Chapter 1

Good practice insights for mainstreaming biodiversity and development

Mainstreaming biodiversity across government and society is crucial for meeting many of the Sustainable Development Goals. This chapter provides an overview of the interlinkages between biodiversity and sustainable development and highlights assessment frameworks and entry points for biodiversity mainstreaming. Drawing on experiences and lessons learned from 16 of some of the most biodiverse countries in the world, the chapter concludes with the key messages and good practice insights from across the report.

Biodiversity – the diversity within species, among species and of ecosystems – is fundamental to human well-being. Terrestrial and marine biodiversity provide a wide range of ecosystem services such as food provisioning, water purification, habitat provisioning, erosion control, nutrient cycling and climate regulation, all of which humans depend on to support life. Despite the fundamental importance of biodiversity to economic, social, health and cultural systems, biodiversity loss continues worldwide as the pursuit of economic growth and development leads to the conversion, and in many cases over-exploitation, of natural resources for inputs to production and consumption.

Given the multiple pressures on biodiversity, there is increasing recognition of the fact that greater efforts are needed to reflect the inherent – and often invisible – values of biodiversity and ecosystem services in all aspects of decision making. Biodiversity underpins many of the 17 Sustainable Development Goals (SDGs), and effective mainstreaming will be an essential step for countries – developed and developing alike – to deliver on Agenda 2030. In recognition of this, the Cancun Declaration on Mainstreaming the Conservation and Sustainable Use of Biodiversity for Well-being, adopted at the 13th Conference of the Parties (COP13) to the Convention on Biological Diversity (CBD) in December 2016, commits parties to undertake work at all levels of government and across all sectors to mainstream biodiversity. Achieving this will require strategic, coherent and well-coordinated policies and actions.

1.1. Mainstreaming biodiversity to achieve sustainable development

The linkages among biodiversity, economic growth and development are well recognised in the global sustainable development agenda. Agenda 2030 and the SDGs place a strong emphasis on biodiversity, recognising that it is central to achieving international goals on sustainable development and poverty reduction. Two of the 17 SDGs are dedicated to the conservation and sustainable use of biodiversity (i.e. 14 on Life under Water and 15 on Life on Land) (Box 1.1), and biodiversity-related actions are integrated into the targets of eight additional SDGs.[1] This is in line with the CBD and the 2011-2020 Strategic Plan for Biodiversity. Article 6b of the CBD, for instance, directs parties to "Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies." Strategic Goal A of the Aichi Biodiversity Targets is "Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society". Under this goal, Target 2 for example is: "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."[2]

Box 1.1. **SDGs in support of biodiversity conservation and sustainable use**

- Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- Goal 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.

The need to mainstream biodiversity more effectively into national and sectoral economic and development objectives is relevant to all countries, though specific issues and priorities differ. Globally, key pressures on biodiversity include land-use change and management, over-exploitation of natural resources, pollution, invasive alien species and climate change (OECD, 2012). Production and consumption patterns have imposed severe stress on the earth's natural resources and its resilience. The biodiversity and development linkages are particularly acute in developing countries, where the poorest populations rely disproportionately on ecosystems and natural resources for their livelihoods and well-being. The World Bank estimates that natural capital accounts for an estimated 36% of total wealth in developing countries (World Bank, 2016), compared with only 2% in OECD countries (World Bank, 2011).[3] Ecosystem services are estimated to account for 47% of gross domestic product (GDP) of the poor in India, 75% in Indonesia and 89% in Brazil (TEEB, 2010). Biodiversity also provides the poor with a form of cost-effective and readily accessible insurance against risk, particularly food security risks, health risks and environmental hazards (Vira and Kontoleon, 2013; Roe and Mapendembe, 2013). Conversely, the loss of biodiversity also imposes huge costs on the economies of developing countries – damages due to crime related to natural resources and the environment in developing countries are estimated to be more than 70 billion United States dollars (USD) a year (World Bank, 2014).

Biodiversity and ecosystem services underpin many key economic sectors which support growth, development and human well-being including agriculture, forestry, fisheries and tourism. Agriculture supports more than half of the world's population, including 1.5 billion people living on small-scale farming in developing countries. Over 3 billion people depend on freshwater, marine and coastal biodiversity for their livelihoods, including many people in developing countries for whom fishing is a main subsistence and commercial activity.[4] Overall, it is estimated that 60% of the world's ecosystems have been degraded over the past 50 years (Millennium Ecosystem Assessment, 2005). With climate change expected to exacerbate existing development pressures, especially in the most vulnerable communities, the impact of biodiversity loss will be even greater in the future. As the global population is projected to increase to 9.7 billion people by 2050 (UNDESA, 2015), with much of this increase expected in developing countries, these pressures are anticipated to rise under a business-as-usual scenario. The need for more sustainable development pathways is therefore crucial.

1.2. What do mainstreaming biodiversity and development involve?

Mainstreaming is intended to promote coherence between biodiversity and development objectives at all levels. While perhaps the most traditional approach to addressing biodiversity loss has been to establish protected areas, it is increasingly clear that there is a need to scale up other approaches that are able to mainstream biodiversity considerations across all sectors of the economy, so as to address the drivers of biodiversity loss and ensure sustainable use (OECD, 2012; 2013).

Mainstreaming has been described in various ways (Box 1.2). Some refer more explicitly to processes, whereas others refer to both processes and outcomes. Some tend to focus more on sectors, whereas others emphasise both national and sector mainstreaming. A more recently used term, "reciprocal mainstreaming" (IIED, 2015), emphasises that biodiversity considerations should be integrated into other development agendas, and that development considerations should be integrated into biodiversity objectives. In this report, the term "mainstreaming" is used to refer to reciprocal mainstreaming, covering both processes and outcomes, and focuses on both national and sector entry points.

Box 1.2. **What is biodiversity mainstreaming?**

"Integrating or including actions related to conservation and sustainable use of biodiversity in strategies relating to production sectors, such as agriculture, fisheries, forestry, tourism and mining. Mainstreaming might also refer to including biodiversity considerations in poverty reduction plans and national sustainable development plans" (CBD, 2014).

"The process of embedding biodiversity considerations into 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" (GEF Secretariat, 2016).

"The recognition and integration of biodiversity and ecosystem services and development considerations across different levels of governance and entry points (e.g. national, sectoral, local)" (IIED and UNEP-WCMC, 2013; OECD, 2013).

"The integration of biodiversity concerns into defined sectors and development goals, through a variety of approaches and mechanisms, so as to achieve sustainable biodiversity and development outcomes" (African Leadership Group, 2012).

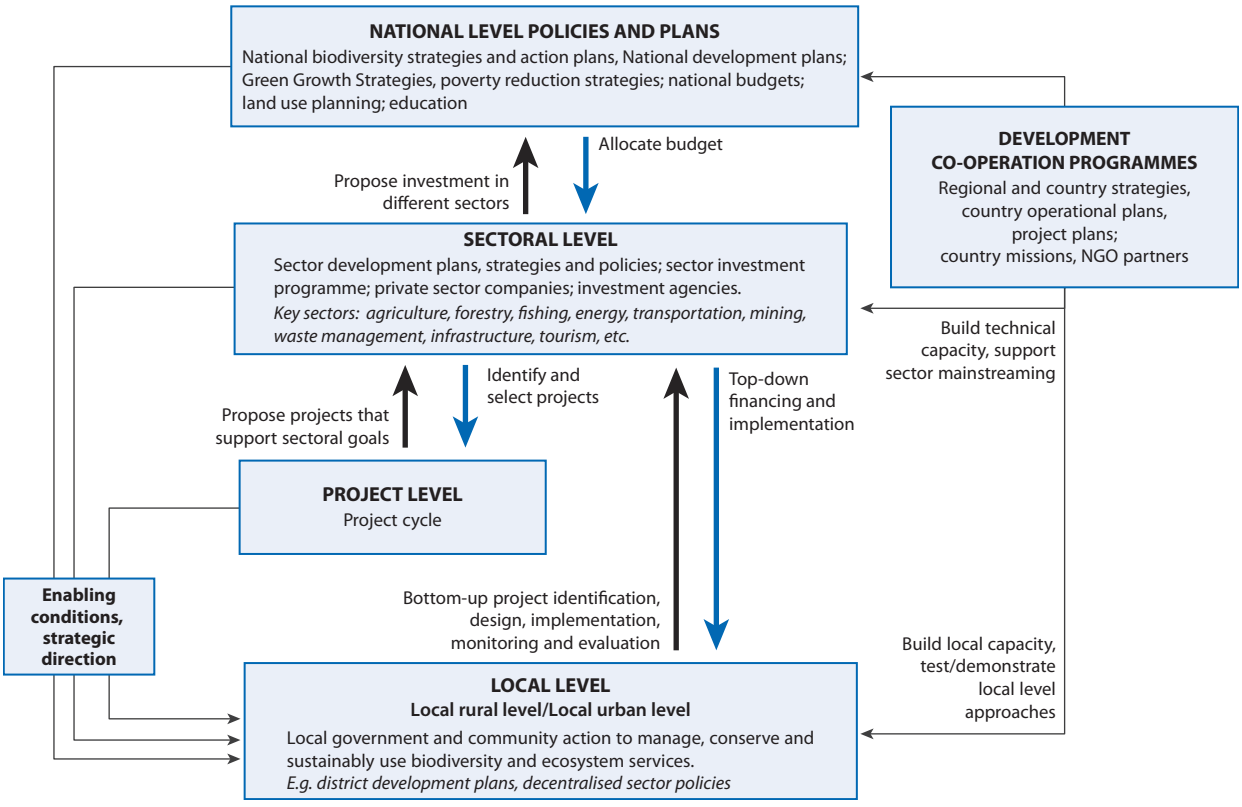
Sources: CBD (2014), *Global Biodiversity Outlook 4*, www.cbd.int/gbo4/; GEF Secretariat (2016), *Biodiversity Mainstreaming In Practice: A Review of GEF Experience*; IIED and UNEP-WCMC (2013), "Ten steps to biodiversity mainstreaming: Tips for NBSAPs 2.0 and beyond", http://pubs.iied.org/14625IIED; OECD (2013), *Scaling-up Finance Mechanisms for Biodiversity*, http://dx.doi.org/10.1787/9789264193833-en; African Leadership Group (2012), "Maun statement on biodiversity and development mainstreaming", http://povertyandconservation.info/sites/default/files/Maun%20Statement.pdf.

According to Huntley and Redford (2014), mainstreaming characteristics include: integration/internalisation/inclusion of biodiversity goals in development models, policies and programmes; simultaneously achieving positive biodiversity and development outcomes; and modifying human behaviour to increase sustainability. Biodiversity mainstreaming can focus on enabling environments at local, national or global levels. It can also focus on development policy, legislation, land-use planning, finance, taxation, economic incentives, international trade, capacity building, research and technology. In addition, it can focus on commodity chains and certification targeted at promoting conservation and sustainable use of major natural resources.

In a review of mainstreaming through the Global Environment Facility (GEF), Huntley and Redford (2014) state that though much has been written about how and why mainstreaming should be done, there is much less on what has been learned from mainstreaming practice – i.e. very limited information is available on what works and what doesn't.

For biodiversity mainstreaming to be effective, it should occur across all levels of government and include all relevant stakeholders (IIED and UNEP-WCMC, 2013). Entry points interact and are located at different levels of governance (Figure 1.1). For example, including attention to biodiversity and ecosystem services within a national or sector development plan is a key step in the mainstreaming process but will not result in changed outcomes on the ground if there is no budget allocated to implement the plan. Similarly, doing so will be insufficient if subnational and sector-level activities are not co-ordinated and aligned with the national vision and strategy (Drutschinin et al., 2015).

Figure 1.1. **Entry points for mainstreaming biodiversity and development**



Note: NGO = non-governmental organisation.

Source: Adapted from OECD (2009), *Integrating Climate Change Adaptation into Development Co-operation: Policy Guidance*, http://dx.doi.org/10.1787/9789264054950-en.

The concept of mainstreaming is not new, nor is it one unique to biodiversity; it has been considered in areas such as climate change and disaster risk management, as well as the environment more broadly, notably in initiatives to pursue green growth or green economies. In the context of climate change, for instance, the impetus for low-emission development strategies was a perceived need to more cohesively pursue dual objectives of low emissions and development goals (see Clapp, Briner and Karousakis, 2010). Similarly, just as "aligning policies for a low-carbon economy" is directly associated with mainstreaming climate objectives into other sectors of the economy (OECD, 2015a), mainstreaming biodiversity and development could, for example, also be described as pursuing inclusive green growth for biodiversity and/or aligning policies for a resource-efficient economy. A number of the lessons and insights are relevant for how to mainstream biodiversity more effectively.

