enabling conditions and policy frameworks must be aligned and economic and financial systems reformed in such a way that they award preferable solutions instead of unsustainable ones. By adopting and promoting natural capital approaches, governments will unlock tools and solutions that are needed to mainstream the value of biodiversity into all policies and decision-making by business, finance and government.

Figure 4:
A flywheel of potential government interventions to leverage transformative change

Governments have five key levers of change to reverse nature loss and achieve a just and green economy (see Figure 4): valuing and embedding nature in decision-making by governments and private actors; adopting appropriate targets that reverse nature loss; integrating and mainstreaming nature into all policies and sectors; changing the rules of the game, reforming incentive mechanisms and co-funding change; and fostering stakeholder participation and empowering everyone to act (building on Lok et al., 2018; Business for Nature, 2020). All of these interventions can be applied at sub-national, regional and national as well as international levels. However, none of these levers of change is the silver bullet that will work in all contexts as they are most effective when implemented together. The efficacy of government interventions will differ depending on the transformational progress made by a company, sector, or particular geography (PBL, 2020). While there is no necessary order in which to implement them, when implemented together they form a strong flywheel for transformative change.

LEVER 1:

Value and embed nature in decision-making by governments and private actors

To better understand people's relationship with nature, their impacts and dependencies on it, governments first need better data. To this end, governments around the world should apply natural capital accounting and assessments (see Box 3). Using these approaches, governments can monitor and improve insights into society's dependencies on natural capital. For government, the UN-System of Environmental-Economic Accounting (SEEA) framework provides a standardized approach. There are two parts of the SEEA: the SEEA Central Framework, which is an international statistical standard and focuses on stocks and flows of natural resources, as well as the SEEA Experimental Ecosystem Accounting (SEEA EEA), which looks at the extent and condition of ecosystems and the services ecosystems provide. The SEEA was recently revised and, in March 2021, adopted as the international standard for governments and can be used to monitor progress in the context of Post-2020 Global Biodiversity Framework. In a parallel track, business application of natural capital approaches is also increasing, using the Natural Capital Protocol and its accompanying guidance, tools and metrics. By supporting private sector applications and linking public and private sector experiences, governments can help scale up the use of natural capital approaches. Examples from India, France and the EU, as well as the state of global SEEA implementation, show how nature can become more visible and prominent in all decision-making.

BOX 3

Accounting and assessing natural capital

Natural capital accounting: The process of compiling consistent, comparable and regularly produced data, using an accounting approach to assess natural capital and the flow of services generated in physical and monetary terms to show the contribution of the environment to the economy and the impact of the economy on the environment. The System of Environmental Economic Accounting (SEEA) is the agreed international statistical standard for natural capital accounting. It is a statistical framework to organize information on the economy and the environment using accounting principles and structures compatible with the System of National Accounts, which is the framework for deriving GDP as well as other macro-economic indicators, including produced assets. This enables countries to understand better how the environment underpins wealth and economic activity and to monitor environmental degradation and its costs.

Natural capital assessment: The process of measuring and valuing relevant impacts and dependencies on natural capital using appropriate methods. The scope can be broad and is primarily about providing information to inform decisions. The data used can be both accounting data and other types of data and statistics.

89 countries

According to the 2020 Global Assessment of Environmental-Economic Accounting and Supporting Statistics 2020 (UN-CEEA), 89 countries worldwide are implementing the UN-SEEA experimental Environmental-Economic Accounting framework (UNCEEA, 2017) and are using the insights derived from this to inform policy decisions. The Natural Capital Accounting in Action series of the WAVES program gives examples of these applications, including examples of how Australia uses natural capital accounts to tackle impact of drought as well as better manage the Great Barrier Reef. Another example is from Guatemala and shows the use of forest accounts to inform economic development.

India

In 2018, the Central Statistics Office of India published the first Environmental-Economic Accounts with the assets of four natural resources: forests, land, minerals and water, and updated this report in 2019. The publication revealed nuances in the state of India's natural capital stocks and flows: some areas found a net-positive increase in carbon stock and forests, while others showed unsustainable groundwater extraction.

France

The French assessment of ecosystems and ecosystem services (Efese) brings together a set of assessment activities that relate to ecosystems and their services at different scales. The program started in 2012 and aims to build robust and coherent tools to support awareness-raising and decision-making. Efese is a platform between science, decision-making and society. Its objective is to strengthen its inclusion in public policies and private decisions in France. The French Ministry of Ecological Transition also finances a research project aiming to develop ecological accounting methods at both national and company level. The project promotes the concept of unpaid ecological costs. The value of an ecosystem is expressed by the cost of bringing this ecosystem back to good ecological conditions.

European Union

As part of the EU Green Deal, the European Union is developing environmental generally accepted accounting principles in collaboration with partners from the private sector (Value Balancing Alliance, Capitals Coalition and the World Business Council on Sustainable Development) with the aim of establishing a standardized measurement and valuation methodology enabling decision-makers to create and protect long-term value for the company, society and nature.

Australia

The Australian government has developed a national strategy for environmental and economic accounting that encompasses both accounting at a national level and enterprise-scale natural capital accounting. They are specifically targeting research and investments within the agricultural sector to mainstream natural capital thinking. This includes the development of a biodiversity certification and stewardship program and investments in research that test the application of natural capital thinking and building capability of landholders in the sector. It encourages the adoption of natural capital accounting to better manage the suite of natural capital that underpins agricultural production.

See the Annex for these and additional examples of natural capital approaches to better mainstream the value of nature (including examples from Australia, Brazil, European Union, Germany, Japan, Netherlands, New Zealand, Mexico, Uganda and the United Kingdom).

