Experiences in Latin America and the Caribbean with mainstreaming biodiversity in the productive, economic and financial sectors

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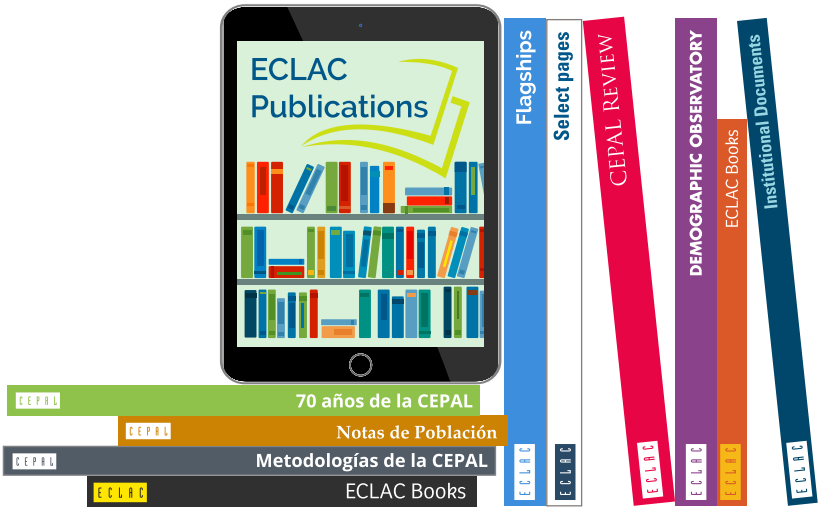

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This document was prepared by Víctor Alvarado, consultant with the Agricultural Development and Biodiversity Unit of the Natural Resources Division of the Economic Commission for Latin America and the Caribbean (ECLAC), Marcia Tambutti, Senior Research Assistant and biodiversity expert in the same Unit, and Aleksandar Rankovic, professor at Sciences Po and researcher at the Institute for Sustainable Development and International Relations (IDDRI) during the preparation and drafting of the document, in the framework of the activities of the Division's programme of work. The document is published with the financial support of French cooperation.

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Presentation

There is a growing sense of urgency worldwide generated by the current environmental and climate crises, as well as the challenges presented by pollution, multilateral governance, and the pandemic and its devastating socioeconomic consequences. Mitigating the impact of these challenges will require coherent, integrated solutions that simultaneously address the underlying drivers of the crises and their impacts. The Convention on Biological Diversity proposes a transformative change to achieve new targets on biodiversity, which are still under negotiation, in an effort to make progress along a path consistent with the desired 2050 Vision of living in harmony with nature.

In order to modify consumption and production patterns, the existing gaps associated with technology, education, access, skills, opportunities and resources must be narrowed. It will also be imperative to modify public and private investment to prevent worsening climate change, the destruction of national and global common resources, and biodiversity loss and degradation.

The mainstreaming of biodiversity in policies and sectors beyond the environmental sector is a tool to effect structural changes that will make it possible to halt and reverse nature loss and degradation, as set forth in the theory of change described in the draft post-2020 Global Biodiversity Framework (post-2020 GBF). Implementation of national biodiversity policies and the Convention has proven to be the most significant challenge and is a core aspect of the new post-2020 GBF. It is clear that progressive, structural change is needed, a "big push for sustainability," as stated by ECLAC (a "transformative change" as IPBES has called it), to reconfigure the way ecosystems and their services are preserved and used, while placing justice and well-being at the centre. However, shifting to new development models is no easy task.

There is a need for more knowledge about current experiences in the region —learning how to strengthen, expand and replicate them— as well as have greater clarity on the challenges encountered in their implementation. This case study on mainstreaming biodiversity in the agriculture, fisheries, forestry, finance, manufacturing, infrastructure and tourism sectors in collaboration with national and subnational governments, cities, and local communities in Latin American and Caribbean countries, serves as a contribution towards the process of the new post-2020 GBF and to the design of practical solutions that can help us build back better after the pandemic. Simply put, it aims to illustrate with concrete practices progress towards development that better balances the social, environmental and economic dimensions. The analysis is complemented by a study on governance for transformative change for biodiversity that

includes nine of the ten cases in this study (Catacora-Vargas and others, 2022) and by the compendium of data collected for the cases (Catacora-Vargas and others, forthcoming) as they represent excellent examples of South-South learning, which we hope to replicate and adapt to the specific conditions in other countries and regions.

It is worth mentioning that the report *Latin America Economic Outlook 2021*, produced by OECD, ECLAC, CAF and the European Union (OECD and others, 2021), proposes to address the effects of the pandemic and transform development traps into virtuous circles that place the region on a path to greater well-being. The four traps identified in the 2019 report (OECD and others, 2019) —namely, low productivity, social vulnerability, institutional weakness and environmental unsustainability— are associated to varying degrees with practical solutions derived from the successful experiences with biodiversity mainstreaming in the cases analysed, from a regional, biocultural perspective and in conditions that are often similar across the so-called global South.

The catalytic potential of reciprocal biodiversity mainstreaming in the productive, economic and financial sectors, as well as the consideration of objectives for these sectors within the environmental sector, as identified in the cases studied, can serve as a foundation for leveraging the willingness to change that is gaining traction globally, and can offer best practices for the conservation, sustainable use and equitable distribution of the benefits of biological diversity. The transition to sustainability must be rooted in transformations driven by institutions, investments, policy frameworks and communities, with a whole-of-government and whole-of-society approach, leaving no one behind, and emphasizing biodiversity considerations within an equitable and sustainable vision of development.

The authors wish to acknowledge and express gratitude for the enormous contribution of the high-level panel of biodiversity experts of Latin America and the Caribbean and key individuals from the case studies, who have given their time and experience and collaborated on this work in many different ways. Their perspectives have not only enriched the study with data, concrete information and conceptual approaches, but also helped make it more representative of the immense biocultural diversity that is the region's greatest source of wealth. Also acknowledged is the Government of Chile, whose request to draw on the region's positive experiences in South-South learning to ground key concepts used in the new post-2020 global biodiversity framework gave the impetus for the studies. Lastly special thanks are owed to French cooperation for the financial support provided.

Executive Summary

The past five decades have witnessed unprecedented levels of biodiversity loss from anthropogenic causes. Its effects currently represent one of the greatest threats to the well-being of societies worldwide. Scientists have warned of the risks posed by irreversible inflection points in the extinction of species and the degradation of environmental services with knock-on effects on the economy, society and life as we know it. In this context, Latin America and the Caribbean, one of the most biodiverse and culturally rich regions in the world, is notable for the high threat levels facing its natural heritage and environmental defenders. The region must overcome critical challenges that should be addressed urgently and comprehensively, uniting the three pillars of sustainable development —social, environmental and economic— from both a short and long-term perspective across the entire territory.

In 2022, the Parties to the Convention on Biological Diversity are expected to agree on a new post-2020 Global Biodiversity Framework (post-2020 GBF) aimed at halting and reversing trends in biodiversity loss, using nature sustainably and ensuring the equitable distribution of its benefits. Latin America and the Caribbean plays a key role in the new framework, both in establishing commitments and in their implementation, given that in addition to its vast biocultural wealth, several of the region's countries are among the most actively engaged in the negotiations.

Latin America and the Caribbean is a region of strong contrasts and contradictions, starting with its immense biological and cultural wealth and its high rates of poverty and vulnerability. Also among its contrasts is the fact that despite the high degree of biodiversity loss and degradation in the region in recent decades, there are also many innovative, interesting, inclusive and successful projects and initiatives focused on the sustainable use of natural resources, whereby mainstreaming biodiversity in the productive, economic and financial sectors has represented a major step forward. This study focuses on these projects and initiatives to close the knowledge gap regarding regional best practices and to illustrate that the challenges facing Latin America and the Caribbean are manageable, and that overcoming them generates multiple socioeconomic and environmental benefits.

ECLAC has prepared this case study on mainstreaming biodiversity in the agriculture, fisheries, forestry, finance, manufacturing, infrastructure and tourism sectors, in collaboration with subnational governments and cities in Latin American and Caribbean countries, to support the drafting and development of the post-2020 GBF through a qualitative analysis using relevant desk research and guided interviews with key stakeholders in the 10 initiatives selected in 7 countries in the region. This study explores biodiversity mainstreaming in 10 cases in coordination with a complementary study that covers governance for transformative change in biodiversity (Catacora-Vargas and others, 2022). The goal is to identify and

compare the primary factors that facilitate or, where applicable, impede biodiversity mainstreaming and governance, as well as avenues for increasing knowledge on the challenges and opportunities facing the implementation and possible scale-up of those interventions with the greatest potential for prompting changes to achieve the Convention's objectives.

Some of the main barriers to biodiversity mainstreaming identified in the cases and analysed in this study are: (i) the unforeseen risks associated with biodiversity loss; (ii) a lack of political will and commitment; (iii) institutional capacity constraints; (iv) incipient sectoral and intersectoral coordination; (v) the lack of reciprocal mainstreaming; (vi) employment challenges; (vii) complexities associated with the scale-up and multiplication of experiences; (viii) difficulties in communicating and understanding the different ways the value of biodiversity is perceived in other sectors and (ix) the lack of monitoring and evaluation initiatives or tools.

Best practices were studied through the lens of the following themes: (i) opportunities for transformative change for biodiversity within the framework of a just transition; (ii) the new, post-pandemic social contract; (iii) cooperation for biodiversity development and mainstreaming; (iv) the mobilization of public and private resources; (v) the consolidation of biodiversity mainstreaming policies; (vi) integration of the climate and biodiversity agendas; (vii) the promotion of effective synergies among environmental conventions; (viii) subnational government participation and (ix) determining factors for biodiversity mainstreaming.

The case analysis demonstrates the varying degrees to which biodiversity mainstreaming has made significant contributions to strengthening joint action with stakeholders in key areas with respect to the assessment and conservation of nature and ecosystem services. In some cases, the benefits are clear, if uneven. Mainstreaming biodiversity-related factors has proven valuable in strengthening policy and institutional frameworks to protect natural resources, mobilize resources and align budgets, improve climate change mitigation and adaptation, boost social equity, enhance good governance and build regional capacity.

While biodiversity mainstreaming has contributed to strengthening the response to the challenges posed by biodiversity loss, the consolidation of efforts to promote conservation, sustainable use and the fair and equitable distribution of its benefits in the productive, economic and financial sectors remains a distant vision, particularly for the economic and financial sectors. In the economic sector, mainstreaming biodiversity-related factors has facilitated participation by corporate and community organizations, expanded the parameters of innovation and competition and contributed directly and indirectly to the creation of decent job opportunities. In most cases, however, there was no evidence that the interventions had prompted increased economic and trade integration of the intrinsic values of biodiversity.

The cases studied provide examples of best practices and innovative measures, using biodiversity mainstreaming as a creative and multifaceted tool with considerable potential for accessing public and private financing for ecosystem recovery and the sustainable use of biodiversity in the region: from the development of public investment projects in biological diversity, typologies and taxonomies for biodiversity in the economic and productive sectors or innovation in public-private participation models, to the creation of avenues for participation by the ministries responsible for budget planning and allocation, by the financial and risk management sectors and by subnational and local governments, as well as the private sector.

Efforts to build capacities in biodiversity mainstreaming in the cases studied have created better conditions to address the challenges associated with ecosystem loss and degradation, from the individual to the institutional or whole-system level, based on the circumstances of each initiative studied. Paradoxically, capacity-building for biodiversity mainstreaming in the productive, economic and financial sectors has also been identified as one of the main challenges facing the region. Capacity-building aimed at generating non-environmental benefits should be considered a core element of training provided to actors in the field and in environmental institutions and could also help promote institutional ownership of the initiatives and their progress and lend continuity to the interventions.

Biodiversity mainstreaming remains vulnerable to fluctuating political will and commitment, from its design, financing and implementation to the scale-up and multiplication of initiatives. The failure to identify and report socioeconomic benefits from the interventions points to a flaw in the very structure of the interventions, which weakens biodiversity mainstreaming efforts in the economic and financial sectors. This aspect could be modified in the short and medium terms, with potentially significant impact, triggering behavioural and cultural changes in the various sectors and among decision makers.

It is, therefore, one of the key measures that can be developed in parallel and in line with an increase in dialogue and coordination.

It is necessary to engage in actions specifically aimed at addressing the existing gaps in information and in the generation of solid, clear and relevant data that can catalyse action by decision makers, such as on data related to employment, inclusion in decision making and improvement of salaries or working conditions and other benefits. Some examples of methods used in the cases studied to enable the creation of conditions for stimulating political will and commitment include: (i) conducting preliminary diagnostic assessments; (ii) the production of specific evidence on the return on investment; (iii) the involvement of budget departments in the ministries of planning and finance; (iv) the preparation of comprehensive assessments of the socio-environmental impact; (v) public expenditure reviews; (vi) the development of indicators of change towards pro-biodiversity measures; and (vii) the stimulation of interest in these measures by the private sector and/or the communities involved or in decision making based on scientific evidence and traditional knowledge.

Perhaps one of the greatest and richest avenues for reversing negative trends in biodiversity loss in Latin America and the Caribbean lies in strengthening and consolidating sectoral and intersectoral coordination, taking into account both public and private alignment to incorporate pro-biodiversity considerations. The cases studied revealed evidence of a gradual process of policy development and implementation —either preceding or stemming from the interventions— to address institutional coordination challenges, helping incorporate other policies, tools and instruments relating to the integration of natural resources, biodiversity and its associated services. However, the depth and degree of intra- and intersectoral dialogue on biodiversity remains inadequate, and the institutional climate in the cases has not enabled harmonious and synergistic inclusion of biodiversity in the productive, economic and financial sectors (in 8 of the 10 cases studied, this was identified as one of the biggest challenges to overcome). There are some clearly identifiable related objectives in a number of the initiatives (to ensure complementarity and synergy as in the following cases: *Mainstreaming Biodiversity into the Mexican Agricultural Sector, Insurance for the Protection of Reefs and Beaches* in Mexico and the *Works for Taxes Mechanism* in Peru). However, in most cases, specific actions targeting the intersectoral coordination of the instruments established have fallen short of achieving them.

One of the main causes of coordination gaps stems from efforts to incorporate a number of the interests and priorities of the productive, economic and financial sectors in initiatives geared towards conservation and sustainable use and the fair and equitable distribution of the benefits associated with natural resources. Several cases demonstrate that designing tools and solutions focused on achieving "*reciprocal mainstreaming*" can reverse a decades-long legacy of crippling inertia and produce shared benefits for biodiversity and productive and economic sectors (as in the following cases: the *Wine, Climate Change and Biodiversity Programme* in Chile, *Mainstreaming Biodiversity into the Mexican Agricultural Sector, Management of the Biosphere Reserves of Sao Paulo* in Brazil and the *Quito Water Fund* in Ecuador). One such example is the development of terminology and classification standards when designing biodiversity mainstreaming systems and the associated financing for activities in the region, which has led to the emergence of more effective resource mobilization practices by directing the flow of potential investments, the development of positive incentives and the modification of harmful incentives, the prioritization of initiatives in relation to interventions in other sectors or the facilitation of monitoring and evaluation of their impacts and outcomes.

Initiatives aimed at mainstreaming the conservation and sustainable use of biodiversity and ecosystem services in the cases studied offer significant potential for employment and decent work in the relevant sectors, particularly for women, indigenous populations and local communities. Several of the initiatives studied highlight very positive outcomes pertaining to the multidimensional benefits (co-benefits) of employment-, for example, the promotion of cultural change, the recognition of the rights of women and young people under a differentiated approach and of their contribution to the value chain of products, increased parity in interventions and in decision making, access to the natural resources in their environment, in addition to the promotion of better nutritional practices, the diversification of productive activities, and the reinvestment of income. However, as mentioned above, one of the most significant employment-related challenges rests in ensuring proper data generation and management on the initiatives studied, given that specific information is not clearly recorded or organized in the design,

planning, execution and assessment of the initiatives implemented in this area. Information must be transformed into knowledge that triggers the actions needed to help promote institutional ownership of the initiatives and their progress and to lend continuity to the interventions from the design stage.

One of the major challenges facing the region is capacity-building in biodiversity mainstreaming in the productive, economic and financial sectors. It is, therefore, critical to coordinate initiatives relating to the design and implementation of a systematized regional strategy for the promotion, implementation, multiplication and scale-up of cooperation and/or assistance programmes to enhance biodiversity mainstreaming in other sectors. In this context, sustainable use, international cooperation and coordination with other sectors are the topics addressed in the majority of cases (7 out of 10), demonstrating advanced or very advanced levels of capacity-building, followed by topics relating to dissemination and awareness raising and the connection between biodiversity and the SDGs (6 out of 10 cases). By contrast, there was evidence of progress on ABS capacity in only one case, which, paradoxically, contributed to its full implementation. It now stands as a model of fair and equitable sharing of the use of genetic resources worldwide. The cases that showed the most progress in capacity-building were: *Community Forest Management in the Mayan Biosphere Reserve* (Guatemala), the *Wine, Climate Change and Biodiversity Programme* (Chile) and *Mainstreaming Biodiversity into the Mexican Agricultural Sector*. Effective capacity-building could serve to forge linkages between complementary actions in other sectors and policies, tools, and instruments relating to biodiversity and its ecosystem services (such as the SDGs, national development plans, regional investment guidelines, NBSAPs or biodiversity strategies for specific sectors).

The scale-up and/or multiplication of the initiatives studied is not a linear process. Thus, progress with mainstreaming may be accomplished more easily in one situation and/or sector versus another. Actions implemented at a single scale in the cases have not adequately effected change in the sector. Therefore, the scale-up and multiplication of initiatives has required a combination of a range of scales of intervention, from multiple angles, recognizing the importance of local (bottom-up) approaches to scale-up and multiply the initiatives and achieve transformative change as well as the need for the highest organizational levels in the sectors to drive and sustain such changes (top-down) through policies, tools and instruments.

The case studies help identify ways to empower and recognize the rights of women, young people and indigenous peoples and local communities and achieve cultural change towards them by means of technical support, knowledge creation and knowledge dialogues, employment generation and participation in decision-making, as well as through the diversification and strengthening of value chains, which, in some cases, has influenced public policies at the subnational and national levels. However, challenges regarding access to resources and property by women, young people and indigenous peoples and local communities continue to present a significant obstacle to reducing inequality amid efforts to multiply and scale-up actions.

The cases provide evidence of the ways in which the investment sectors, businesses, civil society organizations, community-based groups, local authorities and others are making progress and achieving the principles of transformative change —in different areas and to varying degrees— particularly through: (i) taking multiple pathways to achieving the biodiversity objectives; (ii) expanding their scope of action beyond the traditional environmental areas to include economic and social considerations; (iii) generating social and economic co-benefits by diversifying their actions; (iv) designing and implementing inclusive processes to address disagreements and disputes arising from the push for change; and (v) adopting proactive strategies to combat efforts to maintain the status quo.

The cases studied that simultaneously address the nexus between responding to biodiversity loss and climate change, while considering their economic and social impacts, offer an opportunity to maximize multidimensional benefits and help integrate climate mitigation/adaptation and biodiversity conservation concerns into activities in the productive, economic and financial sectors. In some of the cases, the interrelationships identified take various forms, such as co-benefits and trade-offs, recognizing the potential of the climate agenda to facilitate communication and understanding of the issue by stakeholders and pave the way for interventions focused on the conservation and sustainable use of biodiversity. In other cases, the value of biodiversity and the risks that the loss of its services represents for the productive, economic and financial sectors —exacerbated by the current and future climate change outlook— have begun to elicit changes in institutional and corporate behaviour that could help overcome resistance to transformative change.

Key concepts

2030 Agenda	Action plan developed by the United Nations to achieve sustainable development. A global agreement, based on economic, social and environmental sustainability, that defines 17 Sustainable Development Goals and 169 targets to be achieved over 15 years. (United Nations, 2021).
ABS	Access and benefit-sharing (ABS) refers to the way in which genetic resources may be accessed, and how the benefits that result from their use are shared between the people or countries using the resources (users) and the people or countries that provide them (providers). (Secretariat of the Convention on Biological Diversity, 2011a).
Aichi Biodiversity Targets	The Strategic Plan for Biological Diversity 2011-2020 "Living in Harmony with Nature" is a framework for action to define national and regional objectives aimed at protecting biodiversity and enhancing its benefits for humanity through the Aichi Targets, which are 20 goals, grouped into five strategic objectives, approved by the Convention on Biological Diversity in the province of Aichi, Japan in 2010. (Secretariat of the Convention on Biological Diversity, 2011b).
Biodiversity	"Biodiversity" or "biological diversity" refers to "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 part; this includes diversity within species, between species and of ecosystems." (Secretariat of the Convention on Biological Diversity, 1992).
Biodiversity governance	A set of regulations, processes, and networks of formal and informal actors, both public and private, operating at different scales, established to formulate, participate in, and implement decisions and actions regarding access to and the control and use of biodiversity among various actors. (Baud, De Castro and Hogenboom, 2011).
Biodiversity mainstreaming	The process of embedding biodiversity considerations into the policies, strategies and practices of key public and private actors that impact or rely on biodiversity, so that it is conserved and sustainably used, both locally and globally.[a] (GEF, 2016).
Climate change	A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. (Secretariat of the Convention on Biological Diversity, 1992).
Ecosystem services	The benefits that human beings derive from ecosystems. These include provisioning services such as food, water, timber and fibre; regulating services such as the regulation of climate, natural hazards, disease control, water and air quality; supporting services such as soil formation, photosynthesis and nutrient cycling; and cultural services such as recreational, aesthetic and spiritual benefits. (UNEP, 2005).