However, significant challenges remain in harnessing synergies and addressing trade-offs with regard to mainstreaming biodiversity in practice. Earlier work on biodiversity mainstreaming highlights the need to better assess mainstreaming efforts, to use these to inform policy making and to develop learning networks at regional and global scale (Huntley and Redford, 2014).

Table 1.1. **Focus countries examined and their characteristics**

Country	Biodiversity		Income group	Top 20 recipient of biodiversity-related ODA (or top 10 provider of biodiversity-related ODA)? 2014-16
	Mega-diverse	Biodiversity hotspots		
Australia	Yes	The Southwest Australia Ecoregion	HIC	No (Yes)
Brazil	Yes	Atlantic Forest	UMIC	Yes
People's Republic of China	Yes	Mountains of southwest China	UMIC	Yes
Colombia	Yes	Tropical Andes, Tumbes-Chocó-Magdalena	UMIC	Yes
Ethiopia	Yes	Eastern Afromontane	LIC	Yes
France	No	Mediterranean Basin and French overseas territories and departments in the Indian Ocean (Réunion, Mayotte and the Îles Éparses), South Pacific (New Caledonia) and Antilles	HIC	No (Yes)
India	Yes	Himalaya, Indo-Burma, Western Ghats	LMIC	Yes
Madagascar	Yes	Madagascar and the Indian Ocean Islands	LIC	No
Mexico	Yes	Madrean Pine-Oak Woodlands; Mesoamerican Forest	UMIC	No
Myanmar	No	Himalaya, Indo-Burma, mountains of southwest China	LMIC	No
Nepal	No	Himalaya, Indo-Burma	LIC	No
Peru	Yes	Tropical Andes, Tumbes-Chocó-Magdalena	UMIC	Yes
Philippines	Yes	Philippines	LMIC	Yes
South Africa	Yes	Cape Floristic, Succulent Karoo	UMIC	No
Uganda	No	Eastern Afromontane	LIC	Yes
Viet Nam	No	Indo-Burma	LMIC	Yes

Notes: **HIC** = high-income country; **UMIC** = upper-middle-income country; **LMIC** = lower-middle-income country; **LIC** = lower-income country.

Sources: Biodiversity hotspots from CEPF (2017), "Explore the biodiversity hotspots", www.cepf.net/resources/hotspots/; income classification from World Bank (2018), "World Bank Country and Lending Groups" (database), https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups; OECD (2017), *DAC Creditor Reporting System* (database).

This report draws on experiences from primarily 16 countries (Table 1.1), which are selected based on one or more of the following criteria:

- Countries that are "megadiverse" or host one or more biodiversity hotspots,[5] as these are countries which are rich in endemic species and which are under threat from human activities.
- Countries spanning different income groups. Mainstreaming biodiversity is crucial for all countries, as recognised by the parties to the CBD and the SDGs. Nations vary significantly in terms of their socio-economic characteristics and the institutional and technical capacities to make meaningful progress towards mainstreaming. A broad range of countries are therefore examined to ensure that various challenges are considered.
- The role of development co-operation in supporting biodiversity conservation and sustainable use. The OECD Development Assistance Committee (DAC) considers developing countries to be those eligible to receive official development assistance (ODA).[6] These are countries where major policy challenges include reducing poverty and improving human development, and where the trade-offs between biodiversity

conservation/sustainable use and poverty reduction are apparent. The size and extent of bilateral support for biodiversity in a country is an indication of the importance of biodiversity, as well as a reflection of the country's capacity to disburse and deploy biodiversity-related development finance.

In terms of sectors, the report focuses on approaches taken towards biodiversity mainstreaming in agriculture, forestry and fisheries. This is due to the importance of these sectors as they a) are a source of support for livelihoods and economic development; and b) exert pressure on biodiversity and also offer substantial opportunities to support biodiversity. While other sectors – such as tourism, energy, transport, infrastructure and extractives – are also critically important for biodiversity, analysis of these is outside the scope of this report.

1.3 Good practice insights on biodiversity mainstreaming

Biodiversity mainstreaming at the national level

The national-level entry point for reciprocal mainstreaming of biodiversity and development is key in terms of orienting the long-term strategic direction, enabling favourable financial decisions, and harnessing political will and opportunities for scalability. Important elements to help foster mainstreaming and enable its implementation in practice include: mainstreaming biodiversity across relevant national plans and strategies; ensuring co-ordination and coherence across institutions and clearly defining respective roles and responsibilities; generating the evidence base needed for informed decision making (e.g. with respect to legislative and policy frameworks); and mainstreaming biodiversity in national budgets.

Reciprocal mainstreaming through consistent and aligned objectives across various national strategies is a first step towards mainstreaming

A review of National Biodiversity Strategies and Action Plans (NBSAPs) of the focus countries suggests that most countries have recognised the need to mainstream biodiversity in their most recent NBSAPs, building on the Aichi Targets. A number of NBSAPs also define specific mainstreaming targets, as well as indicators to monitor progress. For example, the vision of South Africa's NBSAP links biodiversity conservation and sustainable use to the well-being of people in South Africa, includes a specific strategic objective to mainstream biodiversity into policies across sectors, and elaborates further actions and indicators on mainstreaming. These indicators include rate of loss of natural habitats and positive and harmful incentives. Outcomes of promoting mainstreaming in the NBSAPs are demonstrated, to some extent, through evidence of reciprocal mainstreaming, i.e. whereby the importance of biodiversity and/or ecosystems is being recognised in National Development Plans (NDPs).

Mainstreaming in other national-level plans and strategies is also occurring; however, there is large scope for greater coherence across different national policy areas. For example, the importance of biodiversity or ecosystems is recognised in several of the NDPs reviewed, though in some cases this is restricted to general strategic directions. A fewer number of NDPs incorporate specific biodiversity-relevant targets with associated indicators to monitor progress. Examples of biodiversity-relevant targets and indicators that are incorporated in NDPs include rates of deforestation, land use and degradation (Colombia); increase in forest cover (Nepal, Uganda); species in danger of extinction; and the number and size of protected areas. In addition, the extent to which the importance of

biodiversity (and/or ecosystems) is being recognised in other national strategies varies, and green growth strategies in particular tend to place a stronger emphasis on climate change issues than on biodiversity. Some positive examples of national strategies that integrate biodiversity alongside other policy objectives include the green growth strategy of Indonesia, the poverty reduction strategies of Brazil and Ethiopia, and the climate change strategies of France and Mexico.

Mainstreaming biodiversity in national strategies and policies can be facilitated by the NBSAP preparation process, especially when underpinned by strong stakeholder engagement. In preparing or updating the NBSAP, governments can facilitate engagement and discussion of the linkages and trade-offs between biodiversity and other national priorities (e.g. economic development, poverty reduction, food security, health), which in turn bolsters reciprocal mainstreaming. For example, Uganda set up a working group on "biodiversity for development, wealth creation and socio-economic transformation" to mainstream development issues in its NBSAP. Once this work was completed, the group's mandate was renewed to ensure that biodiversity was mainstreamed into the NDP.

Mainstreaming requires clear institutional mandates, and strong vertical and horizontal co-ordination mechanisms

Clearly identifying the roles and responsibilities of different institutions in the process towards biodiversity mainstreaming is important, as it helps to enhance transparency and accountability. A few NBSAPs reviewed, such as those of India and Ethiopia, clearly specify which institutions are involved for each of the biodiversity targets and actions. In some cases, more comprehensive institutional change has been undertaken to ensure effective implementation. Bringing together four existing institutions to establish the French Biodiversity Agency, for example, was aimed at rationalising biodiversity governance and creating a one-stop shop for action on biodiversity, which can also help promote synergies between action on biodiversity and other environmental agendas such as climate change and green growth.

Irrespective of whether the governance system in a country is centralised or decentralised, governments should aim for strong horizontal and vertical co-ordination and should institute mechanisms to help ensure policy coherence. Co-ordination mechanisms, through the establishment of inter-ministerial committees or working groups for instance, can facilitate a dialogue and working relationships that are necessary to formulate and implement wide-ranging policy reforms associated with reciprocal mainstreaming of biodiversity and development-related issues. At least nine of the countries reviewed have some form of biodiversity-relevant inter-ministerial committee already in place (including China and Nepal). However, challenges have arisen in many of these; for example, the institutions lack the authority or the resources to perform their functions, decisions taken are not binding, or they simply do not meet as frequently as they are supposed to. Such institutions will not be able to deliver on their intended objectives unless they are empowered to do so. It is perhaps timely for governments to review the existing mandates of such committees and to evaluate whether and how they can be improved so as to foster biodiversity mainstreaming.

Adequate human resources are needed among different sector ministries to ensure they are able to prioritise and implement mainstreaming, and governments can build on capacity already in place to tackle other environmental issues. For example, in Ethiopia, environmental units are embedded within various sector ministries with the intent to mainstream environmental issues across sectors. Targeted capacity building can support gaps in technical capacity, and should be focused at both national and subnational levels.

The Mainstreaming Biodiversity and Development Initiative, for example, is a joint effort between the International Institute for Environment and Development (IIED) and the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), funded by governments of the United Kingdom and Germany; it supports technical capacity building in eight African countries to promote mainstreaming. This includes developing tools and guidance to support mainstreaming at national and subnational levels, providing technical support to ministries in target countries, and promoting learning among different countries.

Robust, policy-relevant and readily available data and information are a prerequisite for mainstreaming efforts

The persistent lack of sufficient and/or publicly available data is an ongoing challenge for mainstreaming efforts. Biodiversity-related data are often unavailable, or are unreliable and/or of insufficient quality. Where data are available, usability and accessibility can be an issue with environment-related data fragmented across different institutions and not packaged in forms that can be utilised by various stakeholders. Australia's NBSAP, for example, identifies the need to better align research priorities and improve knowledge exchange among researchers, practitioners and policy makers so that biodiversity-related information is usable beyond the scientific community.

Data and information on biodiversity-related issues are critical for establishing baselines, quantifying benefits, targeting biodiversity expenditures to where they are most needed, and monitoring and evaluating change over time in order to track mainstreaming outcomes as well as impacts (OECD, 2013b). Data are useful not only to inform policy making but can also be instrumental for effective implementation, including enforcement of laws and regulations. In Brazil, for example, a state-of-the-art satellite-based deforestation monitoring system in the Amazon biome, run by the National Institute for Space Research, has enabled the government to monitor and enforce actions against deforestation. Mexico has recently launched a national automated mapping system that allows the evaluation of national subsidies/incentives through spatial analysis tools.[7]

National Ecosystem (or Biodiversity) Assessments can provide the comprehensive information base to facilitate mainstreaming efforts. They are useful in terms of establishing baselines and providing a comprehensive overview of the current state of and pressures on biodiversity. A notable assessment is that of South Africa, which also provides spatially explicit data on the basis of which priority areas and corresponding priority actions are identified. This has also been used to develop biodiversity sector plans at the local and district levels, and overall, the quantity and quality of data available in South Africa has been instrumental in mainstreaming biodiversity in a number of sectors including mining, water infrastructure and agriculture (Manuel et al., 2016).