LEVER 2:

Provide direction by adopting targets to reverse nature loss

When a government has developed a better understanding of its relationship with nature, it can use this to develop, adopt and build societal support for targets to reverse nature loss. This is a key enabler for change because it provides public as well as private actors with the direction and confidence to implement and invest in solutions for biodiversity. A Global Goal for Nature has been proposed by a group of international conservation and business organizations – *Nature Positive by 2030* – and this is already being widely picked up by governments and the private sector as an overarching goal. Under this, the Science-Based Targets Network is developing useful targets for businesses and cities which should also be of note. As examples from Indonesia, the United Kingdom (Scotland) and Sweden show, natural capital approaches can be used to inform progress towards such a target and to further develop more detailed inspirational targets that clearly link nature to economic activities.

Indonesia

Natural Capital Accounts for land, ecosystems and carbon, developed with support from the WAVES program, contributed to make a case for stronger government action on peat preservation and restoration. The accounts showed that the peatland area of Indonesia was much larger than expected. This had direct consequences for the expansion plans of oil palm plantations, as Indonesia introduced a moratorium on oil palm plantations on peatlands.

United Kingdom (Scotland)

The government of Scotland has established a National Performance Framework containing 'national outcomes' that describe the kind of Scotland it aims to create. One of these desired outcomes is that people value, enjoy, protect and enhance their environment. This outcome includes the growth of its natural capital assets as indicator of success.

Sweden

Building on its SEEA-implementation, the government of Sweden has adopted a policy target to reduce greenhouse gas emissions attributed to the Swedish consumption pattern. In this way, greenhouse gas emissions from Swedish consumption are made part of the country's environmental quality objectives. SEEA-based greenhouse gas emissions are used to estimate a consumption footprint indicator of consumption-related 'incorporated' greenhouse gas emissions. This combines domestically generated emissions with emissions incorporated in the goods that are produced in Sweden but consumed abroad. In this way, Sweden also shows its commitment to reduce emissions outside of its national territory (Vardon et al, 2019, Box 2.4).

LEVER 3:

Integrate and mainstream policies

A third step governments can take is the integration and mainstreaming of policies to achieve a carbon neutral, nature positive and equitable economy that recognizes the interconnections between nature, people, society and the economy. Without such a mainstreaming we will not be able to 'bend the curve' and reverse nature loss (Leclère et al., 2020), as the draft Long-Term Approach for Mainstreaming of Biodiversity and the accompanying draft action plan clearly prove (CBD, 2020b, 2020c). The challenges we are facing such as nature loss, climate change and inequality can only be tackled together. Therefore, policy coherence and efficient implementation and enforcement are needed. They can be informed by deploying natural capital approaches, as is also illustrated by the Green Economy Tracker, an online assessment tool that charts 20 'best in class' policies across five themes that drive systemic change in our national economies, including the valuation of nature. This Tracker illustrates how a natural capital approach can be used as a basis for the development of macro indicators and/or information systems alongside economic indicators such as GDP. Examples from New Zealand, Uganda, China and Sweden illustrate how this is becoming a reality in more and more countries.

New Zealand

In December 2018, the New Zealand Treasury released the Living Standards Framework Dashboard that provides indicators and analysis to inform the Treasury's advice about wellbeing priorities. The framework builds on the OECD's Wellbeing Framework and uses four capitals (natural, social, human, and financial & physical) to show how these generate wellbeing now and into the future. Similar approaches have been developed by other countries, including France, Netherlands and Scotland.

Uganda

The government of Uganda uses natural capital accounting, including regularly produced water accounts, as a basis for mainstreaming of nature into policies for water and livelihoods. To restore the River Rwizi catchment area, the district leadership has established a management committee comprising of district natural resource officers, private sector, civil society, elected leaders, youth, opinion leaders and the media. Collaboration with the private sector has been set up to support sustainable management of the catchment area. In addition to this, the government of Uganda uses natural capital accounting to inform strategic policies, including for the development of the third National Development Plan.

China

As part of its dream to become 'the ecological civilization of the 21st century', China is developing and piloting a new indicator: Gross Ecosystem Product (GEP). The aim of the GEP is to complement the indicators of GDP and the Human Development Index to create a more complete picture of wellbeing. The GEP is now implemented and tested in several provinces and counties of the Republic of China. One of the provinces where GEP is tested is the province of Qinghai, showing that the approach is achievable using available data. Qinghai is home to the source of the Mekong, Yangtze, and Yellow Rivers and water-related ecosystem services make up nearly two-thirds of the value of GEP for the province. It has been shown that most of the benefits accrue downstream. In Qinghai, GEP was greater than GDP in 2000 and three-fourths as large as GDP in 2015 as its market economy grew.

Sweden

The Swedish government has used land accounts to identify landowners responsible for biodiversity management on a specific plot of agricultural land and has published land accounts for ecosystem services that connect statistics on land use with economic actors (World Bank WAVES Policy Forum, 2018). These breakdowns can be used for analyzing agricultural investments; they assist with information gathering on the importance of the environment and ecosystems for the wider economy. These kinds of insights help to reorient agricultural practices and priorities towards more sustainable and regenerative ways that will help to reverse nature loss instead of driving it.

Biodiversity Finance Initiative

The Biodiversity Finance Initiative develops evidence-based Biodiversity Finance Plans and supports countries to implement financial solutions to reach their national biodiversity targets. It promotes national platforms, regional and global dialogues enabling countries to accelerate the reduction of their finance needs to the point where these biodiversity targets are no longer hampered by the systemic lack of investment. A practical tool that has been created is the Finance Solution Map, an online "catalogue" and comprehensive list of instruments, tools and strategies that are applicable to the field of biodiversity finance. Biodiversity finance is not only about mobilizing new resources but it concerns delivering better on what is available, reallocating resources from where they harm to where they help, and acting today to reduce the need for future investments.

See the Annex for these and additional applications of natural capital approaches to integrate nature considerations in other policies (including examples from Australia, European Union, France, Indonesia, Netherlands, Mexico, Myanmar, Philippines, South Africa and the United Kingdom).

