

Chapter 2

Mainstreaming biodiversity at the national level

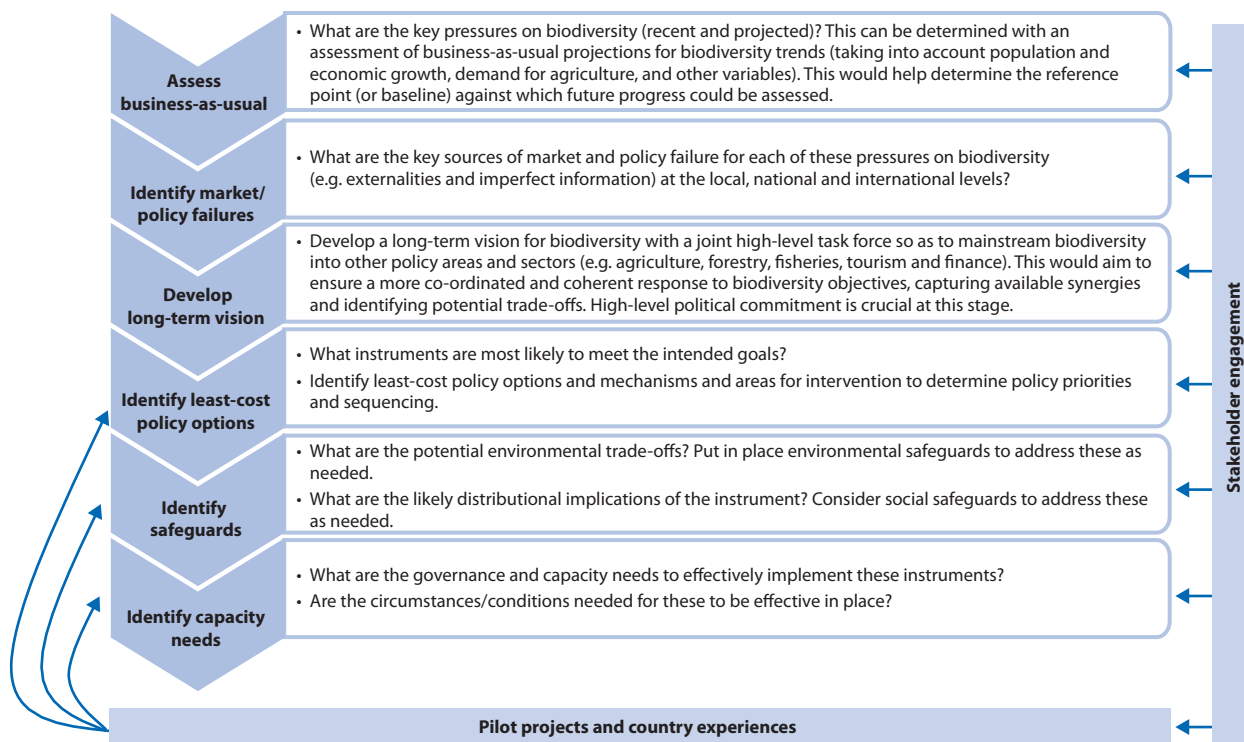
This chapter highlights some of the key features that need to be considered in mainstreaming biodiversity at the national level. This includes reciprocal mainstreaming of biodiversity and development across key strategies and plans including National Biodiversity Strategies and Action Plans, National Development Plans and green growth strategies, among others. Moreover, it examines institutional co-ordination and the establishment of clear roles and responsibilities for biodiversity mainstreaming, the role of data in fostering biodiversity mainstreaming, and how biodiversity is being mainstreaming in national budgets.

2.1. Introduction

The national-level entry point for reciprocal mainstreaming is an important one, as most often it is at this level that long-term strategies are developed, that financing decisions are made and where opportunities for scalability can be harnessed. It is also at this level that political will must be captured. This chapter examines key features that need to be considered for biodiversity mainstreaming at the national level. These are: the extent to which mainstreaming of economic development and where relevant, poverty alleviation objectives are reflected in National Biodiversity Strategies and Action Plans (NBSAPs); the extent to which biodiversity is reflected in National Development Plans (NDPs) and other relevant strategies; institutional arrangements in place to foster mainstreaming; the role of data and information in mainstreaming; and the extent to which biodiversity is reflected in national budgets. It is important to note that these issues should be considered in the broader context of assessment frameworks that have been developed for the conservation and sustainable use of biodiversity, which include the need for mainstreaming (Figure 2.1).

Moreover, while there is a need for mainstreaming biodiversity and development across all sectors and areas of the economy, some are likely to be more important than others. Prioritising and sequencing mainstreaming efforts to target areas that are likely to have a greater impact at lower cost can help to achieve more efficient results.¹

Figure 2.1. **Assessment framework for biodiversity management and mainstreaming**



Source: Adapted from OECD (2013a), *Scaling-up Finance Mechanisms for Biodiversity*, <http://dx.doi.org/10.1787/9789264193833-en>.

2.2. Mainstreaming development and poverty objectives in national biodiversity strategies

NBSAPs have an important role to play in driving the process of mainstreaming at the national level. NBSAPs should clearly set out goals, objectives and priorities for action, including those for mainstreaming. They should also include clear timetables and targets for the specified objectives and actions, and define indicators that enable monitoring of progress towards achieving these.

The Convention on Biological Diversity (CBD) has recognised that NBSAPs should be used as “effective instruments for the integration of biodiversity targets into national development and poverty reduction policies and strategies, national accounting, as appropriate, economic sectors and spatial planning processes” (CBD, 2010). To be effective, therefore, NBSAPs should also reflect the links among biodiversity, economic development and where relevant, poverty alleviation priorities (including defining specific objectives, targets and indicators for reciprocal mainstreaming). Several efforts, adopting different approaches, have been undertaken to evaluate the extent to which biodiversity strategies recognise the links to sustainable development and poverty eradication (CBD, 2016; CBD, 2015; Pisupati and Prip, 2015; IIED, 2013; Prip et al., 2010). A review of first-generation NBSAPs revealed a large variation in the attention given to development issues, with only a few NBSAPs making explicit reference to poverty reduction² (Prip et al., 2010).

An overview of the extent to which development and poverty alleviation objectives have been mainstreamed in the most recent NBSAPs of 16 countries is provided in Annex 2.A1. This examines a) whether objectives for mainstreaming biodiversity into economic development and poverty alleviation have been clearly specified; b) the definition of clear, time-bound and measurable targets and priority actions to implement these objectives; and c) the extent to which indicators to monitor and assess implementation are defined. The analysis also draws on relevant insights from the Fifth National Reports.

The review finds that while the importance of mainstreaming biodiversity and development is well recognised, the extent to which this is translated into priority actions and indicators varies. Nearly all NBSAPs refer to development (and poverty alleviation) in one way or another, but few have established priority actions that specifically link socio-economic development and biodiversity objectives, and fewer have identified indicators against which to monitor progress. On the whole, more recent NBSAPs tend to fare better with regard to mainstreaming than those that are outdated. Nevertheless, while the acknowledgement of the importance of mainstreaming biodiversity and development is essential, specific objectives, actions, targets and indicators are required to provide clear strategic guidance to various stakeholders, and to enable monitoring of progress over time.

While all the countries reviewed recognise the need for mainstreaming in a general sense, some countries consider mainstreaming biodiversity and development as a central goal. In South Africa, for example, the overarching vision of the 2005 NBSAP is to conserve, manage and sustainably use biodiversity to ensure equitable benefits to the people of South Africa, now and in the future. The strategic objectives of the NBSAP are therefore clearly linked with the economic and human development objectives of the country.³ In India, the NBSAP from 2014 includes a target on integrating biodiversity values into planning processes.⁴ Moreover, the NBSAP reiterates that it is to be implemented in line with the overarching National Environmental Policy (NEP) (2006), which was developed to integrate environmental concerns including biodiversity into economic and social development.⁵

Other NBSAPs highlight that while mainstreaming is a priority, a number of challenges persist. Nepal's NBSAP (2014), for example, recognises that mainstreaming biodiversity into development plans and programmes had been inadequate, being the priority of only the line ministry (the Ministry of Forests and Soil Conservation). As a result, the NBSAP lists priority actions for mainstreaming and identifies supporting institutions to implement these.⁶ In the Philippines, though there is a legal mandate to promote mainstreaming into development planning, the country's Fifth National Report acknowledges that many of the NBSAP priorities had been reflected mainly in environmental and natural resources programmes, and that some of these envisaged interventions had never been implemented. The upcoming NBSAP (2014-25) addresses this by identifying entry points for mainstreaming into planning and development processes, including in local governance and urban biodiversity.⁷

Regarding poverty alleviation in relation to biodiversity mainstreaming, while most of the NBSAPs describe the poverty eradication challenges, particularly in the sections focusing on Aichi Targets 2 and 14⁸ or the Millennium Development Goals (MDGs), only a few NBSAPs go beyond a general discussion and translate these considerations into formal objectives and priority actions. This suggests a need for greater policy coherence between NBSAPs and poverty reduction policies. Colombia's NBSAP (2014), for instance, mentions poverty in general terms, despite the country's ambitious strategic direction for extreme poverty eradication, implemented by Colombia's National Agency for Overcoming Extreme Poverty (ANSPE), which was established in 2012.⁹

Examples of NBSAPs where the links between poverty and biodiversity have been explicitly described and priority actions have been outlined related to this include those of India, Nepal, Peru, South Africa and Uganda. Nepal includes two poverty-related priority actions in its NBSAP, namely, "effectively informing the decision-makers that achieving most of the MDGs depend directly on ecosystem services, including the targets on poverty" and "ensuring poor's access to environmental resources and decision making". Peru discusses poverty in the context of equity and productive conservation under the principles and management approaches that guide the implementation of the national biodiversity targets.¹⁰

Only a few NBSAPs include specific poverty-related indicators with time-bound measurable national targets. The People's Republic of China, for example, has defined two poverty-related indicators under Aichi Target 14 (i.e. net income per capita of rural households and the number of people in poverty). Nepal has incorporated an indicator into the implementation matrix (i.e. additional hectares of degraded forest rehabilitated through pro-poor leasehold forestry by 2020).

Stakeholder engagement in the NBSAP development process

Ensuring broad stakeholder consultation processes in the preparation of NBSAPs can also pave the way to fostering the mainstreaming of biodiversity through increasing ownership among various stakeholders and thereby facilitating implementation and providing avenues for discussion of the linkages and trade-offs between biodiversity and other national priorities (such as economic development, poverty reduction, food security, health). Previous analysis of experience with the formulation of national sustainable development strategies, for example, concluded that the involvement of finance ministries facilitates the integration of environmental development priorities with fiscal priority setting and national expenditure and revenue generation (IISD, 2004; OECD, 2006; cited in Clapp, Briner and Karousakis, 2010).

Most parties involved a range of stakeholders¹¹ in the NBSAP revision process, though there is little elaboration on the quality of engagement or implications for NBSAP implementation (SCBD, 2016). Many modes of stakeholder engagement have been reported. Among the 110 revised NBSAPs, the SCBD reports that 66 of them record a formal co-ordination structure such as a working group to bring together various stakeholders for NBSAP-related tasks (SCBD, 2016). In Uganda, for example, a thematic working group on biodiversity for development of wealth creation and socio-economic transformation was established, along with three others, to contribute to the NBSAP revision process. The working groups consist of government ministries, departments and agencies, including those related to agriculture, environment, forestry, wildlife, energy, finance, wetlands, trade, tourism and national planning; district representatives; research institutions; academia; the private sector; and non-governmental organisations (NGOs), among others (Sabino, 2013). Once the NBSAP was approved, their mandate was renewed to spearhead mainstreaming biodiversity into national development frameworks, including the monitoring and budget for Uganda's NDP, spanning the period from 2015/16 to 2019/20 (IIED, 2015). Given the stakeholder membership of the working group (including national planning, agriculture, etc.), this should help to ensure continuity and consistency in the messages conveyed in the NBSAP and the NDP. Further examples of stakeholder participation in the NBSAP process are highlighted in Box 2.1.

Box 2.1. Examples of stakeholder participation in NBSAP development

In **France**, the National Biodiversity Strategy (NBS) (2004-10) was formulated by the Department for Nature and Landscapes involving some technical contributors. One of the main criticisms was that local authorities and other stakeholders were not included in this process. Following the Grenelle Forum in 2007, a greater stress is laid on stakeholder involvement in the NBS (2011-20). There has been an effort to include stakeholders across various levels of government as well as civil society and the private sector, upstream in the formulation of the strategy and downstream through voluntary subscription and commitment to the NBS. All stakeholders (legal entities) are invited to subscribe to promote and publicise the NBS. Each subscriber is invited to make a commitment to action within 18 months and present an action plan which must involve significant, supplementary, measurable and scalable action.

In **Mexico**, the development of the National Strategy on Biodiversity of Mexico (Estrategia Nacional sobre Biodiversidad de México [ENBioMex]) and its Plan of Action 2016-2030 was carried out through a process that involved the broad direct participation of members from federal, state and municipal governments; academic institutions; civil society organisations; and the private sector. Indirectly around 1 800 people participated through involvement in the nine state strategies of biodiversity, which were a primary input for the ENBioMex. Numerous consultation workshops were held for the formulation of the strategy: a) six workshops in which 120 people from the different sectors participated to establish the main elements of the strategy (mission, vision, strategic axes, lines of action, actions, actors and deadlines for compliance); b) working meetings with key actors, to define a national Plan of Action for biodiversity including specific actions, actors responsible for implementation and the deadlines for compliance between 2016 and 2030; c) a national workshop for enrichment, with participation of around 150 people from 126 institutions and 15 national agencies, who contributed to enrich the content and approach of the Plan of Action; and d) finally, a workshop to include the gender perspective and highlight the participation of indigenous peoples and local communities through the ENBioMex.