Nature-based solutions	A concept that encompasses all activities that rely on ecosystems and the services they provide to address various societal challenges, such as climate change, food security or disaster risk, through the protection, restoration and sustainable management of ecosystems to increase their resilience and capacity to overcome societal challenges while safeguarding biodiversity and improving human well-being. (IUCN, 2017; WWF, 2021).
One Health Strategy	A collaborative, multisectoral and transdisciplinary approach —functioning at the local, regional, national and global levels— with the goal of achieving optimal health outcomes, recognizing the interconnection between people, animals, plants and their shared environment. (WHO, 2017)
Transformative change	A fundamental, system-wide reorganization across technological, economic and social factors, including paradigms, goals and values. (IPBES, 2019).

[a] The strategies and practices may include biodiversity-related considerations in the legal framework, institutional arrangements and programmes in the economic, productive and financial sectors.

Introduction

With Decision XIV/34 of the fourteenth meeting of the Conference of the Parties (COP), held in Sharm El-Sheikh, Egypt in 2018, the Parties to the Convention on Biological Diversity launched the process of developing the post-2020 global biodiversity framework (post-2020 GBF). This framework aims to define and promote the implementation of urgent and transformative measures to achieve the objectives of the Convention as expressed in its 2050 vision of living in harmony with nature and its constituent elements.[1] The Parties to the Convention have agreed to undertake regional and national efforts to contribute to this process, developing clear, ambitious targets to be achieved by two milestones: 2030 and 2050. Once approved, the goal of the post-2020 GBF is to promote its implementation through global, national, local and sector-based actions and strategies aimed at living in harmony with nature. Grounded in the research and critical reflections of the Convention and other biodiversity-related instruments, such as the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the post-2020 GBF will support other relevant global, regional and national work agendas, such as the 2030 Agenda and the Sustainable Development Goals (SDGs); National Biodiversity Strategies and action Plans (NBSAP) and, in many cases, instruments associated with other directly or indirectly related agendas, such as National Climate Change Action Plans.

The Economic Commission for Latin America and the Caribbean (ECLAC), through the Natural Resources Division, in collaboration with the Institute for Sustainable Development and International Relations (IDDRI) of France provided support for the formation of a think tank, as well as reflection on and coordination of action with key institutions and sectors in the Latin American and Caribbean region, including with relevant stakeholders, to feed into the process of drafting the post-2020 GBF. These efforts are undertaken in parallel with processes associated with the work of the Subsidiary Body on Scientific, Technical and Technological Advice and the Subsidiary Body for Implementation of the Convention on Biological Diversity and the Open-Ended Working Group (OEWG) for the post-2020 GBF, through priority actions in preparation for COP-15 and the implementation of decisions to be adopted therein. In addition, the impetus for the studies was the request of the Government of Chile to draw on the region's positive experiences for South-South learning to ground key concepts used in the new post-2020 GBF.

[1] The three goals of the Convention are (1) conservation of biological diversity; (2) sustainable use of biodiversity; and (3) the fair and equitable sharing of the benefits arising from the use of genetic resources.

To contribute to the above-mentioned process and enrich regional dialogue, ECLAC has conducted two studies to identify lessons learned from related experiences. The first on biodiversity mainstreaming in the productive, economic and financial sectors in Latin America and the Caribbean, and the second, on innovative governance approaches for transformative change for biodiversity. Their goal is to identify implementation strategies and the main factors that enable or impede biodiversity mainstreaming and transformative governance, as well as broaden awareness of opportunities and obstacles facing the implementation and possible scale-up of the interventions with the greatest potential for enabling change to achieve Convention's objectives in the region. From this perspective, the studies also seek to advance South-South learning in Latin America and the Caribbean, with the hope that their findings will contribute to the development of a regional vision of biodiversity mainstreaming and governance for transformative change to support implementation of the post-2020 GBF.

As a complement to the report on governance approaches for transformative change for biodiversity, this report is based on the analysis of case studies, identified and selected with assistance from the ECLAC High-Level Biodiversity Expert Group, which is composed of professionals from various institutions and organizations from countries in the region. The cases explore biodiversity mainstreaming initiatives in different sectors (agriculture, fisheries, forests, finance, manufacturing, infrastructure, tourism), and at national, subnational and municipal levels in Latin American and Caribbean countries, aimed at achieving one or more of the Convention's objectives. Each case was prepared using qualitative analysis of documentary data and guided interviews with key stakeholders from local, national and regional organizations and institutions, including, as appropriate, the private sector, civil society, academia and financing entities, among others, for each initiative featured.

This document presents a summary, qualitative overview of the current biodiversity landscape in Latin America and the Caribbean and its connection with the 2030 Agenda and the post-2020 GBF (chapter I); an analysis of biodiversity mainstreaming in the productive, economic and financial sectors in Latin America and the Caribbean (chapter II); an overview of the cases studied and their regional distribution (chapter III); evidence of the challenges facing biodiversity mainstreaming in the economic, financial and productive sectors studied (chapter IV); the approaches, methodologies and major opportunities for overcoming the challenges identified in the cases studied (chapter V) as well as the key messages and concluding observations and recommendations of the studies (chapter VI and VII).

I. Biodiversity, the 2030 Agenda and the post-2020 Global Biodiversity Framework

The past five decades have witnessed unprecedented levels of biodiversity loss (IPBES, 2019), the consequences of which represent one of the biggest threats to life as we know it worldwide (OECD, 2019a; WEF, 2021). The planet is facing the sixth mass extinction of species (and in many cases, of their habitats), resulting from the deterioration of ecosystems and their functions due to anthropogenic causes. Several scientists have named this geological period the Anthropocene age (Ceballos, Ehrlich and Dirzo, 2017). The cascading consequences are severe, not only for wildlife species and their ecosystems, but also for all aspects of human existence (WWF, 2020). Paradoxically, while global capital produced per person has doubled, the stock of natural capital per person has declined by more than 40% (Dasgupta, 2021). Scientific research warns that we are heading towards a fundamental change in the Earth's systems as a result of changes in the biosphere (Barnosky and others 2012). The nature, scale and pace of these impacts call for global, regional, national and local efforts to be focused on urgent and transformative change (IUCN, 2017).

The Convention recognizes that the 2030 Agenda for Sustainable Development is underpinned by the principles of the conservation and sustainable use of biodiversity, as well as the fair and equitable sharing of benefits arising from the use of genetic resources —which together constitute the three objectives of the Convention (UNEP and others, 2019). Biodiversity has been recognized as essential for all facets of human existence as well as for the fulfilment of at least 14 of the 17 SDGs (see table 1), including those relating to food, health, employment, water, cities, sustainable production and consumption, the ocean, terrestrial ecosystems, climate change and peaceful societies. More than half of global gross domestic product (GDP) depends directly on biodiversity and its services, for example, for pollination, water quality and the provision of raw materials. The agriculture, construction and manufacturing sectors, among others, are heavily dependent on biodiversity and its ecosystem services (WEF, 2020a).

Targets for the conservation and sustainable use of biodiversity and their corresponding indicators have been established in various multilateral treaties (United Nations, 2012), in particular the CBD Strategic Plan for Biodiversity 2011-2020 (also called the Aichi Biodiversity Targets) and have served as the basis for constructing a comprehensive vision, embodied in the 2030 Agenda (see table 1) (FAO, 2019a).

Table 1
Summary of linkages between the Sustainable Development Goals and the Aichi Biodiversity Targets[a]

Sustainable Development Goals		Aichi Biodiversity Targets
1.	End poverty in all its forms everywhere	2, 6, 7, 14
2.	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	4, 6, 7, 13, 18
3.	Ensure healthy lives and promote well-being for all at all ages	8, 13, 14, 16, 18
4.	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	1, 19
5.	Achieve gender equality and empower all women and girls	14, 17, 18
6.	Ensure availability and sustainable management of water and sanitation for all	8, 11, 14, 15
7.	Ensure access to affordable, reliable, sustainable and modern energy for all	5, 7, 14, 15, 19
8.	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	2, 4, 6, 7, 14, 16
9.	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	2, 4, 8, 14, 15, 19
10.	Reduce inequality within and among countries	8, 15, 18, 20
11.	Make cities and human settlements inclusive, safe, resilient and sustainable	2, 4, 8, 11, 14, 15
12.	Ensure sustainable consumption and production patterns	1, 4, 6, 7, 8, 19
13.	Take urgent action to combat climate change and its impacts	2, 5, 10, 14, 15, 17
14.	Conserve and sustainably use the oceans, seas and marine resources to support sustainable development	2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 14, 15, 17, 19
15.	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	2, 4, 5, 7, 9, 11, 12, 14, 15, 16
16.	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	17
17.	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	2, 17, 19, 20

Source: Prepared by the authors on the basis of United Nations, "Sustainable Development Goals. Take action for the Sustainable Development Goals", 2020 [online] https://www.un.org/sustainabledevelopment/sustainable-development-goals/ and Secretariat of the Convention on Biological Diversity, "Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets: 'Living in Harmony with Nature'", Montreal, 2011 [online] https://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf.

[a] The Aichi Targets serve as a launchpad for the Strategic Plan for Biodiversity 2011-2020 and will be replaced by new targets in the post-2020 GBF, which is currently being negotiated by the Parties to the Convention on Biological Diversity.

Yet, despite the importance of biodiversity to social and economic sustainability and climate resilience, none of the Aichi Targets has been fully met (Secretariat of the Convention on Biological Diversity, 2020), which jeopardizes achievement of the 2030 Agenda, given its comprehensive, indivisible nature. Although the Convention and IPBES report progress on achievement of some of the Aichi Targets, they also underline the need to promote even more extensive, forceful action to bring about transformative change in order to effectively address the underlying causes of biodiversity loss and the degradation of ecosystem functions and services (WEF, 2020a).

The post-2020 GBF process aspires to achieve transformative change[2] in defining the new biodiversity targets. To this end, the first draft of the post-2020 GBF, which is currently being negotiated, recognizes biodiversity mainstreaming, among other conditions and means of implementation, as critical to its implementation (see box 1).

[2] The concept of transformative change is understood as the fundamental reorganization of the totality of a system across technological, economic and social factors, including the paradigms on which it is based and the goals and values it promotes.

Box 1
Post-2020 Global Biodiversity Framework theory of change

The post-2020 GBF theory of change recognizes that urgent global, regional and national policy action is required to transform economic, social and financial models so that the trends that have exacerbated biodiversity loss are stabilized by 2030 and allow for the recovery of natural ecosystems over the next 20 years, in order to realize the Convention's vision of "living in harmony with nature by 2050". It also assumes that a whole-of-government and whole-of-society approach is needed to implement the changes required over the next 10 years, a critical period in which to reverse the negative trend of biodiversity loss is essential. Governments and societies must set priorities and allocate financial and other resources, internalize the value of nature and recognize the cost of inaction.

This theory also calls for the adoption of transformative measures to (i) introduce tools and solutions for implementation and mainstreaming of biodiversity; (ii) reduce threats to biological diversity; and (iii) ensure that biological diversity is used sustainably in order to meet society's needs, recognizing that these measures are underpinned by enabling conditions and appropriate means of implementation, including financial resources, capacity and technology. Also embedded in this theory of change is the assumption that progress will be monitored with transparency and accountability, employing proper stocktaking measures to ensure that, by 2030, the world is on track to achieving the 2050 Vision for Biodiversity.

The theory of change establishes the need for the appropriate recognition of women's rights and the roles they play, women's empowerment and approaches sensitive to young people and the need to ensure the full and effective participation of indigenous peoples and local communities in the implementation of the post-2020 GBF. Moreover, it is bolstered by the awareness that its implementation must be carried out in collaboration with several global, regional, national and local organizations.

The theory of change complements and supports the 2030 Agenda for Sustainable Development. It also considers the long-term targets and strategies of other multilateral environmental agreements, including biodiversity-related conventions and the Rio Conventions, to ensure that all agreements work synergistically to benefit the planet and humanity.

Source: Secretariat of the Convention on Biological Diversity, "First draft of the Post-2020 Global Biodiversity Framework", Montreal, 2021 [online] https://www.cbd.int/doc/c/914a/eca3/24ad42235033f031badf61b1/wg2020-03-03-en.pdf.

The concept of transformative change goes beyond in the post-2020 GBF to support the achievement of the three objectives of the Convention. This approach is especially important given the complex socioeconomic context in Latin America and the Caribbean, which is recognized as the least equitable in the world and the most urbanized of the developing regions. As the region with the highest number of deaths per capita and the steepest increases in poverty and job loss in the world, Latin America and the Caribbean's structural context is one of the reasons it has been so deeply affected by the coronavirus disease (COVID-19) pandemic (ECLAC, 2020a). Widespread structural gaps in the ability of women and girls vis-à-vis men and boys to realize the full spectrum of their rights include access to and control over natural resources (UNEP, 2021).

Latin America and the Caribbean is also facing a critical situation regarding the status of and trends in its biodiversity. Like other regions in the world, countries in the region are using and eliminating biological diversity in a way that exceeds the capacity of ecosystems to recover (namely, their restoration, functionality and support of ecosystemic services) (IPBES, 2018a). The WWF Living Planet Index, which measures the impact of the five direct drivers of biodiversity loss —land use change, overexploitation, climate change, invasive species and pollution— places land use change as the main cause of the region's alarming decline in vertebrate population density, which is the most pronounced in the world (WWF, 2020). Land use change is primarily caused by the expansion of agriculture and livestock farming, to a lesser extent, to urban expansion, road construction and mining, among others. At the UNFCCC COP-26, FAO released the initial findings of new analysis of forest cover based on satellite images, from which it was determined that 90% of land use change stems from agricultural and livestock farming expansion, to the detriment of natural ecosystems (FAO, 2021).

Faced with such a scenario, the proposal for transformative change calls for a systemic rethinking of production and consumption patterns, among other underlying causes of biodiversity loss. The impacts of the COVID-19 pandemic have highlighted that human health is linked to ecosystem health and that it is critical to comprehensively and simultaneously address direct and indirect drivers of biodiversity loss (Gligo and others, 2020). This transformative approach involves going beyond incremental policy changes, budgets, tools and other instruments in the environmental sectors, mainstreaming biodiversity as a cross-cutting theme in other focal areas, such as improvement in health outcomes, reduction of inequality, poverty eradication, green jobs creation, education and sustainable production. Biodiversity mainstreaming plays a crucial role in transcending the environmental approach and addressing the driving economic forces that impact on biodiversity and ecosystems (GEF, 2016).

II. Biodiversity mainstreaming in productive, economic and financial sectors

A. Biodiversity mainstreaming as a key process in sustainable development efforts in Latin America and the Caribbean

In recent years, global interest in biodiversity mainstreaming has progressively increased, although it is still far from adequate. The concept of biodiversity mainstreaming received a particularly strong boost in December 2016, when Mexico proposed it as the focus of the High-Level Segment of the Conference of the Parties to the Convention on Biological Diversity, which adopted the Cancun Declaration on *mainstreaming the conservation and sustainable use of biodiversity for well-being* (Secretariat of the Convention on Biological Diversity, 2016). At the same Conference, the Parties to the Convention on Biological Diversity called for biodiversity mainstreaming in the agriculture, fisheries, forestry and tourism sectors, endorsed the Cancun Declaration and embraced various measures for biodiversity mainstreaming (Secretariat of the Convention on Biological Diversity, 2016a and 2016b).

Subsequently, at COP-14 in 2018, a new declaration was adopted on biodiversity mainstreaming in the energy and mining, infrastructure, manufacturing and processing and health sectors (Secretariat of the Convention on Biological Diversity, 2018b). In decision 14/3 (CBD, 2018c), the Conference of the Parties decided to establish a long-term strategic approach for mainstreaming biodiversity and also established an Informal Advisory Group on Mainstreaming of Biodiversity to advise on the further development of a proposal for such a long-term approach to mainstreaming biodiversity, for consideration by the Subsidiary Body for Implementation. In accordance with that mandate, the Secretariat of the Convention submitted to the Parties a proposal for this approach and a related action plan in order to (i) draft a proposal of a voluntary tool for Parties of the Convention and (ii) recommend priority actions for the mainstreaming of biodiversity, as well as to identify key actors to be involved in the implementation of appropriate actions and instruments (Secretariat of the Convention on Biological Diversity, 2022). As the document was not fully adopted at the third meeting of the Subsidiary Body for Implementation, the Secretariat of the Convention invited the Parties, other governments, indigenous peoples and local communities, interested parties and relevant partners, to review the long-term approach to biodiversity mainstreaming and its action plan and to submit their comments for in-depth consideration at COP-15, with a view to its modification, finalization and possible adoption.

The first draft of the post-2020 GBF recognizes the role of biodiversity mainstreaming as a key tool for implementation, establishing related targets (14, 15, 16, 18 and 19) and indicators. Furthermore, the Subsidiary Body on Scientific, Technical and Technological Advice, at its twenty-fourth meeting, adopted a recommendation to support capacity-building to integrate biodiversity and health linkages within the post-2020 GBF (CBD, 2022b).

B. Availability and quality of information on biodiversity mainstreaming

Insufficient and low-quality data have been identified among the greatest challenges worldwide facing biodiversity mainstreaming in the economic, financial and productive sectors (OECD, 2018). The paucity of reliable data has resulted in significant knowledge gaps that hamper progress with the implementation of measures to facilitate the design of more effective actions, adequate budget allocation, quantification of the benefits of interventions and assessment of the progress achieved over time. The most significant gaps relate to the complex nature of characterizing the components of biodiversity, determining their abundance and establishing their territorial scope. Others are associated with the absence of institutional structures to curate and disseminate data on biological diversity, as well as the lack of intra- and intersectoral coordination (given that the information is dispersed among different institutions) and the lack of standards for methodology and scale that would facilitate the assimilation, standardization and comparison of information obtained. These factors all adversely affect the quality and availability of information generated.

The foregoing also applies to Latin America and the Caribbean, where various countries lack sufficient information on progress made towards specific biodiversity-related targets and, consequently, on the actions to achieve biodiversity mainstreaming in the productive, economic and financial sectors. There are, however, important efforts under way to overcome this challenge from a range of sources, such as national reports under the Convention framework, national strategies and action plans, case studies and published scientific literature. However, the analysis of the cases in this study suggest that information on the policies, tools and specific solutions aimed at mainstreaming biodiversity in the productive, economic and financial sectors is quite scarce.

C. Instruments and tools for mainstreaming biodiversity in the productive, economic and financial sectors

The need for appropriate instruments and tools for mainstreaming biodiversity in the productive, economic and financial sectors remains one of the biggest challenges hampering global efforts to address this issue (GEF, 2010), despite the fact that biodiversity mainstreaming has been identified as a priority at the highest levels of international policy making, for example, through the decisions of the Parties to the Convention and other biodiversity-related conventions as well as by investment and financing instruments for biodiversity conservation, such as the Global Environment Facility (GEF); cooperation agencies and several international NGOs. These deficiencies stem, in part, from the heterogeneity of the methods used in biodiversity mainstreaming initiatives, the lack of an experimental approach to designing such initiatives, as well as challenges with the collection of clear and sound data on the specific biodiversity mainstreaming actions taken.

As part of the process of drafting the post-2020 GBF, the Convention has identified a slate of existing instruments and tools for biodiversity mainstreaming in the development of other sectors, in addition to the NBSAPs themselves, for example: risk assessments, environmental impact assessments, strategic environmental assessments, ecosystem assessments, natural capital accounting and other methods valuing biodiversity, such as the blue and green economy (Secretariat of the Convention on Biological Diversity, 2019).

The Convention also highlights specialized sources of knowledge such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Organisation for Economic Co-operation and Development (OECD), the Capitals Coalition, the Global Environment Facility (GEF)

and the World Bank, along with the International Finance Corporation (IFC) through its Performance Standard 6 (IFC, 2012). This list is supplemented by the use of public policy instruments, such as positive incentives and the reform of subsidies that are potentially harmful to biodiversity —and which outnumber positive incentives by a factor of five or six.[3] Lastly, the tools identified at the local, subnational, national and regional levels also include integrated land-use planning and management (use of land and space), mapping and the consideration of ecosystem services in urban planning to prioritize investment in ecosystem-based approaches.

Some countries and institutions in Latin America and the Caribbean have a noteworthy track record of data collection and scientific research on natural resource management. Yet, progress on biodiversity mainstreaming in most of them can, at best, be viewed as embryonic. The advancement of biodiversity mainstreaming at a regional scale requires implementation of the tools listed above, along with economic, legal and behavioural solutions, given the need for synergy with global and national commitments and with all sectors. Effective application of the tools and solutions[4] must ensure that any objective or milestone included in the period under consideration in the GBF is thoroughly embraced and driven by actors far beyond the environmental ministries, engaging the full spectrum of ministries, agencies and sectors (finance, planning, infrastructure, energy, agriculture, tourism, health among others), which should also assume responsibility for contributing to regional and global progress towards meeting the biodiversity targets.

D. Institutional aspects of biodiversity mainstreaming

In the strictest sense, biodiversity mainstreaming is a political issue requiring both institutional and technical change. It is a complex process, involving iterative changes over different time spans, to mainstream the various principles, components and levels of biodiversity into plans, policies and budgets at the national, local and sectoral levels, and then implement them. It requires collaboration with a variety of interest groups: the government, private sector, civil society organizations, non-governmental organizations, politicians, the general public, indigenous communities and peoples, the media and academia, among others, to achieve changes in the values, attitudes, knowledge, policies, procedures and behaviours relating to biodiversity (IIED, 2015).

Biodiversity mainstreaming in the region has made progress in recent years through the inclusion of objectives, targets and lines of action tied to the conservation and sustainable use of biodiversity in sectoral plans and programmes in a number of countries, such as Argentina, Chile, Costa Rica, Colombia and Mexico. For example, some countries have achieved significant progress with incorporating their national interests in their NBSAPs and development plans (Secretariat of the Convention on Biological Diversity, 2020e). To this end, the SDGs have also played a vital role in helping develop the institutions and human capital needed (SDG 3, 4 and 16) (GEF, 2016; IISD, 2019).