LEVER 4:

Change the rules of the game by reforming incentives and subsidies

The transformative change that is needed cannot be achieved without altering the rules of the game. Incentives, financial mechanisms and regulations have to be adopted to achieve systemic change, and natural capital approaches can help to inform the changes that are needed to reward positive outcomes for nature or penalize negative ones. Building on these incentives, governments can also raise revenues that are needed to promote green finance and co-funding positive actions for nature. Examples from Brazil, Costa Rica, the European Union, France, Sweden and the United Kingdom show how governments are starting to change the rules of the game.

Brazil

Building on their development of Environmental-economic accounting for water, the Brazilian governments has developed a System of Incentives for Environmental Services. For example, the National Water Agency (ANA), in coordination with the regional and local TEEB project, compiled a Natural Capital Account with precise data on waters, an essential element for biodiversity. Since 2001, the water producer program, a national initiative of payment for ecosystem services across 38 watersheds, has rewarded producers who are implementing practices and nature-based solutions to control erosion, to enhance water infiltration in the water-table and to restore and preserve biodiversity.

Costa Rica

Costa Rica's Payment for Ecosystem Services (PES) program is globally recognized as a leading example for enhancing economic, environmental, and social returns from investments in integrated ecosystem management. It has provided innovative financial incentives for ecosystem services that are not usually monetized and paid for in the traditional market. The Costa Rican PES scheme has been credited for more than doubling the country's forest cover from less than 30% in the 1980s to 54% in 2015. Results indicated that in 2016 1,122,312 hectares have been submitted to the Costa Rican PES program. In addition, 6,478,254 trees have been planted in agroforestry systems, almost 16,000 families have been involved in the program, and over 136,000 hectares of indigenous territories have been placed under PES. These achievements strongly demonstrate the viability and effectiveness of green growth (GGGI, 2016).

European Union

The European Union has developed a Taxonomy for Sustainable Activities that provides technical screening criteria for economic activities that can make a substantial contribution to climate change mitigation or adaptation, while avoiding significant harm to the four other environmental objectives: sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention control, and protection and restoration of biodiversity and ecosystems.

France and the European Union

In its national imported deforestation strategy, France has included measures for increasing the monitoring and disclosures of deforestation by companies (non-mandatory). Many more countries have these non-mandatory disclosure regulations, including the European Union. The EU is now reconsidering its policies for non-financial disclosure as part of the EU Green Deal. It is expected that future regulation will be stricter, with a bigger group of companies within its scope.

Sweden

To offer investors a transparent way to ensure that bonds are green, the government of Sweden has published Sweden's Sovereign Green Bond Framework (2020). This framework has been developed in accordance with the guidelines in the Green Bond Principles (GBP), which were published in 2018 by the International Capital Market Association (ICMA). The work was carried out within the Government Offices in consultation with relevant expert agencies and reviewed by an independent expert. The Swedish National Debt Office will issue the bonds at an appropriate time during 2020.

A related example from a financial institution stems from the Inter-American Development Bank and its support for private sector investment in climate-resilient infrastructure in Latin America and the Caribbean. To achieve this, IADB is developing the business case for action that includes a full range of both costs and benefits, including those related to biodiversity.

United Kingdom, Netherlands and France

As part of its international biodiversity strategies, the governments of the United Kingdom and the Netherlands support the exploration of an international group of stakeholders, including several financial institutions as well as UNDP, to establish a Taskforce on Nature-Related Disclosures. Following the example of the Financial Stability Board's Taskforce on Climate-Related Financial Disclosure and the Recommendations on voluntary, consistent climate-related financial risk disclosures it has developed for companies and financial actors, this new taskforce on nature-related financial disclosures would be charged with developing comparable guidelines to address nature loss.

See the Annex for additional applications of natural capital approaches to change the rules of the game and provide better incentives (including examples from Brazil, Philippines, South Africa and Uganda).

LEVER 5:

Empower everyone to act

The first four levers of change are more effective if all actors have the knowledge and capacity, are empowered and can work collaboratively to reverse nature loss. Building the capacity of all actors, including governments, businesses, financers, academics, standards setters, NGOs and individuals, to assess their impacts and dependencies on nature is key to mainstreaming nature into all their decisions and actions. At the policy level, it is paramount to empower local and regional governments that are, most of the time, managing natural capital assets on the ground. Examples from the governments of Africa, Spain, Brazil, United Kingdom (Scotland) and the European Union show how they are empowering everyone to act on nature.

Africa

The Africa Natural Capital Accounting Community of Practice (CoP) is a regional learning and knowledge platform that brings together professionals from government institutions, NGOs and academia that are interested in or working on Natural Capital Accounting (NCA) in Africa. The Africa CoP aims to build momentum and mainstream NCA into statistical production and policy in all African countries by supporting best practices through capacity building and knowledge sharing. To that end, and over the next few years, the community of practice intends to hold regular forums, share information, produce joint communications including case studies, share experiences through South-South exchanges and joint trainings, and build technical expertise through themed working groups. The CoP was initiated in November 2019, following the first Africa Forum on Natural Capital Accounting in Kampala, Uganda, and is supported by the World Bank.

Spain

The Spanish Business and Biodiversity Initiative (IEEB) is a public-private platform that works to integrate biodiversity more effectively into business policy. At present, the IEEB is engaged with the Spanish Green Growth Group in a working group for the valuation of biodiversity using a natural capital approach. Both platforms represent more than 70 companies in Spain, including some of the biggest ones. The idea is to push for best practices by sharing experiences and aligning with current frameworks and methodologies.

Brazil

The National Strategy and Plan of Action for Biodiversity has been constructed and implemented through the PainelBio Initiative. Throughout this process, important documents were generated, knowledge was aggregated, and opportunities for synergy were created among the various sectors and governmental levels. Over 200 institutions and programs were invited to engage in the process to develop the National Biodiversity Strategy and Action Plan of Brazil, contributing to their institutional actions. Through this, the national biodiversity strategy was strengthened and took on board different initiatives that work for biodiversity in Brazil.