In addition to data systems, assessments that demonstrate the economic contribution of biodiversity to society and the costs of ecosystem loss and degradation in monetary terms can help make the case for mainstreaming. Such valuation exercises have been undertaken in several countries, with support from multilateral international initiatives such as The Economics of Ecosystems and Biodiversity (TEEB) and the World Bank's Wealth Accounting and the Valuation of Ecosystem Services (WAVES). Other types of national assessments can also be instrumental in informing and prioritising mainstreaming efforts. In France, a national study was undertaken to evaluate the public subsidies that are harmful to biodiversity (Sainteny et al., 2011). Such a study is unique among the countries reviewed in this report.[8] Given the volume of finance being allocated to potentially environmentally

harmful activities worldwide (including in agriculture, forestry and fisheries), this represents an area for further work. The OECD database on Policy Instruments for the Environment (PINE) also provides information on countries with biodiversity-relevant taxes, charges and fees, tradable permits, and other instruments, all of which are positive incentives for conservation and sustainable use.[9]

Lack of information on biodiversity-related expenditures is a barrier to mobilising support for biodiversity in national budgets

Effective mainstreaming cannot realistically be achieved without sufficient allocation towards addressing biodiversity in national budgets. Assessing the "appropriate" amount of the national budget to be allocated is based on comparing what is required to achieve the objectives specified in the NBSAP and what can reasonably be mobilised from alternative sources (e.g. from the private sector, ODA). Very few countries have been able to make such comparisons, however, due to a lack of robust, comprehensive and comparable time series data on public biodiversity expenditure across national and subnational budgets. Of the countries examined, only a few – such as India, Mexico and South Africa – have information on public biodiversity expenditure. Initiatives such as the United Nations Development Programme's Biodiversity Finance Initiative (UNDP BIOFIN) are working with 30 predominantly developing countries to collect this information. In the Philippines, BIOFIN and the Department of Budget and Management are working together to "tag" biodiversity-related expenditures. Combined with NBSAP costing, this work has enabled an assessment of the funding gap, which is around 10 billion Philippine pisos (PHP) a year. The recently established Paris Collaborative on Green Budgeting, led by the OECD in collaboration with France and Mexico, is a further step in this regard.

Mainstreaming biodiversity in agriculture, forestry and fisheries sectors

The agriculture, forestry and fisheries sectors have major impacts on biodiversity and are priority sectors for mainstreaming in many countries

The agriculture, forestry and fisheries sectors are central to economic growth and development worldwide, and especially so in developing countries. These sectors supply essential commodities such as food, fibre, fuel and fodder which constitute basic needs of society as well as inputs for other economic sectors. The agriculture sector alone employs one in three people in the world's active labour force (FAO, 2012). While these sectors depend on healthy ecosystems for their productive capacity (see e.g. OECD, 2015c, on fisheries and aquaculture), the sectors also exert pressure on biodiversity and are essential to conservation and sustainable use efforts. Large-scale land conversion for agriculture and degradation of ecosystems due to unsuitable agricultural practices and input use is a major pressure on biodiversity loss. In OECD countries, the contribution of agriculture to total income and employment is relatively low;[10] however, the sector continues to have a significant environmental impact given the high levels of input use and large land area under cultivation (36%) (OECD, 2016a; 2013a). The forestry sector is also important: the formal forestry sector is estimated to contribute more than USD 600 billion, or 0.9% of the world's GDP, and provide employment to 13.2 million people (FAO, 2014). Concurrently, forests, particularly in the tropics, provide habitat to 80% of global terrestrial species and a variety of ecosystem services (UN SPF, 2017). Fisheries play an important role for food security and nutrition, and fishery trade is especially important for developing nations, in some cases accounting for more than half of the total value of traded commodities (FAO, 2014).

Clarifying land tenure and reforming environmentally harmful subsidies are prerequisites for effective mainstreaming in the agriculture sector

Pressures on biodiversity related to agriculture stem from land-use change, and unsustainable input use and agricultural practices. The need for sustainable agricultural to ensure the long-term provision of ecosystem services that underlie production are increasingly being recognised. Agriculture sector strategies, plans and policies in countries such as Uganda, Ethiopia and India include consideration of sustainable use and management of natural resources. Key prerequisites for mainstreaming in the sector include clear and secure tenure rights to encourage investment in sustainable agricultural practices and integration of biodiversity criteria in land-use planning. Economic instruments for mainstreaming biodiversity in agriculture are generally underutilised, though mechanisms such as payments for ecosystem services are being increasingly implemented in a range of countries. Additionally, significantly enhanced efforts to identify and reform environmentally harmful government support to agriculture would contribute to mainstreaming efforts. An increasing number of countries are reporting to the OECD Producer Support Estimate database on agricultural support, which is a step in this direction.[11] Large-scale community engagement in natural resource management in the agricultural sector has been undertaken in certain countries such as Ethiopia and Australia, which contributes to raising awareness and enables adoption of improved technologies and practices. In order to better track mainstreaming outcomes, it would be useful to have agri-environmental indicators that are common across countries including indicators that explicitly account for biodiversity.

Approaches to mainstream biodiversity in commercial forestry objectives are taking root, but further efforts to engage local communities and improve land-use planning are needed

While there is clear recognition of the importance of inclusive and sustainable forest management, in a co-ordinated manner with other economic and social policy priorities, as reflected in many NDPs, practical efforts and implementation in this regard vary greatly among countries. For example, the percentage of forest area under forest management plans varies considerably across the countries examined, ranging from about 10% in Brazil, to 40% in France and Peru, to 100% in India and Myanmar (FAO, 2015). Policy instruments that mainstream and internalise the external costs of biodiversity loss in forestry, so as to reconcile the objectives of forest biodiversity, and the development of forestry as a commercial productive sector are increasingly being adopted. These include community-based forestry, payments for ecosystem services and sustainable timber certification schemes. Available comparable data on forest area under sustainable certification schemes at the national level also show large variations across these countries, with most below 2%. Notable exceptions are France (47%), South Africa (16%) and Australia (9%). Subnational data on forest certification remain limited (Kraxner et al., 2017). Common mainstreaming challenges at the practical implementation level include the need for stronger engagement with stakeholders, including indigenous communities, and better co-ordinated land-use planning with a number of sectors including agriculture.

Efforts to mainstream biodiversity in the fisheries sector need to be strengthened

Many challenges remain in the fisheries sector, as reflected by the continuing increasing trends in the over-exploitation of marine fish stocks. The projected rise in aquaculture is also expected to exert increasing pressure on biodiversity. Evaluating compliance with the voluntary Food and Agriculture Organization (FAO) Code of Conduct

for Responsible Fisheries is perhaps the most comprehensive international approach for assessing progress towards mainstreaming biodiversity in the fisheries sector. A fundamental prerequisite for effective fisheries management is reliable comprehensive data on fish stocks, which are lacking in many countries. Australia is a notable exception, and its data collection, together with fisheries management plans, has achieved near 100% sustainable stocks at national level. A number of the review countries are also currently reporting to the OECD Fisheries Support Estimate database (e.g. Australia, Chinese Taipei, Colombia, France and Indonesia), enabling the tracking of government support to this sector over time. Marine spatial plans, which aim to take a systematic and comprehensive approach across sectors in the oceans space, are also beginning to proliferate and have been implemented in Australia, China, Colombia and Mexico; are under development in South Africa; and are being discussed in Brazil, Chile, Madagascar, Thailand and Viet Nam.

Development co-operation and biodiversity mainstreaming

Development co-operation continues to play an important role in supporting mainstreaming efforts in developing countries

Development partners are an important source of finance and technical capacity in support of biodiversity conservation and sustainable use in developing countries. Many developing countries, such as Madagascar and Ethiopia, have identified the availability of external funding as an important factor in successful implementation of their NBSAPs. Concurrently, a steady increase has been recorded in bilateral biodiversity-related ODA from members of the OECD DAC over the past decade, reaching USD 7.9 billion per year in 2015-16. Despite this, biodiversity-related ODA still makes up only a small share of overall portfolios, around 6% in 2015-16.

Besides financing biodiversity efforts, development co-operation supports biodiversity mainstreaming by strengthening frameworks for mainstreaming at the national level as well as directly supporting the mainstreaming of biodiversity into specific sector policies, plans and projects. Both of these include efforts to a) improve policies and institutions; b) improve data and information systems; and c) mobilise financing for biodiversity conservation and sustainable use. In Peru, development co-operation has been a key partner in creating the Ministry of Environment and developing a policy framework to promote public investment in biodiversity. A number of initiatives that have become important enablers of mainstreaming, such as the World Bank WAVES programme, the UNDP BIOFIN and financing from the Global Environment Facility (GEF), have been implemented through continued development co-operation support.

Efforts are under way to integrate biodiversity within development co-operation programming

At the same time, there is an indication that biodiversity is becoming an increasingly important theme in development co-operation programming, with several development partners prioritising biodiversity and ecosystem services within their overall development co-operation strategies. There are also examples of rigorous screening systems being implemented to realise biodiversity co-benefits, or at a minimum to identify and mitigate potential risks to biodiversity in development projects and programmes. Despite the progress achieved, considerable potential remains for further support to mainstreaming efforts of partner countries, and better biodiversity mainstreaming within development co-operation operations and portfolios.

Monitoring and evaluation of biodiversity mainstreaming

Efforts to monitor and evaluate biodiversity mainstreaming need to be scaled up

The need to monitor and evaluate mainstreaming efforts cannot be underestimated. It is not possible to identify how to allocate human, financial and technical resources more effectively, in order to achieve desired objectives, without assessing the impact of interventions over time. The use of indicators is a key component of this. Though indicators are emerging, monitoring and evaluation of biodiversity mainstreaming is in its infancy. The Aichi Biodiversity Targets and the proposed global indicators thereunder, as well as the indicator framework under the SDGs, offer a starting point from which further indicators could be considered. A few of the NBSAPs reviewed in this report also include indicators that are relevant to mainstreaming initiatives (e.g. rate of loss of natural forests, e.g. Viet Nam; number of positive and harmful incentives, e.g. Ethiopia), and some have also been transposed into NDPs (and other national strategies). International organisations that serve as platforms to collect comparable national data (e.g. OECD, FAO, World Bank) also have an important role to play in this context. Building on the indicator frameworks of the Aichi Biodiversity Targets, the SDGs and other multi-country data sources, this report presents a preliminary set of indicators that could be considered for further use to help monitor and evaluate biodiversity mainstreaming efforts in a more consistent manner. This includes indicators across the range of response indicators, namely inputs (e.g. finance), processes (e.g. establishment of inter-ministerial committees), outputs (e.g. national assessments and other studies), outcomes (e.g. new or more ambitious policies) and impacts (changes in the state of biodiversity and ecosystem services).

1.4. Mainstreaming biodiversity for sustainable development – a blueprint for action

Given the breadth of biodiversity mainstreaming, the overarching key messages from this report are the need to: be comprehensive and systematic in assessing mainstreaming needs, prioritise actions and interventions in the face of resource constraints, scale up and make more ambitious the full suite of biodiversity policy instruments that are able to impact on production and consumption patterns, and further develop and use indicators so as to be able to monitor and evaluate progress towards biodiversity mainstreaming over time. Based on this work, as well as previous OECD efforts to assess mainstreaming in the context of green growth, climate change and development co-operation, there are five main areas of action needed by policy makers and decision makers to promote effective mainstreaming of biodiversity and development.

Establish a strong social and business case for biodiversity

Given the multiple drivers of biodiversity loss and degradation, mainstreaming efforts depend on a clear and well-documented understanding of the value of biodiversity and ecosystem services for the economy and society at large, as well as the key pressures, communicated and accepted across sectors and different stakeholder groups. Governments can prioritise the following action to support the development of a strong business case for biodiversity:

- Conduct a national assessment of biodiversity and ecosystem services outlining the key pressures on biodiversity and incorporating, where possible, the full social benefits that ecosystems and ecosystem services provide, including monetary values where feasible.

- Integrate biodiversity-related considerations into sector-level resource assessments – e.g. agriculture, forestry, fisheries – and identify key pressures in each case.
- Invest in statistical/data systems to establish an evidence base on the drivers, pressures and state of biodiversity, including in improvements to the quality of existing data and efforts to enhance consolidation of and access to different data sources, and to enable evidence-based decision making.
- Develop targeted messages to the relevant stakeholders and work together to identify solutions.

Align policies on biodiversity for sustainable development

A strong commitment to biodiversity mainstreaming at national and sector levels is a prerequisite for successful mainstreaming. This commitment should also be reflected in NBSAPs and national/sector development policies, supported by policy coherence across legislative and policy frameworks. Integrating biodiversity and development policy and planning requires the following priority action:

- Develop a clear long-term vision for biodiversity and development through national biodiversity strategies, ensuring engagement of different stakeholders from economic sectors and development planning.
- Promote strategic leadership for biodiversity within the government, e.g. by embedding responsibility for mainstreaming under a cross-cutting, high-level inter-ministerial committee, working group or panel.
- Actively integrate and embed biodiversity into national development planning and policy making, through overarching entry points for environmental issues more broadly.
- Review and evaluate legal and policy frameworks to identify challenges and weaknesses, and strengthen these as appropriate so as to promote policy coherence between biodiversity and development objectives
- Define indicators for environmental and socio-economic policy variables, establish baselines, and make the information publicly available.
- Review and evaluate existing policy instruments (including positive and harmful incentives that may be in place), and identify what adjustments are needed, including the need for additional policy instruments and those that are able to generate revenue.