There are significant areas of opportunity to create and/or strengthen the institutional structures and programmes needed or implemented, as well as to ensure the full involvement of the productive, economic and financial sectors and their associated institutions in a model that contributes to biodiversity conservation in the long run, promoting effective horizontal and vertical actions. For instance, the Convention highlights the need to (i) enhance capacity-building within biodiversity-related institutions to understand the economic and productive processes involved in development and, thus, achieve constructive collaboration; (ii) estimate the economic value of biodiversity and ecosystem services so that outcomes are considered in the decision-making process and (iii) help national financial systems integrate the economic contributions of biodiversity using measurement tools and parameters (Secretariat of the Convention on Biological Diversity, 2011). Some of these elements are analysed in chapters 4 and 5 of the report.

[3] OECD conservatively estimates that subsidies that are potentially detrimental to the environment exceed the financing mobilized for the conservation and sustainable use of biodiversity by a factor of 10.

[4] Incorporating all stakeholders, with a strong emphasis on indigenous and traditional knowledge, practices and collective action, the appropriate use of tools for the effective regulation and governance of businesses, as well as capacity building, scientific and technical cooperation and the generation of knowledge on biodiversity mainstreaming.

III. Selected experiences of biodiversity mainstreaming in the productive, economic and financial sectors in Latin America and the Caribbean

This study has two main objectives. The first objective is to characterize successful experiences with biodiversity mainstreaming in the region. The second is to extract lessons learned and best practices from the experiences and broaden knowledge of implementation challenges and opportunities to identify enabling factors or triggers that may facilitate scale-up or replication.

ECLAC drew on the support of a high-level panel of biodiversity experts of Latin America and the Caribbean, established through a collaborative initiative with IDDRI and supported by the French Cooperation, to exchange ideas and experiences that enhance the regional vision of biodiversity-related issues in the process of drafting the post-2020 GBF (ECLAC, 2020b and 2020c). This group recommended a selection of initial experiences as candidates for the case studies and has participated in the revision and improvement of the document and its findings, which were discussed in a virtual session.

The criteria used for case study selection and prioritization are listed below:

- Interventions currently under way employing best practices or innovative methods.
- An adequate level of readily available and accessible information on the initiatives.
- Contact persons and focal points clearly identified and available for each case (this point takes on greater significance given that the entire assessment was carried out remotely).
- Representation of the defined sectors at various intervention levels.
- Diversity of counties.
- Relevance of the cases to the study objectives.

From an initial group of over 50 cases proposed, 10 cases across Latin America and the Caribbean were selected (see map 1) in the agriculture, forestry, fisheries, finance and manufacturing sectors, including some relating to cities and subnational governments in the region. Of the 10 experiences, 9 are also part of a complementary study focused on governance approaches for transformative change for biodiversity. Table 2 summarizes the details of each initiative.

Map 1
Cases analysed in the study

Source: Prepared by the authors.

In coordination with the study "*Governance approaches and practices in Latin America and the Caribbean for transformative change for biodiversity*" (Catacora-Vargas and others, 2022), desk research on the case studies was designed and carried out and served as the foundation for obtaining information on the following aspects (i) project relevance (in relation to national/regional objectives, global policies and strategies, beneficiaries, among others); (ii) project structure (sector, activities, instruments, beneficiaries, objectives, among others); (iii) project implementation (quality and quantity of outcomes) and (iv) project impact and sustainability.

Table 2
List of case studies on biodiversity mainstreaming in Latin America and the Caribbean by sector

Country	Case study	Sector	Description
Brazil	Management of the Biosphere Reserves of Sao Paulo (MBRSP)[a]	Subnational governments	Subnational strategy developed by the province of Sao Paulo to provide comprehensive management of conserved regions by means of a biosphere reserve.
Chile	Management and Exploitation Areas for Benthic Resources (MEABR)	Fisheries	System for the administration of benthic fishery resources, provided for artisan fishing organizations to promote their recovery, sustainable use and conservation, based on Territorial Use Rights in Fisheries.
Chile	Wine, Climate Change and Biodiversity Programme (WCCBP)[a]	Manufacturing	A scientific initiative that aims to illustrate the compatibility between biodiversity conservation and the development of the wine industry.
Costa Rica	Network of Sustainable Marine Fishing Areas and Marine Territories of Life (NMARFMTL)[a]	Fisheries Tourism	Program for the conservation, use and management of responsible fishing, using a community approach to participatory regulation of fishery resources, with a focus on biodiversity.

Table 2 (concluded)

Country	Case study	Sector	Description
Ecuador	Quito Water Fund (QWF)[a]	Cities	A public/private financing tool that prioritizes investment in green infrastructure as a key component of integrated water management through the conservation and recovery of water sources.
Guatemala	Community Forest Management in the Mayan Biosphere Reserve (CFMMBR)[a]	Forestry	Sustainable forest conservation and management, improved incomes and job creation, community and membership organization and market access.
Mexico	Mainstreaming Biodiversity into the Mexican Agricultural Sector (MBMAS)[a]	Agriculture	Integration of the economic, social, cultural and ecological values associated with biological diversity and its ecosystem services in planning and decision-making instruments.
Mexico	Women and the Environment (W&E)[a]	Manufacturing	Production and marketing of cosmetics made from the lemon balm plant (el bálsamo de "toronjil").
Mexico	Insurance for the Protection of Reefs and Beaches (IPRB)[a]	Financial Tourism	Financial mechanism for the restoration of reefs and beaches.
Peru	Works for Taxes Mechanism (WFT)[a]	Financial Infrastructure	Incorporation of biodiversity criteria into the financing mechanism to close the infrastructure investment gap.

Source: Prepared by the authors, on the basis of G. Catacora-Vargas and others, "Enfoques y prácticas de gobernanza en América Latina y el Caribe para el cambio transformativo a favor de la biodiversidad", *Project Documents*, Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2022, unpublished.

[a] Cases shared with the study "*Governance approaches and practices in Latin America and the Caribbean for transformative change for biodiversity*" (Catacora-Vargas and others, 2022).

Key stakeholders were also interviewed to compile documentation and obtain supplementary data through semi-structured remote interviews. The inputs obtained from the interviews were used to incorporate technical data sheets for each case study, and provided in a supplementary document to the governance and biodiversity mainstreaming studies (Catacora-Vargas, 2022), which were validated with the actors in each of the case studies to complete their analysis. The objectives were (i) to obtain their perceptions of the results and the relevance of the case study interventions to enhance biodiversity mainstreaming in the region; (ii) to understand the internal and external coordination and communication mechanisms used in the interventions; (iii) to identify the key factors that facilitate or impede the processes; (iv) to identify the benefits of the projects to the various types of stakeholders, for example, in terms of employment or the participation of marginalized communities; and (v) to gather additional relevant data associated with the other criteria used in the analysis.

A qualitative analysis was carried out of the experiences and strategies adopted in each case study on biodiversity mainstreaming to assess the coherence and linkages among the organizational structures, coordination mechanisms, implementation modalities, strategies and instruments used to incorporate elements that enable the conservation and sustainable use of nature. Using qualitative analyses of each case, comparative tables were prepared that offer an understanding of their components and facilitate the identification of common factors, unique conditions and diverse perspectives.

IV. Challenges facing biodiversity mainstreaming in Latin America and the Caribbean

A. Unforeseen risks arising from biodiversity loss

The Global Risks Report published by the World Economic Forum (WEF) has identified the rate of biodiversity loss and ecosystem collapse over the past five years as a highly significant risk worldwide in terms of impact and probability (WEF, 2021). In early 2021, one year into the COVID-19 pandemic, the results of the exhaustive Global Risks Perception Survey of the Global Risks Report, conducted through collaboration among businesses, governments, and civil society, were striking: four of the five major global risks to economic development in the world were related to environmental and climate crises. This includes biodiversity loss as one of the key risks to be prioritized over the next 10 years (see table 3). Paradoxically, the same report states that these risks remain invisible in the productive, economic and financial sectors.

With respect to the overall magnitude of these challenges, another WEF analysis (WEF, 2020a) points out that as nature declines, so do prospects for business growth and greater prosperity. For example, 60% of coffee varieties are at risk of extinction owing to a combination of climate change, disease and deforestation. If this were to happen, global coffee markets, a retail sector worth US$ 83 billion in 2017, would be substantially destabilized. The report shows that more than half of the world's total gross domestic product (GDP) (US$ 44 trillion) is moderately or highly dependent on nature and its services, and therefore, exposed to risks from nature loss. Industries heavily dependent on nature generate 15% of global GDP (US$ 13 trillion), while moderately dependent industries generate 37% (US$ 31 trillion). However, the 2020 Global Risks Report (WEF, 2020c) acknowledges that "*In boardrooms, investment and risk committees, nature loss still appears to be largely a hidden risk*".

Through the analysis of the case studies, it is evident that in general, despite increasing levels of attention to the issue of nature loss in recent years, in practice, there is still a lack of knowledge in the region about the interconnection between biodiversity and the viability of the productive, economic and financial sectors, as well as what practical steps such sectors can take to address biodiversity loss. Among the main reasons for this is the persistent general misunderstanding among multiple relevant actors about *what* biodiversity means, *how much* of it has been lost, *why* this loss is related to human well-being and how it can be controlled, especially through the productive and economic sectors.

Table 3
Main global risks by probability and impact as identified by the World Economic Forum in 2021

Risk likelihood	①	Extreme weather
	②	Climate action failure
	③	Human environmental damage
	④	Infectious diseases
	⑤	Biodiversity loss
	⑥	Digital power concentration
	⑦	Digital inequality
	⑧	Interstate relations fracture
	⑨	Cyberattacks
	⑩	Livelihood crises
Risk impact	①	Infectious diseases
	②	Climate action failure
	③	Weapons of mass destruction
	④	Biodiversity loss
	⑤	Natural resources crises
	⑥	Human environmental damage
	⑦	Livelihood crises
	⑧	Extreme weather
	⑨	Debt crises
	⑩	IT infrastructure breakdown
Risk category	●	Economic
	●	Environmental
	●	Geopolitical
	●	Social
	●	Technological

Source: Prepared by the authors, on the basis of World Economic Forum (WEF), *The Global Risks Report 2021: 16th Edition. Insight Report*, Cologny, 2021.

The *Works for Taxes Mechanism* in Peru and the *Mainstreaming Biodiversity into the Mexican Agricultural Sector* initiatives highlight that the risks related to biodiversity loss are not evident in companies' supply chains or in the prioritization of business initiatives at the various territorial levels —national, subnational or local— of both the public and private sectors. During the interviews, the sectoral participatory analyses in planning-finance and agriculture were discussed among the actions implemented in each case. Risks such as the loss of productivity in agricultural systems were identified, for example, in the case of the decline in pollinators for agave or honey production or the impacts on ecosystem services triggered by infrastructure development in the "business as usual" model. Both cases show how participatory analyses may be used as an effective tool to identify challenges and design corresponding biodiversity mainstreaming strategies for each sector.

The *Wine, Climate Change and Biodiversity Programme* in Chile, the *Quito Water Fund* in Ecuador, the *Insurance for the Protection of Reefs and Beaches* initiative in Mexico and *Women and the Environment*, also in Mexico have demonstrated progress with respect to recognizing the risks of biodiversity loss.

Companies from the economic and financial sectors have participated in the following areas: (i) the design of innovative solutions based on sound technical and scientific factors that enable the clear and objective definition and communication of the direct dependence of the both sectors on the conservation and appropriate use of nature and biodiversity; (ii) the valuation of biodiversity to develop fair and equitable interventions for businesses and communities located in conserved spaces; (iii) coordination with other agendas relevant to the sectors (such as climate change or financial, market or feasibility risk management) and (iv) the assessment and communication of positive and/or negative impacts of the interventions, among other actions.

The COVID-19 pandemic has had profound impacts for the productive, economic and financial sectors in all cases studied, as well as new risks, both external and internal, due to uncertainty about their scope, duration, and possible consequences. In all cases, challenges were identified with mainstreaming biodiversity in pandemic response and recovery plans. The following were noted among the main impacts: (i) changes in decision-making processes and in the representation of various actors owing to health-related distancing measures; (ii) inequitable access to remote communication tools; (iii) the change in the priorities of official financing sources and flows, triggering unequal competition for resources with other sectors; (iv) the disruption of production and market chains; (v) changes in medium- and long-term planning processes; (vi) exclusion of women and young people; and (vii) disruption of field activities (e.g. monitoring and research field trips).

B. Lack of political will and commitment

Challenges related to political will and commitment —whether of an individual with high level decision-making power from a key ministry or other actors from organizations associated with the target sectors— were identified as a common key factor in mainstreaming biodiversity in the productive, economic and financial sectors. This was clearly seen in the cases *Mainstreaming Biodiversity into the Mexican Agricultural Sector, Insurance for the Protection of Reefs and Beaches* in Mexico and the *Works for Taxes Mechanism* in Peru. Political will and commitment were also identified as a relevant factor among actors from private and non-governmental organizations, as observed in the *Network of Sustainable Fisheries Areas and Marine Territories of Life* initiative in Costa Rica or the Quito *Water Fund* in Ecuador.

One of the challenges for political will identified by several stakeholders interviewed in this study is that within all levels of government, there is interest in securing political capital in the short term, for instance through the provision of unsustainable financial incentives in the productive sectors instead of seeking comprehensive policies that integrate biodiversity and ecosystem services. It is possible that certain actors in economic sectors or sectors that are important for employment are accustomed to receiving certain incentives even if they are detrimental to biodiversity and, without a just transition —which takes time— any change could cost them government popularity and political leverage. Also related is the lack of interest by political actors in the design and prioritization of biodiversity-related interventions over other conventional projects "*with greater impact*" on the population or communities of interest. This challenge stems from the presumption that because many of the environmental changes are not visible in the short term, they are "*not politically profitable*," which discourages their implementation.

In addition, there is also the overall challenge of overcoming the specific pressures of each sector, particularly in the management of economic incentives (for example, subsidies in agriculture or fisheries). The lobbying power of producer organizations, business groups, or even members of other government sectors often serve as an opposing force to large-scale action on biodiversity mainstreaming, narrowing the scope of interventions at all stages, from planning to implementation and follow-up. The challenges do not only relate to managing the conflict between boosting sector productivity and protecting natural capital, but also to a perceived false dichotomy between conservation and sustainable use of biodiversity and the possibility of losing government support among producers or the inhabitants of a given community.

The following represent some additional challenges identified that, when addressed, enable the creation of better conditions for stimulating political will:

- Identify entry points to build the case for biodiversity in each sector. The *Works for Taxes Mechanism* in Peru and the *Mainstreaming Biodiversity into the Mexican Agricultural Sector* and *Women and the Environment* initiatives in Mexico demonstrate that it is possible to have a more effective impact on decision making through the following: (i) conducting preliminary sectoral assessments of biological diversity and ecosystem services; (ii) identifying and understanding the linkages between the development of sectors and biodiversity; (iii) generating specific findings on impacts and return on investment for decision makers in the public sectors and (iv) strengthening institutional capacities and coordination mechanisms.
- Mainstream biodiversity in planning and budgeting processes at the national and subnational levels. The *Quito Water Fund* in Ecuador, the *Works for Taxes Mechanism* in Peru and the *Insurance for the Protection of Reefs and Beaches* initiative in Mexico illustrate important ways to stimulate political will through the following: (i) triggering and supporting the engagement of budget units in the ministries of planning and finance; (ii) conducting comprehensive assessments of the socio-environmental impacts of sectoral projects (e.g. including the rate of return or cost-benefit analysis of investments focused on biodiversity and natural resources), directed predominantly at the private sector; (iii) reviewing public and private budgets to evaluate and report on past and present investments pertaining to natural resources, biodiversity and other related agendas and their related benefits; and (iv) developing indicators to measure change toward pro-biodiversity measures, including those relating to climate change.
- Fully engage the private sector and the communities involved or that may benefit from implementation of mainstreaming projects, in such a way that they are the ones submitting requests or demand for such projects to the authorities in each sector, as in the cases *Women and the Environment* in Mexico, *Community Forest Management in the Mayan Biosphere Reserve* in Guatemala, the *Network of Responsible Marine Fisheries Areas* and Marine Territories of Life in Costa Rica or *Management of the Biosphere Reserves of Sao Paulo* in Brazil.
- Promote decision-making based on scientific evidence and traditional knowledge, as in the *Wine, Climate Change and Biodiversity Programme* in Chile or the *Quito Water Fund* in Ecuador, in which science and community knowledge have proven essential to closing the gaps between public policy and business production and manufacturing.

The cases studied illustrate that decision makers' political will (both public and private) is neither guaranteed nor predictable. It must be nurtured from the start and on an ongoing basis, from the design and planning of interventions to their implementation. Added to this is the challenge of doing so iteratively, considering the cycles of change faced by political authorities in the region and the much more frequent replacement of officials at different levels of government, which requires new awareness-raising processes to plan and implement projects in the medium and long term.

C. Institutional capacity constraints

Identified as one of the key elements required for mainstreaming biodiversity in the productive, economic and financial sectors (Secretariat of the Convention on Biological Diversity, 2020b and 2021b), as well as for implementation of the post-2020 GBF (Secretariat of the Convention on Biological Diversity, 2021a), capacity-building is also one of the major challenges identified in all the cases studied, recognized as a primary factor affecting biodiversity-related institutions, programmes and activities.

Adequate capacities are a necessary —but not sufficient— condition for transformative change. Furthermore, other sectors must develop capacities to consider the potential undesirable and avoidable indirect effects on biodiversity of their policies and instruments. A lack of adequate capacity can lead to the development and implementation of ineffective, inconsistent or even conflicting policies. An effective biodiversity mainstreaming policy requires minimizing these effects.

To conduct a qualitative assessment of efforts to address capacity-related challenges in the cases studied, interviews included questions about key issues identified in the draft prepared by the Secretariat of the Convention on Biological Diversity of a Long-Term Strategic Approach to Mainstreaming Biodiversity (Secretariat of the Convention on Biological Diversity, 2020a) and OECD reports (OECD, 2017, 2018 and 2019a). Table 4 highlights these issues. Specific initiatives targeting capacity-building were identified, from the individual level to the institutional level or focused on an entire system, based on the situation in each sector.

Table 4
Qualitative assessment of progress on capacity-building in biodiversity mainstreaming by the supporting entities, by case study

Capacity-building subjects identified as ways to mainstream biodiversity[a]	Progress/Country									
	Network of Responsible Marine Fisheries Areas and Marine Territories of Life	Works for Taxes Mechanism	Mainstreaming Biodiversity into the Mexican Agricultural Sector	Community Forest Management in the Mayan Biosphere Reserve	Wine, Climate Change and Biodiversity Programme	Quito Water Fund	Insurance for the Protection of Reefs and Beaches	Management of the Biosphere Reserves of Sao Paulo	Women and the Environment	Management and Exploitation Areas for Benthic Resources
	CR	PE	MX	GT	CL	EC	MX	BR	MX	CL
Conservation	◑	○	◑	●	●	●	●	◑	◕	◑
Sustainable use	◕	○	●	●	●	●	◔	◑	◕	◕
Fair and equitable sharing of benefits arising from the utilization of genetic resources (ABS)	○	○	○	○	○	○	○	○	●	○
Biodiversity research	○	○	◔	●	●	◕	◑	◑	◑	◕
Biodiversity monitoring	◕	○	○	◕	●	◑	◑	◑	◔	◕
International cooperation	◕	◑	●	●	●	◕	◑	●	◕	◑
Outreach and awareness	●	◑	●	◕	◕	◕	◔	◕	◑	◑
Biodiversity and the SDGs	◑	◔	●	●	◕	●	◔	◕	●	◑
Regulatory issues	◔	◑	◑	◑	◔	◑	●	◔	◕	◑
Financing and resource mobilization	◔	◴	◑	◕	◑	●	●	◑	◑	◑
Government institutional capacities	◔	◔	◔	◑	◑	◕	◑	◑	◔	◔
Coordination with other sectors	◕	◕	●	●	●	●	◑	◑	●	◑
Communication	●	◑	●	◑	●	●	◔	◑	●	◔
Recognition of the value of biodiversity to facilitate its mainstreaming in the sectors	◑	◴	●	◕	●	◑	◔	◑	●	◔
Monitoring and evaluation	◔	○	◑	◕	◕	◕	◴	◕	◴	◔
Data generation and management	◑	◴	◑	◕	●	●	◔	◑	◔	◑

○ No activity ◴ Initial ◔ Low ◑ Medium ◕ Advanced ● Very advanced

Source: Prepared by the authors.

[a] In this analysis, challenges relating to outreach and awareness-raising are focused on sensitizing stakeholders in the sectors to the value of biodiversity and ecosystems and the importance of the sustainability of their activities (e.g. production of informative materials in different formats or the implementation of outreach and awareness-raising programmes for institutions and the general public). Communication involves the translation and dissemination of relevant information and content into everyday language and the provision of simple explanations to facilitate understanding and involvement by stakeholders in the other sectors in biodiversity related activities.

Sustainable use, international cooperation and coordination with other sectors are the subjects addressed in the largest number of cases, with evidence of high and very high qualitative levels of progress with capacity-building (7 of 10). Outreach and awareness-raising and the connection between biodiversity and the SDGs come in second, with significant levels of progress in 6 of the 10 cases studied. The *Community Forest Management in the Mayan Biosphere Reserve* in Guatemala, *Wine, Climate Change and Biodiversity Programme* in Chile and *Mainstreaming Biodiversity into the Mexican Agricultural Sector* project were identified as those initiatives with a higher performance in building capacity of their various stakeholders.

Although almost all cases (8 out of 10) reflect a certain degree of progress with capacity-building in resource mobilization, biodiversity research and monitoring, recognition of the values of biodiversity to the sectors or in monitoring and evaluation initiatives, only half of them demonstrated high levels of success. The challenges posed by these four areas are closely associated with needs relating to financing, development of indicators and other metrics, the lack of linkages with research and information entities as well as a lack of the skills needed to educate other stakeholders about their sector's dependence on biodiversity and ecosystem health.