Box 2.1. Examples of stakeholder participation in NBSAP development (continued)

In **India**, a highly participatory, decentralised approach was conceived for the development of the National Biodiversity Action Plan (NBAP) (2008). The Union Ministry of Environment and Forests commissioned an NGO (Kalpavriksh) under a project funded by the Global Environment Facility to conceptualise and co-ordinate a country-wide consultation process for the preparation of the plan. Kalpavriksh convened a 15-member technical and policy core group consisting of experts from different sectors and various parts of the country to reach out to a large number of stakeholders. The consultation process covered over 50 000 people spanning across village organisations, popular movements, NGOs, academics and scientists, government officials from various agencies, the private sector, the armed forces, politicians, media persons, etc. This was done through various means including public hearings, local consultations, field research, cultural events, rallies, exercises in educational institutions and formal workshops. The results of the exercise included 71 Biodiversity Strategy and Action Plans at local, state, eco-regional and thematic levels along with a final technical report for the NBAP. The NBAP was updated with an addendum in 2014 containing 12 national biodiversity targets along with relevant indicators and monitoring frameworks based on stakeholder consultations and a review of the programmes and activities being undertaken by ministries/ departments of the Government of India and State Biodiversity Boards. The review process included inter-ministerial meetings and public stakeholder consultations.

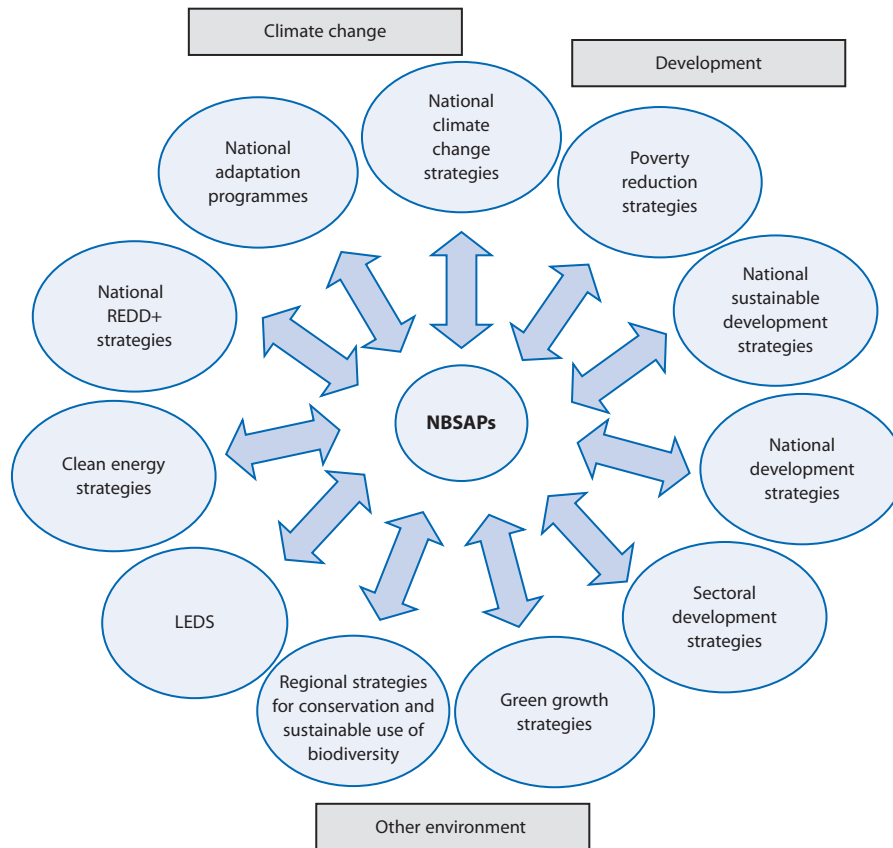
Nepal's NBSAP (2014) describes the plan's formulation process, which involved the collection of primary data through consultations with 1 664 stakeholders at the national, regional, district and community levels. The national-level consultations involved 41 government and non-government agencies, including meetings with the Ministry of Finance and the National Planning Commission. Among the main outputs of the consultations were critical reviews of biodiversity management mechanisms and an assessment of the progress made in implementation of the Nepal Biodiversity Strategy (2002) and Nepal Biodiversity Strategy Implementation Plan (2006). These reviews sought to identify major achievements, shortcomings and lessons learned to develop new biodiversity strategies, and action and implementation plans, as well as a framework for biodiversity management at the local level.

Sources: OECD (2016), *Environmental Performance Review of France*; MoEF (2008), *National Biodiversity Action Plan*; UNEP and CBD (2007) "Ensuring stakeholder engagement in the development, implementation and updating of NBSAPs"; TPCG and Kalpavriksh (2005) *Securing India's Future: Final Technical Report of the National Biodiversity Strategy and Action Plan*; MoEFCC (2014b), *India's Fifth National Report to the Convention on Biological Diversity 2014*.

2.3. Mainstreaming biodiversity into national development plans and other strategies

For mainstreaming to be effective at the national level, strategies, plans, and policies – especially those that are likely to have a strong impact on biodiversity – need to be aligned. This implies that the goals and objectives established in NBSAPs should also be reflected in other relevant national strategies, such as NDPs, Poverty Reduction Strategy Papers (PRSPs), National Sustainable Development Strategies (NSDSs) and/or green growth strategies (Figure 2.2).

Figure 2.2. Existing strategies of relevance to NBSAPs



Note: REDD+ = reducing emissions from deforestation and forest degradation in developing countries.

Source: Adapted from Clapp, Briner and Karousakis (2010), “Low-emission development strategies (LEDS): Technical, institutional and policy lessons”, <http://dx.doi.org/10.1787/5k451mzrnt37-en>.

Mainstreaming of biodiversity in NDPs

Earlier studies examining the extent to which biodiversity is mainstreamed into other development strategies found that biodiversity mainstreaming was not widespread in NDPs, PRSPs or development co-operation agencies’ policies (Prip et. al., 2010; Roe, 2010).¹²

More recent reporting to the CBD revealed that while 85% of parties to the convention (both developed and developing countries) have considered biodiversity in their national priorities or development plans, some of this integration appears to be incidental or random, often with no institutionalisation or planned process involved (CBD, 2014). Overall, only about 7% of the revised NBSAPs contain national targets which match the scope and level of ambition of Aichi Target 2¹³ (CBD, 2016). This is reflected in the fact that the explicit integration of biodiversity into national budgetary processes is currently limited to a dozen countries (Burundi, Chile, Comoros, Ecuador, France, Kyrgyz Republic, Mexico, Mozambique, Netherlands, Norway, Tunisia, Viet Nam) (CBD, 2014).

An overview of the extent to which the focus countries have integrated biodiversity into their recent NDPs is provided in Annex 2.A2. It summarises whether biodiversity priorities are explicitly mentioned and integrated into the objectives and priority actions of the NDPs, and whether these are supported by targets and indicators.

Across most of the countries reviewed, biodiversity (or more generally ecological conservation) has been considered in the strategic objectives and priority actions in NDPs. A number of plans also include targets and indicators, such as those related to deforestation, land use and degradation (Colombia, Ethiopia), increase in forest cover (Nepal, Uganda), species in danger of extinction, and the number and size of protected areas. Most countries have devoted separate thematic sections to biodiversity, ecosystems or environmental protection more broadly. China's 12th Five-Year Plan (FYP) (2011-15) for example, addresses biodiversity under ecosystem protection and accelerated restoration, as part of the plan's overarching strategy to build "a resource-conserving and environment-friendly society through green development". The 13th FYP (2016-20) reiterates this commitment by including "improvement in ecological environment" as a central goal with dedicated targets and indicators. Brazil's federal development plan, Plano Plurianual (2016-2019), includes "conservation and sustainable use of biodiversity" as one of the core programmes, detailing a number of objectives, sub-goals and initiatives. In Mexico, since 2007, the government has included mainstreaming of environmental concerns as a necessary strategy for achieving sustainable development. Both the 2007-12 NDP and the 2013-18 NDP refer to biodiversity under various action items, most notably in the section on green and inclusive growth (OECD, 2013b). However, no targets and indicators are specified.

Myanmar is an example where biodiversity has not been clearly mainstreamed into the NDP. The current short-term plan, the Framework for Economic and Social Reforms (FESR) (2012-15), includes a short section on environmental protection more broadly, with a single reference to biodiversity. It does include a target to ensure sustainable development of forestry by 2015, though no indicators are specified against which progress can be assessed. The FESR sets policy priorities for the formulation of goals under the country's long-term vision, the National Comprehensive Development Plan (2011-31). It remains unclear whether the plan, once finalised, will include biodiversity in its objectives and targets.¹⁴

Mainstreaming of biodiversity into poverty reduction strategies

To ensure policy coherence, biodiversity considerations should also be mainstreamed into other national strategies. Across many countries examined here, poverty and inequality remain important developmental challenges, and addressing these issues can constitute the single most important national development priority. In several instances, PRSPs¹⁵ are in fact the NDPs.¹⁶ Given that many of the world's poor are directly dependent on natural resources for livelihood and well-being, while the sustainable management of natural capital can contribute to poverty alleviation, biodiversity-related priorities should be considered in a complementary manner with national poverty reduction strategies.

A review of nine poverty reduction strategies¹⁷ suggests that biodiversity priorities have been incorporated, albeit to a varying extent, into the strategies of five countries (i.e. Brazil, Ethiopia, Nepal, Uganda and Viet Nam). For instance, the PRSP of Madagascar (2007) includes environment and biodiversity as a central theme.¹⁸ Similarly, the importance of preserving biodiversity and ecology for the health and well-being of the poor has been recognised in the PRSP of Viet Nam (Viet Nam Government, 2004). Some of the poverty reduction strategies have also elaborated on specific ecosystem-related programmes, such as the Bolsa Verde green grant scheme introduced as part of the "Brazil without Poverty" (Brasil Sem Miséria) strategy (MDS, 2014) (Box 2.2.).

Overall, however, these poverty reduction strategies contain less detail on the specific biodiversity-related actions, targets and indicators when compared with NDPs,

and therefore, the extent to which the biodiversity-poverty inter-linkages are realised in practice would be difficult to assess. According to a government white paper, for example, the Development-oriented Poverty Reduction Program for Rural China, launched in the mid-1980s, made significant achievements in forest, wetland and biodiversity conservation (State Council of PRC, 2011). The information to verify these results through targets and specific indicators, however, does not seem to be readily available.

Box 2.2. Bolsa Verde programme in Brazil

Brazil's Bolsa Verde, a green grant scheme, is an example of a biodiversity-specific programme developed and implemented within a national poverty policy. The programme provides quarterly payments to families, including traditional peoples and indigenous communities, in extreme poverty living in federal protected and other rural priority areas in return for certain conservation and sustainable use activities. Although the grant scheme is considered a potentially effective payment for ecosystem services (PES) tool with more than 60 000 families enrolled as of June 2014, administrative complexities remain. There are challenges, among others, related to managing the beneficiaries' database, and monitoring and assessing the compliance with conservation commitments.

Sources: MMA (2015), *Fifth National Report to the Convention on Biological Diversity*; OECD (2015b), *OECD Environmental Performance Reviews: Brazil 2015*, <https://doi.org/10.1787/9789264240094-en>.

While the above-mentioned poverty reduction strategies tend to discuss the inter-linkages with biodiversity in general terms, there are others that make no explicit reference to biodiversity. For instance, ecosystems considerations do not feature in the current programmes implemented by Colombia's ANSPE,¹⁹ while in the Philippines National Anti-Poverty Program 2011-2016 (NAPC, 2010), ecosystems are only briefly mentioned in relation to the reform and management of fisheries and aquatic resources. This is inconsistent with the government's overall orientation towards sustainable development, dating back to the Philippines Strategy for Sustainable Development (DENR, 1990) and the Philippine Agenda 21 (Philippine Government, 1996), in which ecosystems and biodiversity priorities play a central role.²⁰

Mainstreaming of biodiversity into sustainable development, green growth and other relevant strategies

Among the 110 revised NBSAPs only 17 mention an integration of NBSAPs with sustainable development plans (CBD, 2016). Across a selection of countries reviewed, NSDSs and green growth strategies tend to mainstream biodiversity priorities in a relatively more formalised and advanced manner than PRSPs. For instance, South Africa's National Strategy for Sustainable Development and Action Plan (2011-14) highlights the importance of ecosystems and natural resources in sustainable development, setting out five strategic objectives, particular interventions and indicators with the aim of integrating socio-economic goals with ecological sustainability (DEA, 2011). Similarly, Viet Nam's strategy for the Implementation of Sustainable Development for 2011-20 (Viet Nam Government, 2012) provides a comprehensive account of biodiversity and its importance for development, detailing specific indicators and targets. The importance of biodiversity and ecosystems is also recognised in the sustainable development strategies of France and Australia.

