Biodiversity at the Heart of Sustainable Development

Input to the 2018 High-level Political Forum on Sustainable Development (HLPF)

Secretariat of the Convention on Biological Diversity (CBD)

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Introduction

Biodiversity—the diversity of life on Earth—is defined as the variability among living organisms from all sources, including diversity within species, between species, and of ecosystems. Biodiversity thus includes not only the millions of different species on Earth, it also consists of the specific genetic variations and traits within species (such as different crop varieties), as well as the various types of different ecosystems, marine and terrestrial, in which human societies live and on which they depend, such as coastal areas, forests, wetlands, grasslands, mountains and deserts.

Biodiversity is essential for sustainable development and human well-being. It underpins the provision of food, fibre and water; it mitigates and provides resilience to climate change; it supports human health, and provides jobs in agriculture, fisheries, forestry and many other sectors. Without effective measures to conserve biodiversity and use its components in a sustainable manner, the 2030 Agenda for Sustainable Development will not be achievable.

Given the need for biodiversity and healthy ecosystems to achieve the 2030 Agenda, it is not surprising that many Sustainable Development Goals (SDGs) include targets that reflect their important role. The role of biodiversity and healthy ecosystems is thus reflected not only in SDG 14 (life below water), and SDG 15 (life on land), but also in many other goals and targets. For example, there are critical biodiversity dependencies for SDG 2 on zero hunger. Target 2.3 calls for a doubling of agriculture production and, according to the Thematic Assessment of Pollinators, Pollination and Food Production of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), more than three-quarters of the world's food crops rely at least in part on pollination by insects and other animals, with between US$235 billion and US$577 billion worth of annual global food production relying on direct contributions by pollinators.[1]

An analysis of how biodiversity supports the achievement of all SDGs, published jointly by the Secretariat of the Convention on Biological diversity (CBD), the Food and Agriculture Organization of the United Nations, the World Bank, the United Nations Environment Programme, and the United Nations Development Programme, is available online.[2]

In the context of the SDGs to be reviewed by the 2018 High-level Political Forum on Sustainable Development, biodiversity supports the achievement of the 2030 Agenda in the following ways:

[1] www.ipbes.net/sites/default/files/downloads/pdf/spm_deliverable_3a_pollination_20170222.pdf
[2] www.cbd.int/development/doc/biodiversity-2030-agenda-technical-note-en.pdf

- **SDG 6: Clean Water and Sanitation.** Ecosystems provide reliable sources of freshwater. Ecosystems also function as natural water infrastructure, costing less than technological solutions. For instance, wetlands regulate flooding, and healthy soils increase water and nutrient availability for crops and help reduce off-farm impacts. UN-Water underscores the importance of nature-based solutions in water management in its flagship report, *The United Nations World Water Development Report 2018: Nature-Based Solutions for Water*.[3]

- **SDG 7: Affordable and Clean Energy.** Bio-energy produced from renewable biomass such as forestry by-products and agricultural residues can provide major opportunities for supplying cleaner and affordable energy. Ecosystem services are also important for clean energy, e.g., the sources of water needed for energy production.

- **SDG 11: Sustainable Cities and Communities.** Ecosystems help secure freshwater supplies on which cities rely, and can provide natural solutions for urban water run-off, regulating temperature, supporting clean air, and providing resilience to climate change and natural disasters.

- **SDG 12: Responsible Consumption and Production.** Utilizing more resource-efficient approaches is an essential aspect for the sustainable use of biodiversity. Reducing wastes and pollutants is also an important element to reduce adverse impacts on biodiversity.

- **SDG 15: Life on Land.** The conservation, restoration and sustainable use of terrestrial ecosystems is essential for sustainable development and for achieving the 2030 Agenda and all of the SDGs. Targets under this goal include a call to integrate ecosystem and biodiversity values into national and local development planning, poverty reduction strategies and accounts (Target 15.9). Other targets highlight the importance of particular ecosystems, including wetlands, forests and mountains, while others focus on specific challenges, such as desertification and land degradation, as well as poaching and trafficking of protected species.