In contrast, only the case of *Women and the Environment* in Mexico reported evidence of progress in capacity-building on access and benefit sharing arising from the utilization of genetic resources, which, paradoxically, contributed to its full implementation. It now stands as a model of fair and equitable sharing of the use of genetic resources worldwide. None of the other cases reported progress in this area, which clearly highlights the enormous challenge that this issue represents for the region.

Multiple actors in the initiatives mentioned the challenge that capacity-building represents —from the design of interventions to their implementation or monitoring and evaluation— with respect to progress on incorporating the conservation and sustainable use of natural resources, the value of biodiversity, as well as the dependence and relation of the productive and economic sectors to biodiversity, including the impacts of their activities. For example, the *Wine, Climate Change and Biodiversity Programme* in Chile or the *Quito Water Fund* in Ecuador illustrates how measures such as developing and promoting specific scientific research programmes, increasing the quantity and quality of information on nature and ecosystem services, capacity-building in the management of geographic information systems or conducting species inventories can have a positive impact on the identification of key areas for biological diversity and the implementation of actions for their conservation and appropriate management, while encouraging the engagement of the relevant actors and their ownership of the actions taken.

The *Mainstreaming Biodiversity into the Mexican Agricultural Sector* initiative underscores that capacity-building in facilitation mechanisms, the development of sector-based strategies for mainstreaming biological diversity or technical cooperation to facilitate sharing of information and technical expertise and the development of intra- and intersectoral policies, work as levers to stimulate political will and promote the scale-up and multiplication of interventions. The *Women and the Environment* initiative provides information on the importance of promoting community-based knowledge, community capacity-building on negotiating mutually agreed terms between parties regarding sharing the benefits of the sustainable use of resources, outreach and awareness-raising about the values of biodiversity and sectors' dependence on it, as well as technical assistance for community development and the generation of information on genetic resources to substantially increase the potential for achieving ecosystem conservation goals and for fairer and more equitable community development.

It is also evident that, despite the significant advances noted in the case studies, capacity-building challenges in the region are closely linked to other important challenges that must be addressed to progress towards a more effective biodiversity mainstreaming in the sectors. These challenges include the following:

- The lack of properly structured assessments of capacity-building needs and priorities, at all levels and in all sectors, reflecting the reality of conditions in the institutions and among the actors comprising them.

- The existence of sizeable gaps in public financing and private investment for capacity-building, which results in a heavy reliance on external financing.
- The lack of linkages between capacity-building actions in the other sectors with policies, tools and instruments focused on biodiversity mainstreaming (such as SDGs, NBSAPs, or biodiversity strategies for certain sectors).

D. Incipient sectoral and intersectoral coordination

One of the most significant avenues for reversing negative trends in biodiversity loss in Latin America and the Caribbean may lie in strengthening and consolidating sectoral and intersectoral coordination, ensuring alignment between both public and private initiatives, to integrate biodiversity considerations.

The cases studied illustrate that the region has undergone a gradual process of developing and implementing public policies to address inter- and intra-institutional coordination. These actions have helped incorporate policies, tools and instruments relating to mainstreaming natural resources, biodiversity and its associated services in some sectoral initiatives. Nonetheless, coordination remains inadequate; there is considerable contradiction, dispersion, duplication, and misalignment; and significant challenges persist within sectors and in their interaction with other relevant areas to address the direct and indirect causes of biodiversity loss and strategies for managing it.

Several of the actors interviewed mentioned the institutional environment —the sectoral organization of governments and differences in sector mandates— as the main challenge or obstacle to mainstreaming biodiversity. Two of the most frequently mentioned factors were unfamiliarity with and misconceptions about the meaning of biodiversity. For example, interviewees mentioned that "*its components are not clear*" or "*it is not easy to understand what biodiversity is*", "*it has no impact*", "*it is complicated*" or "*it is not a priority.*" This situation has resulted in distinct and profound divisions between sectors involved in economic development or production and those associated with the promotion of the conservation and sustainable use of ecosystems.

Another barrier identified pertains to the implementation phase of the initiatives. The *Mainstreaming Biodiversity into the Mexican Agricultural Sector* initiative and the *Insurance for the Protection of Reefs and Beaches* scheme, both in Mexico, along with the *Works for Taxes Mechanism* in Peru, highlight the need to develop more coherent policies that consider the interaction between sectors, involving all relevant actors and increasing awareness of biodiversity and the importance of incorporating it in decision-making processes. In these cases, the challenge has been addressed by providing guidance and technical assistance on the importance of a "whole-of-government" approach to achieving sectoral and intersectoral biodiversity mainstreaming, which requires having the necessary personnel and resources to implement actions to promote and strengthen coordination among actors.

The *Network of Sustainable Fisheries Areas and Marine Territories of Life* in Costa Rica, *Community Forest Management in the Mayan Biosphere Reserve* in Guatemala, *Management and Exploitation Areas for Benthic Resources* in Chile and *Management of the Biosphere Reserves of Sao Paulo* in Brazil offer examples of the importance of improving synergy between actors in different sectors so that guidance and technical support can create enabling conditions for promoting dialogue between them, for example in the following areas: (i) spatial planning and management for integrated approaches in landscapes and seascapes, (ii) incorporation of the primarily economic valuation of ecosystems and biodiversity in the management and use of forest and fisheries resources; (iii) the promotion of voluntary certification standards as effective alternatives for regulating the use of biodiversity; (iv) the key role of women in production chains or (v) recognition of the value of traditional knowledge and practices. Action taken on these issues has led to relative improvement in communities' livelihoods and food security, as well as access to new markets for their products, which gives them added value.

The existing sectoral and intersectoral coordination gaps identified must be addressed to improve awareness of biodiversity and its values. The *Wine, Climate Change and Biodiversity Programme* and *Management and Exploitation Areas for Benthic Resources* initiative, both in Chile, *Women and the Environment* in Mexico and the *Quito Water Fund* in Ecuador underscore the need for the development and enhancement of policies to promote ecosystem services and natural heritage accounting. When considered from a scientific perspective (e.g., the relevance of species and habitat conservation, the importance of native varieties on crops, and the development of management plans or life cycles of species), the interventions increased knowledge, tools and the capacity for dialogue and communication between actors in the productive sectors as well as those focused on the conservation and sustainable use of resources at the national, subnational and local levels.

Unfortunately, despite recognition of the high degree of ecosystem vulnerability in the region, the depth and degree of - sectoral and intersectoral dialogue on biodiversity has not shown a steady or progressive upward trend and often depends on external factors (e.g. that certain ministers work in closer proximity and, therefore, drive collaborative efforts), meaning that it can easily suffer setbacks. Generally, intersectoral planning downplays the relevance and priority of initiatives relating to the conservation and sustainable use of nature and focuses on purely economic elements —such as financing, employment and profitability— or social elements, through traditional instruments.

E. Lack of reciprocal mainstreaming between the biodiversity sectors and the productive, economic and financial sectors

Various studies have highlighted that mainstreaming biodiversity in the productive, economic and financial sectors is very complex given these sectors' different interests and priorities (Karlsson-Vinkhuyzen and others, 2017; Karlsson-Vinkhuysen and Kok, 2011). One of the key strategies identified to address this challenge has been "*reciprocal mainstreaming*," which is based on the understanding that biodiversity mainstreaming is not simply a unidirectional drive to incorporate biodiversity concerns into development policy, but also involves incorporating development priorities into strategies and policies relating to the conservation and sustainable use of biodiversity and ecosystems (IIED, 2015).

Table 5 illustrates the obstacles and tools associated with reciprocal mainstreaming, as identified in the cases studied. Given the novelty of research on reciprocal mainstreaming in the region and the need for methodological tools to guide its design and implementation, this exercise is proposed only for the purpose of qualitative analysis.

The exercise was adapted to identify three application areas for the tools:

(i) institutional structures, including vertical and horizontal coordination, policies and standards;

(ii) the mechanisms for implementing actions, taking expertise, time and financial resources into account and

(iii) the motivating factors driving behavioural changes.

It is worth noting that, at the institutional level, horizontal interactions and policies and norms have been used —to varying degrees— in all cases. First, the cases highlight the use of biodiversity-focused intersectoral committees and sectoral strategies based on NBSAPs and SDGs, through which sectors can achieve a mutual understanding of the ways in which biodiversity is affected and how it can serve as a basis for the development and productivity of the respective sectors. As outlined below, preliminary analyses and biodiversity mainstreaming strategies for national or subnational planning were particularly effective at addressing resistance to change at all levels of government and at reducing new sources of inertia, but only in half of the cases studied.

With respect to the means used to facilitate reciprocal mainstreaming, almost all cases (8 out of 10) have established initiatives —at varying degrees of development— to recognize the scientific, empirical and traditional knowledge of actors in the sectors targeted by the study. First, the heterogeneity of regional characteristics (economic, social and ecosystem-based) undoubtedly represents one of the most important avenues for reciprocal mainstreaming. Second, there are initiatives under way that help clarify the benefits and different values of biodiversity, a key factor considering the challenge of building the case for the conservation and sustainable use of biodiversity vis-à-vis the perception of a deferred return on investment. Third, in half of the cases, preliminary analysis of the other sectors helps determine mutual points of entry. Moreover, the identification of key actors in resource allocation has produced innovative mechanisms for reducing dependence on traditional financing flows. Finally, it is important to note that an understanding of planning processes and their institutional arrangements, the creation and use of typologies and an awareness of the role of legislative bodies in the definition of standards and budgets remain rather precarious, despite showing considerable potential for achieving reciprocal mainstreaming and for breaking down silos between sectors.

Sectoral interests are important drivers of behaviour. Efforts to mainstream biodiversity considerations into the productive, economic and financial sectors will face the obstacle of attempting to penetrate an area of governance in which all other vested interests have the privilege of "being the first." In view of this, it is worth mentioning that practically all cases have implemented —again, to varying degrees— initiatives to foster common interests (identifying multidimensional benefits, involving relevant actors, recognizing the influence of beneficiaries on programmes/actions or relying on international cooperation). Similarly notable is the importance of promoting biodiversity valuation strategies to stimulate genuine interest by actors in other sectors in the conservation and sustainable use of nature.

Interventions in the region have faced multiple challenges simultaneous and usually synergistic in its efforts to achieve reciprocal mainstreaming (table 5), such as the lack of terminology and classification standards —taxonomies and typologies— to clearly and effectively promote the mainstreaming of biodiversity and its multiple values and services in the productive, economic and financial sectors. The very concepts of *biodiversity and its multifaceted value, nature-based solutions, green infrastructure or ecosystem services* and other key elements illustrate that there is a strong need to establish an appropriate common language for actors and decision makers in the productive sectors, based on their characteristics, needs and focus areas. With the appropriate design, consistent dissemination and the necessary capacity-building, biodiversity-related taxonomies and typologies can play a very useful role in designing biodiversity mainstreaming systems and the financing of their regional implementation (see box 2). In particular, such strategies could help channel existing and potential investments towards the desired goals (such as the SDGs or post-2020 GBF targets), develop or scale positive incentives or modify negative ones, avoid *greenwashing*, promote reciprocal mainstreaming with other relevant agendas (such as climate, education or health), prioritize initiatives vis-à-vis interventions in other sectors or facilitate the assessment and monitoring of their impacts and outcomes. In Peru, for example, the *Works for Taxes Mechanism* highlights the potential of the financial sector to develop taxonomies and biodiversity-related typologies, as well as the role that the UNDP-BIOFIN initiative can play in this sector —and through it, in multiple other productive and economic sectors— in the region (BIOFIN is currently being implemented in 12 Latin American and Caribbean countries).

Box 2
Definitions and taxonomies for the financial sector: an OECD report

OECD defines taxonomies and definitions for sustainable finance as an emerging field that considers the factors that facilitate sustainable investment —recognizing the growing tendency of the financial sector to venture into this area— as well as the establishment of green recovery stimulus packages, which creates a need to clearly define sustainable investment.

In its "Developing Sustainable Finance Definitions and Taxonomies" report, OECD holds that clearer definitions of sustainable finance can enhance some market benefits, including in terms of integrity and increased investor confidence. More precise and consistent definitions of which investments are "green" and "sustainable" could facilitate investment by enhancing confidence and offering security to investors. The report also points to elements of best practices in designing definitions, such as consistency with national climate targets and strategies, and the adoption of a system-wide vision in the design of principles, metrics and thresholds to identify sustainable investments. Other potential benefits include easier tracking of sustainable finance flows to measure them and/or take policy action, such as establishing incentives.

The document affirms that definitions and taxonomies can cover a wide range of environmental objectives, from climate mitigation to adaptation, water, the circular economy, pollution and biodiversity, and may (or may not) include social and governance objectives. These environmental and other objectives may be independent or interdependent.

Source: Organisation for Economic Co-operation and Development (OECD), *Developing Sustainable Finance Definitions and Taxonomies*, Paris, 2020.

Improving coherence between policies and standards, especially at the government level, presents another challenge. Some tools that facilitate dialogue among government sectors are (i) the generation of information through preliminary analyses of conditions in the sectors in terms of coordination and coherence with biodiversity concerns; (ii) the implementation and institutionalization of coordination measures, such as the establishment of biodiversity-focused intersectoral working groups and (iii) actions linking biodiversity mainstreaming in national or subnational planning with budget allocation processes.

Several cases have engaged in some form of interinstitutional work. For example, processes have been established to overcome resistance to change among governmental and private actors in the productive sectors, taking different policies or initiatives into account simultaneously (e.g., agricultural production, market and value chains, climate mitigation and adaptation, food security, among others), or by integrating financial risk management. The *Mainstreaming Biodiversity into the Mexican Agricultural Sector* and *Insurance for the Protection of Reefs and Beaches* initiatives in Mexico, the *Wine, Climate Change and Biodiversity Programme* in Chile, the *Works for Taxes Mechanism* in Peru and *Management of the Biosphere Reserves of Sao Paulo* in Brazil provide examples of such approaches.

In addition to the aforementioned challenges, implementation of reciprocal mainstreaming in the region must overcome barriers relating to financial resources for mainstreaming activities and incentivization of the relevant stakeholders (for example, consideration of those stakeholders' real interests in biodiversity or reliance on the leadership and personal conviction of individual actors with respect to implementing interventions). Weakness in these areas can present serious obstacles to the necessary scale-up of initiatives and to effecting the change needed to meet the objectives of the post-2020 Global Biodiversity Framework.

Table 5
Tools and solutions to address barriers to reciprocal biodiversity mainstreaming

Scope		Barriers	Examples of tools/initiatives to address obstacles to reciprocal integration	Initiatives undertaken in the cases[a]
Institutional	Horizontal coordination	- Resistance to change - Need to address different policies or initiatives at the same time - Understanding of the processes and development of the other sectors - Valuation of the economic importance of biodiversity and ecosystem services to the economic outcomes on which decision making is based - Coordination between sectors with overlapping responsibilities	- Preliminary analyses of conditions in the sectors in terms of coordination and coherence with biodiversity concerns	WFT / MBMAS / WCCBP/ IPRB
			- Strategies for mainstreaming biodiversity in national or subnational planning with respect to budget allocation processes for the implementation of actions	WFT / MBMAS / IPRB / MBRSP / MEABR
			- Intersectoral committees focused on biodiversity	WFT / MBMAS / CFMMBR / IPRB / WCCBP / IPRB / MBRSP / MEABR
			- Sectoral strategies based on the NBSAPs and SDGs	NMARFMTL / WFT/ MBMAS / CFMMBR / WCCBP / IPRB / MBRSP/ W&E
	Vertical coordination	- Coordination and alignment among the national, subnational and local visions - Coordination with other sectoral initiatives - Inequitable prioritization among sectoral initiatives	- Coordination with national and subnational planning and budget ministries	WFT / QWF / IPRB
			- Initiatives to reduce budget dependence on the environment ministries	WFT / MBMAS / CFMMBR / QWF / IPRB
			- Mechanisms to boost investment relating to biodiversity and ecosystem services	WFT/ MBMAS / QWF / IPRB
	Policies and standards	- Compliance with policies and standards - Differences between sectoral and intersectoral policies	- Strategies to highlight market benefits	NMARFMTL / MBMAS / CFMMBR / WCCBP / IPRB / W&E / MEABR
			- Fiscal and/or social policies	NMARFMTL /WFT/ MBMAS / CFMMBR / QWF / IPRB / W&E / MEABR
			- Mainstreaming biodiversity in sectoral strategies	WFT/ MBMAS
Means	Knowledge	- Identifying points of entry and building the case for biodiversity in specific sectors - Understanding the value of biodiversity	- Preliminary analysis of biodiversity-related conditions in the sectors	WFT/ MBMAS / WCCBP / IPRB
			- Initiatives to identify the scientific, empirical and traditional knowledge existing in the other sectors	NMARFMTL / MBMAS / CFMMBR / WCCBP/ QWF/ MBRSP / W&E / MEABR
			- Creation and use of typologies for mainstreaming biodiversity in other sectors	WFT / MBMAS
			- Development and promotion of scientific research programmes	WCCBP / QWF / MEABR
	Time	- Long-term return on investment	- Visualize the benefits and values of biodiversity in broader terms - Visualize different types of benefits (social, economic and environmental)	MBMAS / CFMMBR / WCCBP / QWF / IPRB / MBRSP / MEABR
	Financial resources	- Reliance on public financing - Scarce information on investment in biodiversity	- Understand the planning processes and institutional arrangements for financing	WFT / IPRB /
			- Understand the role of legislative bodies and their consultation processes	MBMAS
			- Identify the role and influence of certain key actors in resource allocation	WFT / MBMAS / WCCBP/ QWF / IPRB

Scope		Barriers	Examples of tools/initiatives to address obstacles to reciprocal integration	Initiatives undertaken in the cases[a]
Rationale	Interests	- Design and prioritization of pro-biodiversity projects or interventions versus conventional projects - Demonstrate ownership of resources with a political objective	- Analysis of co-benefits	NMARFMTL / MBMAS / CFMMBR / WCCBP / QWF / IPRB / MEABR
			- Identify and involve relevant stakeholders in the sectors	NMARFMTL / WFT / MBMAS / CFMMBR / WCCBP / QWF / IPRB / MBRSP / MEABR
			- Identify the influence on decision makers of communities benefiting from programmes and actions	NMARFMTL /WFT/ WCCBP / QWF / IPRB / MBRSP / W&E / MEABR
			- Strengthen a comprehensive human rights policy	NMARFMTL / CFMMBR / QWF/ MBRSP / W&E
			- Build on support from international agencies and NGOs to enhance interventions that promote change	NMARFMTL / WFT / MBMAS / CFMMBR / QWF / IPRB / MBRSP / W&E
	Values	- Lack of genuine interest by certain actors in the conservation and sustainable use of biodiversity	- Promote biodiversity valuation strategies	NMARFMTL / WFT/ MBMAS / CFMMBR / WCCBP / QWF / IPRB / MBRSP / W&E / MEABR
	Framework	- Reciprocal mainstreaming with other relevant agendas (e.g. climate change, risks)	- Establishment of horizontal coordination structures	MBMAS / WCCBP / QWF / IPRB / MBRSP
	Leadership	- Stimulation of long-term political will and commitment - Reliance on personal leadership by some actors	- Adopt an approach focused on impact and outcomes in biodiversity mainstreaming initiatives or projects	WFT / MBMAS / CFMMBR / WCCBP / QWF / IPRB / MEABR
			- Increase social support	NMARFMTL / MBMAS / CFMMBR / WCCBP / IPRB / MEABR
			- Highlight information on the impact and contribution of interventions on income generating opportunities, employment and growth	NMARFMTL / WFT/ MBMAS / CFMMBR / WCCBP / QWF / IPRB / MEABR

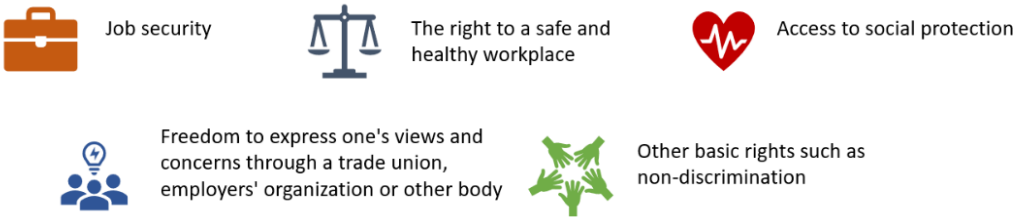
Source: Prepared by the authors, on the basis of S. Karlsson-Vinkhuyzen and others, "Mainstreaming biodiversity in economic sectors: an analytical framework", *Biological Conservation*, vol. 210, Amsterdam, Elsevier, 2017.
[a] Cases studied:
[NMARFMTL] Network of Marine Areas for Responsible Fishing and Marine Life Territories (CR)
[QWF] Quito Water Fund (EC)
[WFT] Works for Taxes Mechanism (PE)
[IPRB] Insurance for the Protection of Reefs and Beaches (MX)
[MBMAS] Mainstreaming Biodiversity into the Mexican Agricultural Sector (MX)
[MBRSP] Management of the Biosphere Reserves of Sao Paulo (BR)
[CFMMBR] Community Forest Management in the Mayan Biosphere Reserve (GT)
[W&E] Women and the Environment (MX)
[WCCBP] Wine, Climate Change and Biodiversity Programme (CL)
[MEABR] Management and Exploitation Areas for Benthic Resources (CL)

F. Employment and biodiversity mainstreaming

The International Labour Organization (ILO) notes that transitions to environmentally and socially sustainable economies, when well managed, can drive poverty eradication, job creation, job upgrading and social justice (Sánchez, 2018). The sectors that are heavily dependent on biodiversity and ecosystem services have been identified in view of their substantial capacity for job creation in Latin America and the Caribbean, creating close to 64 million jobs, which represents 19 percent of total employment in the region, according to ECLAC and ILO estimates (ECLAC, 2020d). However, further research is needed to assess whether such jobs meet the conditions of decent work, as defined by the ILO (see box 3).