The French National Strategy of Ecological Transition towards Sustainable Development 2015-2020 is a high-level document addressing various aspects including biodiversity and ecosystems. Priorities under this strategy include maintaining capacity of territories to provide and benefit from ecosystem services and developing a more resource-efficient new industrial and agricultural policy (MEDDE, 2015). Australia's National Strategy for Ecologically Sustainable Development (1992) contains strategic approaches, objectives and actions for various sectors as well as cross-sectoral issues including biodiversity. One of the core objectives of the strategy is to protect biological diversity and maintain essential ecological processes and life-support systems²¹ (Australian Government, 1992).

In some cases countries have included biodiversity objectives in climate change strategies and action plans. For instance, India's National Action Plan on Climate Change (GoI, 2008) contains eight national missions, two of which specifically relate to biodiversity. The National Mission for Sustaining the Himalayan Ecosystem aims at community management of forests by village councils as well as scientific evaluation and monitoring of the glaciers and freshwater systems in the region. The National Mission for a Green India is aimed at the reforestation of 5 million hectares of degraded land through joint action by the local communities and the state forest departments. These missions have been included in the NDP as well. Among the objectives of Mexico's National Strategy for Climate Change (2013) is the conservation and sustainable use of ecosystems and maintenance of environmental services they provide. The strategy seeks to promote best agricultural and forestry practices to increase and preserve the natural carbon sinks.

In the green growth strategies examined,²² biodiversity features more comprehensively in those of Viet Nam and Indonesia and less so in those of Ethiopia and Uganda, which are more climate-centric. Viet Nam's National Green Growth Strategy (Government of Viet Nam, 2012) is relatively broad and focuses on reducing the intensity of greenhouse gas emissions, greening production and promoting sustainable consumption. Several actions listed have direct or indirect consequences for biodiversity, including review of sectoral plans to ensure efficient use of natural resources in all sectors, restoration of conservation areas and degraded ecosystems, review of urban master plans with a focus on sustainable use and management of natural resources and increase in urban green cover, and promotion of eco-labelling and green products. Similarly in the case of Indonesia (Government of Indonesia and GGGI, 2015), the roadmap to green growth identifies renewable natural resources (e.g. forests, fisheries, agriculture, land management and marine activities) as one of four "clusters of opportunities". The strategy also refers to fostering new natural capital-based markets to mobilise resources from the non-consumptive use of natural capital and ecosystem services, e.g. via ecotourism, PES and mobilising forest carbon finance.

The main policy driver for green growth in Ethiopia is the Climate Resilient Green Economy Strategy (CRGE), which has two components: a Green Economy Strategy, which mainly addresses mitigation and was launched in 2011; and a Climate Resilience Strategy, which focuses on adaptation and is currently being developed with a focus on agriculture, forestry and land use (OECD, 2013a). One of the four pillars is "protecting and re-establishing forests for their economic and ecosystem services, including as carbon stocks" (FDRE, 2011). Several priority initiatives under the CRGE could contribute to lowering pressure on biodiversity. Under agriculture, for example, the priorities are to intensify agriculture with improved inputs to prevent expansion of agricultural land; to create new agricultural lands by rehabilitating degraded areas; and to promote low-emission techniques including use of organic fertilisers. Under the forestry sector, the priorities are to reduce demand for fuelwood by developing renewable sources of power and to increase afforestation, reforestation and forest management. An explicit inclusion of biodiversity considerations is not found in the

strategy; because of this, some of these priorities could negatively impact biodiversity and in turn, reduce the resilience of ecosystems to climate change. For example, focuses on expanding electric power generation from renewable sources, which is a pillar of the CRGE strategy, could have indirect benefits for biodiversity by reducing fuelwood dependence. On the other hand, without adequate safeguards, dependence on large hydropower could also have negative social and environmental impacts.

Uganda is currently developing a Green Growth Development Strategy to 2030 which has the following objectives: a) guide national policy and planning in an integrated way; b) mainstream climate change in key sectors of the economy; and c) position Uganda to access international funding to achieve low-carbon development and green growth. Based on existing information available to date, however, it seems that the strategy may not be sufficiently comprehensive, focusing narrowly on climate change issues without due attention being paid to biodiversity or sustainable natural resource use.

Overall, green growth strategies can be an important tool to integrate environmental goals, including biodiversity and climate change, with growth and development objectives, as has been done in the case of Viet Nam and Indonesia. Focusing too narrowly on climate change within these strategies can lead to a missed opportunity in setting out a comprehensive roadmap for environmentally sustainable economic growth.

Another example of a greening initiative is China’s “ecological civilisation”, a concept that first appeared in 2007 in a report to the 17th National People’s Congress and that has recently gained stronger footing since the government released Central Document No. 12, “Opinions of the Central Committee of the Communist Party of China and the State Council on Further Promoting the Development of Ecological Civilisation” (CPCCC and State Council, 2015). The initiative seeks to make significant progress in addressing the obstacles to effective environmental policy implementation by setting out standards and assessment mechanisms. These include the shift away from using economic growth as the sole criterion to assess the performance of government officials, and creating a strict accountability and penalty system. Another important feature of the document is the collective responsibility for ecological advancement, in which all actors from the government, to the private sector, to individuals are expected to contribute their share. Slowing down biodiversity loss and enhancing the stability of ecosystems, as part of improving the overall quality of the ecological environment, are the biodiversity-specific elements of the document.

2.4. Institutional issues

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. Several countries have listed weak institutional collaboration as well as gaps and overlaps in mandates as a challenge in biodiversity mainstreaming (examples include Viet Nam²³ and Uganda [Matsiko, 2015]). The establishment of inter-ministerial committees and/or working groups is one way to help develop the institutional and governance capacity necessary to formulate and implement wide-ranging policy reforms associated with reciprocal mainstreaming of biodiversity and development.

While the biodiversity responsibilities are most commonly under the mandate of environment ministries, Table 2.1 summarises where other relevant policy areas are situated in the governance structures across a few of the countries. The table illustrates that governments have taken different approaches to assigning sector-level responsibilities to

Table 2.1. Biodiversity-relevant policy areas covered by various ministries

Country	Biodiversity	Forestry	Fisheries	Agriculture	Water	Tourism
Australia	Department of Environment and Energy (DEE)	DEE and Department of Agriculture and Water Resources (DAWR)*	DAWR	DAWR	DAWR	Department of Foreign Affairs and Trade
Colombia	Ministry of Environment and Sustainable Development (Ministerio de Ambiente y Desarrollo Sostenible) (MADS)	MADS	Ministry of Agriculture and Rural Development (Ministerio de Agricultura y Desarrollo Rural) (MADR)	MADR	Ministry of Housing, Cities and Territories	Ministry of Commerce, Industry and Tourism
Ethiopia	Ministry of Environment, Forest and Climate Change (MoEFCC)	MoEFCC	Ministry of Livestock and Fisheries	Ministry of Agriculture and Natural Resources	Ministry of Water, Irrigation and Energy	Ministry of Culture and Tourism
France	Ministry of Environment, Energy and Marine Affairs (Ministère de l'Environnement, de l'Energie et de la Mer) (MEEM)	Ministry of Agriculture, Agrifood and Forestry (Ministère de l'agriculture et de l'alimentation) (MAA)	MEEM	MAA	MEEM	Ministry of Foreign Affairs and International Development
India	MoEFCC	MoEFCC	Department of Animal Husbandry, Dairying and Fisheries (DADF)	DADF	Ministry of Water Resources	Ministry of Tourism
Mexico	Secretariat of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales) (SEMARNAT) National Commission of Natural Protected Areas (Comisión Nacional de Áreas Naturales Protegidas) (CONANP) (CONABIO**)	SEMARNAT National Forestry Commission (Comisión Nacional Forestal) (CONAFOR)	Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación) (SAGARPA)	SAGARPA	SEMARNAT National Water Commission (Comisión Nacional del Agua) (CONAGUA)	Secretariat of Tourism (Secretaría de Turismo) (SECTUR)
Myanmar	Ministry of Environmental Conservation and Forestry (MOECAF)	MOECAF	Ministry of Livestock, Fisheries and Rural Development	Ministry of Agriculture and Irrigation (MOAI)	MOAI	Ministry of Hotels and Tourism
South Africa	Department of Environmental Affairs (DEA); South Africa National Biodiversity Institute (SANBI); South Africa National Parks (SANParks)	Department of Agriculture, Forestry and Fisheries (DAFF)	DAFF	DAFF	Department of Water and Sanitation	Department of Tourism

* DEE for protected forests and DAWR for the rest.

** CONABIO, the Mexican Commission for the Knowledge and Use of Biodiversity (La Comisión Nacional para el Conocimiento y Uso de la Biodiversidad), is an inter-ministerial commission dedicated, among other activities, to the development, maintenance and update of the National Biodiversity Information System; to the support of projects and studies focused on the knowledge and use of biodiversity; to advising governmental institutions and other sectors; to undertaking special projects and programmes and sharing knowledge on biological diversity; and to following up on international agreements on topics related to biological diversity, and provide services to the public.

various institutions. While there may not necessarily be a right or wrong way to allocate these various responsibilities, effectively mainstreaming biodiversity across different policies and programmes requires strong collaboration across these. An exercise undertaken by India illustrates the number of different ministries that are, to some degree, involved in the implementation of the NBAP across each of the National Biodiversity Targets (NBTs) (Table 2.2) (MoEFCC, 2014a). Additionally, India's Addendum to the NBAP (2014) specifies indicators for the 12 NBTs and delineates the government agency responsible for monitoring each indicator. The agencies were identified on the basis of their mandate, expertise and geographical coverage and include national-, state- and local-level bodies.

Table 2.2. Indicative list of ministries/departments and NBTs of the NBAP in India

Ministries/departments of government of India and planning commission	NBTs											
	1	2	3	4	5	6	7	8	9	10	11	12
Ministry of Agriculture	1	2	3	4	5	6	7	8	9	10	11	12
Ministry of Chemicals and Fertilisers	3	4	5	6	7	8	9	10	11	12		
Ministry of Coal	3	4	5	6	7	8	9	10	11	12		
Ministry of Commerce and Industry	2	3	5	7	8	9	10	12				
Ministry of Drinking Water and Sanitation	3	4	6	9	10	11	12					
Ministry of Earth Sciences	1	2	3	4	5	6	7	8	9	10	11	12
MoEFCC	1	2	3	4	5	6	7	8	9	10	11	12
Ministry of Health and Family Welfare	1	3	4	5	6	9	10	11	12			
Ministry of Human Resource Development	1	2	3	4	5	6	7	8	9	10	11	12
Ministry of New and Renewable Energy	1	2	3	4	5	6	7	8	9	10	11	12
Ministry of Panchayati Raj	1	3	4	5	6	7	8	9	10	11	12	
Ministry of Petroleum and Natural Gas	3	4	5	6	7	8	9	10	12			
Ministry of Power	2	3	4	5	6	7	8	9	10	12		
Ministry of Rural Development	1	2	3	4	5	6	7	8	9	10	11	12
Ministry of Science and Technology	1	2	3	4	5	6	7	8	9	10	11	12
Ministry of Shipping	3	4	6	7	8	9	10	12				
Ministry of Tourism	3	4	5	6	7	8	9	10	11	12		
Ministry of Tribal Affairs	1	2	3	4	5	6	7	8	9	10	11	12
Ministry of Urban Development	1	3	4	5	6	7	8	9	10	11	12	
Ministry of Water Resources	1	2	3	4	5	6	7	8	9	10	11	12
Department of Space	3	4	5	6	7	8	9	10	11	12		
Ministry of Youth and Space Affairs	1	2	3	9	10	11	12					
Ministry of Statistics and Programme Implementation	1	2	3	5	7	8	9	10	11	12		
Ministry of Communication and Information Technology	9	10	12									
Planning Commission of India	1	2	3	4	5	6	7	8	9	10	11	12

Source: MoEFCC (2014a), *National Biodiversity Action Plan (NBAP): Addendum 2014 to NBAP 2008*, www.cbd.int/doc/world/in/in-nbsap-v3-en.pdf.

A similar exercise with regard to specifying responsibilities has been undertaken in Ethiopia, which has identified the lead institutions for each of the biodiversity targets and actions (Table 2.3).

Table 2.3. Lead institutions in charge of the NBSAP implementation in Ethiopia

Lead institutions	Targets (no. of targets)	Actions (no. of actions)
Ethiopian Biodiversity Institute (EBI)	1, 2, 3, 6, 8, 9, 11, 12, 14, 15, 16, 17, 18 (13)	1.1, 1.2, 1.6, 2.1, 2.2, 2.3, 2.4, 3.1, 6.1, 6.2, 6.3, 8.1, 8.2, 8.3, 8.4, 8.5, 9.1, 9.2, 9.3, 11.1, 11.2, 11.3, 12.1, 12.2, 14.1, 14.2, 15.1, 15.2, 15.3, 16.1, 16.3, 17.1, 18.1, 18.2 (35)
Ministry of Agriculture and Natural Resources	1, 4, 10, 13 (4)	1.4, 4.3, 10.3, 13.1, 13.2 (5)
MoEFCC	5, 10 (2)	5.1, 5.4, 10.1, 10.2, 10.4 (5)
Ethiopian Wildlife Conservation Authority (Ministry of Tourism and Culture)	7 (1)	7.1, 7.2, 7.3, 7.4 (4)
National Planning Commission	3, 16, 17 (3)	3.2, 16.2, 17.2 (3)
Ministry of Livestock and Fisheries	5 (1)	5.2, 5.3 (2)
Ministry of Education	1 (1)	1.3, 1.4 (2)
Ministry of Industry	4 (1)	4.1 (1)
Ministry of Water Irrigation and Energy	4 (1)	4.2 (1)
Ministry of Women and Children Affairs	12 (1)	12.3 (1)

Source: Based on EBI (2015), *Ethiopia's National Biodiversity Strategy and Action Plan 2015-2020*.