Despite these important roles in sustainable development, biodiversity and ecosystem services which support people's lives and livelihoods continue to be degraded and lost at unprecedented rates. The recent regional assessment reports by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) found that biodiversity is in decline in all regions of the world.[4]

The Strategic Plan for Biodiversity 2011-2020 and its twenty Aichi Biodiversity Targets, adopted by the Conference of the Parties to the Convention on Biological Diversity (CBD) in 2010 at its tenth meeting[5], has been recognized by the United Nations General Assembly as the global policy framework for biodiversity. Accordingly, many elements of the 2030 Agenda and its SDGs have been drawn from the Strategic Plan and the Aichi Biodiversity Targets. The Strategic Plan for Biodiversity 2011-2020 itself is framed in the context of sustainable development, with a vision of maintaining and enhancing ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.

At its thirteenth meeting, held in December 2016, the Conference of the Parties to the Convention welcomed the adoption of the 2030 Agenda for Sustainable Development (see decision XIII/3, para. 3)[6] and recognized the strong interdependence between the Strategic Plan for Biodiversity 2011-2020 and the

[3] www.unwater.org/publications/world-water-development-report-2018/
[4] www.ipbes.net/outcomes
[5] https://www.cbd.int/doc/decisions/cop-10/cop-10-dec-02-en.pdf
[6] https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-03-en.pdf

SDGs in which biodiversity is included in numerous goals and targets (para. 9). In addition, it recognized that the implementation of the 2030 Agenda provides a major opportunity for the mainstreaming of biodiversity and for the achievement of the Aichi Biodiversity Targets (para.10). Further, the Conference of the Parties called for an integrated approach to the implementation of the strategies and plans for the 2030 Agenda and of national biodiversity strategies and actions plans (NBSAPs; paras. 14 and 15).

Leave No One Behind

> *"The full enjoyment of human rights, including the rights to life, health, food and water, depends on the services provided by ecosystems. The provision of ecosystem services depends on the health and sustainability of ecosystems, which in turn depend on biodiversity. The full enjoyment of human rights thus depends on biodiversity, and the degradation and loss of biodiversity undermine the ability of human beings to enjoy their human rights."* (UN Human Rights Council, 34th Session)

In the context of the 2030 Agenda's 'leave no one behind' principle, the Convention's Aichi Biodiversity Target 2 is that, "by 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems."[7] Additionally, at its twelfth meeting, the Conference of the Parties to the Convention on Biological Diversity adopted decisions encouraging Parties to:

> *"(3)…integrate biodiversity and nature's benefits to people, including ecosystem services and functions, into poverty eradication and development strategies, initiatives and processes at all levels, and vice versa, to integrate poverty eradication and development concerns and priorities into national biodiversity strategies and action plans and other appropriate plans, policies and programmes for the implementation of the Strategic Plan for Biodiversity 2011-2020 and the achievement of the Aichi Biodiversity Targets, and to monitor, evaluate and report on these integration efforts, through appropriate indicators and tools, and include this information, inter alia, in their national report…*
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> *(5)…enhance the contribution of biodiversity to sustainable development and poverty reduction through the fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, the conservation of biological diversity and the sustainable use of its components."*[8]

Furthermore, the 34th Session of the Human Rights Council recognized that "although the importance of a healthy environment for the enjoyment of human rights is widely recognized, the relationship between human rights and biodiversity remains less well understood" and, from the perspective of leaving no one behind, made the following observations related to biodiversity[9]:

- *The loss of biodiversity-dependent ecosystem services has disproportionate effects on people who are vulnerable for other reasons, including gender, age, disability, poverty or minority status.*

[7] www.cbd.int/sp/targets/
[8] www.cbd.int/doc/decisions/cop-12/cop-12-dec-05-en.pdf
[9] UN Human Rights Council, 34th Session. Available at: www.ohchr.org/EN/HRBodies/HRC/RegularSessions/Session31/Documents/A%20HRC%2031%2052_E.docx