Box 3
Characteristics of decent work, according to the ILO

Decent work sums up the aspirations of people in their working lives. It involves (i) opportunities for work that is productive and delivers a fair income, (ii) security in the workplace and social protection for families, (iii) better prospects for personal development and social integration, (iv) freedom for people to express their concerns, organize and participate in the decisions that affect their lives and (v) equality of opportunity and treatment for all women and men.



Source: Prepared by the authors, on the basis of International Labour Organization (ILO), "Decent work", [online] https://www.ilo.org/global/topics/labour-migration/standards/lang--en/index.htm.

In the initiatives studied, specific information on jobs is not clearly recorded or structured in the design, planning, implementation and evaluation of the implemented actions. Most of the cases analysed do not allow for accurate analysis of the progress, challenges or impact of biodiversity-related interventions on incomes and working conditions (for example, the number of formal jobs, social security conditions such as retirement, health insurance or other elements of decent work, such as gender, among others). This is consistent with challenges identified in other regions (OECD, 2018).

Efforts to quantify the number of jobs associated with implementation of the policies, tools or instruments focused on biodiversity mainstreaming have encountered many obstacles (see table 6). One of these obstacles is simply that it is not easy to calculate which jobs are related to a given mainstreaming initiative since the majority are distributed across the productive and economic sectors. Another challenge encountered is that biodiversity mainstreaming can either be defined narrowly, as in the case of interventions focused on a clearly defined protected area or conserved space, or more broadly through actions targeting a more complex system or natural territory. Furthermore, no standardized method for estimating employment was identified in the initiatives studied, which means that the information obtained from those that did generate data is of variable quality, quantity and reliability. Finally, employment estimates in the cases tended to focus on a specific time frame, with little effort made to update the data and poor trend analysis capabilities, resulting in unreliable information.

Various actors mentioned the barriers that environmental degradation represents in terms of employment and the deterioration of working conditions, especially for women and vulnerable populations (including people living in extreme poverty, indigenous peoples and local communities, young people and older persons), which underscores that the sustainability of productive and economic activities is also a social justice challenge. The *Network of Responsible Marine Fisheries Areas* and Marine Territories of Life initiative in Costa Rica has generated very positive outcomes in this area through technical support and knowledge exchange on gender-based issues in small-scale fishing cooperatives to boost the value of the work done by women. To this end, some techniques employed include promoting cultural change, recognizing their rights (under a differentiated approach) and their contribution to the product value chain, promoting best practices in food safety and ensuring equity in interventions and decision making throughout the network, thus contributing to women's empowerment (CoopeSoliDar/ILO/INAMU, 2009).[5]

[5] On the basis of an interview with relevant contributors to the Costa Rican case study "Marine Responsible Fishing Areas and Marine Territories of Life Network" (V. Alvarado and G. Catacora-Vargas, interviewers).

Table 6
Tools and initiatives to address challenges facing biodiversity-related employment

Challenges	Tools	Cases[a]
Employment information non-existent, scarce or distributed across other sectors (sometimes fragmented across multiple sectors)	- Horizontal coordination and technical assistance for capacity development	NMARFMTL ●○○ | WFT ●○○ | CFMMBR ●●○ |
	- Analysis of impact on employment	CFMMBR ●●○ | WFT ●○○ |
	- Establishment of intersectoral coordination with a focus on sustainable jobs	WFT ●○○ |
Different levels and scales of intervention (spatial and temporal)	- Coordination of visions by working with the ministries responsible for planning and the national and/or subnational budget	WFT ●○○ | CFMMBR ●●○ | IPRB ●○○ |
Lack of a standardized method for quantifying, organizing and managing information	- Technical assistance for capacity-building	NMARFMTL ●○○ | CFMMBR ●●○ | WFT ●○○ |
	- Establishment of records and/or databases	NMARFMTL ●○○ | CFMMBR ●●○ |
Resistance to structural change by the sectors (jobs in activities with a business-as-usual approach instead of adopting a pro-biodiversity approach)	- Impact analysis on the use of alternative investment scenarios	WFT ●○○ | MBMAS ●○○ | WCCBP ●○○ | IPRB ●○○ | MEABR ●○○ |
Lack of recognition of the contributions of women and young people	- Development of communication and knowledge generation strategies that highlight the importance of the relationship between gender and value chains	NMARFMTL ●●● | CFMMBR ●●○ | QWF ●●○ | W&E ●●● |
	- Strengthening of the organization and promotion of networks to enhance the impact of public policies relating to gender and youth	NMARFMTL ●●○ | CFMMBR ●●○ | W&E ●●● |
Lack of recognition of the right to land tenure or access to resources by indigenous peoples and local communities	- Promotion of discussion on legal/regulatory elements	NMARFMTL ●●○ | CFMMBR ●●● | QWF ●●○ | MEABR ●●● |
	- Draft legislation/regulations that recognize the right of access to resources by indigenous peoples and local communities	NMARFMTL ●●○ | CFMMBR ●●● | QWF ●●○ | MEABR ●●● |

●○○ Challenges discussed without being explicitly addressed
●●○ Challenges addressed partially or in a limited manner
●●● Challenges explicitly addressed and incorporated

Source: Prepared by the authors.
[a] Cases studied:
[NMARFMTL] Network of Marine Areas for Responsible Fishing and Marine Life Territories (CR)
[QWF] Quito Water Fund (EC)
[WFT] Works for Taxes Mechanism (PE)
[IPRB] Insurance for the Protection of Reefs and Beaches (MX)
[MBMAS] Mainstreaming Biodiversity into the Mexican Agricultural Sector (MX)
[MBRSP] Management of the Biosphere Reserves of Sao Paulo (BR)
[CFMMBR] Community Forest Management in the Mayan Biosphere Reserve (GT)
[W&E] Women and the Environment (MX)
[WCCBP] Wine, Climate Change and Biodiversity Programme (CL)
[MEABR] Management and Exploitation Areas for Benthic Resources (CL)

Another factor identified as an obstacle to the implementation of actions focused on the conservation and sustainable use of biodiversity relates to long-term access to resources —in terms of certainty and exclusive rights— by indigenous populations and local communities. In this regard, the Quito Water Fund in Ecuador, the Community Forest Management of the Maya Biosphere Reserve in Guatemala

and the Management and Exploitation Areas for Benthic Resources initiative in Chile provide valuable insight on strategies to address the challenges of (exclusive) access to terrestrial and marine resources and ecosystems.

In the case of Ecuador, the fund defines the actions it implements through direct work with communities and the legal owners of the lands of interest for the conservation of water and ecosystem services in the high Andean moors and peatlands. This work generates employment opportunities for communities, with biodiversity-related co-benefits, through the following: (i) voluntary conservation agreements with local communities; (ii) technical assistance to indigenous peoples and local communities for the diversification of productive activities to support the conservation and sustainable use of ecosystems; (iii) addressing infrastructure needs (e.g. water and sanitation systems); (iv) ecosystem restoration or (v) environmental education[6] (FONAG, 2020a and 2020b). It is worth noting that in Ecuador, the distribution of land ownership stands at 74.6 percent among men and 25.4 percent among women (OECD, 2019b). It would be very useful to have such information for the project so as to include a gender perspective and avoid deepening any structural inequalities that already existed or could be caused by project activities. Currently, no related data have been generated, so it was not possible to analyse its impact from a gender perspective.

In Guatemala, initiatives targeting sustainable forest management address the challenges of employment and access to resources associated with the Mayan biosphere reserve, and its attendant restrictions, through the management and processing of timber and non-timber forest products, such as *xate* (*Chamaedorea spp*), *chicle* (*Manilva spp*), *pepper* (*Pimienta dioica*) and *ramón* tree nuts (*Brosimun allicastrum*), via community forestry grants of long-term usage in the multiple-use zone of the reserve, reportedly creating roughly 2,000 jobs per year (FAO, 2019b). This model also promotes gender-focused action through a second-tier organization that groups all community concessions. Its gender unit has promoted actions that have resulted in 20 percent of leadership and decision-making positions being held by women, which is significant given that initially, all posts were held by men (FAO, 2019b).[7]

Although implementation of the *Insurance for the Protection of Reefs and Beaches* initiative in Mexico and the *Works for Taxes Mechanism* in Peru have only recently begun, the challenges associated with adapting to processes in the economic sectors and the complex dynamics of their objectives are evident, prompting the launch of initiatives that contribute to employment generation focused on the conservation of biodiversity and ecosystem services, nature-based solutions, green infrastructure, environmental restoration and impact mitigation as part of the respective projects implemented in the tourism and infrastructure sectors.[8]

In summary, it is clear that despite the importance of having solid, clear and relevant data and information on employment for more effective decision making and policies in terms of their impact on and contribution to biodiversity mainstreaming and the socioeconomic development of the region, there is an acute need for actions specifically aimed at addressing the data generation gaps in the initiatives studied. Addressing this gap would open up potential avenues for expediting reciprocal mainstreaming by helping to better understand the impact on social welfare (e.g. number of potential jobs, sectoral distribution, types of jobs created, groups in society benefiting from the jobs created, job dynamics over the course of the interventions, technical assistance and capacity-building opportunities) (CEPAL, 2020e).

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6 On the basis of an interview with relevant contributors to the Ecuadorean case study "Fondo para la Protección del Agua de Quito" (V. Alvarado and G. Catacora-Vargas, interviewers).

7 A "first-level" or "grassroots" organization is usually a beneficiary organization; second-level or "second-tier" organizations, as they are called in some Latin American and Caribbean countries, are organizations that function as an "umbrella" that covers, unites and connects entities with similar structures or goals.

8 On the basis of an interview with relevant contributors to the Mexican case study "Seguro para la Conservación y la Restauración de Arrecifes y Playas" and the Peruvian case study "Obras por Impuestos en Perú" (V. Alvarado and G. Catacora-Vargas, interviewers).

G. Complexities associated with the scale-up and multiplication of experiences

The cases studied highlight that the scale-up and/or multiplication of biodiversity mainstreaming initiatives in the region is not a linear process and that progress with mainstreaming may be accomplished more easily in one situation or sector versus another. Similarly, the challenge posed by the broad spectrum of actors that must intervene to enhance or multiply sustainable-use initiatives, both in the short and long term.

The cases also illustrate that when activities are implemented at a single scale, they do not effectively bring about change in a given sector. Therefore, the scale-up and multiplication of initiatives requires a combination of a range of intervention scales. For example, in Chile, through the *Wine, Climate Change and Biodiversity Programme*, progress has been achieved through (i) the participation of producers of different sizes; (ii) differentiated work with the communities that comprise them; (iii) the implementation of actions in specific climate and environmental sustainability projects (particularly those focused on biodiversity and ecosystem services); (iv) scientific research and technological development; and (v) capacity-building for individuals and groups of producers more than 1,800 people had been trained as part of the project). This approach has generated more than 25,000 hectares of native sclerophyll and scrub forest in the associated vineyards through conservation agreements, representing a contribution of 11% of the protected areas in the Chilean Mediterranean region. In addition, the initiative has resulted in the production of conservation guidelines and sustainable practices for vineyards, promoting the country brand and evaluation of the national Sustainability Code. This project also falls under an international sustainability network based on biodiversity conservation and currently includes vineyards from the United States (California), Mexico (Baja California), South Africa and Australia (IEB, 2017; Government of Chile, 2016).

The following two projects facilitate analysis of the contributions made by the cases studied with respect to a bottom-up approach to scale up and multiply the interventions. First, in the *Marine Areas for Responsible Fishing and Marine Territories of Life Network* initiative[9] in Costa Rica, where a few fishing communities began to develop horizontal coordination and capacity-building interventions, conducted independently initially and as pilots. Bolstered by international and national frameworks such as FAO (2020) and partnerships, the communities have increased their assistance and support to other communities and actors, extending the range of their actions to the financial, public policy and regulatory spheres, for example in access to fishing resources, financing, justice and equality and gender, among others. This has led to the development of processes that expand the scope of these associations both vertically and functionally, leading to the recognition of the network by the national government and the establishment of an official government structure that strengthens the model of responsible fishing marine areas (Ministry of Agriculture and Livestock MAG, 2009).

Second, the *Mainstreaming Biodiversity into the Mexican Agricultural Sector* project multiplied the coverage and scope of its actions from the national to the local scale, for example with producers in the states of Guanajuato, Oaxaca and Yucatan. The project provided technical support for the establishment of the Center for Biodiversity Mainstreaming within the Secretariat for Agriculture and Rural Development. Similarly, this project has helped test and highlight the concept of biodiversity mainstreaming at the sectoral level, with the results being used to influence national policy, for example, through the development of priority objectives for the agricultural sector, such as the small and medium-sized producer subsidy programme offered through the Secretariat for Agriculture and Rural Development (Secretariat of Agriculture and Rural Development, 2017b). Functional scale has also been broadened as a result of processes developed with subnational governments, which have designed new strategies to incorporate

[9] The *Network of Responsible Marine Fisheries Areas and Marine Territories of Life* is a conglomerate of organizations of various kinds, ranging from Marine Areas of Responsible Fisheries, different types of fisheries organizations, marine management communities, indigenous groups, groups of persons of African descent, *molusqueras* communities and other forms of fisheries and community organizations. This network responds to the need to forge alliances among the various organizations dedicated to small-scale artisanal fisheries, with the purpose of coordinating efforts and ideas to influence public policies relating to Costa Rica's artisanal fisheries sector.

biodiversity components into the productive sectors at the regional and local levels (e.g. strategies for mainstreaming biodiversity in the productive sectors of the states of Jalisco, Oaxaca and Yucatan) (GIZ, 2021; Secretariat of Agriculture and Rural Development, 2017a).

To conclude, although the strategies employed in most of the cases studied can be considered robust in terms of their overall environmental scope, many could benefit from the design and implementation of strategic systemic interventions (e.g. policies, planning, regulation, institutional strengthening) combined with actions on the ground that generate specific biodiversity benefits, while promoting the economic and social sustainability of the inhabitants of each corresponding territory. From this perspective, it is crucial that the actions generated emphasize the impact and contribution of biodiversity mainstreaming in the productive, economic and financial sectors in order to promote income generating, employment and growth opportunities (for example, in terms of savings by reducing or eliminating the use of agrochemicals through the application of agroecological practices for soil management and pest control). Such actions may serve to give prominence and priority to biodiversity-related initiatives and projects, making the multiplication and upscaling of such initiatives more attractive to target sectors and helping to stimulate greater political will and support.

H. Challenges in communicating and understanding the value of biodiversity to different sectors and to society

The current design of governance, institutions and policies rarely takes into account the notion of the multiple values of nature and its diverse benefits for people (IPBES, 2018b). This holds true despite compelling scientific efforts that clearly and convincingly show the contribution of biodiversity to economic development, to people and all other systems. Inattention to this issue has been identified by multiple stakeholders interviewed in the initiatives implemented in this study as one of the main challenges facing biodiversity mainstreaming in other sectors (for example, given the lack of socioeconomic evidence of the benefits of implementing practices that incorporate biodiversity criteria in the agricultural sector, producers and those who promote such practices do not recognize the benefits associated with sustainable practices).

As previously noted in section 4.1, analysis of the initiatives explored in this document also reveals the challenge posed by the paucity of knowledge in other sectors about the value and contribution of biodiversity to the development of the sectors and the territories examined in the cases, as well as their inhabitants. It also underscores the risks associated with biodiversity loss for human well-being and the viability of their economic and productive activities.

The *Insurance for the Protection of Reefs and Beaches* initiative in Mexico provides valuable insight to help address the challenge of a lack of awareness of the value and contribution of biodiversity to economic development. Although economic sectors such as tourism and infrastructure have been part of the problem, they can also be part of the solution. To this end, the case shows the importance of creating spaces for coordination between companies and public policy makers. It also highlights the difficulty in using different language for communications about climate change and biodiversity, for example, as this creates a false dichotomy in the narrative, such as their risk tolerance, perceptions of profitability, reputation, or contribution to the supply of inputs. The approach proposed was most effective at identifying key strategies, such as using beaches and coral reefs to holistically address the technical aspects of biodiversity and ecosystem services with the tourism and infrastructure sectors, thereby translating the economic importance of their conservation. To achieve this, it was necessary to invest effort in crafting arguments to support climate resilience and biodiversity and to work on formulating language to communicate with companies and decision makers in the tourism and infrastructure sectors where the concepts associated with risk or avoided costs have played a key role. In other words, the main opportunities for mainstreaming biodiversity emerged when economic sectors recognized clear and present risks for their investments.

However, while awareness of the value of biodiversity and natural infrastructure is changing business behaviour in certain locations or cases, clear metrics are still needed to further drive momentum to implement similar actions at the national and subnational[10] levels (Kirkman, 2020).

Given the territorial expanse and the time invested in its implementation, the *Management of the Biosphere Reserves of Sao Paulo* initiative in Brazil is also relevant to this discussion. This model illustrates three important themes relating to the challenges of communicating and understanding how the value of biodiversity is perceived differently in other sectors: the message, the subject of the interventions and the methods. In terms of the message, the important role of biosphere reserves in curbing biodiversity loss must be emphasized. While it has been a long-term process, the Mata Atlântica Biosphere Reserve was designated by decree in 1991 and currently covers about 89 million hectares. Protection has made it possible to find a meaningful and convincing way to discuss key challenges using terms that are easier to understand for the inhabitants and sectors that coexist in the reserve territory (for example, transformations in food production systems and their effects on forests and forests, water or biodiversity have been communicated in simple terms to all audiences).[11] Similarly, with regard to the interventions, the biosphere reserve model takes into account relevant objectives for present and future action in the other sectors. For example, in the case of the extractive and cement manufacturing sectors that operate in the reserve's territory, the components of nature and biodiversity that are relevant to the sector have been identified, as well as the positive or adverse effects of biodiversity viability or loss on their businesses. Furthermore, these sectors have worked on identifying the effects of their activities on ecosystems, providing an opportunity to take the appropriate action. Finally, with regard to the methods employed, the biosphere reserve has served as a space for coordination and coherence in the context of data generation, project implementation and the channelling of funding. While there is no specific method of organizing these elements and using them efficiently, this model has facilitated coordination on issues such as climate change, sustainable tourism or the gender perspective through multi-stakeholder platforms.[12] [13]

Overall, the initiatives studied offer important perspectives on why the countries in the region should seek to promote efforts to communicate and advocate for an understanding of the differing perspectives on the values of biological diversity to the productive and economic sectors. The following are some of the elements that can be identified: (i) sectors depend directly and indirectly on biological diversity and its numerous ecosystem services; (ii) productive and economic sectors, along with their respective businesses, are often responsible for damage to biological diversity; (iii) consumers are increasingly shifting toward sectors and companies that demonstrate concern for biodiversity, although this trend is still at incipient levels and (iv) it makes sense to promote efforts to mainstream biodiversity since doing so can open up new markets, generate business opportunities, and provide a competitive advantage to actors who maximize these opportunities.

To leverage these effects, it is important that countries in the region develop effective policy instruments, incentives, awareness-raising tools and information, long-term education efforts and other policies that help to recognize and value local and national biodiversity and its services. In formulating the approach to these instruments, it is also important to better understand the motivations of urban actors and the private sector, such as their risk tolerance, perceptions of profitability, reputation, or contribution to the supply of inputs.

[10] On the basis of an interview with relevant contributors to the Mexican case study "Seguro para la Conservación y la Restauración de Arrecifes y Playas" (V. Alvarado and G. Catacora-Vargas, interviewers).
[11] See Mata Atlântica Biosphere Reserve [online] https://rbma.org.br/n/.
[12] See Mata Atlântica Biosphere Reserve [online] https://rbma.org.br/n/.
[13] On the basis of an interview with relevant contributors to the Brazilian case study "Gestión de las Reservas de la Biósfera de São Paulo" (V. Alvarado and G. Catacora-Vargas, interviewers).

I. Lack of monitoring and evaluation initiatives or tools

OECD defines monitoring and evaluation as *the systematic collection and objective evaluation of data on specific indicators to provide information on the extent of progress and the achievement of the objectives of an ongoing project, programme, policy or intervention.* It also recognizes biodiversity mainstreaming as being essential to efforts to scale up and multiply best practices at the global level (OECD, 2018).

The study reveals three main challenges that affect all the cases, although in different ways, pertaining to monitoring and evaluation of biodiversity mainstreaming actions in the productive, economic and financial sectors. The first is the need to establish clear, sound and supported targets for reciprocal mainstreaming in the productive and economic sectors, based on those defined in the NBSAPs and other related instruments (such as national reports to the Convention on Biological Diversity that often provide a wealth of non-quantitative, non-comparable information), but in a manner that transcends these instruments, to have a considerable impact on other sectors. The second is related to the wide range of objectives and measurement tools or indicators used which, given the heterogeneous and specific characteristics of each initiative, have not been specifically designed to assess biodiversity mainstreaming actions. In the same vein, the third challenge lies in the need to develop specific biodiversity mainstreaming indicators to achieve these targets. These shortcomings have an adverse effect on (i) the effective and clear assessment of progress in interventions and (ii) the ability to communicate the scope of potential milestones and their associated contexts.

The only initiatives that provided evidence of monitoring and evaluation on biodiversity mainstreaming were *Mainstreaming Biodiversity into the Mexican Agricultural Sector* in Mexico and the *Wine, Climate Change and Biodiversity Programme* in Chile, which highlighted reporting elements (formats and/or processes) specific to biodiversity mainstreaming. However, they also identified the need to establish mechanisms for synthesis and analysis over time and to establish transparent and participatory processes for specific, clear and robust reporting and, in this way, foster opportunities for coordination, coherence and comparability with other intra- and inter-sectoral reporting processes.