United Kingdom (Scotland)

The Scottish government has developed sectoral Sustainable Growth Agreements to work directly with businesses to engage them in Scotland's One Planet Prosperity policy implementation. The Scottish Environment Protection Agency is working with businesses using new mechanisms such as Sustainable Growth Agreements and sector plans. These help businesses, local authorities and whole sectors to work with SEPA to take action to consume less and use resources more productively. The government is helping businesses and the public sector to work together to build the case for investing in nature to achieve inclusive growth.

European Union

To increase applications by business, especially SMEs, the European Union is funding a three-year We Value Nature campaign to support businesses and the natural capital community to make valuing nature the new normal for businesses across Europe. We Value Nature is supporting the natural capital community to share research, resources and best practice; helping businesses to improve their risk management, communication with investors, stakeholder engagement and anticipation of future legislation; and making a difference by targeting businesses and barriers where we expect to make the greatest impact. The EU also supports Oppla, a web-based community and innovation hub for sharing knowledge about natural capital, ecosystem services and nature-based solutions.

See the Annex for these and additional applications of natural capital approaches to empower everyone to act (including examples from the European Union, Netherlands).

04

What's next?

Framing nature as asset - as natural capital - that stores and provides value to people, has proven to be an effective route for change and it's clear that it must be incorporated into the Post-2020 framework. The groundwork is prepared, and the frameworks, methodologies and metrics are already in place to start. What is needed now is an acceleration an acceleration in uptake.

Creating transformative change

Transformative change does not occur overnight. It takes three distinct phases, from preparing the groundwork and accelerating the transition to creating a new normal (Figure 5).

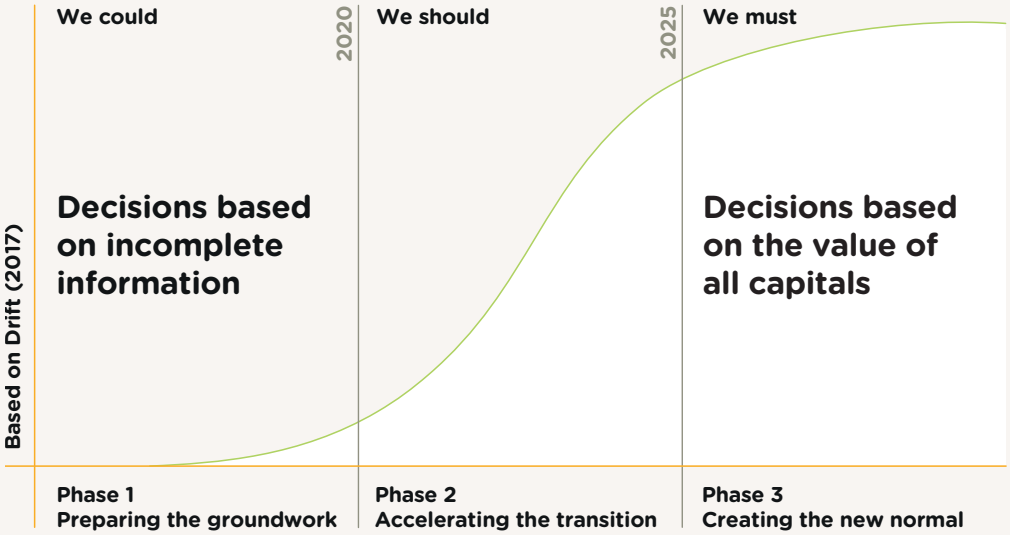

Figure 5: A model for enabling transformational change

As illustrated throughout this paper, framing nature as asset (as natural capital) that stores and provides value to people, has proven to be an effective route for change and it's clear that it must be incorporated into the Post-2020 framework. The groundwork is prepared, and frameworks, methodologies and metrics are in place to start. What is now needed is to accelerate their uptake. It is crucial to strengthen the capacity around the world to ensure that in all geographies and at all levels of government, people are trained, empowered and rewarded for mainstreaming the value of nature into decisions.

The adoption of an ambitious Post-2020 Global Biodiversity Framework is a crucial step to enable the acceleration we need and for the new normal to become a reality. Five levers of change have been described for effective government intervention. None of these levers of change is the silver bullet that will work in all contexts. The effectiveness of government interventions will differ depending on the transformational progress made by a company, sector, or geography. But these five types of potential government action provide an inspirational palette. Together, they can help to make the Post-2020 Global Biodiversity Framework an enabler for change that would ensure that the value of nature is embedded in all decisions throughout society.

The quest now is to use them.

Annex

A glossary of examples that show how natural capital approaches can inform change

This annex provides an overview of how policymakers across the globe, working in diverse policy areas – ranging from conservation to planning, economy and development – use natural capital approaches to take more informed decisions and help reverse nature loss. Together these examples testify to the power of framing nature as an asset to promote better understanding of threats to nature as well as people's needs of nature. And they provide a compelling library of best practices to help achieve the Sustainable Development Goals and to mainstream nature into the policies of the whole of governments as well as of business and finance institutions.

Examples

Africa

01. The Africa Natural Capital Accounting Community of Practice is a regional learning and knowledge platform that brings together professionals from government institutions, nongovernmental organizations and academia that are interested in or working on Natural Capital Accounting (NCA) in Africa. This CoP was initiated in November 2019, following the first Africa Forum on Natural Capital Accounting in Kampala, Uganda, and is supported by the World Bank.

Levering change:
- Value
- Empower

Australia

02. The Australian government is using Natural Capital accounting to help prawn fisheries businesses assess the risks and opportunities associated with the ecosystem assets they rely on. A new study is looking at the prawn-producing habitat in Wallis Lake, on the New South Wales coast north of Newcastle, encompassing the estuary and adjacent catchment – made up of saltmarsh, seagrasses and mangroves – with a view to understanding how this natural capital supports the fishery's productivity and to value its contribution through the use of natural capital accounting. The research is prepared as part of a larger national project, 'Increasing farm gate profits: the role of natural capital accounts.'