- *The degradation and loss of biodiversity often result from and reinforce existing patterns of discrimination.* Although everyone depends on ecosystem services, some people depend on them more closely than others. For indigenous peoples, forest-dwellers, fisherfolk and others who rely directly on the products of forests, rivers, lakes and oceans for their food, fuel and medicine, environmental harm can and often does have disastrous consequences.
- *Many religions call on all human beings to be stewards of the riches of the natural world. However, the loss of particular places is felt predominantly by those who associate their sacred rituals and sites with those locations.* Food and shelter may be replaced, but the destruction of a sacred grove may cause irreparable harm.
- *The loss of biodiversity-dependent ecosystem services is likely to accentuate inequality and marginalization of the most vulnerable sectors of society, by decreasing their access to basic materials for a healthy life and by reducing their freedom of choice and action.* Economic development that does not consider effects on these ecosystem services may decrease the quality of life of these vulnerable populations, even if other segments of society benefit.

Gaps, Areas Requiring Urgent Attention, Risks and Challenges

The fourth edition of the Convention's *Global Biodiversity Outlook* (2014), which provides a mid-term assessment of progress in the implementation of the Strategic Plan for Biodiversity 2011-2020, highlights five principal pressures on biodiversity: climate change, habitat loss and degradation, excessive nutrient load and other forms of pollution, overexploitation and unsustainable use, and invasive alien species. [10]

Furthermore, *Global Biodiversity Outlook 4* identified eleven of the twenty Aichi Biodiversity Targets of the Strategic Plan as lagging behind in progress. These target areas are listed in the table below together with the SDGs that are most closely related.

Aichi Biodiversity Targets and Elements	**Related SDGs and associated targets[11]**
Aichi Target 3 Incentives, including subsidies, harmful to biodiversity, eliminated, phased out or reformed in order to minimize or avoid negative impacts	SDGs 2 (Target 2.b), 12 (Target 12.c), 14 (Target 14.6)
Aichi Target 4 Keep the impacts of use of natural resources well within safe ecological limits	SDGs 8 (Target 8.4), 9 (Target 9.4), 12 (Target 12.2)
Aichi Target 5 The loss of all habitats at least halved and where feasible brought close to zero; Degradation and fragmentation significantly reduced	SDGs 13, 14, 15 (Targets 15.1, 15.2, 15.5)
Aichi Target 6 Fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems; The impacts of fisheries on stocks, species and ecosystems are within safe ecological limits	SDGs 2, 12, 14 (Targets 14.4, 14.7)
Aichi Target 8 Pollution from excess nutrients brought to levels that are not detrimental to ecosystem function and biodiversity	SDGs 3, 6, 9 (Target 9.4), 11, 12, 14 (Target 14.1), 15 (Target 15.5)

[10] Global Biodiversity Outlook 4: www.cbd.int/gbo4/

[11] www.cbd.int/development/doc/biodiversity-2030-agenda-technical-note-en.pdf; and www.cbd.int/doc/meetings/sbstta/sbstta-19/information/sbstta-19-inf-09-en.pdf

Aichi Target 9 Introduction and establishment of invasive alien species (IAS) prevented	SDGs 14, 15 (Target 15.8)
Aichi Target 10 Multiple anthropogenic pressures on coral reefs are minimized, so as to maintain their integrity and functioning	SDGs 11, 14 (Targets 14.2, 14.3)
Aichi Target 12 Extinction of known threatened species prevented; The conservation status of those species most in decline improved and sustained	SDGs 14 (Target 14.4), 15 (Targets 15.5, 15.7)
Aichi Target 13 The genetic diversity of wild relatives maintained	SDG 2 (Target 2.5)
Aichi Target 14 Ecosystems that provide essential services, including services related to water, health, livelihoods and well-being, are restored and safeguarded; taking into account the needs of women, indigenous and local communities, and the poor and vulnerable	SDGs 1 (Targets 1.4, 1.6), 6 (Target 6.6), 14, 15
Aichi Target 15 Ecosystem resilience and the contribution of biodiversity to carbon stocks enhanced through conservation and restoration	SDGs 13, 15 (Targets 15.1, 15.3)

Lessons Learned on Transformation towards Sustainable and Resilient Societies

There has been significant progress in the implementation of the Convention on Biological Diversity in the two and a half decades since its entry into force in 1993. With 196 Parties, the Convention has near-universal membership, a comprehensive political and science-driven mandate, and a financial mechanism, in form of the Global Environment Facility, to support national implementation by developing countries.