V. Opportunities to support and scale up biodiversity mainstreaming

A. Transformative change for biodiversity within a framework of a just transition for all

UNEP (2016a), the Secretariat of the Convention on Biological Diversity (2020d), IPBES (IPBES, 2018a and 2020) and ECLAC (Gligo and others, 2020; ECLAC, 2020e) have noted the ecosystem degradation and health challenges caused by the COVID-19 pandemic in Latin America and the Caribbean and have called on the regional urgency of achieving transformative change for sustainability through dynamic and coordinated measures on several fronts (the environmental big push, so termed by ECLAC), with biodiversity mainstreaming playing a fundamental role.

Most of the initiatives in the study did not reflect current considerations specifically focused on transformative change. However, information provided by various actors involved in the interventions, as well as other sources of evidence, reveal examples of progress and areas of opportunity that, if expanded, can support transformative change. These observations offer a solid basis for reflection on opportunities to meet the associated challenges and advance biodiversity mainstreaming as a key element in achieving regional and national targets.

Table 7 presents the findings of a review of each of the cases studied through an empirical, qualitative assessment of the six principles of transformative change utilized in a European Union exercise carried out to identify ways to promote transformative change in the structure, targets and tools of the post-2020 GBF (European Commission, 2020). An additional principle relating to the rights of indigenous peoples and local communities was also included, as it was considered relevant for Latin America and the Caribbean. These principles can act as levers that generate new, high-level targets and facilitate the participation of new agents of change, while ensuring that pro-biodiversity action produces fair and sustainable outcomes for society.

Table 7
Qualitative evaluation of performance on the implementation of the principles of transformative change[a]

Principles of transformative change	Explanation		Performance/Initiative and country									
			Network of Responsible Marine Fisheries Areas and Marine Territories of Life	Works for Taxes Mechanism	Mainstreaming Biodiversity into the Mexican Agricultural Sector	Community Forest Management in the Mayan Biosphere Reserve	Wine, Climate Change and Biodiversity Programme	Quito Water Fund	Insurance for the Protection of Reefs and Beaches	Management of the Biosphere Reserves of Sao Paulo	Women and the Environment	Management and Exploitation Areas for Benthic Resources
			CR	PE	MX	GT	CL	EC	MX	BR	MX	CL
Address the main causes of biodiversity loss	The main direct and underlying causes are considered in context[b]	Underlying causes	◑	◔	◑	◑	◕	◑	◔	◔	◑	◑
		Direct causes	◕	◔	◑	◕	◕	◕	◑	◑	◑	◕
Take multiple pathways	Employ a variety of strategies compatible with biodiversity objectives (rather than single solutions or generalized design schemes)		●	◔	●	●	◕	●	◔	◕	◕	◑
Expand the scope of action	Cover multiple areas of the economy and society, rather than remaining limited to the traditional environmental sectors		◕	◔	◕	◕	◕	●	◑	◕	◕	◑
Generate multidimensional benefits	Attain ambitious biodiversity targets and other social and economic objectives		◕	◔	◕	●	◑	●	◔	◕	●	◕
Design inclusive, results-driven processes	Resolve disputes through the use of inclusive spaces and processes to promote dialogue and the search for consensus-based solutions		◕	◔	◕	◕	◑	◕	◔	◑	●	◕
Adopt a proactive approach to addressing resistance	Overcome resistance to change by incorporating just transitions from the design stage and eliminate interest in maintaining the status quo		◕	◑	◕	◕	●	◕	◑	◑	◕	◕
Respecting the rights of indigenous peoples and local communities	Fully integrate the rights of indigenous peoples and local communities and recognize their contributions		◑	○	◑	◑	◔	◑	○	◔	◑	◔

○ No activity ◔ Initial ◔ Low ◑ Medium ◕ Advanced ● Very advanced

Source: Prepared by the authors, on the basis of Bulkeley, H. and others (2020), Moving Towards Transformative Change for Biodiversity: Harnessing the Potential of the Post-2020 Global Biodiversity Framework, Wallinford, 2020.

[a] The qualitative evaluation of performance is determined by the authors, based on analysis of desk research and interviews with relevant stakeholders in each initiative.

[b] The direct drivers of biodiversity loss as identified by IPBES are (1) land-use change; (2) Overexploitation; (3) Climate change; (4) Pollution; and (5) Invasive species. It also identifies a series of underlying causes that result in such drivers: (a) production and consumption habits; (b) human population dynamics and trends; (c) trade; (d) technological innovations; and (e) governance systems, from local to global.

In general, taking multiple paths, expanding the scope of action, generating multidimensional benefits, and developing proactive strategies against resistance to change are the principles applied in the largest number of cases (7 of 10), demonstrating advanced and very advanced levels of progress.

Of these principles, the first two (taking multiple paths, expanding the scope of action) are closely linked to the adaptive processes that the actors involved have had to carry out in response to the obstacles and challenges encountered in the implementation of their actions. In other words, the actions were not originally designed with those principles in mind. With respect to the generation of co-benefits, this principle has been highlighted by the actors interviewed as one of the elements with the greatest potential to encourage the proactive participation of relevant stakeholders in the other sectors. However, although some of the multidimensional benefits (sometimes also called co-benefits) had been accounted for since the design stage, the greatest outcomes did not result from the original design and, in some cases, were not identified until the project was under way. Regarding the last principle (developing proactive strategies against resistance to change), it is important to highlight its dependence on the individual leadership, time circumstances and enabling conditions (institutional, legal, budgetary and even psychological), which influence its viability and implementation.

It should be noted that almost all the cases (9 out of 10) have implemented actions that address some of the underlying causes of biodiversity loss, particularly those associated with governance, accountability and consumption. While almost all cases display low to medium performance —with only one case showing advanced levels of achievement in the manufacturing sector— the evidence of successful implementation of actions addressing these causes is remarkable given their potential for facilitating transformation of the other sectors.

Respect for the rights of indigenous peoples and local communities is the principle with the second largest number of actions taken on cases (8 out of 10), albeit having achieved medium to low levels of progress, and the remaining 2 cases at incipient stages of implementation. It is paradoxical that although the region is one of the regions with the highest levels of ethnic and cultural diversity, there has been little change regarding integration of the rights of indigenous peoples and the communities that inhabit the territories featured in the cases.

B. The new post-COVID-19 social contract

According to OECD, in 2020, the coronavirus pandemic (COVID-19) triggered an unprecedented economic and social crisis worldwide, with global GDP shrinking by 4.5% and unemployment estimated at 9.4% by the end of 2020 (OECD, 2020b and 2020c). ECLAC reported an historic contraction of regional GDP, estimated at 6.8%, in the same year (ECLAC, 2020a). This situation prompted a series of emergency measures by governments in the region to address the immediate challenges from a macroeconomic and labour perspective, focusing predominantly on the agendas and sectors directly associated with those challenges (Weller and others, 2020).

IPBES published a report on the pandemic (IPBES, 2020), making an urgent appeal to tackle the risk factors underlying the emergence of future pandemics related to biodiversity degradation and loss, including deforestation and wildlife trade. Radical change is needed to shift from a reactive to a proactive approach that integrates the conservation and sustainable use of biodiversity as one of the pillars of pandemic recovery and the prevention of future pandemics.

Against this backdrop, the United Nations General Assembly has called for action at the highest levels (Secretariat of the Convention on Biological Diversity, 2020c), highlighting the urgency and opportunity to launch natural recovery efforts as a key component of the drive to achieve a fair and sustainable recovery from the COVID-19 pandemic and move toward a new economic and social paradigm that reflects the value of natural heritage (United Nations, 2020).

Throughout this study, interviewees mentioned multiple impacts that made it possible to qualitatively identify the ways in which all the interventions analysed have been affected to varying degrees by the health and economic crises precipitated by the COVID-19 pandemic. The breadth of situations ranges from budget cuts to changing market dynamics, loss of jobs (permanent and temporary, linked to conservation, restoration, monitoring, capacity development, among others), relaxation of environmental regulatory compliance, budgetary prioritization of sectors with a substantial ecological footprint (such as agriculture or industry), establishment of economic incentives that are detrimental to biodiversity, and other effects. These measures have adversely affected the feasibility and impact of interventions, commensurate with the scope and resilience of each initiative. All these elements converge with the repercussions of COVID-19 on natural resources in Latin America and the Caribbean, as identified by ECLAC (ECLAC, 2020e).

Still, some interviewees highlighted opportunities arising from efforts to contend with the COVID-19 pandemic. Such is the case with the *Marine Areas for Responsible Fishing and Marine Territories of Life Network* in Costa Rica. Its associative and participatory community model, in place for more than 20 years, has demonstrated the resilience of the network and its members in the face of economic, financial and employment challenges caused by the pandemic. This is the result of previous efforts by the same network to, for example, defend the rights of its members, build their capacities, strengthen and develop the self-esteem of its members or collective work. In this way, the pandemic has made it possible to activate the network's response capacity and uncover opportunities for innovation. In light of the network's dependence on tourism —and the collapse due to the health crisis of its productive activities and the breakdown of the "normal" marketing chain for fish products caused by the stoppage of economic activities— a solidarity fund was established using the cooperatives' resources to finance actions aimed at opening up new market chains and enhancing the value-added of these products. These actions were met with a positive response in terms of marketing, a return to communities and a drive to promote fair, gender-focused work.[14]

The *Women and the Environment* initiative in Mexico created opportunities at the stage of the COVID-19 pandemic for interaction between the communities involved in the project, actors in the scientific sector focused on developing biotechnological solutions (in terms of health, based on the region's soil biome) and the government environmental institutions to develop an innovative governance process aimed at generating prior informed consent protocols for soil sampling, capacity-building of local stakeholders and the establishment of mechanisms to ensure the fair distribution of the benefits derived from products with the potential to address health issues.[15]

Yet, once again, information on the impact of the pandemic on biodiversity and ecosystem services is scarce. It is, therefore, important that Latin American and Caribbean countries include the potential of biodiversity mainstreaming in their recovery strategy, through research on existing and potential initiatives, by adopting a reciprocal mainstreaming approach to incorporate development and health priorities into biodiversity strategies and vice versa. This strategy should include the following actions: (i) analyse the pandemic's impact on biodiversity; (ii) identify best practices; (iii) set targets for the design and implementation of incentives; (iv) assess the impacts of recovery measures and (v) stimulate investment geared towards promoting the conservation, restoration and sustainable use of biodiversity with a focus on employment and development. Table 8 summarizes some of the most relevant opportunities identified for this purpose.

[14] On the basis of an interview with relevant contributors to the Costa Rican case study "Marine Responsible Fishing Areas and Marine Territories of Life Network" (V. Alvarado and G. Catacora-Vargas, interviewers).

[15] On the basis of an interview with relevant contributors to the Mexican case study "Mujeres y ambiente" (V. Alvarado and G. Catacora-Vargas, interviewers).

Table 8
Opportunities for mainstreaming biodiversity in post-COVID-19 recovery efforts

Opportunities	Tools and approaches
Analyse the pandemic's impact on biodiversity	- Adapt educational, scientific and capacity-building strategies to the circumstances - Build awareness of the linkages between biodiversity loss triggered by the global health and environmental crisis, food security and human well-being - Generate data on the connection between health and biodiversity - Prepare scenarios identifying the costs and associated risks for the productive sectors of maintaining the status quo - Facilitate coordination among the mainstreaming components in the context of fighting hunger and poverty, climate change and biodiversity
Develop objectives for the design and implementation of incentives	- Work towards a common vision by collaborating with the ministries responsible for planning and the national and/or subnational budget in terms of health, food security and biodiversity - Realign economic incentives - Include sustainability criteria in the supply and value chains of other sectors (e.g., green procurement, biodiversity-focused typologies and taxonomies, criminalization of unsustainable practices, design and implementation of carbon taxes) - Adopt the One Health approach[a]
Assess the impact of recovery measures	- Integrate human health into the interventions designed/programmed for each initiative (e.g. in actions targeting conservation, ecological restoration, climate adaptation, environmental service provision) - Strengthen institutional capacities to better respond to current, medium- and long-term disruption
Promote investment in the conservation, restoration and sustainable use of biodiversity with a focus on employment and development	- Develop geospatial databases of biodiversity and its associated ecosystem services in the region to assist with alignment of decision making and engagement with other sectors and civil society - Build communication and knowledge generation strategies that highlight the value of the relationship between gender and value chains - Invest seed capital in socio-technological innovation initiatives to promote community self-organization processes linked to the sustainable use of biodiversity (e.g. to improve the traceability of fish products)
Develop new partnerships with the health sector where possible	- Strengthen the organization and promotion of networks to boost the impact of public policies - Jointly promote policies, standards, tools and solutions - Create collaborative, coordinated platforms for education and capacity-building

Source: Prepared by the authors, on the basis of Secretariat of the Convention on Biological Diversity, "Discussion note for the special virtual session on biodiversity, One Health and the response to COVID-19. Note by the Executive Secretary", Geneva, 2020 [online] https://www.cbd.int/doc/c/44f2/38b3/cf38b99f5527f600c19e3c09/sbstta-sbi-ss-02-02-en.pdf; Global Biodiversity Outlook 5, Montreal, 2020; Organisation for Economic Co-operation and Development (OECD), "Biodiversity and the economic response to COVID-19: ensuring a green and resilient recovery", OECD Policy Responses to Coronavirus (COVID-19), Paris, 2020; World Economic Forum (WEF), The Future of Nature and Business, Cologny, 2020; R. Corlett and others, "Impacts of the coronavirus pandemic on biodiversity conservation", Biological Conservation, vol. 246, Amsterdam, Elsevier, 2020; and interviews with relevant contributors to the case studies.
[a] The Secretariat of the Convention on Biological Diversity (2017) provides guidance on implementation.

C. Development cooperation and biodiversity mainstreaming

Development cooperation (including regional, bilateral and national cooperation) is one of the key elements of almost all the initiatives studied. It involves a broad and diversified array of tools, financing instruments and programmes, including interventions from other sectors associated with the environment and biodiversity. While this document does not include an analysis of cooperation mechanisms in the initiatives studied, analysis of the case studies provides valuable information about potential opportunities for cooperation such as the following:

- Support from cooperation agencies, technical assistance mechanisms and international organizations has been indispensable for almost all the initiatives studied. This collaboration has mainly targeted regional and local challenges that are not necessarily linked to biodiversity or were not initially aligned with biodiversity-related interests or priorities —in terms of their design and planning— although they relate to issues and sectors associated with nature conservation and ecosystem services. Designing and including specific biodiversity-related elements in interventions represents an area of opportunity to facilitate mainstreaming in the target sectors and to broaden the scope of cooperation.
- There is no systematized strategy or method for the promotion, implementation, multiplication and scale-up of cooperation and/or assistance programmes to strengthen biodiversity mainstreaming in the productive, economic and financial sectors studied.
- There is a need for more effective coordination and collaboration between cooperation and assistance agencies and organizations operating in Latin America and the Caribbean.

D. Mobilization of public and private resources

The fifth edition of the Global Biodiversity Outlook recognized the global failure to achieve key resource mobilization targets (Aichi Target 20) for effectively implementing the Strategic Plan for Biodiversity 2011–2020 and phasing out or reforming subsidies and other incentives that may be harmful for biodiversity, as well as to create positive incentives for its conservation and sustainable use (Secretariat of the Convention on Biological Diversity, 2020e). In this regard, the most recent IPBES and IPCC reports have made important contributions to understanding the urgency of sensitizing the global community to the pressing need to implement effective actions aimed at closing the resource gap, which continues to hamper efforts to achieve global transformative change.

Experts have identified biodiversity mainstreaming as a crucial and fundamental element in mobilizing resources for implementation of the post-2020 GBF goals and objectives (Secretariat of the Convention on Biological Diversity, 2020f; A. Seidl and others, 2020). This has also been recognized by major global funding and resource mobilization efforts, including the UNDP-BIOFIN initiative[16] and the GEF.

The *Works for Tax Mechanism* in Peru is regarded as an innovative model with considerable potential for expanding access to public and private financing for ecosystem recovery and the sustainable use of biodiversity. This mechanism allows private companies (individually or in consortium) to finance, implement and maintain public investment projects by channelling financial resources amounting to up to 50% of their income tax per year, fast-tracking investment in infrastructure works that elevate living conditions, including eligibility for green infrastructure works. Its design and implementation stem from the collaboration between UNDP-BIOFIN in Peru and the Ministries of Finance and Environment, along with the participation of subnational and local governments, as well as the private sector acting as the main driving force, with more than 30 private companies and consortia. This model has been identified by BIOFIN as an instrument with potential for substantial impact on biodiversity and a high probability of successful implementation.

The following represent some contributions of the Works for Taxes Mechanism to biodiversity mainstreaming efforts: (i) the establishment of guidelines for the development of public investment projects in biological diversity; (ii) the design of biodiversity-specific typologies and taxonomies in public investment projects and (iii) the identification of environmental projects for public-private partnerships.

[16] The BIOFIN initiative promotes national platforms and regional and global dialogue to empower countries to rapidly reduce their financial need and to ensure that achievement of biodiversity objectives is no longer hampered by a systemic lack of investment. It promotes tools and instruments that leverage available resources, reallocating them from areas where they cause harm to areas where they contribute to biodiversity and its services, thus reducing the need for future or new investments. BIOFIN is currently active in 36 countries, 10 of which are in Latin America and the Caribbean (Belize, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Mexico and Peru).

Analysis of more than 50,000 national projects reveals that BIOFIN has generated a portfolio of just over 650 potential projects worth close to US$ 1.5 billion). However, although the relevant legislation has been in place for several years and the mechanism is very well received by companies, implementation of biodiversity actions is still at an incipient stage. The greatest effort is still focused on infrastructure projects in other sectors, such as health and education owing to the lack of recognition of the value of biodiversity and ecosystem services by regional and local governments, which request or approve projects in conjunction with the national government. The persistence of this decision-making approach represents the most significant challenge to attracting interest and investment in projects aimed at mainstreaming biodiversity in the other sectors (Ministry of the Environment, 2016; BIOFIN, 2019).[17]

In addition to its innovative public-private participation model, another important contribution of this initiative consists in the development of taxonomies and typologies for biodiversity, which can play a vital role in the design of biodiversity mainstreaming programmes and projects and the financing of their implementation. In particular, they could help channel investments —existing and potential— towards the desired goals (such as the SDGs or the new post-2020 Global Biodiversity Framework targets). For this purpose, for example, the Works for Taxes Mechanism highlights the potential of the finance sector to develop taxonomies and biodiversity-related typologies, as well as the role that the UNDP-BIOFIN initiative can play in this sector and —given the traction and influence of the finance sector— many other productive and economic sectors in the region.

The initiatives studied also demonstrate that in the region, national authorities are often responsible for allocating budgets and prioritizing projects. This partly explains why subnational and local authorities do not have access to larger financial resources to allocate to biodiversity initiatives, let alone to coordinate with other levels of government. It is in this space that biodiversity mainstreaming has been identified as a key and fundamental element for scaling up biodiversity funding through the horizontal and vertical integration of actions that contribute to implementation of the post-2020 Global Biodiversity Framework. Working directly with the ministries of finance and planning on mechanisms to close the funding gap offers a direct and effective way to ensure coordination and collaboration at all levels. As resource mobilization and the closure of financial gaps are among the main topics of discussion in the post-2020 Global Biodiversity Framework negotiations, it would be advisable to consider the BIOFIN experience and expand it to other countries in the region.

Another example of an innovative mechanism for biodiversity-focused resource mobilization in the region is the *Insurance for the Protection of Reefs and Beaches* initiative in Mexico. This initiative emerged from joint work between the subnational government of Quintana Roo state, the international association The Nature Conservancy and the tourism sector in the state. Covering 150 kilometres of coastal ecosystems, the insurance model protects reefs and beaches under a policy based on wind intensity parameters in hurricanes and other similar weather events.[18] This model was successfully tested after hurricane Delta in October 2020, whereby winds registering over 100 knots activated the insurance, prompting the release of nearly US$ 800,000 to the Trust for the Integrated Management of the Coastal Zone, Social Development, and Security for the State of Quintana Roo, Mexico (the investment for the insurance contract cost the trust approximately US$ 250,000). This compensation will contribute to the implementation of urgent actions to restore the natural systems that were damaged by the hurricane.

Both examples, along with elements noted in the other cases in the study, help to develop recommendations to boost resource mobilization in the region:

(i) Mobilize resources from a range of other sources in addition to the environmental budgets themselves. Highlight the dependence on financing from sectors linked to environmental agendas in almost all initiatives. Innovation plays a key role in this.

[17] See Alliance for Works for Taxes (ALOXI) [online] https://www.aloxi.org.pe/. On the basis of an interview with relevant contributors to the Peruvian case study "Obras por Impuestos en Perú" (V. Alvarado and G. Catacora-Vargas, interviewers).

[18] The higher the speed, the greater the damage, therefore, the greater the insurance compensation: moderate damage from 100 knots to less than 130 = 40% of maximum pay out, severe damage from 130 knots to less than 160 = 80% of maximum pay out, and catastrophic damage with over 160 knots = 100% of maximum pay out.

(ii) Recognize and harness the potential of subnational governments. Often, the resources required to close financial gaps to facilitate effective biodiversity mainstreaming can be found within local budgets, for example, through the promotion of public-private partnerships.

(iii) Increase knowledge of private sector potential for resource mobilization. In all cases, these data are either non-existent or have not been duly recorded and verified, thus, it is assumed that they are undervalued or not even considered.

(iv) Recognize the importance of engaging the ministries of finance and planning from the early stages of the design and planning of activities as a key factor in boosting resource mobilization, and thus, having a greater impact.