Overall, the roles and responsibilities across institutions must be clearly and appropriately defined. Clearly setting out the ministries and agencies responsible for the relevant biodiversity targets and actions helps to enhance transparency and accountability in the mainstreaming process, and should be undertaken in all countries. In contrast in Uganda, a challenge has been raised regarding the lack of clearly defined roles between the National Environment Management Authority (NEMA) and the Ministry of Environment and Water; it is not clear who is responsible for implementation (Matsiko, 2015).

The establishment of inter-ministerial committees and working groups can also help to minimise silo approaches and thus foster policy coherence across the various ministries and the programmes they are responsible for. Several examples of such are summarised in Table 2.4, together with some of the challenges that have been identified.

While several countries have established inter-ministerial committees that are relevant to biodiversity, the mandates of these vary, and some have a narrower mandate than that of mainstreaming. It would be timely for governments to review the existing institutional structures in place and what they are intended to achieve, and consider updating these to reflect evolving policy needs and priorities. Moreover, once challenges or issues arise, these need to be addressed. It is also important to note, however, that these inter-ministerial committees do not need to be biodiversity-specific. If, for example, a government has established a green growth inter-ministerial committee, which adequately reflects biodiversity, then there is no need to convene a separate one. Embedding permanent environment or natural resource management units in various ministries, as is the case in Ethiopia and Madagascar,²⁴ could also contribute towards mainstreaming.

Table 2.4. **Examples of biodiversity-relevant inter-ministerial committees**

Country/Committee	Composition	Challenges
Brazil		
National Environmental Council (Conselho Nacional do Meio Ambiente) (CONAMA) – High-level advisory and deliberative committee	In 2010, CONAMA had 71 government representatives (41 federal, 27 state and 8 municipal); 22 representatives (11 permanent and 11 rotating) from civil society, academia and trade unions; 8 from the business sector; and 1 honorary member. It is supported by “technical chambers” (expert groups) on various policy issues.	Many members routinely miss its meetings. Municipalities complain they lack influence on its decision. As with other environmental policy areas in Brazil, responsibilities across institutions and levels of government often overlap, and effective co-ordination is challenging (OECD, 2015b).
National Biodiversity Commission (Comissão Nacional da Biodiversidade) (CONABIO) – co-ordinates, supervises and evaluates actions implemented under the Brazilian National Biodiversity Strategy. CONABIO is also responsible for elaborating the National Biodiversity Policy and promoting the implementation of Brazilian commitments under the CBD.	CONABIO includes representatives of nine ministries, civil society, the private sector and academia. Several other federal ministries and co-ordination bodies are involved in biodiversity policy.	
China		
National Committee for Biodiversity Conservation (NCBC)	NCBC consists of 25 departments, with the secretariat residing within the Ministry of Environmental Protection. NCBC co-ordinates biodiversity conservation actions at the national level.	
Inter-ministerial Joint Meeting for Protection of Biological Resources and the National Coordinating Group for Implementation of the Convention on Biological Diversity	Headed by the Ministry of Environmental Protection and composed of 17 ministries and commissions.	
Colombia		
National Environmental Council (NEC) – role is to ensure the inter-sectoral co-ordination between government environment and renewable energy policies and programmes.	The NEC comprises high officials, including ministers, as well as business, academia, NGOs and ethnic minorities, among others (OECD, 2012).	The NEC lacks the authority to perform its functions, while its decisions are not binding and rarely implemented. Moreover, although the council is supposed to meet every six months, in practice it does not (OECD, 2014).
Mexico		
CONABIO	10 Ministries: Foreign Affairs, Finance and Public Credit (Secretaría de Hacienda y Crédito Público) (SHCP), Energy, Economy, SAGARPA, Public Education, SSA, SECTUR, Social Development, SEMARNAT	Despite these various commissions, a much more comprehensive approach has been undertaken for climate change for example. OECD (2013b) has recommended that Mexico establish a high-level inter-ministerial task force (similar to the one for climate change) to promote economically and environmentally sustainable use of ecosystems and biodiversity.
CONAFOR	SEMARNAT, SHCP, SAGARPA, SECTUR and the National Defence Ministry, plus CONAGUA.	
Inter-secretarial Commission for the Sustainable Management of Seas and Coasts	Ministries of Interior; Foreign Affairs; Marine; Social Development; Energy; Economy, Agriculture, Livestock, Rural Development, Fisheries and Food; Communications and Transport; Tourism; and Environment and Natural Resources.	

Table 2.4. Examples of biodiversity-relevant inter-ministerial committees (continued)

Country/Committee	Composition	Challenges
Nepal The National Biodiversity Coordination Committee (NBCC) – role is to advise government on matters relating to biodiversity	NBCC is composed of 23 (to increase to 27) members and is led by the Minister of Forests and Soil Conservation. Members include representatives from other relevant government ministries (e.g. Agricultural Development, Energy, Finance), academia, the private sector and donors. NBCC is divided into thematic subcommittees: forests and protected areas, agro-biodiversity, biosecurity, genetic resources, and sustainable use of biodiversity.	NBCC has generally been viewed as ineffective in carrying out its mandate to guide, implement and monitor national biodiversity strategy. According to the NBSAP (2014), the committee is fraught with poor co-ordination, resulting from inadequate human and financial resources. Under its priority actions, the NBSAP has thus committed to strengthening the NBCC (by also providing legal recognition) and its secretariat (through provision of adequate human and financial resources), filling these gaps by 2016.
South Africa Ministers and Members of Executive Councils Meeting (MINMEC) and Ministerial Technical Committee (MINTEC) – facilitate co-ordination between DEA and the provincial environmental departments	MINTEC comprises the Director-General of DEA, representatives of public entities including SANBI and SANParks, and the heads of the provincial departments responsible for environmental management and biodiversity*.	Further efforts are needed to integrate biodiversity into other sectoral policies, notably mining, energy, transport and coastal zone management (OECD, 2013c).
Uganda Working group on biodiversity for development wealth creation and socio-economic transformation – to mainstream development in NBSAPs and biodiversity in NDPs	The working groups consist of government ministries, departments and agencies – Agriculture, Environment, Forestry, Wildlife, Energy, Finance, Wetlands, Trade, Tourism – National Planning Authority District representatives, and research institutions, academia, the private sector and NGOs, among others.	
Viet Nam Interdisciplinary Steering Committee to Formulate and Implement the NBSAP	The steering committee headed by the Minister of Natural Resources and Environment and representatives of the Office of the Government, National Assembly Office, 13 ministries, 2 academic and scientific bodies (Viet Nam Union of Science and Technology Associations, Viet Nam Academy of Science).	Different staff members were assigned to participate in different activities that did not capture the full information on progress of the implemented activities. Loose co-operation and inadequate communication among ministries led to achieving low outputs
Ministerial Joint Committee on Promotion of Biodiversity and Nature Conservation 2015-2020	Co-operation plan between the Viet Nam Administration of Forestry (VNFOREST) of the Ministry of Agriculture and Rural Development and the Viet Nam Environment Administration (VEA) of the Ministry of Natural Resources and Environment in biodiversity and nature conservation from 2015-20. The main co-operation areas are a) development and implementation of legal documents, policies on nature conservation and biodiversity; b) joint implementation of prioritised programmes approved in the NBSAP 2013; and c) development and management of database and sharing system on biodiversity observation between VNFOREST and VEA.	Just recently signed a memorandum of understanding, but has not implemented many joint activities due to lack of specific terms of references.

* MINTEC working groups include biodiversity conservation (Working Group 1), water (Working Group 5), environmental management including environmental impact assessments (EIAs) (Working Group 7), marine and coastal issues (Working Group 8), climate change (Working Group 10), and law reform (Working Group 11).

Co-ordination is also important between national and subnational agencies. Vertical institutional co-operation remains a challenge in a number of countries, including Madagascar, Peru, South Africa and Viet Nam. Some of the important reasons for lack of co-operative governance at different administrative levels are the lack of a comprehensive policy and legislative agenda (new initiatives are taken independently by different stakeholders); overlaps and contradictions among the mandates of different government departments and among the national, provincial and municipal levels of government; lack of capacity within many government authorities to implement the legislation and government policies (Du Plessis, 2008, cited in OECD, 2013c); and lack of sufficient financial resources. Australia is an example where the regional authorities have the primary mandate for biodiversity management. Regional government are responsible for creating natural resource management plans based on national frameworks. At the national level, the Natural Resource Management Ministerial Council (NRMMC)²⁵ prepared the NBSAP as well as the National Framework for Natural Resource Management Standards and Targets (NRMMC, 2002) to encourage integrated management of land, water and biodiversity on a landscape scale. Other countries, such as Myanmar, have set targets to enhance subnational planning and implementation for biodiversity management.²⁶

More comprehensive institutional changes may be required to overcome silos and anchor biodiversity challenges in economic decisions so as to ensure effective implementation. In Ethiopia, this consisted of: re-establishment and restructuring of EBI; establishment of biodiversity centres in regional governments; establishment of regional biodiversity units of the EBI; and the establishment of new ministries (Tefera, 2016). New ministries and agencies were also created in Peru, subsequent to the 2005 General Environment Act. These include the Ministry of the Environment, the Peruvian National Protected Areas Service, and the Agency for Environmental Assessment and Enforcement in 2008. The National Service of Environmental Certification for Sustainable Investments was created in 2012 (OECD/UN ECLAC, 2017). In France there has been an attempt to align sector and environmental policies by extending the mandate of the Ministry of Ecology and Sustainable Development to cover transport, infrastructure, tourism and marine affairs, and more recently, energy, though some integration issues remain unresolved (OECD, 2016). Additionally, a key measure of the recently implemented law on biodiversity conservation (August 2016) was to rationalise biodiversity governance by setting up the French Biodiversity Authority (Agence Française pour la Biodiversité) (AFB), which has been operational since January 2017. Four institutions have been brought together under the AFB: the Agency for Protected Marine Areas, the National Office for Water and Aquatic Environments, the National Parks of France, and the Technical Workshop for Natural Areas. A joint research unit will be set up with the National Natural History Museum and the National Centre for Scientific Research. Moreover, resources for biodiversity management have been stepped up under the AFB.²⁷

2.5. Role of data and information in mainstreaming

Robust, clear, policy-relevant and readily available data and information are required to enable policy decisions that are more effective in terms of both environmental impact and cost. Such information is critical for establishing baselines, quantifying benefits, targeting biodiversity expenditures to where they are most needed, and monitoring and evaluating change over time (Bass, 2013). The lack of sufficient data is a challenge that has often been raised in the context of mainstreaming. Examples of informational challenges noted in NBSAPs of India, Ethiopia and Uganda are highlighted in Box 2.3. Barriers to collecting comprehensive data include lack of technical and scientific capacity, lack of financial and institutional resources, and fragmentation of existing data. Another challenge often raised is the capacity needed to manage and report the existing data in an accessible and policy-relevant form.

Box 2.3. Examples of data challenges highlighted in NBSAPs and Fifth National Reports

In **Australia**, there remain significant gaps in knowledge on biodiversity and insufficient coverage for many parts of the country, according to the NBSAP (2010-30). For instance, there is relatively little information on marine biodiversity and on invertebrate species and micro-organisms, as well as how various plant, animal and micro-organism species contribute to ecological functions and health of the environment. There is need for greater communication among researchers, policy makers and on-ground biodiversity managers as well as improved alignment of research with priorities for biodiversity conservation in order to make data and information readily usable by stakeholders beyond the scientific community. Accordingly, Target 8 of the NBSAP is that by 2015, nationally agreed science and knowledge priorities for biodiversity conservation guide research activities.

Ethiopia's NBSAP (2015-20) identifies lack of information on components of biodiversity as a “key biodiversity conservation issue” and notes that there is no institution mandated with the maintenance, storage, analysis, organisation and dissemination of biodiversity-related information. Moreover, existing data are scattered among various institutions in and outside the country. Consequently, one of the strategic objectives of the NBSAP is the expansion and improvement of the information base on the biodiversity of Ethiopia. This is reiterated in the Fifth National Report, which sets a target that by 2017 the “national biodiversity database is strengthened, information dissemination strategy is devised and the Clearing House Mechanism is updated”.

India's NBSAP (2008) reports that there is inadequate baseline data on species and genetic diversity, and their macro and micro habitats.* Existing biodiversity-related information is fragmented, and some databases are not of a high standard. The challenges to the collection and dissemination of national-level information include lack of infrastructure, lack of skilled manpower and a low level of co-ordination across different scientific fields. Consequently both the NBSAP (2008) and the NBSAP addendum (2014) list action points related to inventory building for setting baselines and building valuation models for biodiversity-related goods and services.

In **Peru**, environment-related data are fragmented and scattered among different authorities and levels of government. Despite considerable progress through the development of the National System of Environmental Information, challenges persist. Where the data are collected, they might not always be shared with the government or made publicly available. They are also not always sufficiently systematised and user-friendly. The current quality of biodiversity-related data has been considered insufficient to permit a comprehensive national evaluation of biodiversity, or to formulate concrete measures to promote conservation and sustainable use (CEPLAN, 2011).