The Convention's constituency base is diverse and active. Beyond the Parties of the Convention, the CBD has a broad stakeholder base consisting of civil society groups, indigenous peoples and local communities, and representatives of youth, women, academia and business, along with a significant number of intergovernmental and non-governmental organizations. In addition, the Convention interacts with a wide range of United Nations organizations and agencies as well as other relevant international and regional institutions.

Over the past few decades, a strong institutional and scientific process has been developed to support implementation of the Convention as well as its Protocols, supported by quantitative and qualitative environmental sciences that model, map and explore ecosystem dynamics, seek understanding of ecological impacts, and develop policy recommendations.

Yet biodiversity loss continues at an alarming rate. This is arguably because its value as underpinning human well-being is not fully understood and adequately taken into account in public and private decision-making. In order to address this challenge, the Strategic Plan for Biodiversity 2011-2020 includes, as one of its five Strategic Goals, the need to "address the underlying causes of biodiversity loss by mainstreaming biodiversity across governments and society".

At its thirteenth meeting, held in Cancun, Mexico in 2016, the Conference of the Parties to the Convention adopted a decision on mainstreaming biodiversity into the key economic sectors of

agriculture, forests, fisheries and tourism.[12] This was reinforced by the Cancun Declaration on Mainstreaming the Conservation and Sustainable Use of Biodiversity for Well-Being, adopted by its high-level segment.[13] The fourteenth meeting of the Conference of the Parties, to be held in November 2018 in Egypt, will consider the mainstreaming of biodiversity in the sectors of infrastructure, energy and mining, manufacturing and processing, and health.

Recent meetings of the Conference of the Parties have also adopted a number of decisions calling for stronger actions to address biodiversity loss by the business sector, and also on the critical role that cities and subnational governments play in achieving the goals of the Convention.

Some of the likely main barriers to, and associated opportunities for, action identified for transformational change in sectors and domains that have an impact on, or benefit from, biodiversity, are the following:

- *Insufficient knowledge base*: Build a stronger knowledge base for a clear narrative on how ecosystems and biodiversity are essential to achieving the Sustainable Development Goals and the climate change agreement, with a view to inform diverse stakeholders on how ecosystems and biodiversity can help to deliver on different mandates;
- *Slow rate of innovation*: Promote research and innovation on nature-based solutions or development approaches for delivering key development benefits – and thus help implementing both the Sustainable Development Goals and the Aichi Biodiversity Targets;
- *Insufficient mainstreaming*: Intensify efforts to mainstream biodiversity considerations in economic sectors, and in cross-sectoral policies such as development plans and budgets;
- *Deficient re-alignment of incentives*: Accelerate and intensify policy action to eliminate, phase out, or reform incentives, including subsidies, that are harmful for biodiversity, and develop and apply positive incentives for the conservation and sustainable use of biodiversity, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions;
- *Better monitoring tools on the interface between the economy and ecosystem management*: Undertake strategic experimentation and capacity building programmes around ecosystem accounting methodologies, both at a national level and at the level of individual businesses;
- *Unrealized opportunities for synergy*: Optimize the use of technical capacities and financial resources in parallel with other relevant processes, thus harnessing opportunities for synergies and integrated programming.

The United Nations Decade on Biodiversity and the Strategic Plan for Biodiversity 2011-2020 will come to a close at the end of 2020. At its fourteenth meeting, the Conference of the Parties will launch an open and inclusive process to design the post-2020 global biodiversity framework, for consideration and adoption at its fifteenth meeting in 2020. This process will provide an opportunity to collectively reflect on achievements, take stock of ongoing challenges, and bring new perspectives to advance the implementation of the Convention, in the context of the overall objective of the 2030 Agenda to achieve the transformation towards sustainable and resilient societies.