(v) Involve public and private decision makers, employing a bottom-up approach that reflects national circumstances and conditions from a local perspective, recognizing the role local communities and indigenous peoples can play in such processes by identifying potentially viable solutions for biodiversity mainstreaming.

E. Policy mix for biodiversity mainstreaming

IPBES has highlighted the immense variation in the nature and trajectories of the transformations needed to re-establish balance in natural systems, depending on their context, and the equally variable challenges countries face, depending on their level of development. It also stresses that risks related to the inevitable uncertainties and complexities of sustainability-focused transformations can be reduced through participatory, inclusive, substantiated and adaptive governance approaches, which require a strategic combination of appropriate, site-specific policy instruments (IPBES, 2019). The case study that complements this paper uses this conceptual framework for the in-depth analysis of innovative governance approaches (Catacora and others, 2022).

All the initiatives studied have employed a policy mix to achieve their specific goals at different levels and stages of their processes (see table 5). Whether from the design stage, as in the cases of *Mainstreaming Biodiversity into the Mexican Agricultural Sector*, the *Wine, Climate Change and Biodiversity Programme* in Chile, *Insurance for the Protection of Reefs and Beaches* in Mexico and the *Quito Water Fund* in Ecuador, or as a consequence of the interventions as in the cases of *Management of the Biosphere Reserves of Sao Paulo*, *Community Forest Management in the Mayan Biosphere Reserve* in Guatemala, *Management and Exploitation Areas for Benthic Resources* in Chile or the *Network of Responsible Marine Fishing Areas and Marine Territories of Life* in Costa Rica, the initiatives have produced outcomes based on a combination of policies from myriad perspectives, such as governance elements, natural resource management, community approaches, territorial planning or the application of the legal framework, resource mobilization, infrastructure planning, private sector mobilization, transparency and accountability, among others.

In all the cases cited, it is evident that biodiversity mainstreaming can be incorporated into decision making in the productive, economic and financial sectors if a holistic approach is adopted. This approach includes financial elements (e.g., national or subnational public budgets), legislative and fiscal policy (e.g. financial codes or sectoral regulations) and public and private procurement and public expenditure (e.g. in the area of infrastructure or services), among other areas. While the implementation of isolated policy measures has sometimes worked, the appropriate policy response has almost always required a combination of flexible, smart policies. Typically, this type of policy mix has been implemented gradually, starting with the most feasible opportunities.

This holistic approach is important given that one of the ways to achieve transformative change is to change the policies and regulations at a regional, national and local scale. However, outcomes derived from change of this scope are difficult to assess, since reform is generally complex, widely dispersed and

time consuming. Yet, based on the lessons learned from the case studies, it is clear that employing a mix of policies or policy packages and tools (from design to implementation and evaluation), can trigger greater positive impacts in the short, medium and long term, thus contributing significantly to the advancement of regional and national goals that support the Convention on Biological Diversity 2050 Vision. Similarly, this approach represents a major opportunity to promote the intra- and intersectoral coordination and coherence required in the post-COVID-19 pandemic phase, bearing in mind the uncertainties associated with future socioeconomic conditions.

F. Integration of the climate and biodiversity agendas

IPBES and IPCC have identified climate change and biodiversity loss as two of the most important challenges and risks facing humanity, pointing out that climate and biodiversity are interconnected in an interdependent feedback loop (e.g., climate change exacerbates risks to biodiversity and natural and managed habitats, while natural and managed ecosystems and their biodiversity play a key role in greenhouse gas flows, as well as in supporting climate adaptation (IPBES/IPCC, 2021).

The United Nations Environmental Management Group[19] (EMG, 2021) also recognizes the close relationship between biodiversity and frameworks and agendas focused on climate mitigation and adaptation and disaster and pollution reduction, stressing the need for reciprocal mainstreaming of factors related to biodiversity and climate change, particularly through conservation and sustainable use of ecosystems.

Two cases studied offer valuable insight into the opportunities to be derived from coordination between the climate and biodiversity agendas. The first case, the *Wine, Climate Change and Biodiversity Programme* in Chile, recognizes the potential of the climate agenda to facilitate interventions in the conservation and sustainable use of biodiversity. Actions in this project were designed based on the acquisition of financing to develop risk maps for the participating wine companies in order to plan long-term productive actions focused on climate adaptation and, through them, to develop proposals for integrated ecosystem and landscape management. In turn, the projects include the study of species behaviour and territorial planning measures to conserve the forest and sclerophyll vegetation of central Chile, along with the biodiversity residing in it. The wine companies' existing arsenal of resources includes elements of nature-based solutions or ecosystem-based adaptation, the product of a global effort to achieve sustainable production that has taken hold in the sector, resulting in corporate decisions that adopt a climate and conservation approach to Mediterranean ecosystems.

The second example is the *Quito Water Fund* in Ecuador. Unlike the immediately preceding initiative, this mechanism adapted and broadened its field of action to include a wide-ranging climate-related agenda through which it channels resources into programmes, strategies, agreements and projects related to: ecological conservation and restoration, governance, community development, environmental education research, outreach and awareness-raising. Specifically, the fund implements ecosystem-based approaches, such as the restoration and conservation of high Andean peatlands or wetlands, the benefits of which have enabled greater regional integration, helping to build a case against conventional grey infrastructure-based solutions. In addition, it coordinates efforts with the Consortium for the Sustainable Development of the Andean Ecoregion (CONDESAN) through the Regional Initiative for Hydrological Monitoring of Andean Ecosystems (iMHEA). This initiative collects and shares hydrometeorological data, which supports adaptive decision-making in view of the impacts of climate change on the water resources of the Andes. This initiative is composed of actors from Bolivia, Colombia, Ecuador and Peru.

[19] The United Nations Environment Management Group (EMG) is a system-wide coordinating body on environment and human settlements. It was established in 2001 pursuant to General Assembly resolution 53/242 of 28 July 1999. EMG members are composed of 51 specialized agencies, funds and programmes of the United Nations, including the secretariats of multilateral environmental agreements (EMG, 2021).

These two initiatives recognize that biodiversity loss and climate change, together with land degradation and desertification, are challenges of similar magnitude and urgency and are fundamentally interrelated. They must, therefore, be addressed together, from the highest global levels through the respective conventions —the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa— to the regional, national and local levels as part of a broader, more inclusive ecological recovery. There are multiple tools available to accomplish these goals that can serve as a basis for the design and implementation of existing and new initiatives in the region (Secretariat of the Convention on Biological Diversity, 2021c; OECD, 2017).

G. Promotion of effective synergies between different biodiversity conventions

In recent decades, countries have negotiated and agreed to abide by a number of biodiversity-related conventions and other multilateral environmental agreements (United Nations Framework Convention on Climate Change, Convention to Combat Desertification, Ramsar Convention, Convention on International Trade in Endangered Species of Wild Fauna and Flora, among others). Although treaties are still generally implemented in isolation, in recent years, countries have begun to move towards a comprehensive governance approach that addresses the conservation and sustainable use of biodiversity and ecosystem services. However, as the number of obligations arising from these legal instruments has increased, concern has also increased about how to implement them effectively and consistently while avoiding duplication of efforts (UNEP, 2016a). Considerable effort has been made to improve alignment between biodiversity-related conventions and to identify and take advantage of opportunities for cooperation and coordination, primarily through the Convention on Biological Diversity and the United Nations Environment Programme.

While qualitative analysis of the initiatives in this study did not identify references to specific actions to build synergies among different biodiversity-related conventions, the exercise highlights some actions/opportunities:

- Gather validated, systematized and consolidated information that allows access to case studies, data and indicators and build capacity focused on implementing the actions necessary for the conservation and sustainable use of biodiversity in such a way that the various related conventions are highlighted. To this end, the region could develop a repository of biodiversity mainstreaming initiatives in Latin America and the Caribbean and curate and exchange the information and data generated. Implementation of this initiative can be bolstered at the regional, national and subnational levels through councils, agencies, permanent or regular consultative bodies and even suitably designed formal and/or informal forums, for example, the Forum of Ministers of Environment of Latin America and the Caribbean.
- These actions must consider the importance of having a platform for data and knowledge exchange about biodiversity and its mainstreaming in the productive, economic and financial sectors of the region, as mentioned in various case studies analysed. This type of platform can be developed within the framework of a South-South cooperative approach that establishes groups for liaison and coordination among biodiversity-related conventions at the national level to identify initiatives implemented and communicate their scope, and to take advantage of the work developed in the United Nations Environmental Management Group.

H. Dialogue and participation of subnational governments and local actors

All the stakeholders interviewed pointed out the urgent need to include or increase the participation of local and subnational governments in planning, budgeting and decision-making processes as they often function as natural "mainstreamers." They also stressed the need to eliminate silos in policy formulation (for example, relevant discussions often take place in different areas or at levels from which local governments and actors are generally disconnected).

The cases also highlight the important role played by empowering local communities and indigenous peoples to promote successful transformations that mainstream biodiversity and ecosystem services into governmental decision making, not only in the promotion of sustainable initiatives and/or projects in their territories, but also in the consideration of elements that prevent or mitigate the quantity and magnitude of possible adverse impacts on the environment. A detailed analysis of the role that participation plays in transformative governance is explored in the study carried out by ECLAC (Catacora-Vargas and others, 2022) that complements this study.

There are multiple opportunities to foster dialogue and participation and decision-making of local governments and actors, including the following:

- Respondents in the cases *Mainstreaming Biodiversity into the Mexican Agricultural Sector* and *Works for Taxes Mechanism* in Peru noted that there is a great need to build capacity about biodiversity mainstreaming (understanding, knowledge, skills and experience) within the government and among actors at the subnational and local levels.
- Through the cases *Network of Sustainable Fisheries Areas and Marine Territories of Life* in Costa Rica and the *Quito Water Fund* in Ecuador, *Women and the Environment* in Mexico and the *Community Forest Management of the Mayan Biosphere Reserve* in Guatemala, it is clear that it is imperative to take advantage of the linkages between mainstreaming biological diversity and the many urgent demands that "compete" with biodiversity mainstreaming (for example, combating poverty, education, food security, or health) and, in doing so, create the conditions to address local challenges, such as resource mobilization and the availability of experts in the field. In these cases, the participatory approach to implementation included activities that seek to improve employment outcomes, stimulate and promote fair economic development, and increase social participation, with an intergenerational and gender-based focus.
- The post-2020 GBF and the national biodiversity strategies and action plans that will support it must include objectives and targets that help governments and local actors to align their activities and goals in a more coordinated and effective manner than is currently the case.[20]

I. Enabling conditions for biodiversity mainstreaming

Table 9 provides a qualitative analysis of some elements identified that could be leveraged to facilitate efficient and effective biodiversity mainstreaming in the cases studied. Overall, the most progress was observed in the area of designing and implementing policies geared towards incorporating biodiversity into the productive sectors. It is also the only element that is not rated lower than "average progress" in all the cases studied. However, none of the cases has fulfilled its implementation potential. Some examples of promising actions undertaken are the combination of sectoral policies and the implementation of territorial approaches as well as other approaches based on the rights of local communities and indigenous peoples.

[20] Consider the contributions of the Regions4 organizations (https://www.regions4.org), Advisory Committee on Subnational Governments and Biodiversity (AC SNG) [online] (https://www.regions4.org/project/advisory-committee-on-subnational-governments-and-biodiversity/; and Group of Leading Subnational Governments toward Aichi Biodiversity Targets (GoLS), as well as the Edinburgh Declaration on post-2020 global biodiversity framework (Government of Scotland, 2021).

The second element demonstrating significant cross-cutting progress is the active participation of actors. Given the multi-functional characteristics of the cases studied and the different scales at which they have been implemented, multi-stakeholder and multi-scale governance is a key factor in the management of initiatives. Almost all have achieved advanced levels of progress relating to the development of pathways for free and informed stakeholder participation using of a variety of governance and information systems. However, there is still a great need to address power imbalances among the actors involved and to shift to results-based models, such as the SDGs or those established by the Convention on Biological Diversity, which would facilitate further progress towards alignment with local contexts and needs.

Paradoxically, progress made in policy development has not moved beyond strengthening environmental regulations or standards and their application to efforts to mainstream biodiversity into the sectors, which hampers progress in each case's ability to produce transformative change and address the direct and underlying causes of biodiversity loss. In some cases, policy developments have occurred in response to the emergence of social or stakeholder initiatives (e.g. certification standards or the regulation of incentives).

There is also evidence of progress in some cases (6 out of 10), classified as mid-level progress in terms of transforming institutional arrangements, understood as formal and informal organizational structures and guidelines —including routines and habits—, to complement efforts to manage biodiversity mainstreaming actions. Despite the progress made, the power disparity between sectors and institutions remains one of the most important gaps to be addressed in all the cases. This situation is compounded by the vulnerability of progress to political and governmental fluctuations.

With the exception of those initiatives that have been designed and implemented with the goal of channelling specific funding to the protection of biodiversity and/or ecosystem services, the cases have demonstrated nascent progress in terms of generating mechanisms to mobilize, allocate and secure financial resources for their activities. The vulnerability that this implies, along with the dependence on official assistance and/or development cooperation, creates significant challenges for continuity of the initiatives. Only in two cases can it be reliably said that advanced levels of progress have been achieved. Capacity-building and the adoption of measures to promote investment will be key to the future of the models developed. However, despite the meagre external budget allocated to the initiatives, they have strengthened and grown over the years, which supports the notion that the sustainable use of resources generates economic benefits for its stakeholders.

Among the elements showing the least progress in almost all the cases studied are indicator development and the need for financing, which may be related in that initiatives that do not receive robust investment tend to be overlooked in measurement policies. Indicator development is particularly relevant in assessing the status and evolution of biodiversity mainstreaming, the effectiveness of related measures and programmes in each initiative, or the level of resource mobilization to close the financing gap. These indicators should transcend standard metrics to incorporate elements that motivate decision makers and relevant stakeholders in the productive, economic and financial sectors to get involved and, in so doing, contribute to regional transformative change.

Lastly, productive diversification is identified as an especially valuable element of mainstreaming biodiversity, creating the conditions for resilience through benefits such as income recovery or growth, behavioural change, food self-sufficiency, or solidarity and sustainability in the pursuit of well-being, particularly for indigenous communities, women's groups and rural families in a number of the cases.

Table 9
Elements of biodiversity mainstreaming in the initiatives included in the study

Elements identified in the initiatives		Explanation	Initiative and country									
			Network of Responsible Marine Fisheries Areas and Marine Territories of Life	Works for Taxes Mechanism	Mainstreaming Biodiversity into the Mexican Agricultural Sector	Community Forest Management in the Mayan Biosphere Reserve	Wine, Climate Change and Biodiversity Programme	Quito Water Fund	Insurance for the Protection of Reefs and Beaches	Management of the Biosphere Reserves of Sao Paulo	Women and the Environment	Management and Exploitation Areas for Benthic Resources
			CR	PE	MX	GT	CL	EC	MX	BR	MX	CL
	Policies	Preparation of actions aimed at mainstreaming biodiversity into the analysis, evaluation and resolution of the specific problems encountered in the initiatives	◑	◑	◕	◕	◕	◕	◑	◕	◕	◕
	Regulations	Development or application of criteria or formulas to design a regulatory and structural framework for biodiversity-related actions undertaken in the initiatives	◑	◔	◔	◑	◔	◔	◔	◔	◑	◑
	Institutional architecture	Development or application of formal and informal guidelines (including organizational routines and customs) put in place to protect and mainstream biodiversity	◔	◑	◑	◑	◑	◑	◔	◕	◔	◑
	Budget	Development or application of instruments for the establishment of direct or indirect investment to protect mainstream biodiversity	◔	◔	◔	◔	◔	◕	●	◔	◔	◔
	Active multi-stakeholder participation	Development of tools and instruments for the free expression of the will and interests of the multiple actors involved in the initiatives	◕	◔	◕	◕	◕	◕	◔	◑	◕	◕
	Indicators	Development of metrics to assess the status and evolution of biodiversity mainstreaming, the effectiveness of measures and related programmes in each initiative	◔	◔	◔	◔	◕	◔	◔	◔	◔	◔
	Productive diversification	Development and integration of schemes and mechanisms focused on product diversification and the creation of innovative and sustainable value chains that help limit the impact on biodiversity	◑	○	◑	◕	◑	◑	◔	◑	◑	◑

○ No activity ◔ Initial ◔ Low ◑ Medium ◕ Advanced ● Very advanced

Source: Prepared by the authors.

VI. Key messages

This report analyses 10 cases of biodiversity mainstreaming in seven countries in the region. The cases all present paths to regional sustainability via its three dimensions —economic, social and environmental— by aligning productive and economic activities, reducing or mitigating their negative impacts, and multiplying the positive ones, so that ecosystems remain in good health and resistant to environmental fluctuations, thus ensuring the provision of essential services for human beings and for global ecosystems and species.

A. Make biodiversity clear

There is a very limited understanding of the effect of biodiversity loss on the productive, economic and financial sectors and the practical steps these sectors can take to prevent such loss. Among the main reasons for this is the scarcity of general knowledge among multiple relevant actors about *what biodiversity is* or *what constitutes biodiversity*, *why* it is associated with human welfare, *how much* or *how* it has been lost or degraded, and *how* its loss and degradation can be reversed, specifically through the productive, economic, and financial sectors. The outreach of verified, synthesized and contextualized or sector-focused information is essential to broaden knowledge about biodiversity and its impact on people's quality of life. Greater effort and prioritization are required to ensure effective understanding.

Biodiversity mainstreaming is a tool that helps to identify the risks of biodiversity loss for the economic, financial and productive sectors and to manage the various interests and priorities of these sectors in a reciprocal manner. In some of the cases studied, active participation by the various decision makers in these sectors in the analysis, design and development of innovative solutions based on science and knowledge —scientific and traditional— helped identify the interrelationship between biodiversity and the viability of economic, financial and productive activities. In addition, coordination with other relevant agendas, such as climate change or financial and market risk management, has made it possible to identify the impacts associated with nature loss and the assessment and communication of the associated risks. [Cases: WCCBP / QWF / IPRB / W&E]. At the same time, horizontal interactions and inclusive policies and standards have been used in all cases, with varying degrees of success.

Biodiversity mainstreaming in the productive, economic and financial sectors remains vulnerable to weak political will and commitment and a lack of long-term policies (beyond the governments in power), in terms of their design, financing and implementation, compromising the upscaling and multiplication of existing initiatives. Most cases demonstrate a heavy reliance on actors who are willing to carry out the necessary changes to the status quo and sustain the initiative over time. In this regard, the initiatives have failed to transform the functioning of the sectors.

The tendency to report mainly environmental benefits in projects while ignoring the social and economic achievements linked to biodiversity, weakens their perceived value and political weight in government decisions. There is an acute need for comprehensive reporting of information and the production of sound, transparent data on the direct and indirect benefits of biodiversity mainstreaming across sectors, for example, in terms of fair employment benefits, empowerment and inclusion, and economic benefits. This approach would have a positive impact on political decision making, which could enhance biodiversity mainstreaming in the region as it would no longer be perceived as spending or cutting into the profits of conventional, "business as usual" approaches. Biodiversity mainstreaming would then enable actors to leverage the momentum sparked by the post-2020 GBF and the post-COVID-19 recovery phase, triggering the implementation of employment-generating policies and blue and green jobs through just transitions, in light of the scale and nature of the necessary structural changes.

Coordination with other relevant agendas, for example in the areas of climate change, health security or financial and market risk management, has made it possible to identify and disseminate information on the impacts of nature loss. Mainstreaming biodiversity in other agendas and forums, such as the WTO and the risk analyses produced by the World Economic Forum or in terms of climate change, that link sectors such as private and development banking and the energy, infrastructure, risk management, manufacturing, or tourism sectors, has raised awareness among relevant actors for whom biodiversity was previously "invisible." [Cases: QWF / WCCBP / IPRB].

B. Mainstream biodiversity in the productive, economic and financial sectors to move towards social, environmental and economic sustainability

The Latin American and Caribbean region is a source of multiple positive experiences with mainstreaming biodiversity and ecosystem services in the productive, economic and financial sectors, demonstrating replicable and scalable alternative approaches that support a shift from the current productive paradigms towards nature-friendly development. While the processes involved in mainstreaming biodiversity and ecosystem services are at different stages of development in each case, it is possible to identify common elements that are useful in guiding, stimulating and strengthening the development of similar initiatives in the region. In this regard, it is important to support the recording, study and dissemination of regional best practices in biodiversity mainstreaming to support the transition from the current productive paradigms towards sustainability. [All cases].

Mainstreaming biodiversity and ecosystem services in the productive, economic and financial sectors has the potential to generate inclusive employment, particularly for women, indigenous peoples and local communities. The cases studied have shown evidence of very positive socioeconomic benefits, such as job creation, capacity-building to boost employability, increases in wages, the promotion of cultural changes relating to inclusiveness and sustainability, recognition of the rights of women and young people under a differentiated approach and of their contribution to the value chain of products, increased parity in decision-making, access to the natural resources in their environment, in addition to the promotion of better nutritional practices, the diversification of productive activities, and the reinvestment of income earned in community-based social benefits and infrastructure. In turn, at least half the case studies have pointed to the need for an employment impact assessment. [Cases: NMARFMTL / CFMMBR / WCCBP / QWF / IPRB / MEABR].

Biodiversity mainstreaming in the productive, economic and financial sectors has emerged as an innovative opportunity with considerable potential to support the recovery of ecosystems and the sustainable use of biodiversity in the region and opens up possibilities for access to public and private financing. The initiatives studied can serve as a reference for Latin America and the Caribbean and other regions, given their innovative approaches to the conservation and sustainable use of biodiversity. These approaches range from the implementation of the first insurance system to manage risks to ecosystems and the development of public investment projects with biodiversity-related typologies and taxonomies incorporated into public-private participation models, to opening up avenues for multi-stakeholder participation that include the ministries responsible for planning and budget allocation to establish financial funds, along with subnational and local governments and the private sector. [Cases: MBMAS/ QWF / WFT / IPRB].