Informing on:
- People's needs

Levering change:
- Value
- Integrate

03. The development of a national strategy for environmental and economic accounting that encompasses both national-level accounting and enterprise-scale natural capital accounting. They are specifically targeting research and investments within the agricultural sector to mainstream natural capital thinking. This includes the development of a biodiversity certification and stewardship program and investments in research that tests the application of natural capital thinking and building capability of landholders in the sector. It encourages the adoption of natural capital accounting to better manage the suite of natural capital that underpins agricultural production.

Levering change:
- Value
- Empower

04. The development of natural capital accounts for Marine and Coastal Ecosystems (Port Phillip Bay), including ecosystem accounting to assess the relationship between the environmental condition of the area and economic and other benefits in the Great Barrier Reef region (ABS, 2015, 2017; World Bank WAVES Policy Forum, 2018).

Informing on:
- People's needs

Levering change:
- Value

05. The development of natural capital accounts for Victoria's Parks, including ecosystem accounting in the Central Highlands of Victoria to assess the economic and ecological impacts of conserving versus those of exploiting the area (Keith et al., 2017).

Informing on:
- Threats

Levering change:
- Value
- Integrate

06. Support for the development and implementation of an international Standard on Biodiversity Offsets (together with the Netherlands).

Levering change:
- Integrate

Brazil

07. The Brazilian Institute of Geography and Statistics (IBGE), since 2015, has developed massive efforts with geotechnology tools to collect Land Cover and Use Accounts, with the detection of changes occurring throughout the territory. In addition, it analyzed the availability and consumption of water resources in the country, through regionalized results from the Water Accounts.

In 2017, a law requiring the calculation of the Green Domestic Product, which includes the national ecological capital, was enacted. In this way, IBGE was encouraged to improve the methodology of their approach to natural capital and to progress their ecosystem accounting, with the support of UNSD and UNEP. In 2020, a new publishing imprint was inaugurated at the Institute, promoting products that demonstrated the levels of preservation for terrestrial biomes, with their vectors of change, and the synthesis of the risk of extinction of fauna and flora in the various ecological environments.

Informing on:
• Threats

Levering change:
• Integrate

08. The development of Environmental-economic accounting for water as well as a System of Incentives for Environmental Services. For example, the National Water Agency (ANA), in coordination with the regional and local TEEB project, compiled a Natural Capital Account with precise data on waters, an essential element for biodiversity. Since 2001, the water producer program, a national initiative of payment for ecosystem services across 38 watersheds has rewarded producers who are implementing practices to control erosion, to enhance water infiltration and to restore and preserve biodiversity.

Levering change:
• Value
• Incentivize

09. The National Strategy and Plan of Action for Biodiversity has been constructed and implemented through the PainelBio Initiative.

Levering change:
• Empower

China

10. As part of its dream to become 'the ecological civilization of the 21st century', China is developing and piloting a new indicator: Gross Ecosystem Product (GEP). The aim of the GEP is to complement the indicators of GDP and the Human Development Index, to create a more complete picture of wellbeing. The GEP is now implemented and tested in several provinces and counties of the Republic of China. One of the provinces where GEP is tested is the province of Qinghai, showing that the approach is achievable using available data. The sources of the Mekong, Yangtze, and Yellow Rivers water-related ecosystem services make up nearly two-thirds of the value of GEP for Qinghai. It has been shown that most of the benefits accrue downstream. In Qinghai, GEP was greater than GDP in 2000 and three-fourths as large as GDP in 2015 as its market economy grew.

Levering change:
• Value
• Integrate

China continued

11. At the beginning of the century the Chinese government launched one of the largest payment-for-ecosystem-services programs in the world. Examples of these restoration programs are the Sloping Land Conversion Program and Natural Forest Conservation Program that together involve 120 million households, with payment exceeding USD 100 billion in 2001-2010 (Guerry et al., 2015, p. 2). Reforestation is considerable and soil erosion has decreased rapidly. However, in terms of social issues there still are challenges. The payments were not enough in all places to compensate for loss of income from shifting livelihoods.

Informing on:
• Threats

Levering change:
• Integrate
• Incentivize

Costa Rica

12. Costa Rica's Payment for ecosystem services (PES) program is globally recognized as a leading example for enhancing economic, environmental, and social returns from investments in integrated ecosystem management. It has provided innovative financial incentives for ecosystem services that are not usually monetized and paid for in the traditional market.

Levering change:
• Incentivize

European Union

13. The linking of natural ecosystems and socio-economic systems through the flow of ecosystem services, in the context of the EU project Mapping and Assessment of Ecosystems and their Services (MAES).

Levering change:
• Value

14. As part of the EU Green Deal the European Union is developing environmental generally accepted accounting principles in collaboration with partners from the private sector (Value Balancing Alliance, Capitals Coalition and the World Business Council on Sustainable Development). The aim is to establish a standardized measurement and valuation methodology enabling decision-makers to create and protect long-term value for businesses society and nature. A sister project also proposed by the EU aims to make sure that biodiversity is adequately included in the eGAAP and will start in late 2021.

Levering change:
• Value

15. The development of a Taxonomy for Sustainable Activities, starting with screening criteria for climate change mitigation or adaptation, later to be complemented with criteria for natural capital and circular economy.

Levering change:
• Integrate
• Incentivize

European Union continued

16. The convention of an EU Business@Biodiversity Platform, that brings together governments, business and non-government organizations to discuss experiences on natural capital accounting and biodiversity measurement approaches for businesses and financial institutions; also to engage with pioneering corporates and financials and to promote the integration of biodiversity concerns within the decision-making processes of a growing number of businesses.

Levering change:
- Value
- Empower

17. The funding of the We Value Nature campaign to support businesses on their natural capital journey. Also, the support for Oppla, a web-based community and innovation hub for sharing knowledge about natural capital, ecosystem services and nature-based solutions.