In **Uganda**, one of the five strategic objectives of the NBSAP is “to facilitate research, information management and information exchange on biodiversity”. Insufficient information is listed as a key issue for various biodiversity components including forests, wetlands, open waters and soil. The Fifth National Report points out that one of the challenges in the implementation of the NBSAP has been in carrying out a comprehensive inventory of biodiversity resources and that consequently there has been minimal progress towards the target to integrate biodiversity values in strategies and plans for development, economic growth and wealth creation and incorporating them in national accounts and reporting systems by 2020.

* Although 70% of the land area has been surveyed and 45 500 species of plants and 91 000 species of animals have been catalogued, there are large gaps in data and it is estimated that up to 400 000 species are yet to be recorded.

Information that can promote effective mainstreaming includes a clear understanding of the underlying and proximate drivers of biodiversity loss. In addition, given the often limited budget available for biodiversity, information that can help to target and prioritise biodiversity interventions to areas where they will have most impact is also important. Ideally, investments should be prioritised towards areas with highest biodiversity and ecosystem benefits and with highest risk of loss/degradation. Cost-effectiveness is also enhanced by prioritising areas with lower opportunity costs (Wunscher, Engel and Wunder, 2006; OECD, 2010).

Data on local socio-economic characteristics (e.g. income levels, employment) can enable consideration of impacts of biodiversity policies and mainstreaming interventions on poverty and income distribution. Understanding and addressing the potential distributional impacts of biodiversity policies and reforms are important to ensure their political acceptability and success (OECD, 2008). A study of Eastern Cape in South Africa, for example, showed that a change from livestock farming to eco-tourism resulted in the doubling of the number of jobs per hectare and a fourfold increase in income per hectare (OECD, 2013c). Finally, information on existing biodiversity finance, including needs and gaps, is also required to help plan and implement effective mainstreaming policies (discussed in Section 2.6).

National biodiversity (or ecosystem) assessments are useful for establishing baselines of information and provide a comprehensive understanding of current state and pressures on biodiversity. While a number of these have been undertaken, they vary greatly in terms of their objectives, scope and type.²⁸ An example of a high-quality National Biodiversity Assessment (NBA) is that of South Africa (DEA and SANBI, 2011) which is at the forefront of international practice in terms of methodology, quality of data and level of analysis (OECD, 2013c). It presents the state of biodiversity across terrestrial, freshwater, estuarine and marine environments. The assessment provides spatially explicit data on the basis of which priority areas and corresponding priority actions are identified. The NBA has also been used to develop biodiversity sector plans at the local and district levels. Overall, the quality and quantity of data available in South Africa has been instrumental in mainstreaming biodiversity in a number of key sectors, including agriculture, mining and water infrastructure, among others (Manuel et al., 2016). France initiated a national ecosystems and ecosystem services assessment in 2012. As part of this work, a conceptual framework was released in April 2017 and further work is under way.

Brazil has also taken steps towards building a biodiversity-related knowledge base, including releasing an updated list of threatened flora and fauna in 2014 and monitoring biodiversity conservation status in protected areas. Moreover, the National Institute for Space Research (Instituto Nacional de Pesquisas Espaciais) (INPE) runs a state-of-the-art satellite-based deforestation monitoring system for the Amazon biome which has enabled the government to enforce and monitor actions against deforestation. Additionally, the Brazilian Institute for Environment and Renewable Natural Resources (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis) (IBAMA) has initiated a satellite monitoring programme for the other terrestrial biomes in the country. Although the data on the other biomes are not yet as precise as the forest monitoring system for the Amazon biome, INPE and IBAMA are collaborating to develop monitoring systems across the country which can provide data on deforestation and land use that is comparable and continuous (OECD, 2015b). Such information on the status and trends in ecosystem change can enable prioritisation of policy action in sectors and activities which have the most impact on these resources.

Assessments that also include valuation of biodiversity (or ecosystems) – demonstrating their economic contribution to society, as well as the costs of their loss in monetary terms – can help make the case for mainstreaming by countering the “economic invisibility” of natural resources in decision-making processes. Recognising this, countries such as Brazil, India, Mexico and South Africa have initiated national-level valuation studies in partnership with The Economics of Ecosystems and Biodiversity (TEEB). Each of these countries has taken a different approach, depending on its national circumstances and priorities. For instance, India initiated a national-level TEEB project in 2011 to recognise, demonstrate and capture the value of ecosystem services in the context of wetlands, forests and marine ecosystems. In Brazil, the TEEB study initiated in 2013 under the Brazilian Natural Capital Initiative does not single out priority ecosystem types but focuses on various components (i.e. for national-level policy makers; for regional and local governments; for citizens; and for business).²⁹ South Africa has also initiated a TEEB assessment and released a report titled “State of play: Baseline valuation report on biodiversity and ecosystem services” (DEA, 2011), which gathers and synthesises available information on which the assessment can build. France is currently developing a national assessment on ecosystems and ecosystem services, with an explicit target of restoration of at least 15% of degraded ecosystems (Fiorina et al., 2012). This assessment is expected to include a component valuating ecosystem services.

Another process that can enable mainstreaming is to include the values of biodiversity and ecosystem services in national accounting and reporting systems (as laid down in Aichi Target 2) so that these reflect the trends in environmental as well as economic resources. To facilitate internationally comparable integration of environment into national accounts, the System of Environmental-Economic Accounting (SEEA) was developed to supplement the System of National Accounts (SNA) by adding the dimension of stocks and flows of natural resources.³⁰ The SEEA contains internationally agreed upon standard concepts, definitions, classifications, accounting rules and tables for producing comparable statistics on the environment in order to integrate environmental and economic statistics and monitor interactions between the economy and the environment.³¹

In Mexico, the National Institute of Statistics and Geography calculates the net internal ecological product as part of its National System of Economic and Ecological Accounting, to demonstrate the negative effects and associated costs of ecological and environmental degradation for Mexico’s gross domestic product (GDP) (OECD, 2013b). Brazil has begun to include the value of water resources in national accounts and is aiming to develop forest economic accounting as a next step (OECD, 2015b). Some countries, such as Peru, have set specific targets to make progress towards natural capital accounting. One of the targets featured in the Peru Bicentenary Plan 2021 under biodiversity objectives is the increase in the share of regional governments that have conducted an evaluation and valuation of their natural resources and to increase the number of environmental variables in the national accounts. However, so far only a few countries have taken steps towards natural capital accounting, and these generally focus on areas where demand for accounting is clear and linked to specific policy questions (OECD, 2012). The Wealth Accounting and the Valuation of Ecosystem Services (WAVES) initiative co-ordinated by the World Bank is supporting partner countries to recognise and reflect the importance of natural capital in national accounts.³²

The information collected through biodiversity assessments including valuation studies should be made readily available and communicated in useful forms for policy makers at various levels and other stakeholders, in order for it to be integrated into economic and environmental decisions. In South Africa, for example, biodiversity-related information is easily obtainable and packaged in accessible forms for a variety of audiences. The Biodiversity

Advisor web portal³³ contains information for researchers, planners and policy makers such as detailed instructions on conducting EIAs, a Land Use Decision Support tool, links to useful institutions and biodiversity records, a wide variety of geographical information system maps, and biodiversity plans, among other information. Similarly, information on biodiversity and ecosystem services (including information on use of biodiversity and connections between biodiversity and human health) in Brazil is made available to policy makers, researchers and other stakeholders through the online Information System on Brazilian Biodiversity.³⁴ Challenges remain in maintaining updated and user-friendly data (MMA, 2015).

2.6. Biodiversity in national budgets

Effective management of biodiversity cannot realistically be achieved unless there is a sufficient budget in place to implement necessary conservation and sustainable use policies. This in turn requires that the budget process allows for visibility about biodiversity spending and facilitates informed debate about the adequacy of these allocations, at national and subnational levels, by reference to public commitments and in balance with other public goals.

The “appropriate” amount of national budget allocation would ideally reflect the gap between what is required to achieve the objectives specified in the NBSAP (and other biodiversity-relevant objectives more broadly) and what can reasonably be mobilised from alternative sources (e.g. from the private sector and official development assistance [ODA]). Accurate and up-to-date information on spending needs and available funding by relevant authorities is essential for estimating the financing gap and developing strategies to mobilise additional resources. Collecting robust, comprehensive and comparable time series data on public biodiversity expenditure across national and subnational budgets is an important starting point for informed debate. This would allow comparing biodiversity expenditure in relation to environmental and overall public expenditure. However, such data are not yet readily available for all countries. The type and detail of data available across four countries are summarised in Box 2.4 and illustrate that challenges still remain.

Box 2.4. A review of biodiversity expenditure data across four countries

India: India was among the first few countries to undertake a comprehensive assessment of funding for biodiversity conservation. Overall funding for biodiversity conservation amounted to 92 044.5 million rupees for 2013-14 from 77 schemes of 23 ministries/departments. More generally, in India, overall funding for environment-related programmes is a very small proportion of the total annual budget. Between 2007-10 (under the 11th FYP), the annual budget for the Ministry of Environment and Forests (its name at that time) for various environmental programmes was around 0.012% of GDP and less than 0.25% of the annual national budget. The lack of funds for environmental programmes at the state and city level has been marked as a “cause for concern” in the current FYP.*

Mexico: Biodiversity expenditure was around 8.41 billion pesos (MXN) in 2009, an increase from MXN 2.56 billion in 2001, although the categorisation of data is not consistent over the years, making comparison difficult. More generally, data are available on the SEMARNAT budget (MXN 51.2 billion in 2011) and the relative shares of the commissions within this (CONANP’s share in 2011 was MXN 0.99 billion [1.9%], an increase from MXN 0.35 billion in 2002, and CONAFOR’s share was MXN 6.46 billion (i.e. 12.6%), a threefold increase in real terms since 2002). In comparison, the SAGARPA budget in 2011 was MXN 73.00 billion.**

Box 2.4. A review of biodiversity expenditure data across four countries (continued)

Nepal: There is to date no dedicated budget code and monitoring system in place, making it difficult to assess the exact funding trends for biodiversity management. More generally, data on the programme budget of the Ministry of Forests and Soil Conservation show that it continuously and substantially increased during the last decade.*** Similar increasing trends were found in allocation of budget for management of agro-biodiversity and climate change adaptation and management. Notably, Nepal has estimated the total cost of the NBSAP implementation over six years (almost 673 million United States dollars [USD] from 2014/15 to 2019/20), and has identified where the funding would come from (government covering 55%, donors 25%, private sector 2%).

South Africa: The government's biodiversity-related expenditure was around 1.9 billion rand (ZAR) in 2012-13, an increase from ZAR 1.3 billion in 2009-10. At the national level, the Department of Environmental Affairs spent 13% of its budget (around ZAR 576 million) in 2011-12 on biodiversity-related projects. The bulk of the expenditure for biodiversity comes from the provincial level, where all but two provinces (Gauteng and Northern Cape) allocate more than half their environmental expenditures to biodiversity. The provincial-level biodiversity-related expenditure amounted to ZAR 1.3 billion in 2012-13 (nearly double compared with the 2007-08 expenditure).

*The Fifth National Report states that despite expanded datasets in terms of number of ministries/ departments and programmes considered as compared with the previous study undertaken for 2010-11, the amount arrived at for 2013-14 is lower. This is attributed to efforts made to reduce subjectivity in the earlier use of a multiplicative factor by directly consulting the concerned ministries/departments to confirm the contribution of schemes implemented by them towards biodiversity conservation, as well as to the significant difference in rupee-USD conversion rate in 2014.

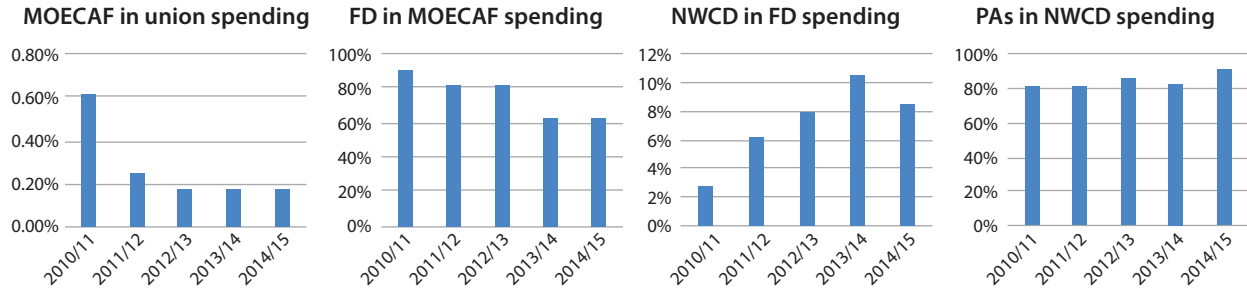
**In comparison, Mexico spent 1.7% of GDP on energy subsidies over 2005-09, including those for transport fuels and electricity use by households and farmers. Most of the subsidies benefit the rich more than the poor, however. For example, the poorest 20% reap only about a tenth of electricity subsidies and even less of transport fuel subsidies. Replacing indirect subsidies – artificially low prices for energy and water – with cash transfers would help the poor, encourage efficient use of energy and water, and help to promote more socially inclusive green growth.

***A bulk of the funds (i.e. 84.4%) came from the government or internal sources, and the remaining amount from foreign assistance in the form of grants (14.1%) and soft loans (1.5%).

Sources: MoEF (2012), *Report on Assessment of Funding Support for Biodiversity Conservation in India*; GoI (2013), *Twelfth Five Year Plan (2012-2017) – Faster, More Inclusive and Sustainable Growth*; OECD (2013b), *OECD Environmental Performance Review: Mexico 2013*, <https://doi.org/10.1787/9789264180109-en>; MFSC (2014), *Nepal Fifth National Report to Convention on Biological Diversity*; OECD (2013c), *OECD Environmental Performance Reviews: South Africa 2013*, <https://doi.org/10.1787/9789264180109-en>.