[12] www.cbd.int/doc/decisions/cop-13/cop-13-dec-03-en.pdf
[13] Cancun Declaration on Mainstreaming the Conservation and Sustainable Use of Biodiversity for Well-Being: https://www.cbd.int/doc/c/edd1/7e90/76ccae323fc6c2286ceba9a2/cop-13-24-en.pdf

Emerging Issues Likely to Affect Building Sustainable and Resilient Societies

Rapid urbanization and infrastructure development

The global urban population is expected to reach 5 billion by 2030, and more than 60% of the area projected to become urban by 2030 is yet to be developed. In addition to the impact of expansion of urban land use, changing consumption patterns lead to an increased ecological footprint, i.e. demand for food, water, fibre, energy and other goods and services as well as waste and wastewater discharge, impacting ecosystems near and far due to associated land use changes. Such degradation of the ecosystem and its services potentially affect the well-being of both urban and rural populations that rely on them.

Efforts to achieve some of the Sustainable Development Goals closely linked to urbanization, such as Goal 6 on water and sanitation, Goal 7 on energy, Goal 9 on industry, innovation and infrastructure, and Goal 11 on cities and human settlements, will require substantial investment for construction of various infrastructures. In particular, the energy and transportation sectors are likely to receive large investments, followed by water and sanitation, and communications. Some estimates suggest that, in order to deliver on the Sustainable Development Goals, investments in infrastructure as high as US$ 6 trillion annually are needed.[14] This also creates pressure in terms of significant scale-up of investments within a short timeframe compared with the pre-2015 period. Infrastructure and urbanization are among the major drivers of fragmentation, degradation or loss of habitats, leading to significant biodiversity loss. Ensuring careful management of such investments in a way that does not undermine ecosystem services or biodiversity, especially those ecosystem services that are of particular importance for the poor, is an urgent task. Thus, in order to be "sustainable", infrastructure investments must be not only low carbon and resilient but must also support the conservation and sustainable use of biodiversity. As noted above, the issue of mainstreaming biodiversity into infrastructure policies and programmes is one of the items for consideration by the Conference of the Parties at its fourteenth meeting, to be held in November 2018.

Agriculture and fisheries

Unsustainable practices in agriculture and forestry, such as pollution by fertilizers, chemicals and pesticides, conversion of habitats and excessive water withdrawal, cause substantial environmental degradation and biodiversity loss. Agricultural expansion is said to account for 70% of the projected loss of terrestrial biodiversity.[15] Demand for fertile land is projected to increase substantially by 2050 due to increasing population and urbanization. The combination of expanded agriculture and bioenergy could result in a global land squeeze in which there would not be sufficient room to conserve natural terrestrial habitats, leading to large declines in biodiversity. Under prevailing production and consumption patterns, biodiversity loss and natural resource degradation will continue unabated or accelerate without additional policies, with the poor being disproportionally affected. The provision of food, water, and energy to the poor becomes more difficult when available natural resources are not managed sustainably or are degraded.

Fisheries account for 17% of global intake of animal protein, with small-scale fishers directly dependent on coastal and marine biodiversity for their livelihoods. However, the world's oceans and coasts are highly threatened and subject to rapid environmental change. Coral reefs continue to be degraded, and

[14] https://publications.iadb.org/bitstream/handle/11319/8242/Crossing-the-Bridge-to-Sustainable-Infrastructure-Investing-Exploring-Ways-to-Make-it-Across.PDF
[15] www.cbd.int/gbo4/

nearly 90% of fisheries stocks are said to be fully fished or overfished. Significant challenges exist in controlling major threats to coastal marine ecosystems, including unsustainable fishing practices, impact of climate change, land-based pollution and eutrophication. This requires the enforcement of effective regulations through cooperation among different global, national and subnational governing bodies and the private sector.