Develop monitoring and evaluation systems for mainstreaming

- Build on relevant indicators under the Aichi Biodiversity Targets and the SDGs, and further examine what other indicators would be useful and feasible to monitor and evaluate mainstreaming at the national level and across sectors.
- Such indicators could better cover the full range of responses, including inputs (e.g. finance and staff), processes (e.g. existence of inter-ministerial commissions), outputs (e.g. new data and assessments), outcomes (e.g. new policies such as the introduction of pesticide taxes), and impacts (e.g. improved state of biodiversity).

Strengthen institutions and capacity

Adequate institutional capacity, including dedicated human resources at national and subnational levels to implement and monitor mainstreaming action, supports iterative decision-making and inter-ministerial co-ordination mechanisms.

- Establish horizontal and/or vertical co-ordination mechanisms.
- Clearly define mandates, roles and responsibilities of relevant institutions.
- Provide training, and enhance capacity to ensure implementation.
- Promote research on biodiversity mainstreaming and research collaborations in developed and developing countries (including South-South collaborations), and provide grants as well as support for mainstreaming environmental and biodiversity programmes in education at all levels (schools and at university level).

Mobilise adequate financing for biodiversity

Identifying biodiversity financing needs to ensure the conservation and sustainable use at the national level and by sector enables the policy actions identified above to be implemented. Finance for biodiversity can be mobilised through government budgets, through economic instruments (and in some cases voluntary approaches) that apply to the private sector, and through civil society via philanthropy for example. In developing countries, support for mainstreaming from development co-operation can play an important complementary role to the government and other stakeholders. It is important to also note that the biodiversity financing challenge is not only about mobilising additional resources, but also about a) avoiding future costs; b) spending existing resources more effectively and efficiently; and c) reallocating existing resources as appropriate.

- Develop and embed approaches to track biodiversity-related expenditure within the government system, and identify resource needs to effectively implement mainstreaming activities.
- Examine the potential use of economic instruments (such as taxes, charges and fees, and payments for ecosystem services, among others) that are able to generate revenue, while also providing continuous incentives for biodiversity mainstreaming.
- Promote efforts to further engage the private sector in biodiversity mainstreaming efforts.

Notes

1. Biodiversity is also relevant to other SDGs, including Goal 1 on poverty eradication, Goal 2 on food security and sustainable agriculture, Goal 6 on sustainable water management, Goal 8 on economic growth, Goal 9 on resilient infrastructure, Goal 11 on cities and human settlements, Goal 12 on sustainable consumption and production, and Goal 13 on combating climate change.
2. Many of the targets in the SDGs resonate strongly with the CBD Aichi Biodiversity Targets, including on mainstreaming. SDG Target 15.9 for example is: “By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes and poverty reduction strategies, and accounts”.

3. See Lange, Wodon and Carey (2018) for updated numbers.

4. www.un.org/sustainabledevelopment/oceans/.

5. Biodiversity hotspots originated from the concept of "megadiverse" countries or those rich in endemic species, which was proposed by Conservation International in 1998 (Mittermeier et al., 2004). There are currently 36 biodiversity hotspots worldwide which together hold the majority of the world's endemic species, and also hold exceptionally high numbers of threatened species, including 50% of threatened mammals, 73% of threatened birds and 79% of threatened amphibians (see Myers et al., 2000).

6. The DAC list of ODA-eligible countries includes all low- and middle-income countries, excluding those that are members of the Group of 8 or European Union, and includes the United Nations' list of Least Developed Countries separately.

7. http://ssig.conabio.gob.mx/appweb.

8. Similar efforts are being undertaken in other countries including Germany, Italy and the Kyrgyz Republic.

9. The OECD PINE database includes information on when the instrument was introduced, what it applies to, the geographical coverage, the environmental domains it aims to address (e.g. biodiversity, climate), the industries concerned, revenues, costs or rates, earmarking, and exemptions.

10. The share of agriculture in total GDP of OECD countries ranges from 0.3% to 9.2% (OECD, 2013a), and employment ranges from 1.1% to 21% (OECD, 2016d).

11. These include Australia, Brazil, China, Colombia, France, Mexico and South Africa.

References

African Leadership Group (2012), "Maun statement on biodiversity and development mainstreaming", http://povertyandconservation.info/sites/default/files/Maun%20Statement.pdf.

CBD (2014), *Global Biodiversity Outlook 4*, Convention on Biological Diversity, Montreal, www.cbd.int/gbo4/.

CEPF (2017), "Explore the biodiversity hotspots", Critical Ecosystem Partnership Fund, www.cepf.net/resources/hotspots/.

Clapp, C., G. Briner and K. Karousakis (2010), "Low-emission development strategies (LEDS): Technical, institutional and policy lessons", *OECD/IEA Climate Change Expert Group Papers*, No. 2010/02, OECD Publishing, Paris, http://dx.doi.org/10.1787/5k451mzrnt37-en.

Drutschinin, A. et al. (2015), "Biodiversity and development co-operation", *OECD Development Co-operation Working Papers*, No. 21, OECD Publishing, Paris, http://dx.doi.org/10.1787/5js1sqkvts0v-en.

FAO (2015), *Global Forest Resources Assessment 2015*, Food and Agricultural Organization of the United Nations, Rome.

FAO (2014), *The State of the World's Forests*, FAO, Rome.

FAO (2014), *The State of the World Fisheries and Aquaculture*, FAO, Rome.

GEF Secretariat (2016), *Biodiversity Mainstreaming In Practice: A Review of GEF Experience*, Global Environment Facility, Washington, DC.

Huntley, B.J. and K.H. Redford (2014), "Mainstreaming biodiversity in practice: A STAP advisory document", Global Environment Facility, Washington, DC.

IIED (2015), "Putting biodiversity at the centre of development: A checklist for reviewing the mainstreaming potential of a country's NBSAP", International Institute for Environment and Development, London, http://pubs.iied.org/pdfs/17572IIED.pdf.

IIED and UNEP-WCMC (United Nations Environment Programme World Conservation Monitoring Centre) (2013), "Ten steps to biodiversity mainstreaming: Tips for NBSAPs 2.0 and beyond", IIED, London, http://pubs.iied.org/14625IIED.

Kraxner, F. et al. (2017), "Mapping certified forests for sustainable management – A global tool for information improvement through participatory and collaborative mapping", *Forest Policy and Economics*, Vol. 83, Elsevier, pp. 10-18.

Lange, G.-M., Q. Wodon and K. Carey (2018), *The Changing Wealth of Nations 2018 : Building a Sustainable Future, World Bank,* Washington, DC, https://openknowledge.worldbank.org/handle/10986/29001.

Manuel, J., et al. (2016), "Key ingredients, challenges and lessons from biodiversity mainstreaming in South Africa: People, products, process", *OECD Environment Working Papers*, No. 107, OECD Publishing, Paris, http://dx.doi.org/10.1787/5jlzgj1s4h5h-en.

Millennium Ecosystem Assessment (2005), *Ecosystems and Human Well-being: Synthesis*, Island Press, Washington, DC.

Mittermeier, R.A. et al. (2004), *Hotspots Revisited*, CEMEX, Mexico City.

Myers, N. et al. (2000), "Biodiversity hotspots for conservation priorities", *Nature*, Vol. 403, Springer Nature, pp. 853-858.

OECD (2017), *DAC Creditor Reporting System* (database), OECD Publishing, Paris.

OECD (2015a), *Aligning Policies for a Low-carbon Economy*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264233294-en.

OECD (2015b), *Towards Green Growth?: Tracking Progress*, OECD Green Growth Studies, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264234437-en.

OECD (2013), *Scaling-up Finance Mechanisms for Biodiversity*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264193833-en.

OECD (2012), *OECD Environmental Outlook to 2050: Consequences of Inaction*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264122246-en.

OECD (2009*), Integrating Climate Change Adaptation into Development Co-operation: Policy Guidance*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264054950-en.

Roe, D. and A. Mapendembe (2013), "Biodiversity and development mainstreaming: A state of knowledge review – discussion paper", International Institute for Environment and Development and the United Nations Environment Programme World Conservation Monitoring Centre, London.

Sainteny, G. et al. (2011), *Public Incentives that Harm Biodiversity*, Centre d'analyse strategique, Paris.

TEEB (2010), *The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature – A Synthesis of the Approach, Conclusions and Recommendations of TEEB*, United Nations Environment Programme, Nairobi.

UNDESA (2015), "World population prospects: The 2015 revision, key findings and advance tables", *Working Paper,* No. ESA/P/WP.241, United Nations Department of Economic and Social Affairs, Population Division, New York.

UN SPF (2017), *Strategic Plan for Forests, 2017-2030*, United Nations, New York, www.un.org/esa/forests/documents/un-strategic-plan-for-forests-2030/index.html.

Vira, B. and A. Kontoleon (2013), "Dependence of the poor on biodiversity", in *Biodiversity Conservation and Poverty Alleviation,* Wiley-Blackwell, Oxford.

World Bank (2018), "World Bank Country and Lending Groups" (database), https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.

World Bank (2016), "Natural capital accounting", www.worldbank.org/en/topic/environment/brief/environmental-economics-natural-capital-accounting.

World Bank (2014), "Enforcing environmental laws for strong economies and safe communities", *Agriculture and Environmental Services Discussion Paper*, No. 05, World Bank, Washington, DC.

World Bank (2011), *The Changing Wealth of Nations*, World Bank, Washington, DC, http://siteresources.worldbank.org/ENVIRONMENT/Resources/ChangingWealthNations.pdf.

BIOFIN (2015), "Peru: One step ahead on biodiversity finance", www.biodiversityfinance.net/news-and-media/peru-one-step-ahead-biodiversity-finance (accessed 13 January 2017).

BMU and BMZ (Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit [German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety] and Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung [German Ministry for Economic Cooperation and Development) (2014), *Committed to Biodiversity: Germany's International Cooperation in Support of the Convention on Biological Diversity for Sustainable Development,* GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit), Bonn and Eschborn.

BMZ (2010), *Biodiversity in German Development Cooperation 2010*, GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit [German Technical Cooperation Agency]), Eschborn.

BMZ (2008), *Strategies 166: Biological Diversity,* BMZ.

Busch, J. and H.S. Grantham (2013), "Parks versus payments: Reconciling divergent policy responses to biodiversity loss and climate change from tropical deforestation", *Environmental Research Letters*, Vol. 8/3, IOP Publishing, https://doi.org/10.1088/1748-9326/8/3/034028.

CBD (2014) "Resource mobilization", decision adopted by the Conference of the Parties to the Convention on Biological Diversity, XII/3, Convention on Biological Diversity, Pyeongchang.

CBD (2012), "Report of the High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020", UNEP/CBD/COP/11/INF/20, CBD, Hyderabad, www.cbd.int/doc/meetings/cop/cop-11/information/cop-11-inf-20-en.pdf.

CCBA (2017), website, The Climate, Community and Biodiversity Alliance, Arlington, Va., www.climate-standards.org/ (accessed 23 January 2017).

COMBO (2017), "The COMBO Project: COnservation, Impact Mitigation and Biodiversity Offsets in Africa", project website, http://combo-africa.org (accessed 13 January 2017).

Council of the European Union (2009), "Council conclusions on integrating environment in development cooperation", 11474/09, 26 June 2009, Brussels.

Crishna Morgado, N. and B. Lasfargues (2017), "Engaging the private sector for green growth and climate action: Overview of development co-operation efforts", *OECD Development Co-operation Working Papers*, No. 34, OECD Publishing, Paris, https://doi.org/10.1787/85b52daf-en.

Danielsson, L., S. Dahlgren and J. Lindström (2016), *Utvärdering av ändamålsenligheten i Sidas arbete med insatshantering* [*Evaluation of effectiveness of Sida's contribution management*], Sida Evaluation, 2016:2, Swedish International Development Cooperation Agency, Stockholm.

Danilova, N. and P. Pillai (2010), "Donor coordination in country-level environmental analytical work", *Environment Notes*, No. 5, World Bank, Washington, DC.

DFAT (2016), "Good Practice Note: Environment protection Principle 2: Assess and manage environmental risks and impacts", Australian Department for Foreign Affairs and Trade, Barton, Australia.

DFAT (2014), "Environment protection policy for the aid program", DFAT, Barton, Australia.