In Myanmar, comprehensive information on national biodiversity expenditure is not readily available at the present time. Time series data are available on the budget of the Nature and Wildlife Conservation Division (NWCD) (Emerton, Aung Kyin and Tizard, 2015), showing a nearly steady increase over the 2010/11-2014/15 period (Figure 2.3). It is interesting to note that the data are sufficiently granular to find that protected areas (PAs) were the main component of NWCD's budget, consuming just over 90% of funds. In the financial year 2014/15, union funds worth 1.06 billion kyats (MMK) (USD 1.03 million) were allocated to PAs.

Figure 2.3. Proportion of union budget allocated to MOECAAF, FD, NWCD and PAs, 2010-15



Source: MOECAAF data cited in Emerton, Aung Kyin and Tizard (2015), “Sustainable Financing of Protected Areas in Myanmar”.

The NWCD sits under the Forest Department (FD), which is under the MOECAAF. Time series data are also available for each of these. While the FD accounted for two-thirds of MOECAAF spending (MMK 13.62 billion or USD 13.29 million), the share of FD funding going to NWCD was relatively low at 8.5% (MMK 1.15 billion or USD 1.12 million). Overall, the MOECAAF budget (MMK 21.46 billion or USD 20.93 million) accounted for just 0.18% of total union expenditures on line ministries and departments (MMK 12.13 billion or USD 11.8 billion). This compares with around 5.7% for the health sector, 11% for education and 0.29% for social welfare (UNICEF, 2013).

Emerton, Aung Kyin and Tizard (2015) have undertaken a comprehensive analysis of financing of PAs in Myanmar that also clearly outlines the budget process in the context of PAs as well as funding sources, flow, gaps, constraints and opportunities. Ideally, such an analysis should also be undertaken for biodiversity conservation and sustainable use more generally, including mainstreaming.

The United Nations Development Programme (UNDP) Biodiversity Finance (BIOFIN) initiative is, in fact, currently working in 31 countries³⁵ to support governments in undertaking analysis such as the one for PAs in Myanmar but for biodiversity expenditure as a whole. BIOFIN has developed methodology with the aim of guiding countries to a) analyse the policy and institutional context for biodiversity finance; b) measure the current biodiversity expenditures; c) assess future financial needs; and d) identify the most suitable finance solutions to achieve national biodiversity plans and targets. The various components are highlighted in Box 2.5.

Box 2.5. The BIOFIN Initiative

1. Policy and Institutional Review (PIR)

Through the PIR process, the national BIOFIN Team maps the impact of economic sectors on biodiversity, identifies the main financing mechanisms being used and reviews which subsidies have an impact on biodiversity. The PIR also reviews the overall financing architecture for biodiversity in the country and generates specific recommendations for an improved institutional framework.

2. Biodiversity Expenditure Review

Through the Expenditure Review, BIOFIN collects detailed data on public, private and civil society budgets, allocations and expenditures to inform evidence-based biodiversity policies, financing and outcomes.

Box 2.5. The BIOFIN Initiative *(continued)*

3. Biodiversity Financial Needs Assessment

The Financial Needs Assessment produces a comprehensive estimate of the financial resources needed to achieve national and subnational biodiversity targets. It compares these financial needs with expected biodiversity expenditures over a medium- to long-term planning horizon. National biodiversity targets are typically articulated in NBSAPs and other key national strategies such as NDPs, sectoral development plans and climate change plans.

4. Biodiversity Finance Plan

The Biodiversity Finance Plan aims to present a coherent and comprehensive national approach to biodiversity finance that encompasses a full suite of finance solutions, going beyond the mobilisation of resources, and including strategies to reduce future costs and deliver more effectively scarce resources. The plan proposes steps to implement a balanced mix of prioritised finance solutions to sustainably manage biodiversity finance and achieve national biodiversity targets.

5. Implementing the Biodiversity Finance Plan

BIOFIN supports the design and implementation of some of the prioritised finance solutions.

Working with BIOFIN, for example, the Philippines has estimated that the total NBSAP financial requirements were USD 7.426 billion. Based on the findings from the Biodiversity Expenditure Review and the Financial Needs Assessment, the amount that is currently financed is 20% of the total annual requirement. It is currently working on developing a Biodiversity Finance Plan, including examining the potential to increase e.g. penalties and user fees, which were found to be low in the PIR (Box 2.6).

Box 2.6. Objectives and insights from BIOFIN in the Philippines

The Philippine Biodiversity Strategy and Action Plan (PBSAP) and BIOFIN are proposed to be mainstreamed in public- and private-sector decision-making processes, specifically planning, programming and budgeting.

Building on the results generated from the public and private expenditure review (PPER) and lessons learned from the processes of Climate Change Expenditure Tagging, BIOFIN Philippines will work with the Department of Budget and Management and bureaus under the Department of Environment and Natural Resources (DENR) to conduct biodiversity tagging workshops. The objective is to identify programmes, activities and projects of each bureau that are responsive to biodiversity. It is envisioned that this will provide finer resolution of biodiversity-related expenditures and at the same time provide a process that will raise awareness and inform the bureaus about biodiversity.

The National Economic Development Authority (NEDA) is the main government agency mandated to co-ordinate the formulation and implementation of development plans and investment programmes. For 2016, NEDA was tasked to start the pre-work of drafting the Philippine Development Plan (PDP) (up to 2022) for the next presidential term. This will serve as the basis of the Philippine Investment Plan and all other regional, provincial and local development plans and investment programmes. At time of writing, the five priority

Box 2.6. Objectives and insights from BIOFIN in the Philippines *(continued)*

programmes of the PBSAP have been fully integrated within the PDP Outcome 1 Strategies on “intensifying sustainable management of natural resources” and “expanding development of resource-based industries”. In the section on priority legislation, BIOFIN lobbied for the inclusion of the Expanded NIPAS (National Integrated Protected Areas System) Act, Philippine Genetic Resources Access and Benefit Sharing, and proposed amendments to the use of the Malampaya Fund towards biodiversity conservation as priority environment and natural resources legislation supporting PDP. These policy measures are currently filed in the House of Representatives for the 17th Congress and are essential for biodiversity financing.

Part of the mainstreaming process is lobbying and advocacy work with the selected Regional Development Councils. The councils are the highest planning and policy-making body that serves as the counterpart of the NEDA board at the subnational level. They play a vital role in co-ordinating and setting direction of local initiatives that could accelerate socio-economic development in the region. BIOFIN’s localisation initiative in Mindoro province shall apply this planning modality.

Based on the result of PPER, more than 10% of the available resources to finance biodiversity are attributed to the non-core biodiversity agencies. The amount is significant, and these agencies can also carry out activities that are beyond the mandate of DENR. Similar to the biodiversity tagging workshop, target agencies for this activity include: the Department of Agriculture and Bureau of Fisheries and Aquatic Resources, the Department of Science and Technology, the Commission on Higher Education and the Department of Education, the Department of Tourism, the National Research Council of the Philippines, the Department of Social Welfare and Development, the Department of the Interior and Local Government, and leagues.

The result of the gaps analysis show that even under the best scenario (i.e. the PBSAP is successfully mainstreamed, increases in ODA, projects), the Philippines still needs to raise at least 10 billion pesos a year. The bulk of this amount is expected to come from the private sector – including businesses, financial institutions, venture capital, foundations, philanthropies, privately run academic institutions, and for-profit and not-for-profit organisations. Thus, one of the core functions of the PBSAP secretariat will be to monitor financial flows related to PBSAP implementation.

Source: BIOFIN (2016), personal communication.

As a result of the BIOFIN Philippines process, a number of information gaps were addressed. Prior to BIOFIN, the expenditure towards biodiversity by government agencies (especially non-core) and other institutions was not known. There was also a knowledge gap on the cost of the PBSAP and the financing gap needed to implement it. Knowledge on potential investments that both the country and the private sector may look into was also lacking. Now, such possible investable projects can easily be pinpointed. Additional insights and lessons from the BIOFIN process in the Philippines include that: a) lobbying and advocacy work is an important element of mainstreaming; and b) it is important to plan ahead, so as to develop arguments, make contacts, and establish relationships and trust with key stakeholders and decision makers in order to effectively ensure mainstreaming.

BIOFIN could also be considered for use by all countries, as this would help to identify the appropriate allocation of national budget to biodiversity, as well as how to scale up finance from other sources, including private (see Bass, 2013, for further discussion). Another interesting example is from Uganda, where the Ministry of Finance, Planning

and Economic Development; the Office of the Prime Minister; the Ministry of Water and Environment; and NEMA developed a checklist for mainstreaming biodiversity in the budget framework paper. This is used for funding a project, as well as for monitoring and evaluation and appraisal (Matsiko, 2015). In the broader context of green budgeting, in December 2017 the OECD launched the Paris Collaborative on Green Budgeting, together with France and Mexico.³⁶

Annex 2.A1

Mainstreaming development and poverty alleviation in NBSAPs

Country (Period of plan)	Mainstreaming of biodiversity and development in NBSAPs	Mainstreaming of poverty alleviation in NBSAPs
Australia (2010-30)	<p>Australia's Biodiversity Conservation Strategy 2010-2030 identifies three national priorities for action (engaging all Australians, building ecosystem resilience and getting measurable results). Mainstreaming biodiversity is a sub-priority under the priority to engage all Australians. Priority actions under other sub-priorities also contribute to mainstreaming, such as "Develop innovative mechanisms to encourage private investment and interest in biodiversity conservation" (A8) and "Integrate biodiversity conservation into planning instruments" (A18).</p> <p>The target associated with mainstreaming is to achieve a 25% increase in the number of Australians and public and private organisations that participate in biodiversity conservation activities by 2015 (National Target 1).</p> <p>Targets are well defined; however, responsibility for priority actions is very broadly assigned. For example, "all governments, NGOs and businesses" are responsible for actions aiming at mainstreaming.</p> <p>Strategic direction ● Priority actions ● Indicators ◐</p>	<p>Increasing indigenous engagement is a sub-priority under the priority for "engaging all Australians". The associated priority actions are to increase the employment and participation of indigenous peoples in biodiversity conservation activities, increase the use of indigenous knowledge in biodiversity conservation decision making and increase the extent of land managed by indigenous peoples for biodiversity conservation.</p> <p>The associated target is that by 2015, a 25% increase in employment and participation of indigenous peoples in biodiversity conservation will be achieved.</p> <p>Strategic direction ● Priority actions ● Indicators ◐</p>
Brazil (2008)	<p>One of the national targets for 2011-20 is mainstreaming biodiversity values across national and local development and poverty reduction strategies, national accounting systems, and planning procedures.</p> <p>The Fifth National Report describes how Brazil's biodiversity programmes are contributing to the MDGs.</p> <p>Strategic direction ◐ Priority actions ● Indicators ○</p>	<p>Poverty eradication is mentioned several times, including in the context of payments for ecosystem services, compensation payments for poor families living in areas rich in natural resources, and programmes to support the harnessing of traditional knowledge.</p> <p>The Fifth National Report reiterates the commitment to poverty reduction, mainly in relation to payments for ecosystem services (e.g. Bolsa Verde), but also harnessing traditional knowledge and contributing to MDG 1. The progress towards Aichi Targets 2 and 14 is reported as occurring, but at an insufficient rate, unless efforts are increased. The indicators and monitoring strategy for the national biodiversity targets are being developed.</p> <p>Strategic direction ● Priority actions ◐ Indicators ○</p>
China (2010)	<p>The NBSAP (2011-30) states that biodiversity provides the foundation for human survival and sustainable social and economic development, and safeguards ecological safety and food security. Priority Area 2 is to incorporate biodiversity conservation into sectoral and regional planning and promote sustainable use.</p> <p>Under strategic tasks, "China will mainstream biodiversity conservation into national economic and social development planning as well as relevant sectoral planning processes".</p> <p>Thirty-nine projects have been listed (including project durations), a few of which relate to the mainstreaming of development.</p> <p>Strategic direction ● Priority actions ● Indicators ○</p>	<p>Poverty alleviation is only briefly mentioned in the NBSAP.</p> <p>The Fifth National Report gives wider consideration to poverty. The section on "poverty reduction and development" reinstates the importance China attributes to biodiversity conservation while aiming to reduce poverty, and details five focus areas. Net income per capita of rural households and the number of people in poverty are the two poverty-related indicators under Aichi Target 14. The reported outcomes under Target 2 relate to the efforts made to develop the methodology for economic evaluation of biodiversity, and for an assessment and reward-penalty system to enable the creation of an ecological civilisation.</p> <p>Strategic direction ◐ Priority actions ◐ Indicators ●</p>
Colombia (2012)	<p>The need to mainstream development issues is recognised in the NBSAP, and a few key sectors are identified (e.g. agriculture/livestock, mining). Some challenges are highlighted but no specific timetables, targets or action plans on how to address these are included.</p>	<p>Poverty is mentioned a few times but in very general terms – no explicit poverty reduction benefits or examples included and no explicit priority actions or targets are referred to.</p>