Impacts of climate change

Global temperature increases of 0.4 to 2.6°C by 2055 and 0.3 to 4.8°C by 2090 would be accompanied by rising sea levels, changes in precipitation patterns, substantial loss of summer Arctic sea ice and increasing ocean acidification. These changes would have a broad range of impacts on biodiversity at genetic, species and ecosystem levels, including shifts in the distribution of species and ecosystems, changes in species abundance and increased risk of extinctions. This, in turn, will affect vital ecosystem services, such as air and water purification, pollination, food production, and global nutrient and carbon cycles. Efforts to mitigate climate change could also have very large impacts, both positive and negative, on biodiversity.

Poor populations are at higher risk from climate-related shocks. For instance, agriculture is one of the most important economic sectors in many poor countries, but also one of the most sensitive to climate change due to its dependence on weather conditions and other climate-related stressors, such as pests, diseases or sea level rise. One scenario estimates that an additional 100 million people will fall in poverty by 2030 due to climate change, mostly due to rising food prices.[16] In addition to addressing the issue of food security, there is a need to increase the resilience of communities through restoration of ecosystems, which contributes to the protection of people and infrastructure from the negative impacts of extreme climatic events.

Guidance from the High-level Political Forum

Additional guidance to support integrated approach for the implementation, follow-up and review at the national and regional levels[17]

In order to live up to the ambition of the 2030 Agenda to balance the economic, social and environmental dimensions of sustainable development, it is crucial to ensure an integrated approach and policy coherence at the national and regional levels. Otherwise, the balanced, mutually supportive approach of the Sustainable Development Goals could be undermined, and activities to implement certain Sustainable Development Goals could cause adverse impacts on biodiversity and ecosystems. Additional guidance on a common approach for planning, implementation, follow-up and reviews for countries and regions could be provided to encourage the application of integrated approach and policy coherence.

One area for further improvement includes the effective application of Strategic Environmental Assessment (SEA) to ensure that efforts to achieve one or more Sustainable Development Goals do not put at risk the achievement of others. SEA is the formalized, systematic and comprehensive process of identifying and evaluating the environmental consequences of proposed policies, plans or programmes to

[16] http://documents.worldbank.org/curated/en/260011486755946625/Shock-waves-managing-the-impacts-of-climate-change-on-poverty

[17] www.cbd.int/doc/notifications/2015/ntf-2015-070-post2015-en.pdf; www.cbd.int/idb/image/2015/more/sdg-may2015.pdf

ensure that they are fully included and appropriately addressed at the earliest possible stage of decision-making on a par with economic and social considerations[18]. This is particularly important in the light of the trillions of dollars needed over the coming period for infrastructure investments in order to ensure that such investments are directed towards sustainable approaches. This is critically important for not only ensuring that such investments are supportive of biodiversity and ecosystem functions and services, but also supporting low-carbon and resilient infrastructure.

The High-level Political Forum may also wish to encourage subsidiary bodies of the Economic and Social Council, including the regional commissions, to foster synergies with the existing relevant global processes, such as multilateral environmental agreements.

Implementation, follow-up and review of the Strategic Plan for Biodiversity 2011-2020

Many biodiversity-related targets included in the Sustainable Development Goals use 2020 as the date for their achievement as they reflect the pertinent Aichi Biodiversity Targets, or elements thereof, of the Strategic Plan for Biodiversity 2011-2020. The Convention has initiated work towards developing the post-2020 global biodiversity framework, for eventual adoption by the Conference of the Parties at its fifteenth meeting in 2020.[19] It will be critical to ensure that the current level of coherence between the Sustainable Development Goals and the current Strategic Plan for Biodiversity will be maintained and further improved under its successor framework.