Levering change:
- Value
- Empower

France

18. The implementation of a National ecosystem assessment (the EFESE program), to influence decisions in all sectors.

Levering change:
- Value

19. The financing of a research project aiming to develop ecological accounting methods at both national and company level. The project promotes the concept of unpaid ecological costs. The value of an ecosystem is expressed by the cost of bringing this ecosystem back into good ecological conditions.

Levering change:
- Value

20. Implementation of Payments for environmental services in agriculture, which scheme has been validated in 2020 by the European Commission

Levering change:
- Incentivize

21. Implementation of French forest accounts, based on the European Forest Accounts, that include biophysical and economic data.

Levering change:
- Value

22. Use of environmental accounts as the basis for a Dashboard of 10 complementary wealth indicators, including a carbon footprint and soil sealing indicator (Service d'information du Gouvernement, 2017).

Levering change:
- Integrate

France continued

23. Adoption of a National strategy to eliminate imported deforestation from the French supply chain that contains non-mandatory objectives about increasing the monitoring and reporting of deforestation by companies (all links refer to texts in French).

Levering change:
• Incentivize

India

24. In 2018, the Central Statistics Office of India published the first Environmental Economic Accounts with the assets of four natural resources: forests, land, minerals and water, and updated this report in 2019. It has revealed nuances of the state of India's natural capital stock and flows; with, for instance, areas with a net-positive increase in carbon stock and forests, and others with unsustainable groundwater extraction.

In parallel, the National Biodiversity Action Plan (NBAP) of India highlighted that policy decisions for biodiversity preservation have been inadequate due to the undervaluation of natural resources and non-accounted or invisible negative environmental impacts. The NBAP mention their essential target of "valuation of goods and services provided by biodiversity and use of economic instruments for decision-making process." In 2019 the government published an Overview of the Implementation of India's National Biodiversity Action Plan.

Levering change:
• Value
• Integrate

25. Since 2015, the government of Andhra Pradesh state has been implementing the Zero Budget Natural Farming (ZBNF) with 58,000 farmers to enhance people's welfare while conserving the environment. Part of TEEBAgriFood Initiative (an UNEP program), ZBNF consists of a set of regenerative agricultural practices that restore natural capital stocks and reduce farms' costs. Historically, India faced food insecurity and farmers incurred debts due to a costly chemical input model. ZBNF appears to be an alternative that meets people's need for food, diversifies farmers incomes with intercropping and reinforces ecosystem services. Thanks to the engagement of local government, 260,000 hectares are part of the ZBNF and soil fertility improvement, better water retention, higher biodiversity and climate change resilience have been demonstrated.

Informing on:
• People's needs

Levering change:
• Integrate

Indonesia

26. Indonesia's Low Carbon Development Initiative illustrates that without changing its development course, Indonesia will not be able to continue to grow its economy due to environmental degradation and increased scarcity of environmental goods and services (Garrido et al., 2019). The government of Indonesia has become increasingly aware that preserving and restoring natural resources is key to growing the economy sustainably and reducing pressure on natural capital. To achieve this the Low Carbon Development Initiative for Indonesia (LCDI) explicitly incorporates Greenhouse Gases (GHG) emissions reduction targets into the country's Mid-Term Development Plan (RPJMN 2020-2025), along with other interventions for preserving and restoring natural resources at the regional level and for particular ecosystem types.

Informing on:
• Threats
• People's needs

Levering change:
• Value
• Integrate

Indonesia continued

27. Natural Capital Accounts for land, ecosystems and carbon developed with support from the World Bank WAVES program have contributed to make a case for stronger government action on peat preservation and restoration. The accounts showed that the peatland area of Indonesia was much larger than expected. This had direct consequences for the expansion plans of oil palm plantations, as Indonesia introduced a moratorium on oil palm plantations on peatlands.

Informing on:
• Threats

Levering change:
• Target

28. The government of Indonesia issued its first Islamic 'green' sovereign bond known as the Green Sukuk in early 2018, listed on the Singapore Stock Exchange and NASDAQ Dubai. It has attracted investment of approximately USD 1.25 billion.

Japan

29. To promote private sector applications on biodiversity and natural capital, the government of Japan has started a Community of Learning for Natural Capital Valuation.

Levering change:
• Value

Netherlands

30. Creation of a Monitor of Wellbeing, using a system of natural capital accounts based on implementing the UN-SEEA framework in the Netherlands.

Levering change:
• Integrate

31. Application of a SEEA-EEA based Natural Capital Account for the North Sea to link data on the extent and condition of the ecosystems of the North Sea with that on ecosystem services provided by these ecosystems (in physical terms).

Informing on:
• People's needs

Levering change:
• Value

32. Establishment of a Community of Practice 'Financial Institutions & Natural Capital' that supports natural capital approaches by the financial sector in the Netherlands.

Levering change:
• Value
• Empower

33. As a supervisor of the Dutch financial system, the Dutch Central bank (DNB) explores how sustainability issues might affect Dutch financial institutions and the financial system as a whole. In the report Indebted to nature: Exploring biodiversity risks for the Dutch financial sector (DNB & PBL, 2020) the central bank has investigated the exposure of the financial sector to different risk channels of biodiversity loss. Biodiversity loss is identified as a potential source of financial risks that threaten the availability of ecosystem services, such as wood, animal pollination and soil fertility, on which economic activities depend.

Informing on:
• People's needs

Levering change:
• Value
• Integrate

Netherlands continued

34. Support for the development and implementation of an international Standard on Biodiversity Offsets (together with Australia)

Levering change:
• Integrate

New Zealand

35. In December 2018, the New Zealand Treasury released the Living Standards Framework Dashboard, that provides indicators and analysis to inform the Treasury's advice about wellbeing priorities. The framework builds on the OECD's Wellbeing Framework and uses four capitals (natural, human, social, and financial & physical) to show how these generate wellbeing now and into the future.