Dinshaw, A. et al. (2014) "Monitoring and evaluation of climate change adaptation: Methodological approaches", *OECD Environment Working Papers*, No. 74, OECD Publishing, Paris, http://dx.doi.org/10.1787/5jxrclr0ntjd-en.

Drutschinin, A. and S. Ockenden (2015), "Financing for development in support of biodiversity and ecosystem services", *OECD Development Co-operation Working Papers*, No. 23, OECD Publishing, Paris, http://dx.doi.org/10.1787/5js03h0nwxmq-en.

Drutschinin, A. et al. (2015), "Biodiversity and development co-operation", *OECD Development Co-operation Working Papers*, No. 21, http://dx.doi.org/10.1787/5js1sqkvts0v-en.

EBRD (2014), "Environmental and social policy", European Bank for Reconstruction and Development, London, www.ebrd.com/downloads/research/policies/esp-final.pdf.

EBI (2015), *Ethiopia's National Biodiversity Strategy and Action Plan 2015-2020*, Ethiopian Biodiversity Institute, Addis Ababa.

EIB (2013), *Environmental and Social Handbook*, European Investment Bank, Luxembourg, www.eib.org/attachments/strategies/environmental_and_social_practices_handbook_en.pdf.

EIB (2009), "Statement of environmental and social principles and standards", EIB, Luxembourg, www.eib.org/attachments/strategies/eib_statement_esps_en.pdf.

EU (2014), "The EU Biodiversity for Life flagship initiative", Publications Office of the European Union, Luxemburg, http://bookshop.europa.eu/en/the-eu-flagship-initiative-pbMN0214786/.

European Commission (2016), *Integrating the Environment and Climate Change into EU International Cooperation and Development*, Tools and Methods Series Guidelines, No. 6, Directorate-General for International Cooperation and Development, Brussels and Luxembourg.

European Commission (2015), *Thematic Global Evaluation of the EU Support to Environment and Climate Change in Third Countries (2007-2013)*, final report, Particip, Freiburg.

FDRE (2011), *Ethiopia's Climate-Resilient Green Economy: Green Economy Strategy*, Federal Democratic Republic of Ethiopia, Addis Ababa, www.undp.org/content/dam/ethiopia/docs/Ethiopia%20CRGE.pdf.

Freudenberger, K. (2010), *Paradise Lost? Lessons from 25 Years of USAID Environment Programs in Madagascar*, United States Agency for International Development, Washington, DC.

GIZ (2017), "Contribution to the environmental objectives of Peru", GIZ, www.giz.de/en/worldwide/13376.html (accessed 13 January 2017).

GIZ (2015), *GIZ Progress Report on Sustainability*, GIZ, Bonn and Eschborn.

Government of Madagascar (2015), *National Biodiversity Strategy and Action Plans 2015-2025*, Government of Madagascar, Antananarivo.

Government of Sweden (2016), *Policy Framework for Swedish Development Co-operation and Humanitarian Assistance,* Government Communication 2016/17:60, Government of Sweden.

Government of Viet Nam (2007), *Viet Nam Forestry Development Strategy: 2006-2020,* unofficial translation, http://theredddesk.org/sites/default/files/viet_nam_forestry_development_strategy_2.pdf.

Harrison, M.E. and G.D. Paoli (2012), "Managing the risk of biodiversity leakage from prioritising REDD+ in the most carbon-rich forests: The case study of peat-swamp forests in Kalimantan, Indonesia", *Tropical Conservation Science,* Vol. 5/4, Sage Publications, pp. 426-433.

IADB (2007), *Implementation Guidelines for the Environment and Safeguards Compliance Policy*, Sector Strategy and Policy Papers Series, Inter-American Development Bank, Washington, DC, http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=35597106.

IADB (2006), "Environment and safeguards compliance policy", IDB, Washington, DC, http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=665902.

IFC (2012), *Performance Standards on Environmental and Social Sustainability*, International Finance Corporation, Washington, DC, www.ifc.org/wps/wcm/connect/c8f524004a73daeca09afdf998895a12/IFC_Performance_Standards.pdf?MOD=AJPERES.

IIED (2018), Mainstreaming Biodiversity and Development Project, website, www.iied.org/mainstreaming-biodiversity-development (accessed 27 June 2018).

IIED and UNEP-WCMC (2015), "Mainstreaming biodiversity and development: Tips and tasks from African experience", International Institute for Environment and Development, London.

JICA (2015a), "National Biodiversity Database System launched with JICA assistances", 27 January, Japan International Cooperation Agency, Hanoi, www.jica.go.jp/vietnam/english/office/topics/press150127.html (accessed 13 January 2017).

JICA (2015b), "JICA and JAXA announce forest monitoring system using ALOS-2 satellite: Constant monitoring of deforestation throughout the tropics and open data access on the Internet", 15 December, JICA, www.jica.go.jp/english/news/press/2015/151215_01.html (accessed 13 January 2017).

JICA (2010), *Guidelines for Environmental and Social Considerations*, translation of Japanese version, JICA, www.jica.go.jp/english/our_work/social_environmental/guideline/pdf/guideline100326.pdf.

Johannes, S. and Olearius, A. (2011), "Environmental Taxation in Viet Nam", GIZ, Eschborn, www.giz.de/fachexpertise/downloads/giz2011-en-factsheet-efr-vietnam.pdf.

Karousakis, K. (2009), "Promoting biodiversity co-benefits in REDD", *OECD Environment Working Papers*, No. 11, OECD Publishing, Paris, http://dx.doi.org/10.1787/220188577008.

Lanius, D.R., E. Kiss and J.W. de Besten (2013), "Aligning biodiversity compensation and REDD+: A primer on integrating private sector conservation financing schemes in the tropics and sub-tropics", IUCN NL (International Union for Conservation of Nature Netherlands), Amsterdam.

Laurans, Y. and A. Haddad (2015), "Ecosystem service valuation for development aid donors: The expected theoretical uses mask the real potential for use", in *Development and Biodiversity: Navigating the Environmental Turning Point*, AFD, Paris.

Levard, L. et al. (2014), "Agroécologie: Évaluation de 15 ans d'actions d'accompagnement de l'AFD – Synthèse du rapport final", AFD, Paris.

Manuel, J., et al. (2016), "Key Ingredients, Challenges and Lessons from Biodiversity Mainstreaming in South Africa: People, Products, Process", *OECD Environment Working Papers*, No. 107, OECD Publishing, Paris. http://dx.doi.org/10.1787/5jlzgj1s4h5h-en.

MEF (2015), "*Lineamientos para la formulación de proyectos de inversión pública en diversidad biológica y servicios ecosistemicos* [*Guidelines for the formulation of public investment projects in biological diversity and ecosystem services*]", Directorate General of Public Investment, Ministry of Economy and Finance of Peru, Lima.

MINAM (2015), "*Lineamientos de política de inversión pública en materia de diversidad biológica y servicios ecosistémicos 2015-2021*[*Public investment policy guidelines on biological diversity and ecosystem services 2015-2021*]", Ministerial Resolution No. 199-2015-MINAM, Ministerio del Ambiente (Ministry of Environment) of Peru, Lima, www.minam.gob.pe/wp-content/uploads/2015/08/RM-N%C2%B0-199-2015-MINAM1.pdf.

MINAM (2010), *Plan Nacional de Acción Ambiental* [*National Environment Action Plan*], MINAM, Lima, www.legislacionambientalspda.org.pe/index.php?option=com_content&view=article&id=822&Itemid=5317.

Murray, J.P. et al. (2014), "Can REDD+ deliver biodiversity co-benefits in Indonesia?", in *REDD+ on the Ground: A Case Book of Subnational Initiatives across the Globe,* Center for International Forestry Research, Bogor, Indonesia.

Nairobi Outcome Document (2016), "Global partnership for effective development co-operation", 1 December 2016, http://effectivecooperation.org/wp-content/uploads/2016/12/OutcomeDocumentEnglish.pdf.

Norad (2014), *Can We Demonstrate the Difference that Norwegian Aid Makes? Evaluation of Results Measurement and How This Can Be Improved*, Report 1/2014, Norwegian Agency for Development Cooperation, Oslo.

Norad (2006), *Norwegian Action Plan for Environment in Development Cooperation,* Norad, Oslo.

OECD (n.d.), *OECD DAC Rio Markers for Climate: Handbook*, OECD Publishing, Paris.

OECD (2018a), *Making Blended Finance Work for the Sustainable Development Goals*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264288768-en.

OECD (2018b), *OECD Investment Policy Review of Viet Nam*, OECD Investment Policy Reviews, OECD Publishing, Paris.

OECD (2018c), *DAC Creditor Reporting System* (database), OECD Publishing, Paris, http://stats.oecd.org/ (accessed 12 February 2018).

OECD (2017), "Climate-related development finance in 2016" (statistical flyer), OECD Publishing, Paris http://oe.cd/RioMarkers.

OECD (2016a), "Biodiversity-related official development assistance 2015" (statistical flyer), OECD Publishing, Paris, www.oecd.org/dac/environment-development/Biodiversity-related-ODA.pdf.

OECD (2016b), "Climate-related development finance in 2015" (statistical flyer), OECD Publishing, Paris http://oe.cd/RioMarkers.

OECD (2016c), "TOSSD compendium for public consultation", draft, OECD Publishing, Paris, www.oecd.org/dac/financing-sustainable-development/TOSSD%20Compendium2016.pdf.

OECD (2015), "Biodiversity and Development: Mainstreaming and Managing for Results", OECD Workshop Co-chairs' Summary, 18 February 2015, www.oecd.org/dac/environment-development/Biodiversity%20and%20Development%20Workshop%20Co-Chairs%20Summary_FINAL_clean.pdf.

OECD (2014a), *Mainstreaming Cross-cutting Issues: Seven Lessons from DAC Peer Reviews*, OECD Development Co-operation Peer Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264205147-en.

OECD (2014b), *OECD Development Co-operation Peer Reviews: Sweden 2013*, OECD Development Co-operation Peer Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264196254-en.

OECD (2013), *Scaling-up Finance Mechanisms for Biodiversity*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264193833-en.

OECD (2012), *Greening Development: Enhancing Capacity for Environmental Management and Governance*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264167896-en.

OECD (2010), "Policy statement on integrating biodiversity and associated ecosystem services into development co-operation", Development Assistance Committee, OECD Publishing, Paris.

OECD/UNDP (2016), *Making Development Co-operation More Effective: 2016 Progress Report*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264266261-en.

Panfil, S.N. and C.A. Harvey (2016), "REDD+ and biodiversity conservation: A review of the biodiversity goals, monitoring methods, and impacts of 80 REDD+ projects", *Conservation Letters*, Vol. 9/2, Wiley Periodicals, pp. 143-150, https://doi.org/10.1111/conl.12188.

Panfil, S.N. and C.A. Harvey (2014), "REDD+ and biodiversity conservation: Approaches, experiences and opportunities for improved outcomes", USAID-supported Forest Carbon, Markets and Communities (FCMC) Program, Washington, DC.

Parker, C. et al. (eds). (2012), *The Little Biodiversity Finance Book: A Guide to Poractive Investment in Natural Capital (PINC)*, Global Canopy Programme, Oxford.

Phelps J., D.A. Friess and E.L. Webb (2012) "Win-win REDD+ approaches belie carbon biodiversity trade-offs", *Biological Conservation,* Vol. 154, Elsevier, pp. 53-60, https://doi.org/10.1016/j.biocon.2011.12.031.

RBINS (2013), "Building capacities for biodiversity for sustainable development and poverty reduction: Strategy 2014-2023", Royal Belgian Institute of Natural Sciences, Brussels.

REDD Standards (2012), "REDD+ Social & Environmental Standards", Version 2, www.redd-standards.org/documents/97-redd-social-environmental-standards-version-2.

Roe, D. (2010), "Whither biodiversity in development? The integration of biodiversity in international and national poverty reduction policy", *Biodiversity*, Vol. 11/1-2, Taylor & Francis, pp. 13-18, https://doi.org/10.1080/14888386.2010.9712641.

SDC (2012), *CEDRIG Climate, Environment and Disaster Risk Reduction Integration Guidance*: *Part I and Part II CEDRIG Handbook*, Federal Department of Foreign Affairs, Swiss Agency for Development and Cooperation, Bern.

SDC (2009), *Evaluation of SDC's Contribution towards Biodiversity: Impact in the Andean Region*, SDC, Bern.