Country (Period of plan)	Mainstreaming of biodiversity and development in NBSAPs	Mainstreaming of poverty alleviation in NBSAPs
Colombia (2012) <i>(continued)</i>	In relation to wider development priorities, the NBSAP states that the NDP 2010-14 is aligned with Aichi Targets. There is also a reference to the need to integrate biodiversity with sectoral policies, as a lesson learned since launching the National Biodiversity Policy 1996. Strategic direction ● Priority actions ○ Indicators ○	On Aichi Target 2 and 14, the Fifth National Report assesses progress as medium and low respectively, with a risk of a negative trend, but does not elaborate how this was evaluated. Strategic direction ○ Priority actions ○ Indicators ○
Ethiopia (2016)	Mainstreaming is recognised as an important issue, with NBTs being aligned with government priorities, in order to facilitate their mainstreaming into five-year federal and regional plans. The NBSAP also emphasises improving agriculture productivity and preventing agricultural expansion, in order to ease the pressure on biodiversity. Ethiopia's commitment to a path of sustainable green development as part of its CRGE strategy is also reiterated. Each target has a set of indicators, specific actions as well as lead and co-ordinating agencies, and an implementation period which were developed in consultation with the stakeholders. The indicators are often but not always set against baselines Strategic direction ● Priority actions ● Indicators ●	The links between poverty and biodiversity are recognised in the NBSAP, in terms of both poverty contributing to the pressure on biodiversity and the sustainable use of biodiversity contributing to food security and poverty eradication. Poverty alleviation also features in NBTs (Targets 3 and 17) in relation to the need to integrate biodiversity objectives, community knowledge and the benefits from protected areas into poverty alleviation strategies. Strategic direction ● Priority actions ● Indicators ●
France (2011)	The 2011-2020 NBS was developed as a component under the NSDS. The ambition of the NBS is "to preserve, restore, strengthen and value biodiversity and ensure its fair and sustainable use and to involve everyone and every sector of activity, in order to succeed". Several targets aim at mainstreaming including through Including preservation of biodiversity in economic decisions (Target 7) and ensuring ecological efficiency of public and private policies and projects (Target 15). Based in the emphasis on "shared governance", the achievement of the broad targets set in the NBSAP is based on voluntary declarations of commitment by stakeholders. A set of proposed indicators for the NBS are set out in an accompanying document. They will be updated at an appropriate frequency for each indicator and the updated set of indicators will be published annually. Without quantified targets and deadlines for the targets included in the NBS, it will be difficult to assess progress. Strategic direction ● Priority actions ● Indicators ○	While there is no specific poverty-related target, Target 3 (turn biodiversity into a positive issue for decision makers) and Target 7 (include preservation of biodiversity in economic decisions) are relevant to poverty alleviation, especially in the overseas territories where the link between exceptionally rich biodiversity, and development and poverty alleviation is strong. Strategic direction N/A Priority actions N/A Indicators N/A
India (2008 and 2014)	The need for mainstreaming biodiversity across development sectors is recognised in the NBAP 2008. The plan mentions the need to integrate biodiversity concerns into development sectors (infrastructure, power, mining, etc.) and promote use of clean technologies. The 2014 addendum to the NBAP sets clear targets with explicit time frames, including that values of biodiversity be integrated in national and state planning processes, development programmes and poverty alleviation strategies by 2020 (Target 2). In addition, agriculture, fisheries and forestry have been set out as priority sectors for adopting sustainable development measures by 2020 (MoEFCC, 2014a). Strategic direction ● Priority actions ● Indicators ●	The link to poverty reduction is mentioned only in passing in the 2008 NBAP, in the context of wetlands (MoEF, 2008). Mainstreaming biodiversity into poverty alleviation programmes is part of National Target 2 in the NBAP addendum. Specifically, the Mahatma Gandhi National Rural Employment Guarantee Act programme and the Integrated Watershed Management Programme have been set aside as indicator projects for integrating livelihood and biodiversity goals (MoEFCC, 2014a). Strategic direction ● Priority actions ● Indicators ●
Madagascar (2015)	The NBSAP (2015-25) establishes the links between biodiversity conservation and sustainable economic development, and emphasises the role of biodiversity to improve the quality of life of the Malagasy people and the future of the next generation.	Poverty reduction is referred to in the NBSAP in numerous places, with poverty acknowledged as a main cause of biodiversity loss and the need for urgent action highlighted.

Country (Period of plan)	Mainstreaming of biodiversity and development in NBSAPs	Mainstreaming of poverty alleviation in NBSAPs
Madagascar (2015) <i>(continued)</i>	<p>Strategic Objective 2 states that in 2025 at the latest, biodiversity values, opportunities and benefits of conservation and its sustainable use will be recognised and integrated into the country's socio-economic development activities.</p> <p>Strategic direction ● Priority actions ○ Indicators ○</p>	<p>Strategic Goals A to D of the NBSAP reflect how good management and governance of biodiversity can enhance development and reduce poverty.</p> <p>The Fifth National Report (2014) refers to the National Strategy for Sustainable Management of Biodiversity (2002-12), which has principles to help improve the living conditions of the population in the fight against poverty.</p> <p>Strategic direction ● Priority actions ○ Indicators ○</p>
Mexico (2016)	<p>The mission of the ENBioMex is “to establish the foundations to promote, guide, co-ordinate and harmonise the efforts of governments and society for the conservation, sustainable use, and fair and equitable sharing of benefit arising from the utilisation of the components of biological diversity and their integration into the country's sectoral priorities”.</p> <p>The strategy is based on six strategic axes: knowledge; conservation and restoration; sustainable use and management; attention to pressure factors; education, communication and environmental culture; and mainstreaming and governance. Under these axes, there are 24 lines of action and 160 detailed priority actions.</p> <p>There are no indicators in the strategy; development of indicators by implementing agencies is a priority under several lines of action.</p> <p>Strategic direction ● Priority actions ● Indicators ○</p>	<p>Poverty alleviation is mentioned as a goal especially under the axis of sustainable use and management. Specific lines of action related to poverty in the document have been identified as generation, strengthening and diversification of productive and value chains in farming, forestry, fishing and aquaculture (3.2) and creation and strengthening of instruments for sustainable use and the fair and equitable sharing of benefits (3.3).</p> <p>Strategic direction ● Priority actions ● Indicators ○</p>
Myanmar (2011 and 2015)	<p>NBSAP (2011) sets ten strategic directions, one of which is mainstreaming biodiversity into other policy sectors; priority interventions under this include forging partnerships between biodiversity conservation and rural development. In the updated NBSAP (2015), national targets related to the Aichi targets have been defined, including incorporating biodiversity into state/region planning, developing a national legal framework on land tenure rights that encourages conservation and sustainable management, drawing up guidelines for mining and energy sectors, and placing over 130 000 hectares of forest under community management.</p> <p>Strategic direction ● Priority actions ● Indicators ○</p>	<p>The previous version of NBSAP (2011) mentions poverty in the context of biodiversity loss and land degradation, and refers to “the eight major tasks” undertaken by the government in an effort to address poverty, with a focus on rural areas. In the NBSAP (2015), which was revised to incorporate Aichi goals, poverty is mentioned in relation to harmful subsidies intended as poverty reduction policies; under Target 7 in relation to the importance of supporting smallholder farming for poverty reduction; and under Target 14 in relation to equity issues in accessing ecosystem services. Nevertheless, poverty does not feature among specific priority actions and indicators.</p> <p>Strategic direction ● Priority actions ● Indicators ○</p>
Nepal (2014)	<p>The NBSAP recognises that sustainable economic growth can be achieved only through responsible use of natural resources. It highlights that “conservation-friendly economic growth” has featured in NDPs since the 9th FYP (1997-2002). Nevertheless, it is noted that while Nepal made considerable progress in infrastructure development during the last decade, many projects do not take environmental safeguards into account. The NBSAP therefore lays the ground for practical implementation of the “conservation-friendly economic growth” strategy by identifying the main threats associated with economic development and relevant priority actions and indicators for their mitigation. For instance, one of the priority actions is to develop by 2015 an effective control mechanism for mining of gravel and sand, which poses a threat to forests and wetlands. It also aims to ensure effective implementation of environmental management plans by 2016, including in the EIA report of hydropower, industries, irrigation, mining, roads and other infrastructure projects.</p> <p>Strategic direction ● Priority actions ● Indicators ●</p>	<p>The NBSAP stresses a “strong poverty-environment-health and vulnerability nexus” in relation to the half of the population living in rural mountainous areas, where poverty, ethnic diversity and vulnerability are disproportionately higher than in lowlands. Linking biodiversity with poverty reduction is identified as a capacity need for successful implementation of the NBSAP. The pro-poor leasehold forestry programme is considered an important instrument to conserve biodiversity alongside poverty alleviation. Increasing the area of rehabilitated forest through the programme is the poverty-specific indicator in the target-indicator matrix.</p> <p>Strategic direction ● Priority actions ● Indicators ●</p>

Country (Period of plan)	Mainstreaming of biodiversity and development in NBSAPs	Mainstreaming of poverty alleviation in NBSAPs
Peru (2014)	<p>The NBSAP makes several references to the importance of sustainable use of biodiversity and other natural resources in the context of development. One of the six strategic objectives for 2021 is the increased contribution of biodiversity to national development, with an aim to promote bio-businesses and support them in marketing their bio-products nationally and internationally. The strategic objective details related priority actions and indicators. The recognition of the contribution of biodiversity to development and welfare features in the goal to increase the awareness of the value biodiversity brings to national development and welfare. A priority action in the target-indicator matrix is the development of a guide by 2015 on good corporate practices for biodiversity conservation for mining and hydrocarbons companies.</p> <p>Strategic direction ● Priority actions ● Indicators ●</p>	<p>Poverty is integrated into the NBSAP under the “principle of equity” in the access to biodiversity and its benefits. Poverty also features in the discussion on the productive conservation and sustainable use of resources for the benefit of indigenous people and for local communities. Poverty reduction is not included in the NBSAP implementation target-indicator matrix.</p> <p>Strategic direction ● Priority actions ○ Indicators ○</p>
Philippines (2002)	<p>The crux of mainstreaming in the Philippine’s NBSAP (1997) and Philippines Biodiversity Conservation Priorities (the second iteration of the NBSAP in 2002) is seen at the planning level. One of the six objectives in the NBSAP (1997) is that there be better integration of biodiversity in development planning. This is supported by broad action points in the 2002 NBSAP, such as: the Department of Agriculture, Department of Agrarian Reform, Department of Public Works and Highways, Department of Science and Technology, etc. incorporate the findings of the biodiversity priorities in their work plans, and local government units integrate these priorities into regional development.</p> <p>Strategic direction ● Priority actions ● Indicators ○</p>	<p>The NBSAP recognises that biodiversity loss exacerbates poverty. Local poverty status was used as one of the threat indicators to develop maps of areas of biodiversity priorities. The Fifth National Report refers to poverty reduction in relation to updating Philippines NBSAP and including an action plan to integrate the value of biodiversity into poverty reduction strategies. A link between PES and poverty alleviation is made under the progress report for Aichi Target 2. Land management and administration, listed under biodiversity-related programmes, refers to a connection between land tenure security and poverty alleviation.</p> <p>Strategic direction ● Priority actions ● Indicators ○</p>
South Africa (2015)	<p>The links between biodiversity and development are very well recognised and the need for mainstreaming permeates the NBSAP. The revised strategy has been aligned with the NDP 2010 and the Medium-Term Strategic Framework (2014-19). The overarching vision is to “conserve, manage and sustainably use biodiversity to ensure equitable benefits to the people of South Africa, now and in the future”. This goal is to be achieved through six strategic objectives including enhancing “management of biodiversity assets and their contribution to the economy, rural development, job creation and social well-being” (Strategic Objective 1) and mainstreaming biodiversity considerations “into policies, strategies and practices of a range of sectors” (Strategic Objective 3). Each strategic objective is accompanied by actions ranked according to priority (high, medium and low), and targets, indicators, and lead and implementing agencies are listed for every action.</p> <p>Strategic direction ● Priority actions ● Indicators ●</p>	<p>The links to poverty feature strongly throughout the strategic objectives and associated activities; the key points that inform the strategy include the importance of livelihood concerns, the need for integration of biodiversity management with poverty alleviation and local development, and the importance of equitable sharing of benefits. Specific targets include that the biodiversity economy (economic opportunities linked to biodiversity assets) is expanded, strengthened and transformed to be more inclusive of the rural poor (Target 1.3).</p> <p>Strategic direction ● Priority actions ● Indicators ●</p>

Country (Period of plan)	Mainstreaming of biodiversity and development in NBSAPs	Mainstreaming of poverty alleviation in NBSAPs
Uganda (2016)	<p>Mainstreaming biodiversity into sectoral, cross-sectoral and district development plans is one of the priority areas of the second NBSAP of Uganda and is also included in the overarching principles and targets (Target 1.1). Linkages between the NBSAP and Uganda's Vision 2040, NDP and Sustainable Development Goals are sketched out in the strategy.</p> <p>Additionally there are targets to involve various stakeholders such as women, indigenous people and local communities as well as address impact on biodiversity from activities in various sectors. For instance, Target 3.6 is that by 2020, management plans are in place and implemented for areas under agriculture, aquaculture and forestry (Target 3.6).</p> <p>All targets are accompanied by priority actions, indicators and budget for implementation.</p> <p>Strategic direction ● Priority actions ● Indicators ●</p>	<p>Pressures on biodiversity due to poverty and the contribution of biodiversity to poverty reduction are key themes of the NBSAP. A three-phased approach to mainstreaming is proposed under which the first phase would be to make the case for mainstreaming regarding poverty-biodiversity linkages, followed by integrating biodiversity into national development processes and then building implementation capacity.</p> <p>Several targets and indicators aim at poverty alleviation indirectly through livelihood generation and stakeholder involvement.</p> <p>Strategic direction ● Priority actions ● Indicators ●</p>
Viet Nam (2015)	<p>The NBSAP to 2020 and Vision to 2030 clearly indicates that "biodiversity conservation must be integrated into national, sectoral and provincial development strategies, plans and policies" (Viewpoint 2.1.e.). The main vision of the NBSAP also recognises that biodiversity must contribute "significantly to the country's socio-economic development". In addition, the list of tasks for implementation includes "the development of legal documents" to guide "the mainstreaming of biodiversity conservation into land use planning, and the planning of a number of key sectors (agriculture, forestry and fisheries)".</p> <p>The strategy contains 5 strategic goals with 23 indicators assigned to different ministries for follow-up, monitoring and evaluation. These indicators are mainly focused on monitoring the state of and threats to biodiversity, and do not include a specific indicator to measure progress on mainstreaming.</p> <p>Strategic direction ● Priority actions ● Indicators ○</p>	<p>An explicit link is made between biodiversity and poverty by stating that conservation and sustainable use of biodiversity contribute to poverty reduction and improved living standards (Viewpoint 2.1.b.). The NBSAP also includes tasks and actions that could support poverty reduction efforts indirectly, such as implementing mechanisms to share benefits from conservation areas equitably with communities and replicating co-management models in protected areas. However, there are no specific projects, actions or indicators that link poverty and biodiversity conservation efforts explicitly.</p> <p>Strategic direction ● Priority actions ○ Indicators ○</p>

Legend: ● = development and poverty priorities explicitly discussed and integrated into NBSAP as a strategic direction, priority action or indicator.
 ● = development and poverty priorities integrated into NBSAP, albeit to a limited extent, or feature in the progress analysis towards Aichi targets in a Fifth National Report, e.g. priority actions not formulated in NBSAP but reported on in the Fifth National Report.
 ○ = development and poverty priorities are not discussed.