Levering change:
• Value
• Integrate

36. The implementation of a strategic approach to the government's science investment, by targeting long-term goals, e.g. for Sustainable Seas.

Levering change:
• Value
• Integrate

Nigeria

37. In the context of the GLOBE-UNEP-GEF Project; "GLOBE Legislators Advancing REDD+ and Natural Capital Governance Towards the Delivery of the 2030 Agenda" a workshop was held with the aim of advocating to authorities the importance of the government driving a participatory approach to mainstream Biodiversity accounts into National Accounts. The workshop was predominantly led by staff of the Ministry of Budget and National Planning; participants were from the staff of relevant Ministries, Departments and Agencies in the country. The workshop provided suggestions on how to mainstream NCA into the National Planning and Budgeting system, to enable a better understanding of how in Nigeria the environment underpins wealth and economic activity and to monitor environmental degradation and its costs.

Levering change:
• Value
• Integrate

Malaysia

38. In 2020, the Ministry of Water, Land, and Natural Resources organized a Business Forum with fifty representatives from the government, the private sector and NGO. The outcomes of the event were the creation of a working group to establish the Malaysian Platform for Business and Biodiversity to encourage the use of market-based and non-market-based tools to include biodiversity consideration and encourage behavioural change.

Levering change:
• Empower

Mexico

39. Application of Ecological Integrity Indicators within the natural capital index, to measure the ecological and economic value of the natural capital of México.

Levering change:
• Value
• Integrate

Mexico continued

40. The incorporation of the International Open Data Charter principles into a National Decree for Open Data in 2015.

Levering change:
- Value
- Empower

Myanmar

41. The pilot of the 3Returns Framework (developed by the Green Growth Knowledge Platform and Global Green growth Institute) for the mangroves of the Ayeyarwady Delta shows how a natural capital approach helps to estimate the return on investment in environment, social, human and financial capital.

Informing on:
- People's needs

Levering change:
- Integrate

Peru

42. To show how at local levels ecosystem degradation has created equity issues associated with access to resources, Conservation International has worked with Peruvian authorities on Natural capital accounts to assess the economy-wide local effects of ecosystem degradation (Vardon et al., 2019). The study also highlighted the impacts of land degradation, the trends of threatened species, and trends, both positive and negative, in the benefits we receive from nature. Indicators from the natural capital accounts can, for example, help to better understand linkages at local level between nature conservation and sustainable water use, allowing for more holistic resources management and policy implementation.

Informing on:
- Threats

Philippines

43. Using ecosystem accounts developed for the Laguna de Bay Basin — the watershed for the country's largest lake, in metropolitan Manila — the Laguna Lake Development Authority (LLDA) has created a scorecard for local government units to assess environmental conditions and is using the information to update the Laguna de Bay Master Plan. The accounts have been used to simulate consequences of unabated deforestation and to explore options for watershed measures with the greatest potential for positive impacts on ecosystem protection and regeneration.

Informing on:
- Threats

44. The Philippine government, with support from the World Bank WAVES program, has developed accounts for the Laguna de Bay Basin adjacent to the capital Manila. The accounts highlight the tensions between the use of the lake for the production of fish (via aquaculture and open-water fishing), water supply and water emissions. Estimates of resource rent for fisheries based on these accounts were used for revising the licensing and permit fees for aquaculture in the lake and the Implementation of the Laguna de Bay Watershed Greening Program.

Levering change:
- Incentivize

Examples

South Africa

45. The greening of South Africa's tax policies, using insights from their natural capital accounts.

Levering change:
• Incentivize

Sri Lanka

46. In 2019 the Central Bank of Sri Lanka launched a Roadmap for Sustainable Finance. This Roadmap provides a broad direction to financial regulators and financial institutions to effectively manage environmental, social and governance (ESG) risks associated with projects they finance and help increase assistance to businesses that are greener, more climate-friendly and socially inclusive.

Levering change:
• Incentivize

Spain

47. The Spanish Business and Biodiversity Initiative (IEEB) is a public-private platform that works to integrate biodiversity into business policy more effectively. At present the IEEB is engaged with the Spanish Green Growth Group in a working group for the valuation of biodiversity using a natural capital approach. Both platforms represent more than seventy companies in Spain, including some of the biggest ones. The idea is to push for best practices by sharing experiences and aligning with current frameworks and methodologies.

Levering change:
• Empower

Sweden

48. The Swedish government has used land accounts to identify which landowners are responsible for biodiversity management on a specific plot and has published Land accounts for ecosystem services, that connect statistics on land use with economic actors (World Bank WAVES Policy Forum, 2018). These breakdowns can be used for analyzing agricultural investments; they can help to learn more about the importance of the environment and ecosystems for the wider economy. These kinds of insights help to reorient agricultural practices and priorities towards more sustainable and regenerative ways that will help to reverse nature loss instead of driving it.

Informing on:
• People's needs

Levering change:
• Integrate

49. Building on its SEEA-implementation, Sweden has adopted a policy target to reduce emissions attributed to the Swedish consumption pattern. In this way, greenhouse gas emissions from Swedish consumption are made part of the country's environmental quality objectives. SEEA-based greenhouse gas emissions are used to estimate a consumption footprint indicator of consumption-related 'incorporated' greenhouse gas emissions. This combines domestically generated emissions with emissions incorporated in the goods that are produced in Sweden but consumed abroad. In this way Sweden shows its commitment to reduce emissions outside as well as within its national territory (Vardon et al, 2019, Box 2.4; Statistics Sweden, 2015).

Levering change:
• Target
• Incentivize

Sweden continued

50. The greening of Swedish tax policies, using insights from sector-by-sector accounting of CO_2 emissions and energy use, in parallel with standard economic accounts.