Sida (n.d.), Sida's Helpdesk for Environment and Climate Change, website, Swedish International Development Cooperation Agency, http://sidaenvironmenthelpdesk.se/.

Sida (2017), *Sida's Environmental Policy,* decided by Sida's Director General, 13 June.

Sida (2004), "Sida's environmental management system", Policy and Action Plan for Environmentally Sustainable Development, Sida, Stockholm.

Strassburg B. et al. (2010), "Global congruence of carbon storage and biodiversity in terrestrial ecosystems", *Conservation Letters,* Vol. 3/2, Wiley Periodicals, pp. 98-105, https://doi.org/10.1111/j.1755-263X.2009.00092.x.

Thomas, J. (2014), "NBSAPs 2.0 Mainstreaming Biodiversity and Development", workshop report, Third International Workshop, Okahandja, Namibia, 23-25 July 2014, http://pubs.iied.org/pdfs/G03827.pdf.

UNDP (2016), *BIOFIN Workbook: Mobilizing Resources for Biodiversity and Sustainable Development*, United Nations Development Programme, New York.

UNDP (2013), "Mainstreaming agro-biodiversity: Providing incentives to farming communities to conserve wild crop relatives and landraces", UNDP, New York.

UNDP (2010), *Assessment of Development Results: China*, Evaluation of UNDP Contribution, Evaluation Office, UNDP, New York.

USAID (2016), *Biodiversity How-To Guide 1, 2 and 3,* United States Agency for International Development, Washington, DC, https://usaidlearninglab.org/library/usaid-biodiversity-programming-how-guides.

USAID (2015a), *Biodiversity and Development Handbook,* USAID, Washington, DC.

USAID (2015b), *Biodiversity and Development Research Agenda,* USAID, Washington, DC.

USAID (2014), *USAID Biodiversity Policy,* USAID, Washington, DC.

USAID (2013), "ADS Chapter 204: Environmental procedures", *The Automated Directives System (ADS),* USAID, Washington, DC, www.usaid.gov/sites/default/files/documents/1865/204.pdf.

US Department of State (2015), "United States joins European partners in support of Ethiopia's Climate Resilient Green Economy", 9 July 2015, U.S. Embassy in Ethiopia, Addis Ababa, https://et.usembassy.gov/pr-07092015/.

Waldron, A. et al. (2013), "Targeting global conservation funding to limit immediate biodiversity declines", *PNAS* (Proceedings of the National Academy of Sciences of the United States of America), Vol. 110/29, National Academy of Sciences, pp. 12144-12148, https://doi.org/10.1073/pnas.1221370110.

World Bank (2016), *Environmental and Social Framework: Setting Environmental and Social Standards for Investment Project Financing*, World Bank, Washington, DC.

Chapter 5

Monitoring and evaluating biodiversity mainstreaming

Monitoring and evaluation of biodiversity mainstreaming is key for enabling the assessment of progress over time, and can therefore also play a key role in the deriving good practices that can be shared. This chapter provides a conceptual framework for indicator use and a review of existing and emerging indicators relevant for mainstreaming. Using these as a basis, an overview of possible indicators that can be used to monitor and evaluate biodiversity mainstreaming across the range of policy responses is presented.

5.1. Objectives of monitoring and evaluation of biodiversity mainstreaming

Monitoring and evaluation (M&E) is the systematic collection and objective assessment of data on specified indicators to provide information on the extent of progress and achievement of objectives of an ongoing project, programme, policy or intervention (OECD, 2002). Robust M&E of biodiversity mainstreaming is needed for several reasons. First, there is a need to establish baselines, i.e. the current understanding of the state of play, from which mainstreaming effectiveness can eventually be evaluated. M&E can help to close the knowledge gap and build the evidence base on mainstreaming effectiveness and, when combined with case studies from practitioners, can offer insights on mainstreaming best practices and possible improvements. Finally, it improves transparency by providing information on accounting of resources used in light of stated objectives and results achieved, thus informing the allocation and prioritisation of resources, and allows for adaptive management over time.[1] This is useful at the international level, but arguably even more important for domestic policy makers, to help identify what has worked and what can be made both more environmentally effective and cost-effective. Despite the importance of M&E, however, the Global Environment Facility (GEF), for example, has noted that though billions of dollars have been spent on biodiversity mainstreaming outcomes, there is very little robust, credible evidence on the efficacy of these actions (Huntley and Redford, 2014).

Although M&E is crucial to assessing the effectiveness and efficiency of mainstreaming interventions, often little capacity and funds are devoted to it. Davies et al. (2013) highlight that M&E has typically been constrained by a shortfall in resources allocated to this task due, for example, to reluctance from managers to divert resources from implementation, or hesitancy to expose shortcomings of an intervention. Other challenges include ambiguous definitions,[2] lack of monitoring methodologies and indicators, lack of baseline data, lack of capacity and technical expertise – especially at regional and local levels – a limited understanding between natural science and social science, and a lack of adequate reporting (OECD, 2015a; Davies et al., 2013; Drutschinin et al., 2015). These are further compounded by an intrinsic mismatch between the short time frame of funding cycles and the longer time frame required for M&E of changes in outcomes. In addition to difficulties linked to implementation, there are other barriers to learning from M&E processes (Box 5.1).

Despite these challenges, the need to monitor biodiversity mainstreaming is likely to be increasingly recognised. In the context of cross-sectoral mainstreaming, the Convention on Biological Diversity (CBD) 13th Conference of the Parties (COP13) Decision XIII/3 invites parties: "To enhance monitoring of the use of natural resources, such as land, soil and water in all sectors, including agriculture, forests, fisheries and aquaculture, and tourism, among others, and to improve data collection, management and public access to monitoring data" (CBD, 2016c: para g). Though it is difficult to determine whether more recent biodiversity mainstreaming efforts have been effective, indicators to monitor this are beginning to emerge. This chapter therefore examines the types of indicators that could be used to track progress on biodiversity mainstreaming. It presents a conceptual framework for indicator use and, building on the indicator frameworks under the Aichi Biodiversity Targets and the Sustainable Development Goals (SDGs), provides an overview of indicators that are beginning to emerge. The chapter concludes with an overview of possible indicators that could be used to monitor and evaluate mainstreaming biodiversity efforts across the range of different types of policy responses.

Box 5.1. **Barriers to learning from M&E**

Barriers to learning from M&E, which apply to the national, programme and project levels, include:

- **Organisational culture:** In some organisational structures, poor performance is associated with blame, discouraging openness and learning. Other structures see failure to deliver expected results as an opportunity for learning.
- **Pressure to spend:** Pressure to meet disbursement targets reduces the time available to examine lessons learned and to integrate them in the planning process.
- **Lack of incentives to learn:** When staff turnover is high, the incentive to learn may be limited since the staff responsible will often have moved on long before the consequences of failure to learn are felt.
- **Tunnel vision:** Some staff or operational units prefer to stick to their old processes and procedures even when the shortcomings of these approaches are recognised.
- **Loss of institutional memory:** The organisational capacity to use M&E as a mechanism for learning may be reduced when staff turnover is high.
- **Insecurity and the pace of change**: Unclear and frequent shifts in priorities can have an adverse effect on learning.
- **Unequal nature of relationship:** In the case of development co-operation, the unequal relationship between development co-operation providers and partner countries can inhibit two-way knowledge sharing.

Source: OECD (2015b), *National Climate Change Adaptation: Emerging Practices in Monitoring and Evaluation*, http://dx.doi.org/10.1787/9789264229679-en.

5.2. Conceptual measurement framework

Conceptual framework for classifying mainstreaming indicators

Developing indicators to assess progress against mainstreaming objectives and targets is an essential part of the M&E process. One commonly applied measurement framework, used for the OECD Green Growth Indicators for example (OECD, 2011; 2017), is the pressure-state-response model. In that context, responses can cover a wide range of different actions including those by government, the private sector and civil society. The underlying objective of these responses is that these actions lead to measurable progress in terms of impacts (i.e. reduced pressures, and thus improvement in the state of the environment). Responses refer to environmental, general economic and sectoral policies and changes in awareness and behaviour – via government, households and firms, with examples of indicators including environmental expenditures, environmentally related taxes and subsidies, and enforcement and compliance activities (OECD, 2006). The conceptual framework used here to monitor and evaluate mainstreaming responses can be further elaborated by a conceptual framework that depicts the mainstreaming responses as a system whose key components include inputs, processes (or activities), outputs, outcomes and impacts. Some references also include a cross-cutting context dimension.[3] Indicators to monitor and evaluate biodiversity mainstreaming can be derived for each of these components (Table 5.1).

Table 5.1. **Indicator classification relating to biodiversity mainstreaming**

Indicator type	Definition	Examples
Input	Measure the material and immaterial pre-conditions and resources – both human and financial – provided for an activity, project, programme or intervention	• Finance allocated for biodiversity • Staff allocated to biodiversity
Process	Measure the progress of processes or actions that use inputs and ways in which programme services and goods are provided	• Establish an inter-ministerial committee for biodiversity
Output	Measure the quantity, quality and efficiency of production of goods or services as a result of an activity, project, programme or intervention	• Studies such as national ecosystem assessments or to identify and assess subsidies harmful to biodiversity • New policy instruments
Outcome	Measure the intermediate broader results achieved through the provision of outputs	• Reduced pesticide use • Increase in protected area coverage
Impact	Measure the quality and quantity of long-term results generated as a result of achieving specific outcomes	• Improved condition of biodiversity and sustainability of ecosystem services, such as number of threatened species
Context	Measure how the context (demographic, social, economic, etc.) informs and changes in relation to inputs, processes, outputs, outcomes and impacts	• Measures of stakeholder participation during the mainstreaming process*

*Such indicators include, for example, measures of stakeholder engagement, transparency, political leadership and donor co-ordination in the case of development co-operation. Mainstreaming interventions encompass a variety of dimensions, including economic, ecological, attitudinal and behavioural. According to Davies et al. (2013), for M&E to offer analytical insights, data collected need to cover several dimensions so as to highlight potential trade-offs.

Sources: Based on Huntley and Redford (2014), "Mainstreaming biodiversity in practice: A STAP advisory document", www.cbd.int/doc/case-studies/inc/Mainstreaming-Biodiversity-LowRes.pdf; Horsch (1997), "Indicators: Definition and Use in a Results-Based Accountability System"; Thomas (2014), "Defining and assessing success in mainstreaming"; UNICEF (2003), "M&E training module", Section 2.3 on Indicators.

Entry points for mainstreaming occur at different levels – from national plans, sectoral policies and local projects, to business practices and development co-operation – and M&E is relevant at each of these.[4]

Principles and criteria that can guide the development of suitable indicators for monitoring and evaluating mainstreaming efforts are that they are: measurable (good quality data, comparable across countries and coherent over time), analytically sound (methodologies have been/need to be developed) and policy-relevant (meaningful to target audience) (OECD, 2011). Indicators should also be SMART (specific, measurable, attributable, relevant and time-bound).[5]

Review of existing indicators proposed for or relevant to biodiversity mainstreaming

The concept of mainstreaming has been applied to other policy areas, including the environment, climate change adaptation and gender. Insights on mainstreaming indicators from these areas can therefore be relevant for biodiversity mainstreaming as well. The UN Environment-Development Programme Poverty Environment Initiative, for example, proposes possible (albeit general) indicators that can be used to measure successful environmental mainstreaming (Box 5.2).

Box 5.2. **UN Poverty-Environment Initiative indicators for successful environmental mainstreaming**

- Inclusion of poverty-environment linkages in national development and poverty reduction strategies.
- Strengthened capacity within finance/planning ministries as well as environmental agencies to integrate environment into budget decision making, sector strategies and implementation programmes.
- Inclusion of poverty-environment linkages in sector planning and implementation strategies.
- Strengthened capacity in key sector ministries to include environmental sustainability in their strategies.
- Widened involvement of stakeholders in making the case for the importance of environment to growth and poverty reduction.
- Improved domestic resource mobilisation for poverty-environment investments.
- Increased donor contributions to country-level environmentally sustainable investment.
- Improved livelihoods and access to environmental and natural resources for the poor.

Source: UNPEI (2007), "Guidance note on environmental mainstreaming into national development planning", www.cbd.int/doc/meetings/nbsap/nbsapcbw-seasi-01/other/nbsapcbw-seasi-01-undp-unep-guide-en.pdf/.