In this regard, the Convention's Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) considered at its twenty-first meeting in December 2017, the intersection of biodiversity and the 2030 Agenda for Sustainable Development in the context of implementation and follow up to the Strategic Plan for Biodiversity 2011-2020. The document CBD/SBSTTA/21/2/ADD1[20] provides a summary of the links between the Sustainable Development Goals and related targets and the Aichi Biodiversity Targets, identifies gaps and inconsistencies, and explores how the 2030 Agenda provides an enabling environment for the achievement of the Aichi Biodiversity Targets as well as the longer-term goals of the Strategic Plan for Biodiversity 2011-2020 and its 2050 Vision. It also discusses implications for the mutually reinforcing implementation of the two frameworks and includes further analysis of how the SDGs contribute to the implementation of the Strategic Plan for Biodiversity 2011-2020.

Recommendations for Accelerating Progress in Establishing Sustainable and Resilient Societies

Promotion of approaches to integrate biodiversity in development policies and actions

In order to ensure the benefits of biodiversity to the poor as well as for future generations and to avoid negative impacts of development investments on ecosystem services which support the lives of vulnerable populations, national and local decision makers and stakeholders both in private and public sectors need to ensure that biodiversity and ecosystem services are mainstreamed in development and poverty reduction policies and actions.

[18] Sadler B. & Verheem R. (1996). Strategic Environmental Assessment: Status, Challenges and Future Directions. Ministry of Housing, Spatial Planning and the Environment, The Netherlands, and the International Study of Effectiveness of Environmental Assessment.
[19] www.cbd.int/doc/decisions/cop-12/cop-12-dec-31-en.pdf
[20] CBD/SBSTTA/21/2/ADD1. https://www.cbd.int/doc/meetings/sbstta/sbstta-21/official/sbstta-21-02-add1-en.pdf

Experiences and lessons learned by Parties and other partners of the Convention encompass various approaches: institutional coordination mechanisms (see section 2 below), integration of biodiversity consideration in national budgets and sectoral policies, use of spatial planning tools, and use of nature-based solutions to development challenges, such as ecosystem-based adaptation (EbA) and Ecosystem-based Disaster Risk Reduction (Eco-DRR). Such approaches are most effective when they are adopted at the earlier stage of planning, following strategic environment assessments. Support needs to be provided to strengthen the capacity of stakeholders and availability of information that enables the use of those approaches in decision-making processes.

National institutional mechanisms for effective inter-agency coordination, stakeholder engagement[21]

Experiences by Parties and partners of the Convention suggest that effective institutional arrangements are one of the key requirements for integrating biodiversity, national poverty reduction strategies and sectoral plans across all relevant ministries. One aspect of this is the use of effective inter-ministerial or inter-agency processes for developing government-wide policies. Such mechanism provides an effective formal forum for development and implementation of government-wide and sectoral policies through better integrated approach.

Another key aspect of institutional arrangements is the effective engagement of civil society, indigenous peoples, and local communities, and their ability to contribute to decision making. The use of robust and inclusive mechanisms for stakeholder engagement is an important element of the implementation of the 2030 Agenda, which strives to "leave no one behind".

Ensuring that the benefits of conservation mechanisms reach the poorest

Several conservation measures include innovative mechanisms to address poverty, mainly in rural areas. These include: Payments for Ecosystem Services including Reducing Emissions from Deforestation and forest Degradation (REDD+), ecotourism, sustainably managed fisheries and no-fish zones, community forestry, non-timber forest products, mangrove restoration, protected area jobs, agroforestry, grassland management, and conservation of agricultural diversity. Evidence suggests that schemes such as REDD+ and Eco-DRR also have extensive social, economic and environmental benefits. Ecosystem-based solutions can often be more cost-efficient and sustainable compared to grey infrastructure.

However, studies and discussions suggest that the existence of these mechanisms alone does not guarantee that they contribute to poverty reduction. It is necessary to ensure that the benefits produced by such mechanisms reach the poorest and the most vulnerable by embedding rights-based approaches into policy designs and accountability of such interventions through monitoring and reporting. In addition, it is important to provide decision makers with better information on multiple benefits that can be generated by investments in programmes that contribute to both social and environmental benefits.