Levering change:
• Incentivize

51. To offer investors a transparent way to ensure that bonds are green, the government of Sweden has published Sweden's Sovereign Green Bond Framework (2020). This framework for Swedish sovereign green bonds has been developed in accordance with the guidelines in the Green Bond Principles (GBP), which was published in 2018 by the International Capital Market Association (ICMA). The work was carried out within the Government Offices in consultation with relevant expert agencies and reviewed by an independent expert. The Swedish National Debt Office will issue the bonds at an appropriate time during 2020.

Levering change:
• Incentivize

Uganda

52. The government of Uganda is working with the World Bank's Global Program on Sustainability to develop accounts for land, forest and wetlands ecosystems. The aim is to provide information for the economic planning of these wetlands and ensure ther ecosystem health and resilience, as well as the continued provision of services for the wellbeing of people, ranging from food production and water supply to tourism services.

Informing on:
• People's needs

53. Using natural capital accounting, including regularly produced water accounts, as a basis for the mainstreaming of nature into policies for water and livelihoods. To restore the River Rwizi catchment area, the district leadership has established a management committee comprising of district natural resource officers, private sector, civil society, elected leaders, youth, opinion leaders and the media. Collaboration with the private sector (including Coca Cola and ABInBev) has been set up to support the sustainable management of the catchment area.

Levering change:
• Integrate

54. The government of Uganda, with support of the World Bank WAVES program, has published an Issues paper on Adjusted Macroeconomic Indicators and Measures of Comprehensive Wealth. This paper presents the results of the adjusted macroeconomic indicators and wealth accounts for Uganda and identifies policy issues that need to be considered during government planning and budgeting. It spells out the Adjusted Net National Income (ANNI) and the Adjusted Net Savings (ANS) in addition to the country's wealth measure indicators. All these measures are consistent with the System of National Accounts (SNA) but take into consideration natural capital use and formation.

Levering change:
• Value
• Integrate

Uganda continued

55. The Ugandan Wood Assets and Forest Accounts (2020) show policy makers that if nothing changes, national sustainable wood supplies from areas defined as forest will be fully depleted by 2025. An important driver for this is charcoal production, for which the high market supply is driven by value addition and margins equivalent to about 80 percent of the retail price, while charcoal producers' returns are usually between 12.5% and 20% of the retail price. The accounts show that the current structure of fiscal instruments does not internalize the externalities of wood production and that a new market structure is needed that includes e.g. wood extraction costs and resource rents for charcoal in the value chain, and promotes the use of improved cooking stoves, kiln technologies and enhanced incentives for the adoption of alternative sources of energy for cooking, especially liquified petroleum gas and electricity.

Levering change:
• Incentivize

56. The National Environment Management Authority has developed in collaboration with WWF a Payment for Watershed Services manual for catchments in the Rwenzori Mountains National Park.

Levering change:
• Incentivize

United Kingdom

57. Development of a National Ecosystem Assessment that provides an example of how non-monetary techniques can be used to consider biodiversity's value alongside monetary values.

Informing on:
• People's needs

58. Integration of natural capital into The Green Book, the United Kingdom's central government's guidance on appraisal and evaluation of policies and policy decisions.

Levering change:
• Integrate

59. The running of six biodiversity-offsetting pilot areas from 2012 to 2014. This led to a publication on results of the pilots, together with research into international experiences of biodiversity offsetting.

Levering change:
• Integrate

Scotland

60. Establishment of a National Performance Framework containing 'national outcomes' that describe the kind of Scotland its government aims to create. One of these desired outcomes is that people value, enjoy, protect and enhance their environment. This outcome includes the growth of its natural capital assets as indicator of success.

Levering change:
• Value
• Target
• Integrate

Scotland continued

61. The government of Scotland is applying a four capitals approach, including natural capital, to build a strong strategy for achieving wellbeing for its citizens. It is now using the insights gathered from that to develop a robust economic strategy for Scotland that will enable a post-COVID recovery by creating a resilient wellbeing economy: one that generates strong economic growth with the concomitant creation of quality jobs, and that does so with an unequivocal focus on climate change, fair work, diversity, and equality.

Levering change:
• Integrate

62. To ensure that its policies are directed towards improving Scotland's natural capital assets, the Scottish government has fully integrated nature in its regulatory framework (One Planet Prosperity Regulatory Strategy). It also has developed sectoral Sustainable Growth Agreements to work directly with businesses to engage them in Scotland's One Planet Prosperity policy implementation.

Levering change:
• Integrate
• Empower

United Kingdom, France, and the Netherlands

63. As part of its international Biodiversity strategies, the governments of the United Kingdom and the Netherlands support the explorations of an international group of stakeholders, including several financial institutions as well as UNDP, to establish a Taskforce on Nature-Related Disclosures. Following the example of the Taskforce on Climate-Related Financial Disclosure, this new Taskforce would be charged with developing guidelines for companies on biodiversity-related disclosures.

Levering change:
• Incentivize

United States of America

64. The Department of the Interior, the US federal agency responsible for protecting natural resources, has developed the Habitat Equivalency Analysis (HEA) for compensatory restoration requirements. In the context of Natural Resource Damage Assessment, this method identifies the amount of restoration required to replace the lost services for a given injured habitat for a specific period. A visual HEA program with an intuitive graphical interface allows comparison between restoration projects to find the optimum offset scenario.

Informing on:
• Threats

Levering change:
• Value

Biodiversity Finance Initiative

65. The Biodiversity Finance Initiative develops evidence-based Biodiversity Finance Plans and supports countries to implement financial solutions to reach their national biodiversity targets. It promotes national platforms, regional and global dialogues enabling countries to accelerate the reduction of their finance needs to the point where these biodiversity targets are no longer hampered by the systemic lack of investment. A practical tool that has been created is the Finance Solution Map, an online "catalogue" and comprehensive list of instruments, tools and strategies that are applicable to the field of biodiversity finance. Biodiversity finance is not only about mobilizing new resources. It is concerned with delivering better on what is available, reallocating resources from where they harm to where they help and acting today to reduce the need for future investments.

Levering change:
• Value
• Integrate

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