A number of other indicators, specific to biodiversity mainstreaming, have been proposed in the context of the Aichi Biodiversity Targets and the SDGs, in a few National Biodiversity Strategies and Action Plans (NBSAPs), and by multilateral development banks and, to a lesser extent, by or for the private sector. A review of these (below) illustrates the various approaches that are emerging.

Several of the Aichi Biodiversity Targets and the proposed global indicators for these are directly relevant to biodiversity mainstreaming. Strategic Goal A is to address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society. The four targets under this goal and the proposed global indicators for these provide a starting point from which to consider possible indicators for biodiversity mainstreaming. The indicators for Aichi Target 2[6] are shown in Table 5.2 as an example. Aichi Target 3 on incentives is another target relevant to mainstreaming biodiversity.[7] The Biodiversity Indicators Partnership (BIP) currently includes one indicator for Target 1, no indicator for Target 2, one indicator for Target 3, and two (active) for Target 4.[8]

Several of the most recent NBSAPs also refer to indicators to monitor biodiversity mainstreaming (Box 5.3), while others (such as those of Australia, France and Mexico) highlight the ongoing or planned development of indicators as an action in their NBSAPs.[9]

Other indicator initiatives can also be relevant to monitoring progress towards biodiversity mainstreaming. Conservation International (2015), for example, developed a set of national indicators that can be used to monitor progress towards sustainable development in Madagascar, several of which are also relevant for mainstreaming biodiversity. These include, for natural capital, percentage of essential natural capital that has formal protection status (with a baseline of 18%), and deforestation rate within areas of essential natural

capital 2010-12 (with a 0.3% deterioration). For sustainable production, the indicators are annual increase in efficiency (crop yield versus area harvested) (with an improvement of 0.4%) and percentage of essential natural capital with overlapping mining permits (with a baseline of 44%).

Table 5.2. **Indicators for Aichi Biodiversity Target 2 under Strategic Goal A**

Generic indicator	Specific indicator
Trends in incorporating measures of stock and flow of natural resources into national accounting	Number of countries implementing natural resource accounts, excluding energy, within the System of Environmental-Economic Accounting (SEEA)
Trends in number of countries that have assessed values of biodiversity, in accordance with the convention	Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011-2020 (indicator for SDG target 15.9)
Trends in integration of biodiversity and ecosystem service values into sectoral and development policies	Number of countries that have integrated biodiversity in National Development Plans, poverty reduction strategies or other key development plans

Notes: Data for the first two indicators are not yet available. Roe (2010) is cited as the reference for the third indicator.

Source: CBD (2016a), "Indicators for the Strategic Plan for Biodiversity 2011-2020", https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-28-en.pdf.

Box 5.3. **Examples of indicators proposed in NBSAPs to monitor biodiversity mainstreaming**

Ethiopia

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.

Target 2. By 2020, the existing biodiversity-related laws, regulations and strategies, including those associated with incentives, are reviewed and gaps are addressed.

Indicator: Number of identified incentives that reward positive contributions and addressed perverse incentives.

Target 3. By 2020, biodiversity values and ecosystem services are communicated and integrated into national and local development and poverty reduction strategies and plans.

Indicator: Strategies integrating values of biodiversity and ecosystem services.

Target 4: By 2020, habitat conversion due to expansion of agricultural land is halved from the existing rate of about 10% per year.

Indicator: Rate of annual conversion of habitats into agricultural land.

India

Target 2: By 2020, values of biodiversity are integrated into national and state planning processes, development programmes and poverty alleviation strategies.

Indicators: Trends in number of studies on biodiversity-inclusive environmental impact assessments (EIAs), cumulative EIAs and strategic environmental assessments (to be conducted by the Ministry of Economic Affairs and Planning Commission); and trends in identification, assessment, establishment and strengthening of incentives that reward positive contribution to biodiversity and ecosystems.

Monitoring/Reporting frequency is every three years.

Box 5.3. **Examples of indicators proposed in NBSAPs to monitor biodiversity mainstreaming** *(continued)*

Madagascar

Strategic Objective 2: In 2025, at the latest, biodiversity values, opportunities and benefits of conservation and sustainable use will be recognised and integrated into the country's socio-economic development activities.

Action: 2.1. Consider the values of biodiversity into sectoral strategies and programmes.

Indicator: 2.1.1. Number of sectoral plans and strategies incorporating and implementing the values of biodiversity implementation strategies.

South Africa

Objective 3: Biodiversity considerations are mainstreamed into policies, strategies and practices of a range of sectors.

Target 3.1: Effective science-based biodiversity tools inform planning and decision making.

Indicator: Number of tools developed to support mainstreaming of biodiversity assets and ecological infrastructure in production sectors and resource management. By 2020, 10 new tools produced and 15 knowledge resources demonstrating the value of biodiversity developed and disseminated.

Viet Nam

Strategic Goal 3: Strengthened sustainable use and equitable sharing of ecosystems, species and genetic resources.

Indicator: Percentage of important degraded ecosystems effectively recovered.

Strategic Goal 4: Reduce direct pressures on biodiversity.

Indicator: Rate of loss of natural forests and water surface area due to land-use conversion.

Other domestic initiatives, which have not been explicitly proposed as indicators for biodiversity mainstreaming but which merit consideration as such as they represent important milestones in the mainstreaming process, include national assessments on public subsidies that are harmful to biodiversity, such as the one undertaken by France (Sainteny et al., 2012).

The GEF has also recently developed indicators to monitor and evaluate biodiversity mainstreaming in its relevant GEF-6 programmes (Box 5.4).

Box 5.4. **Indicators for the mainstreaming of biodiversity in production landscapes/seascapes and sectors in the GEF biodiversity strategy**

Outcomes

Marine and terrestrial resource use is appropriately situated to maximise production without undermining or degrading biodiversity.

Indicator: Area of production landscapes and seascapes that integrate conservation and sustainable use of biodiversity into management.

Box 5.4. **Indicators for the mainstreaming of biodiversity in production landscapes/ seascapes and sectors in the GEF biodiversity strategy** *(continued)*

Production practices and sectoral activities in agriculture, forestry, fisheries, tourism, extractive industries (gas, oil and mining) are biodiversity-neutral, biodiversity-positive or less destructive of biodiversity.

Indicator: Area of production landscapes and seascapes that integrate conservation and sustainable use of biodiversity into management.

Increase in the amount of public and private financial flows that address threats to biodiversity.

Indicator: Financial resources mobilised for biodiversity management.

Policy and regulatory frameworks remove perverse subsidies and provide incentives for biodiversity-neutral or biodiversity-positive land and resource use that remains productive, but that does not degrade biodiversity.

Indicator: The degree to which sector policies and regulatory frameworks incorporate biodiversity considerations and implement the regulations.

Indicator: The degree to which biodiversity values and ecosystem service values are internalised in development, finance policy, and land-use planning and decision making.

Impact

Globally significant biodiversity conserved and sustainably used in production landscapes and seascapes (areas outside the protected area estate)

Indicators: 1) Intact vegetative cover and degree of fragmentation in production landscapes measured in hectares as recorded by remote sensing; 2) Coastal zone habitat and productive seascapes intact as recorded by remote sensing and where possible supported by other verification methods.

Source: GEF Secretariat (2016), "Biodiversity mainstreaming in practice: A review of GEF experience".

International organisations also have an important role to play in the context of indicators for biodiversity mainstreaming, as a number of these collect national-level data or have the ability to mobilise resources for global collection of data via satellite data or other means. Examples include the OECD, the Food and Agricultural Organization of the United Nations (FAO), the World Bank, and other research institutions. A recent review of indicators to measure progress on inclusive green growth at the country level (Narlof, Kozluk and Lloyd, 2016) includes several indicators that are relevant to biodiversity mainstreaming (Table 5.3).

Whichever indicators may eventually be used, at national and/or international level, to monitor and evaluate progress towards biodiversity mainstreaming, these need to be practicable. The concept of biodiversity mainstreaming covers multiple dimensions (institutional, national and sectoral plans, policies, budgets); multiple sectors; and various actors (government, private sector, development co-operation). This could in theory lend itself to hundreds of possible indicators, adapted also to national circumstances and socio-economic characteristics. To be able to make broad statements about the effectiveness of biodiversity mainstreaming, ideally one would need to start with a set of core indicators which are fairly easy and inexpensive to collect, and which are comparable across countries. In many ways, the Aichi Biodiversity Targets and the SDGs, together with the

ongoing work on indicators to monitor progress towards these, go a long way towards this. A few other indicators may also merit further consideration.

Ideally, existing national monitoring systems can be adapted to include mainstreaming indicators. UNPEI (2011) identifies seven steps in the integration of poverty-environment linkages in the national monitoring processes, which are also relevant to integrating M&E of biodiversity-development mainstreaming in the national monitoring system (Annex 5.A1). Selecting a core set of indicators (Step 6) is an important element of this, and aims should be made for these to be as consistent as possible across countries, so as to enable aggregation of data at regional and global levels.

5.3. Possible indicators for monitoring and evaluating biodiversity mainstreaming

Building on the key mainstreaming elements discussed in Chapters 2 and 3, and the review of indicators discussed above, Table 5.3 provides an overview of possible indicators that could be used to monitor progress towards biodiversity mainstreaming at national and sector level and in development co-operation. The table is not comprehensive and is intended to be illustrative. The type of data needed for these vary, with some requiring a simple binary response (e.g. has a national assessment of subsidies harmful to biodiversity been undertaken – yes/no); others requiring some kind of qualitative response (e.g. how has biodiversity been integrated into other national strategies – such as high, medium or low); and others requiring quantitative data.

Table 5.3. **Examples of possible indicators to monitor progress towards biodiversity mainstreaming**

Possible indicators	Indicator type					Data source and availability
	Input	Process	Output	Outcome	Impact	
NATIONAL						
Finance mobilised for biodiversity	x					Work under way. Biodiversity-relevant environmental protection expenditures (OECD, European Environment Agency), CBD national financial reporting, UNDP BIOFIN (Biodiversity Finance Initiative)
Trends in incorporation of physical measures of stock and flow of natural capital in natural accounting		x				World Bank Wealth Accounting and Valuation of Ecosystem Services
Implementation of natural resource accounts within the SEEA		x				
Integration of development into NBSAP		x				Not systematically collected. Roe (2010); OECD this document.
Integration of biodiversity into National Development Plan and other relevant national strategies*		x				Not systematically collected. Prip (2012); OECD this document
National ecosystem assessment (or other similar national assessments)			x			Not systematically collected – see http://catalog.ipbes.net/
National assessment of harmful subsidies (e.g. in agriculture, fisheries, forests, mining, tourism)			x			N/A
Inter-ministerial committee for biodiversity (mainstreaming)		x				N/A

Table 5.3. **Examples of possible indicators to monitor progress towards biodiversity mainstreaming** *(continued)*

Possible indicators	Indicator type: Input	Process	Output	Outcome	Impact	Data source and availability
SECTORAL						
Generic/Cross-cutting						
• Biodiversity integrated into key sectors' policies and plans (e.g. agriculture, forestry, fisheries, mining, tourism) • Trends in incorporation of natural resource, biodiversity and ecosystem service values into sectoral plans (e.g. agriculture, forestry, fishing, mining, tourism)		x				Not systematically examined
Number of biodiversity-relevant taxes, charges and fees, tradable permit schemes				x		OECD Policy Instruments for the Environment (PINE) database, about 80 countries
Number of other policy instruments (e.g. payment for environmental services [PES] schemes, biodiversity offset programmes, other)				x		Not systematically examined. Ecosystem marketplace. Work planned for OECD PINE database
Agriculture						
Trends in percentage of agricultural support that is potentially environmentally harmful, neutral and beneficial				x		OECD Producer Support Estimate (PSE) database, about 45 countries
Changes in land use and cover				x		OECD Environmental Statistics; FAO, national sources, e.g. CORINE land cover database
Percentage of agricultural area under sustainable certification				x		
Number of plant and animal genetic resources for food and agriculture secured in medium- or long-term conservation facilities				x		FAO
Amount of pesticide use per hectare				x		FAO and OECD Agri-Environment Indicators (AEI)
Amount of fertiliser use per hectare				x		FAO and OECD AEI
Agriculture ammonia emissions				x		OECD AEI
Agricultural freshwater withdrawal				x		OECD AEI
Status of water quality				x		OECD AEI
Nitrogen balance				x		OECD AEI
Phosphorous balance				x		OECD AEI
Index of farmland birds				x		OECD AEI
Land degradation (topsoil loss of agricultural land)				x		FAO Global Assessment of Soil Degradation (GLASOD) 1991, about 145 countries
Areas/population exposed to water scarcity				x		World Resources Institute Aquaduct 2014. Global
Water resources exposed to harmful pollution levels				x		
Fisheries						
Number of fisheries with management plans				x		
Number of fisheries with total allowable catch or other quota/licensing				x		N/A
Number of countries with individually transferable quotas for fisheries				x		OECD PINE
Bottom-trawling regulation in environmentally sensitive areas				x		
Percentage of fish from sustainable sources (eco-certification)					x	
Percentage of fish species overexploited or collapsed					x	FAO, Global (cannot be disaggregated at national level)

Table 5.3. **Examples of possible indicators to monitor progress towards biodiversity mainstreaming** *(continued)*

Possible indicators	Indicator type: Input	Process	Output	Outcome	Impact	Data source and availability
Forestry						
Changes in land use and cover				x		OECD Environmental Statistics, FAO, national sources e.g. CORINE
Land with different forest types and change over time				x		FAO Forest Resource Assessment, most countries
Value of forest resource depletion				x		World Bank World Development Indicators, about 130 countries
Percentage of forests with sustainable forest management (SFM) plans				x		
Percentage of harvested timber under sustainable certification				x		
DEVELOPMENT CO-OPERATION						
National strategy to mainstream biodiversity in development co-operation		x				N/A
Percentage of biodiversity-related bilateral ODA in total ODA	x					OECD CRS
Trends in flows and activities marked by development providers as "principal" and "significant" for biodiversity	x					OECD CRS

* Other relevant national strategies include, but are not limited to, national sustainable development strategies, green growth strategies and poverty reduction strategies.