Biodiversity mainstreaming facilitates the identification of points of entry for policies and tools geared towards achieving transformative change and helps contribute to the development of initiatives that stimulate political will and commitment to protecting natural heritage. Some points of entry to promote pro-biodiversity intra- and inter-institutional integration, cohesion and coordination are the following: conducting preliminary analyses, reducing conflicts and promoting peace, reducing poverty and promoting the inclusion of indigenous peoples and local communities, productive diversification and innovation, the generation of specific evidence on impacts or return on investment, the involvement of budget units in the ministries of planning and finance, the development of comprehensive socio-environmental impact assessments, public expenditure reviews and the formulation of indicators of change towards pro-biodiversity measures. Sparking interest in these measures by the private sector and/or the communities involved, as well as decision-making based on technical, scientific, and traditional knowledge, are examples of ways to create the conditions to stimulate political will and commitment. [Cases: WFT / MBMAS / W&E / WCCBP / QWF / IPRB / CFMMBR / MBRSP].

Biodiversity mainstreaming initiatives can be scaled up and multiplied through the establishment of public-private partnerships and the combination of intervention scales and implementation models (e.g., top-down and bottom-up). The initiatives studied have been implemented at different organizational scales and in widely diverse territories, promoting bottom-up, top-down and mixed approaches. Participants include indigenous peoples and local communities; academia; local, national and global NGOs; cooperation agencies and international institutions; companies; the financial sector; unions; the productive and conservation-focused government sectors; subnational governments; national governments and even religious groups. Evidently, there are no apparent impediments to promoting replication/adaptation on any scale and in any ecosystem or system of government [all cases]. It is important to acknowledge the key role of local approaches (bottom-up) and of public-private partnerships in scaling up and multiplying initiatives and achieving transformative change, as well as the importance of involvement at the highest organizational levels in the productive sectors to drive and maintain top-down transformation through policies, tools and instruments designed for that purpose. [Cases: NMARFMTL / MBMAS / WCCBP]. However, in some cases, the expansion of biodiversity mainstreaming initiatives has faced a number of financial, institutional, organizational and governance constraints that complicate scale-up of the initiatives, particularly when they are highly localized pilot experiences. Sustained support over time could help scale projects into comprehensive programmes. [Cases: IPRB / W&E].

The cases offer concrete knowledge of the possible implications of the transformative change model proposed by IPBES and the post-2020 GBF, which, if scaled up, can support the transition of the productive, economic and financial sectors in achieving regional goals. The cases also provide evidence of progress and achievements, in different areas and to varying degrees, in the principles of transformative change, particularly through the region's own vision that integrates human activities more harmoniously into nature, emphasizing sustainable use rather than restricted conservation efforts. The concept of taking multiple pathways that are compatible with biodiversity objectives requires a process of South-South and South-North learning that must be disseminated, taking into account among others: expanding its scope beyond traditional environmental issues to include economic and social

considerations; generating multidimensional social and economic benefits (often referred to as social and economic "co-benefits") through the diversification of actions; designing and implementing inclusive processes to address disagreements and disputes arising from the pressure for change; and adopting proactive strategies to combat efforts to maintain the status quo. It is important to establish linkages between the innumerable projects, policies and programmes in the region that share several common elements, despite not having been part of the design or concept of any of the cases studied, and will be strengthened by implementation of the GBF. [Cases: NMARFMTL / WFT / MBMAS / CFMMBR / WCCBP / QWF / IPRB / MBRSP / W&E / MEABR].

C. Transform institutions and actors

Mainstreaming biodiversity in the productive, economic and financial sectors opens up avenues for challenging the status quo in institutional settings and eliminating silos between sectors. All the cases implemented policies and/or tools to address inter- and intra-institutional coordination. Nonetheless, coordination is inadequate; there is considerable contradiction, dispersion, duplication, and misalignment; and significant challenges persist within sectors and in their interaction with other relevant areas to address the direct and indirect causes of biodiversity loss and strategies for managing it. In addition, in general, institutions lack short- or medium-term adaptive systems that allow them to incorporate, adapt and scale up or continue the best practices learned from the projects or initiatives they implement.

Capacity-building is a key element of the transition to sustainable development by actors, institutions, programmes and policies and can trigger behavioural change. The cases broadly illustrate three themes in which most progress has been made across the board: sustainable use, coordination with other sectors and international cooperation. Capacity-building also prompted significant progress in terms of behavioural changes, for example, with respect to women's empowerment; the inclusion of young people and older persons; valuing the contributions made by indigenous peoples and local communities; or the proactive participation of relevant actors in the productive and economic sectors. [Cases: NMARFMTL / WFT / MBMAS / CFMMBR / WCCBP / QWF / IPRB / MBRSP / W&E / MEABR].

The policy mix approach is a key tool for achieving biodiversity mainstreaming and transformative change in the region. All the cases studied have used a blend of policies to achieve their goals at different levels and stages of their interventions. The best practices learned cover issues relating to governance, natural resource management, community approaches, territorial planning or implementation of the legal framework, resource mobilization, infrastructure planning, private sector mobilization, transparency and accountability, among others. However, more needs to be done. Progress towards progressive structural change requires the implementation of a blend of measures and policies in key sectors in a coordinated and systematic manner (such as those based on ecosystems), which ECLAC has called the big push for sustainability (ECLAC, 2020a) [All cases].

The NBSAPs, and their associated instruments, should be designed and implemented in collaboration and coordination with the relevant stakeholders and ministries in the productive, economic and financial sectors. Institutional coordination mechanisms should have the highest priority and should be incorporated from the design stage (or earlier) in establishing new policies and programmes or in renewing existing ones. Notwithstanding the contribution of the cases to the necessary transformation of projects and programmes in the productive, economic and financial sectors in the region to reverse the loss and degradation of natural resources, most cases have not taken into account elements such as NBSAPs and other national biodiversity commitments during the planning and implementation of their actions. Thus, biodiversity policies and strategies tend to be secondary and disjointed considerations, or not viewed as a de facto element in most of the initiatives studied.

Biodiversity mainstreaming depends heavily on external financing and technical assistance. As noted previously, the development of actions specifically designed to build capacities in biodiversity mainstreaming in the productive, economic and financial sectors is in the incipient stages. This issue is

closely linked to challenges in the sectors themselves, highlighting the poor understanding of the role of biodiversity and its value, functions and services; the absence of properly structured assessments of training needs and priorities; the existence of large gaps in public financing and private investment and, therefore, a strong dependence on external financing or technical assistance. Universities, NGOs, and think tanks can play a significant role in capacity-building to help close these gaps. [All cases].

The development of terminologies and taxonomies bound by standards guided by the productive sector can offer significant potential for reciprocal mainstreaming in the design of programmes and policies and the financing of their actions in the region. For example, resource mobilization is made more effective by channelling and promoting potential investments, transforming incentives that are harmful to biodiversity into positive influences, developing positive incentives, prioritizing the initiatives over interventions in the other sectors or facilitating the monitoring and evaluation of their impacts and outcomes. [Cases: WFT / MBMAS / WCCBP / IPRB].

A synergistic approach to addressing climate- and biodiversity-related challenges generates co-benefits, additional trade-offs and interconnections with economic and social benefits that strengthen the adaptive capacities of the beneficiary communities and the institutions involved. In view of the distinct global shift towards increasing the synergies and linkages between the two agendas —as highlighted in the recent joint report between IPBES and IPCC— there is clear evidence of the potential of the climate agenda to pave the way for interventions focused on the conservation and sustainable use of biodiversity through instruments such as an ecosystem-based approach to climate adaptation, environmental research or education. Those approaches, while generating social impacts, offer the opportunity to maximize environmental benefits and achieve global development goals. [Cases: WCCBP / QWF].

D. Leave no one behind

Biodiversity mainstreaming in the productive and economic sectors has facilitated the empowerment and recognition of the rights of women, young people and indigenous peoples and local communities and achieved cultural change towards them. Empowerment through technical support initiatives, knowledge creation, employment generation and participation in decision-making has been key to the organization and promotion of support networks for these initiatives, as well as to the diversification and strengthening of value chains, which has influenced public policies at the subnational and national levels. However, challenges regarding access to resources and property by women, young people and indigenous peoples and local communities continue to present a significant obstacle to reducing inequality amid efforts to multiply and scale-up actions. [Cases: QWF / W&E / CFMMBR / NMARFMTL].

The resilience shown by local communities to the COVID-19 pandemic stems from strong participatory governance and adaptive community organization, developed from projects focused on the sustainable use of biodiversity. Innovation and the identification of areas of opportunity in the communities and organizations involved in the activities undertaken in some projects led to the implementation of promising actions with very positive impacts on community resilience and inhabitants' capacity to recoup income levels. The ability to combine instruments and policies from sectors that, under normal circumstances, would be uninvolved or unrelated was a determining factor in the success of the initiatives. [Cases: NMARFMTL / W&E].

Subnational and local governments are "natural" avenues for mainstreaming biodiversity and ecosystem services, serving as de facto partners of national governments to achieve their biodiversity objectives. In both land and marine ecosystems, as well as in initiatives viewed from an urban, provincial or national perspective, the governments and local actors involved in the cases provide assistance —of different levels and scope— to the development of policies, governance and financial solutions that support vertical and horizontal integration of actions to support the shift towards transformative change. [Cases: NMARFMTL / WFT / MBMAS / QWF / IPRB / MBRSP / W&E].

VII. Recommendations

As recognized by the Secretariat of the Convention on Biological Diversity and by multiple Parties and observers to the Convention in the context of the COP-15 negotiations, biodiversity mainstreaming is necessary to achieve synergies with global and national commitments, as well as with all sectors, through economic, regulatory and behavioural tools and solutions. Biodiversity mainstreaming can help ensure that the objectives, milestones and targets included in the post-2020 GBF, along with their positive impacts, are applicable far beyond the environmental ministries so that accountability for achieving them rests with a broader range of ministries, agencies and sectors. This principle is also embedded in the global processes targeting the participation of subnational and local governments and is enshrined in the Edinburgh Declaration. However, if the impact on the territory in which the actions are implemented is not considered —lessons learned, enabling elements, the opportunities and obstacles to their multiplication and possible scale-up— biodiversity policies will be ineffective. In turn, it should be emphasized that there are virtually no adaptive mechanisms in the region's institutional structure that can, in the short term, incorporate the lessons learned from the implementation of pilot experiences or nature-friendly productive projects and adapt their own policies to enhance their effectiveness.

The reporting, appraisal and priority dissemination of what have so far been called "co-benefits" (and which are actually "multidimensional benefits," given that those identified in this study are essential to sustainable development from a social, environmental and economic perspective) can serve as the basis for maintaining political will and cross-cutting support over time, as well as for the adaptation of policies and programmes. The failure to derive socioeconomic benefits from the interventions points to a flaw in the structure itself, which weakens biodiversity mainstreaming efforts in the productive, economic and financial sectors. This aspect could be modified in the short and medium terms, with potentially significant impact, triggering behavioural and cultural changes in the various sectors and among decision makers. It is, therefore, one of the key measures that can be developed in parallel and in line with an increase in dialogue and coordination. Capacity-building aimed at generating other non-environmental benefits should be considered a core element of training provided to actors in the field and in environmental institutions. This approach could also help promote institutional ownership of the initiatives and their progress and lend continuity to the interventions as early as the design stage. To ensure the dissemination of biodiversity benefits, it would be useful to devise a validated, systematized and consolidated repository of information that would allow access to case studies, data and indicators to help assess the status and

evolution of biodiversity mainstreaming, the effectiveness of various measures and related programmes in order to incorporate elements that encourage the involvement of decision makers and relevant actors in the productive, economic and financial sectors and, in so doing, contribute to transformative change across the region.

The cases studied highlight the importance of capacity-building in all sectors. The greatest challenge undoubtedly lies in closing the sizeable gap in capacities relating to awareness of the value of biodiversity and access to and equitable sharing of benefits from its sustainable use. Doing so would help minimize the current imbalance of attention given to the three objectives of the Convention and increase the participation of indigenous peoples and local communities, which remains unacknowledged and unsupported. By contrast, it is important to capitalize on the level of progress seen with respect to conservation, sustainable use and international cooperation. Capacity-building in biodiversity mainstreaming could be achieved by (i) linking actions for capacity-building and development in other sectors with policies, tools and instruments associated with biodiversity and biodiversity mainstreaming (such as SDGs, national development plans, regional investment guides, NBSAPs or biodiversity strategies for certain sectors) and (ii) developing properly structured assessments of financing needs and priorities for capacity development, developing indicators and other metrics relating to these needs and fostering linkages with entities focused on research and information and skills to sensitize other actors about their sector's dependence on ecosystem health.

Implementation of the post-2020 GBF will require considerable resources and funding, which may be derived in part from the creation, promotion and expansion of positive biodiversity incentives, as well as by reallocating harmful biodiversity subsidies in order to reduce threats to biodiversity and curb the process of biodiversity degradation and loss. Through the cases analysed in this study, financial solutions have been identified to develop biodiversity mainstreaming initiatives beyond those currently implemented in the environmental sector and its institutions and that can help close the funding gap. The following illustrate some ways this could be achieved: (i) emphasize the risks associated with biodiversity loss in ecosystems to mobilize resources from sources other than the environmental budgets themselves; (ii) promote the active participation of multiple actors to support the wider adoption of solutions, including by involving the ministries of finance and planning and the financial and private sectors; (iii) drive behavioural change through joint intersectoral institutional coordination and planning to help stimulate political will; and (iv) establish guidelines for the development and scale-up of public investment projects in biodiversity (including biodiversity-specific typologies and taxonomies).

Transformation from the current "business as usual" approach to a more cohesive one, from an environmental perspective, requires conscientious citizens who promote replacing current consumption patterns with more responsible ones. This change is crucial for the multiplication and scale-up of initiatives such as those studied in this regional analysis, and would support the transformation of the productive, economic and financial sectors, resulting in better conditions and enhanced political capital for transformative change. To this end, it is key that Parties to the Convention develop guidance for biodiversity mainstreaming to facilitate the attainment of the targets to be adopted in the post-2020 GBF. The long-term strategy for biodiversity mainstreaming prepared by the Secretariat of the Convention could serve as a starting point; however, its drafting, review and adoption should be inclusive, with the broad participation of all relevant stakeholders, including national and subnational governments, indigenous peoples and local communities, women, young people, productive, economic and financial sectors, and academia, among others. In addition, it would be advisable to consider the shared but differentiated responsibility approach established in the Convention as a premise for its design. If adopted, this tool could be used to establish a regional roadmap for biodiversity mainstreaming in the productive, economic and financial sectors. The potential of productive diversification should be harnessed as a lever for integration, helping to advance towards structural changes from the start of implementation of the post-2020 GBF based on appropriate indicators.

The cases studied revealed best practices for advancing the principles of transformative change (taking multiple pathways, expanding the field of action, generating diverse co-benefits and developing proactive strategies against resistance to change). The systematization of these practices and the generation of sector-based guidance tools could help multiply and scale up actions to address the root causes —direct and underlying— of biodiversity loss. Such tools must include ways to promote and ensure respect for the rights of indigenous peoples and local communities and empower women using an intergenerational approach. The adoption of biodiversity mainstreaming as a key element in enhancing implementation of the post-2020 GBF targets and objectives from its launch could also help mainstream biodiversity in national and subnational legal and planning tools to transform them into comprehensive policy mandates and give greater weight to biodiversity and ecosystems in particular, thus balancing budgets and capacities while promoting linkages with institutions in other sectors.

Abbreviations and Acronyms

WB	World Bank
ECLAC	Economic Commission for Latin America and the Caribbean
CBD	United Nations Convention for Biological Diversity
COP	Conference of the Parties
NBSAP	National Biodiversity Strategy and its Action Plan
FAO	United Nations Food and Agriculture Organization
GEF	Global Environmental Fund
GBO-5	Fifth edition of the Global Biodiversity Outlook
GEB-ECLAC	ECLAC Group of Experts on Biodiversity
IDDRI	Institute of Sustainable Development and International Relations of France
IPBES	Inter-governmental Science-Policy Platform on Biodiversity and Ecosystem Services
ME-Chile	Ministry for the Environment of Chile
Post-2020 GBF	Post-2020 global biodiversity framework of the Convention for Biological Diversity
OEWG	Open-ended Working Group
SDG	Sustainable Development Goals
NPCC	National Plan on Climate Change
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
CFMMBR	Case study: Community Forest Management in the Mayan Biosphere (Guatemala)
IPRB	Case study: Insurance for the Protection of Reefs and Beaches (Mexico)
MBMAS	Case study: Mainstreaming Biodiversity into the Mexican Agricultural Sector (Mexico)
MBRSP	Case of study: Management of the Biosphere Reserves of Sao Paulo (Brazil)
MEABR	Case of study: Management and Exploitation Areas for Benthic Resources (Chile)
NMARFMTL	Case of study: Network of Responsible Fishing Marine Areas and Marine Territories of Life (Costa Rica)
QWF	Case of study: Quito Water Fund (Ecuador)
WCCBP	Case of study: Wine, Climate Change and Biodiversity Programme (Chile)
W&E	Case of study: Women and the Environment (Mexico)
WFT	Case of study: Taxes for Works Mechanism (Peru)

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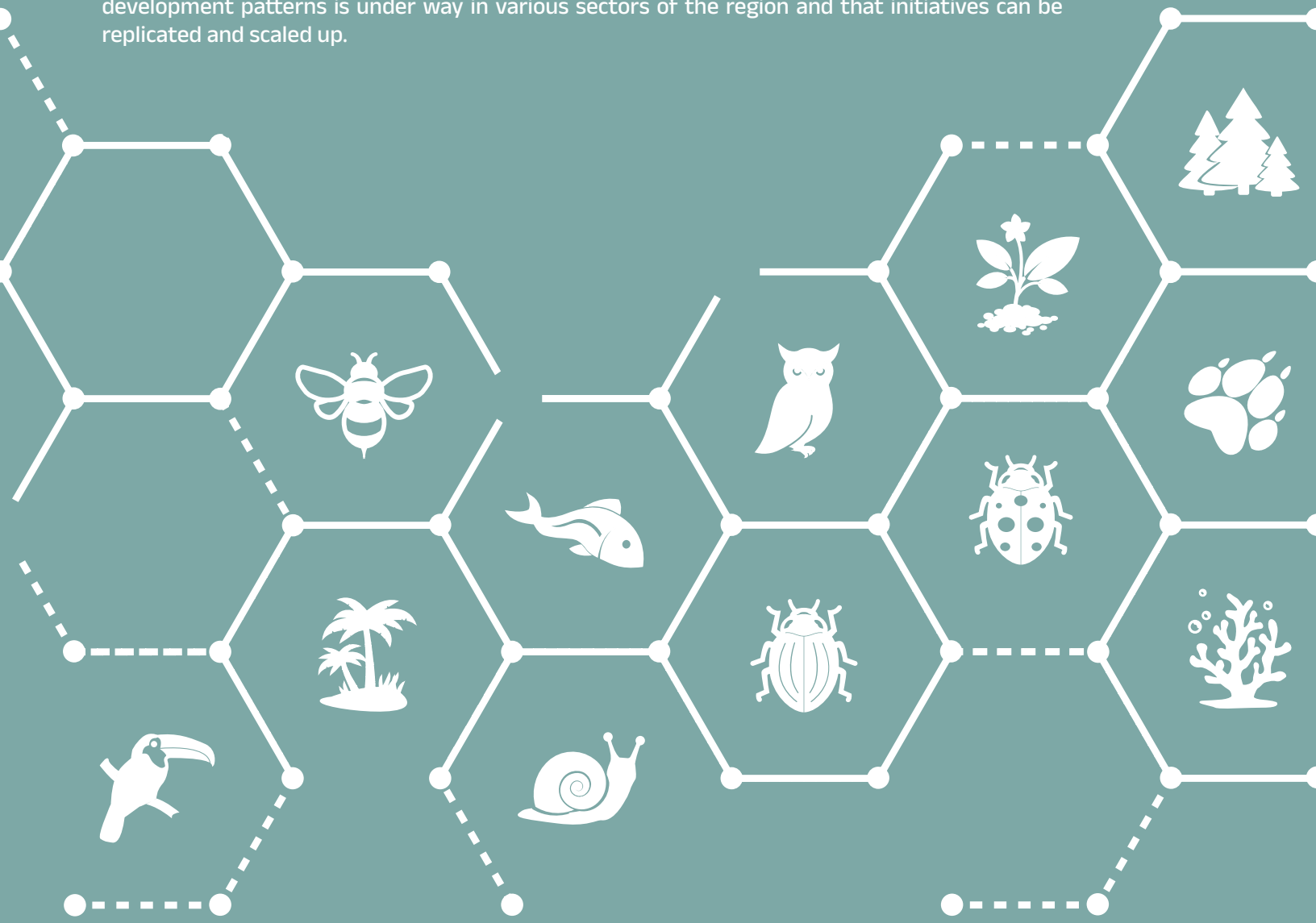
The severity of cascading global environmental, climate, economic, social and health crises is such that they sometimes seem insurmountable. ECLAC has therefore compiled a set of best practices, drawing from cases in Latin America and the Caribbean that can serve as models to promote comprehensive structural change and improve socioeconomic and environmental well-being.

This study addresses challenges, opportunities and lessons learned as to how mainstreaming biodiversity in the agriculture, fisheries, forestry, financial, manufacturing, infrastructure and tourism sectors is a catalyst for the transition towards comprehensive development, in line with the 2030 Agenda, and a fundamental tool for the implementation of the new post-2020 global biodiversity framework. The cases, implemented at varying scales, in diverse ecosystems and with different approaches, show that the shift towards environmentally-friendly production and development patterns is under way in various sectors of the region and that initiatives can be replicated and scaled up.



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