Supporting customary rights, traditional knowledge and ecological practices of communities

In order to ensure that the poor continue to benefit from ecosystem services, the importance of recognizing and strengthening the customary rights and laws of indigenous peoples and local communities to access, use, govern and manage lands and natural resources has been repeatedly

[21] www.cbd.int/doc/meetings/biodiv/impws-2015-01/official/impws-2015-01-03-en.doc

highlighted. The governments of many Parties to the Convention have undertaken legal, political and institutional reform to recognize such rights. In many cases, these provisions have enabled communities to conserve and use biodiversity sustainably, generate income and empower themselves. Political support for the preservation of traditional knowledge and ecologically sustainable practices by communities, such as supporting conservation of agricultural biodiversity and ensuring a minimum support price for sustainable production in times of drought and floods, also contribute to the well-being of poor households.[22]

Taking actions for climate change and energy systems, and food systems[23]

Global Biodiversity Outlook 4 underlines two major areas of actions that may contribute significantly to pathways for the long-term sustainability of human society and biodiversity:

(a) *Climate change and energy systems:* Halting deforestation and appropriately implementing reforestation could make important contributions to climate mitigation and protection of biodiversity. Nevertheless, a substantial degree of climate change by 2050 and beyond is already committed due to long lags in the Earth's climate system; therefore, measures for adaptation of communities including the poor are needed. Such measures include conservation and restoration of coastal habitats such as mangroves and enhancing diversity of crops and their wild relatives to help farmers adapt to climate change by switching to drought or flood resistant varieties. From the perspective of biodiversity conservation, adaptation will require, for instance, anticipating climate change in the design of protected area systems;

(b) *Food systems:* Major transformations to food systems are among the key areas of actions for achieving sustainability. There is a need for improved management of agriculture, aquaculture and wild capture fisheries. Realistic changes in management of crops and livestock could substantially reduce both water consumption and pollution. Significant reductions in fishing pressure and changes in fishing techniques in most marine fisheries would lead to rebuilding of fisheries over the next one to two decades. It is also essential to restore land and water resources by shifting to more sustainable agricultural practices. Food waste needs to be reduced: roughly a third of harvested food is lost either in the food transport and transformation chain (primarily in developing countries) or in the home (primarily in developed countries). Diverse diets combined with global convergence to moderate levels of calorie and meat consumption would improve health and food security in many areas and also substantially reduce impacts on biodiversity.

Strengthening the implementation, follow-up and review of poverty-related Sustainable Development Goals in relation to biodiversity and ecosystem services

Sustainable Development Goal 1 recognizes not only socioeconomic but also environmental dimensions of poverty, through its associated targets 1.4 and 1.5 encompassing the rights of the poor and the vulnerable to natural resources, land tenure, basic services, and resilience against socioeconomic and environmental shocks and disasters. Many of them are supported by healthy ecosystems. The current suite of global indicators does not necessarily fully capture the multidimensional aspect of poverty, in terms of access to various ecosystem services. The implementation, follow-up and review of SDG 1 and its interrelation with other relevant Sustainable Development Goals could therefore be further encouraged to take into account the benefits of biodiversity and ecosystem services for the poor, through such means as

[22] www.cbd.int/pa/doc/ts64-case-studies/australia-en.pdf; www.cbd.int/doc/meetings/cop/cop-13/information/cop-13-inf-30-en.pdf.
[23] www.cbd.int/gbo4/. pp. 136-137

additional monitoring and reporting of pro-poor policies and programmes that contribute to safeguarding or enhancing access to ecosystem services.

List of further resources

Technical Note: *Biodiversity and the 2030 Agenda for Sustainable Development*. Available at: www.cbd.int/development/doc/biodiversity-2030-agenda-technical-note-en.pdf

CBD Technical Series No. 55 *Linking Biodiversity Conservation and Poverty Alleviation: A State of Knowledge Review*. Available at: www.cbd.int/doc/publications/cbd-ts-55-en.pdf

Principles, Guidelines and Other Tools Developed under the Convention. Available at: www.cbd.int/guidelines/