Sources: Based on CBD (2015a), "Global indicators and sub-global approaches to monitor progress in the implementation of the Strategic Plan for Biodiversity 2011-2020", www.cbd.int/doc/meetings/ind/id-ahteg-2015-01/official/id-ahteg-2015-01-02-rev1-en.pdf; OECD (2013), *Policy Instruments to Support Green Growth in Agriculture*, http://dx.doi.org/10.1787/9789264203525-en; Narlof, Kozluk and Lloyd (2016), *Measuring Inclusive Green Growth at Country Level*.

Annex 5.A1

UNPEI steps in integration of mainstreaming into national monitoring processes

UNPEI (2011) defines seven steps in the integration of mainstreaming poverty-environment linkages in the national monitoring processes in its *Mainstreaming Environment and Climate for Poverty Reduction and Sustainable Development: A Handbook to Strengthen Planning and Budgeting Processes*. These are:

1. **Review literature and experience in other countries.** Undertaking a literature review helps identify issues that need to be taken into account in mainstreaming poverty-environment objectives into a monitoring system. Examples from a growing number of countries are available, outlining the process they have undertaken in the adoption of poverty-environment indicators.
2. **Analyse national priorities and identify entry points.** National monitoring systems are subject to continuous review and data collection cycles (e.g. five-year household surveys) that are closely linked with the review and elaboration of five-year National Development Plans and sector strategies. Timelines and targets need to be mapped out in order to inform and influence national monitoring systems at a strategic point in the review and planning cycle.
3. **Identify key institutions and establish cross-sectoral working groups.** Delineate the national, sector and subnational monitoring systems in place and the institutions charged with co-ordinating their application and those responsible for data collection. As noted above, the national statistics office, working in close collaboration with the ministry of planning, is typically responsible for the monitoring system; sector ministries are responsible for collecting data over time for a cluster of thematic indicators. Establish working relationships with these institutions and make the case to them on the benefits of revisiting and/or adding poverty-environment indicators into existing systems.
4. **Analyse existing monitoring and reporting systems.** National monitoring systems often ignore linkages with the environment, while environmental monitoring systems tend not to consider the poverty impacts of environmental changes. Assessing existing national monitoring systems and their associated data collection and reporting components provides essential information which can inform and influence changes to better reflect poverty-environment linkages. In addition, the availability, quality and relevance of existing datasets and indicators (including gender disaggregation) should be analysed, along with the institutional roles and responsibilities for collecting, analysing and reporting on data.
5. **Identify possible poverty-environment linkages through a consultative process.** Possible indicators should be formulated through a participatory process, drawing

on sector experts and statisticians from the national statistics office. The process should be embedded in the elaboration and monitoring of national/subnational development policy and planning and/or sectoral strategy processes. It should be informed by quality criteria and respond to the need to capture progress and change resulting from the implementation of priority initiatives contained in national plans and sector strategies, as funded by public- and private-sector funds. Indicator formulation could be preceded and informed by a commissioned study that offers a range of poverty-environment indicators, complete with definitions, purpose, institutional roles and responsibilities, and data collection protocols. Another useful input is sector or thematic indicators proposed under other national and/or global initiatives. For instance, national climate change adaptation and mitigation strategies, NBSAPs and green economy strategies have formulated specific indicators that could be considered.

6. **Select a core set of indicators.** Through a consultative process with policy makers from the ministries of planning and key sectors and the national statistics office, practitioners should facilitate a process in which a core set of indicators is selected from among the possible poverty-environment indicators identified in the preceding step. Keep the number of proposed new indicators realistic, as the national statistics office will raise justified concerns related to the costs of data collection, the feasibility of regular data collection and how the data will be used for reporting.

7. **Continuous review and refinement.** The adoption and application of poverty-environment indicators can take five to ten years, owing to the cyclic planning and monitoring process. National development policies and plans and sector strategies are normally subject to five-year review and formulation cycles, and national monitoring systems are linked to these. Experience shows that an indicator can be adopted in the national monitoring system but no data be collected on it over time, either because of a lack of institutional ownership to put data collection systems in place or because it has been determined that data collection is not technically or economically feasible. Consequently, the effectiveness of proposed indicators should be reviewed periodically and indicators dropped or refined accordingly.

Notes

1. M&E can also address the development and validation of the theory of change underpinning mainstreaming interventions. Theory of change is a specific type of methodology for planning, participation and evaluation that is used in the philanthropy, not-for-profit and government sectors to promote social change.
2. The terms "biodiversity" and "development" are not always clearly defined, or defined differently for different programmes, making it difficult to compare and assess performance (Davies et al., 2013).
3. Contextual factors are a source of inputs and constraints to inputs, processes, outputs, outcomes and impacts; conversely, inputs, processes, outputs, outcomes and impacts feed into the context. Examples of contextual factors include political leadership and stability, and macroeconomic and fiscal policies (Thomas, 2014).
4. Huntley and Redford (2014) classify mainstreaming indicators in seven categories: spatial, government, private sector, individual-based, multilateral donor, poverty alleviation and markets for ecosystem services.
5. According to Scheerens et al. (2011), indicator data should also be sufficiently granular or disaggregated so as to allow for better adjustments and valid causal inferences.
6. Aichi Target 2 states: "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. Aichi Target 3 is to encourage positive incentives and to reform incentives, including subsidies, that are harmful to biodiversity.
8. These are: Target 1: Biodiversity barometer; Target 3: Trends in potentially harmful elements of government support to agriculture; number of countries with biodiversity-relevant taxes; number of countries with biodiversity-relevant fees and charges; number of countries with biodiversity-relevant tradable permit schemes; Target 4: ecological footprint and Red List Index.
9. Ireland has also defined indicators for measures that mainstream biodiversity and use the green, yellow, red traffic light signal to indicate the level of progress. For more information see: http://indicators.biodiversityireland.ie/index.php?qt=fa&id=5.

References

CBD (2016a), "Indicators for the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets", Convention on Biological Diversity, Cancun, https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-28-en.pdf.

CBD (2016b), "Strategic actions to enhance the implementation of the Strategic Plan for Biodiversity 2011-2020 and the achievement of the Aichi Biodiversity Targets," CBD, Cancun.

CBD (2015a), "Global indicators and sub-global approaches to monitor progress in the implementation of the Strategic Plan for Biodiversity 2011-2020", report for the Ad Hoc

Technical Expert Group Meeting on Indicators for the Strategic Plan for Biodiversity, Geneva, 14-17 September 2015, www.cbd.int/doc/meetings/ind/id-ahteg-2015-01/official/id-ahteg-2015-01-02-rev1-en.pdf.

Conservation International (2015), "Monitoring natural capital and human well-being in Madagascar: National indicators for sustainable development", Conservation International, Arlington, Va.

Davies, T.E. et al. (2013), "Missing the trees for the wood: Why we are failing to see success in pro-poor conservation", *Animal Conservation*, Vol. 17/4, Zoological Society of London, pp. 303-312, https://doi.org/10.1111/acv.12094.

Drutschinin, A. et al. (2015), "Biodiversity and development co-operation", *OECD Development Co-operation Working Papers*, No. 21, OECD Publishing, Paris, http://dx.doi.org/10.1787/5js1sqkvts0v-en.

GEF Secretariat (2016), "Biodiversity mainstreaming in practice: A review of GEF experience", Global Environmental Facility, Washington, DC.

Horsch, K. (1997), "Indicators: Definition and use in a results-based accountability system", *Reaching Results*, Harvard Family Research Project, Harvard Graduate School of Education.

Huntley, B.J. and K.H. Redford (2014), "Mainstreaming biodiversity in practice: A STAP advisory document", GEF, Washington, DC, www.cbd.int/doc/case-studies/inc/Mainstreaming-Biodiversity-LowRes.pdf.

Narlof, U., T. Kozluk and A. Lloyd (2016), "Measuring inclusive green growth at the country level: Taking stock of measurement approaches and indicators", GGKP (Green Growth Knowledge Platform) Research Committee on Measurement & Indicators, Working Paper 02/2016, United Nations Environment Programme, Geneva.

OECD (2017), *Green Growth Indicators 2017*, OECD Green Growth Studies, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264268586-en.

OECD (2015a), "Biodiversity and Development: Mainstreaming and Managing for Results", OECD Workshop Co-chairs' Summary, 18 February 2015, www.oecd.org/dac/environment-development/Biodiversity%20and%20Development%20Workshop%20Co-Chairs%20Summary_FINAL_clean.pdf.

OECD (2015b), *National Climate Change Adaptation: Emerging Practices in Monitoring and Evaluation*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264229679-en.

OECD (2013), *Policy Instruments to Support Green Growth in Agriculture*, OECD Green Growth Studies, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264203525-en.

OECD (2011), *Towards Green Growth: Monitoring Progress: OECD Indicators,* OECD Green Growth Studies, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264111356-en.

OECD (2002), *Evaluation and Aid Effectiveness No. 6 – Glossary of Key Terms in Evaluation and Results Based Management (in English, French and Spanish)*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264034921-en-fr.

Prip, C. et al. (2010), *Biodiversity Planning: An Assessment of National Biodiversity Strategies and Action Plans,* United Nations University Institute of Advanced Studies, Yokohama, Japan.

Roe, D. (2010), "Linking biodiversity conservation and poverty alleviation: A state of knowledge review", *CBD Technical Series*, No. 55, Secretariat of the Convention on Biological Diversity, Montreal, www.cbd.int/doc/publications/cbd-ts-55-en.pdf.

Sainteny, G. et al. (2012), *Public Incentives that Harm Biodiversity*, Centre d'analyse strategique, Paris.

Scheerens, J. et al. (2011), *Perspectives on Educational Quality: Illustrative Outcomes on Primary and Secondary Schooling in the Netherlands*, Springer Netherlands.

Thomas, J. (2014), "Defining and assessing success in mainstreaming", Background Paper, IIED (International Institute for Environment and Development), London, http://pubs.iied.org/pdfs/G03828.pdf.

UNICEF (2003), "M&E Training Modules", Section 2.3: Indicators, www.ceecis.org/remf/Service3/unicef_eng/module2/index.html.

UNPEI (2011), *Mainstreaming Environment and Climate for Poverty Reduction and Sustainable Development: A Handbook to Strengthen Planning and Budgeting Processes*, UNDP (United Nations Development Programme)-UNEP Poverty Environment Initiative, www.unpei.org/sites/default/files/publications/PEI%20handbook-low%20res.pdf.

UNPEI (2007), "Guidance note on environmental mainstreaming into national development planning", UNPEI, Nairobi, www.cbd.int/doc/meetings/nbsap/nbsapcbw-seasi-01/other/nbsapcbw-seasi-01-undp-unep-guide-en.pdf/.

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