Notes: "Strategic direction" refers to the existence of a substantial discussion on the linkages between biodiversity, and development and poverty reduction objectives.
 "Priority actions" refers to the existence of specific development- and poverty-related actions, programmes and projects under national biodiversity targets.
 "Indicators" refers to the existence of specific measurable indicators to monitor the performance towards development and poverty-related targets.

Sources: Review of NBSAPs across these countries.

Annex 2.A2

Biodiversity mainstreaming in NDPs

Country (Period of plan)	Mainstreaming of biodiversity into NDP
Australia	Australia does not have an NDP. Australia's National Strategy for Ecologically Sustainable Development, in place since 1992, aims to improve total quality of life now and in the future while maintaining ecological processes (see section on "mainstreaming of biodiversity into sustainable development, green growth and other relevant strategies").
Brazil (2016-19)	Biodiversity is integrated into the NDP. Under strategic dimensions, the importance of biodiversity in achieving sustainable development is explained, and links with tourism and exploration of resources are made. Under sector-level programmes, a separate programme with explicit budget is set out for biodiversity-related work. Biodiversity is also integrated into the agriculture sector programme, with links made to "socio-biodiversity" as a way of managing risks and strengthening agriculture policies. Strategic direction ● Actions/Targets ● Indicators ●
China (2016-20)	The 13th FYP for Social and Economic Development contains a section on resource conservation and environmental protection. Biodiversity is addressed through targets and indicators to increase forest coverage rate and stock as well as limitation of new construction land and increase in "ecological space". Targets to reduce pollution, energy and water use also have implications for biodiversity. Strategic direction ● Actions/Targets ● Indicators ●
Colombia (2014-18)	Biodiversity is mainstreamed into the 2014-18 NDP (Bases del Plan Nacional de Desarrollo) via sub-goals of one of its cross-cutting strategies – rural transformation and green growth. Targets and indicators related to deforestation, land use and degradation are included. Details on the aggregate budget and the funding sources to implement the cross-cutting strategy are also provided. Strategic direction ● Actions/Targets ● Indicators ●
Ethiopia (2010/11-2014/15)	The Growth and Transformation Plan II (2015-20) contains targets and indicators for natural resource management objectives under the agriculture and rural development sector (including areas of land rehabilitated, areas under community watershed development and areas under modern small-scale irrigation) and the targets on conserving agro-biodiversity in situ and ex situ. In addition, environment and climate change are incorporated into the plan as one of six cross-cutting issues. Targets under this section include developing the forest sector (including identification, demarcation and conservation of forest resources, increase in forest cover, and increase in socio-economic benefits of forests) and wildlife conservation and development with targets for PAs (including demarcation of new wildlife zones, monitoring illegal wildlife activities, development of benefits of wildlife zones, and participatory actions in demarcation, conservation, and benefit from PAs). Strategic direction ○ Actions/Targets ● Indicators ●
France	France does not have an NDP. The National Strategy of Ecological Transition Towards Sustainable Development 2015-20 is a high-level plan defining the vision for green growth until 2020 (see section on "mainstreaming of biodiversity into sustainable development, green growth and in other relevant strategies").
India (2012-17)	The 12 th FYP (2012-17), strategically titled Faster, More Inclusive and Sustainable Growth, has a section on sustainable development including programmes targeting sustainable management of the Himalayan ecosystem and the Western Ghats, coastal zone management, and public participation in sustainable development. Another section on environment, forests and wildlife lists schemes and programmes under three headings: forests, wildlife, and environment and ecosystems. Biodiversity is also mentioned under the key sectors of agriculture, animal husbandry and tourism. Broader environmental concerns and strategies for mitigating environmental impact are a key objective in various sectors of industry such as energy, mining, steel, textile, petrochemicals and transport. Strategic direction ● Actions/Targets ● Indicators ○
Madagascar (2015-19)	The NDP acknowledges that natural capital, including biodiversity, is an important pillar to make Madagascar a modern and prosperous nation. The Fifth Strategic Direction of the NDP is "valuing natural capital and building resilience to disaster risks". While there are 11 sub-objectives under this Strategic Direction, these remain at a fairly general level and are not quantitative in nature (e.g. improve the legal and institutional framework; significantly reduce pollution). Biodiversity (included in "natural capital") is addressed in an isolated manner and not mainstreamed into the other four Strategic Directions. Strategic direction ● Actions/Targets ○ Indicators ○

Country (Period of plan)	Mainstreaming of biodiversity into NDP
Mexico (2013-18)	The NDP (2013-18) recognises the need to balance biodiversity conservation and the sustainable use of natural resources in development. Biodiversity is referred to under various action items, predominantly in Section 4.4 on green and inclusive growth. No targets and indicators have been specified. Strategic direction ● Actions/Targets ○ Indicators ○
Myanmar (2011-30)	The short-term FESR (2012-15) includes a concise section on environmental protection with one reference to biodiversity and a few references to sustainable forestry. Strategic direction ○ Actions/Targets ○ Indicators ○
Nepal (2013/14-2015/16)	Biodiversity is integrated into some objectives and strategies under sectoral development policies of the 13th Three-Year Plan 2013/14-2015/16, namely in agriculture, food security and nutrition, forest and soil conservation, and tourism. Increased forest coverage area is included as a single biodiversity-related target and indicator. Strategic direction ● Actions/Targets ● Indicators ●
Peru (2011-21)	Biodiversity is mainstreamed into the Bicentenary Plan 2021 via the strategic objective of “natural resources and environment” (one of six), which elaborates on biodiversity-specific goals, priority actions, indicators and targets, and includes cost estimates to implement underlying programmes. Strategic direction ● Actions/Targets ● Indicators ●
Philippines (2011-16)	Biodiversity priorities feature prominently in the PDP 2011-2016 in the chapter on natural resource conservation, under a distinct sub-goal and subsequent priority actions. Biodiversity-related targets and indicators are elaborated in PDP 2011-2016 Mid-term Update (2014). Strategic direction ● Actions/Targets ● Indicators ●
South Africa (2011-30)	The NDP Vision 2030 refers to biodiversity numerous times, and in various contexts, from general to specific. Biodiversity is a core component of the “Environmental sustainability and resilience” section. Various other sections in the NDP including sections on tourism, agriculture, mining, land-use planning and climate change among others mention the need to keep biodiversity concerns in sight. While the plan contains no indicators, one of the key objectives under “environment” is to develop a set of indicators for natural resources accompanied by publication of annual reports to inform policy. Strategic direction ● Actions/Targets ● Indicators ○
Uganda (2015/16-2019/20)	Biodiversity considerations feature prominently in Uganda’s NDP 2015/16-2019/20, which reports slow progress made in reducing biodiversity loss. The NDP has a dedicated section on “Environment and natural resources”, which details biodiversity-specific objectives and interventions. Biodiversity is also incorporated in the plan’s recommended post-2015 goals and targets (Annex 3) and “Public investment plan projects” (Annex 6). Regarding the indicators, the NDP notes that the National Planning Authority is charged with the task of developing NDP performance indicators and targets in liaison with sectors. Currently, the NDP includes as a biodiversity-specific indicator the increased forest coverage area. Biodiversity is also mainstreamed into tourism, through the recognised need to link the development of the sector to biodiversity conservation priorities by creating tourism and green zones, and into the oil and gas sector through a planned intervention to “strengthen institutional capacity to manage the impact of oil and gas activities on environment and biodiversity”. Strategic direction ● Actions/Targets ● Indicators ○
Viet Nam (2016-20)	The Socio-Economic Development Plan (SEDP) for the period of 2016-20 includes a stronger emphasis on environmental protection than previous years. The SEDP recognises that action on managing natural resources and protecting the environment has been limited in the past, and identifies effective management of natural resources and environmental protection as a key priority for the government for the next five years. The plan includes four environmental targets, including three related to waste management and the fourth being “forest coverage to reach 42% by 2025”. This latter target is a revision of a target in the previous SEDP (2011-15), which was to increase forest cover to about “42%-43% by 2015”. SEDP 2016-20 also includes an action to “Promote nature conservation and biodiversity” under activities related to climate change and environmental protection. Strategic direction ● Actions/Targets ● Indicators ○

Legend: ● = biodiversity priorities explicitly discussed and integrated.

○ = biodiversity priorities integrated, albeit to a limited extent, or implicitly addressed through a broader encompassing element, e.g. aggregate budget for an overarching programme of which biodiversity constitutes a part.

○ = biodiversity priorities are not discussed.

Notes: “Strategic direction” refers to the existence of a substantial discussion on the linkages between biodiversity/ecosystems and development objectives.

“Actions/Targets” refers to the existence of specific biodiversity-related actions and goals.

“Indicators” refers to the existence of specific measurable indicators to monitor the performance towards biodiversity-related targets.

Notes

1. An understanding of what the key drivers of biodiversity loss are in a given country will help to do this (i.e. step 1 in Figure 2.1).
2. More specifically, their assessment of NBSAPs revealed that only a small majority consider biodiversity in a broader development policy context. Among these, the degree of elaboration varied considerably, from thorough analysis and actions linked to development policy papers (e.g. Namibia, Costa Rica) to general statements with no elaboration or proposed concrete actions.
3. These strategic objectives are that: 1. management of biodiversity assets and their contribution to the economy, rural development, job creation and social well-being is enhanced; 2. investments in ecological infrastructure enhance resilience and ensure benefits to society; 3. biodiversity considerations are mainstreamed into policies, strategies and practices of a range of sectors; 4. people are mobilised to adopt practices that sustain the long-term benefits of biodiversity; 5. conservation and management of biodiversity are improved through the development of an equitable and suitably skilled workforce; and 6. effective knowledge foundations, including indigenous knowledge and citizen science, support the management, conservation and sustainable use of biodiversity.
4. The addendum to India's NBSAP (2014) includes a national target (Target 2) to integrate values of biodiversity into national and state planning processes, development programmes and poverty alleviation strategies by 2020 along with indicators, responsible agencies and monitoring time frames.
5. The NEP lists key problems, strategies and priority actions for various environmental themes including regulatory reform, enhancing and conserving environmental resources, environmental standards and certifications, and stakeholder involvement.
6. Nepal's NBSAP (2014) sets a priority action (MB-A2) for mainstreaming that by 2019, biodiversity considerations will be incorporated in the policies, plans and programmes of all relevant line ministries and other government and non-government agencies.
7. <https://www.cbd.int/doc/world/ph/ph-nbsap-v3-en.pdf>.
8. Target 2 under Aichi Strategic Goal A: "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." Target 14 under Aichi Strategic Goal D: "By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable."
9. Colombia Government, Decree 4160 (2011).
10. Several NBSAPs highlight some important issues on the linkages between biodiversity and poverty. Myanmar discusses the potentially harmful environmental impacts of subsidies which support poverty alleviation. Nepal highlights the existence of a "strong poverty-environment-health and vulnerability nexus" in relation to the fact that half of its population lives in rural mountainous areas, where poverty, ethnic diversity and vulnerability are disproportionately higher than in the lowlands. Ethiopia highlights that the exploitation of natural resources brings only a short-term relief to poverty, while in the long term it is fraught with negative consequences for the environment, including biodiversity loss.
11. Most commonly engaged government ministries overall were those related to agriculture, development/planning, fisheries, forestry, tourism, education and finance. Non-governmental stakeholders included non-governmental organisations, the private sector, indigenous and local communities, and academia (SCBD, 2016).

12. Roe (2010) examined the degree to which biodiversity-poverty links have been recognised in NDPs (predominantly PRSPs but including other development plans listed by the World Bank as the equivalent of PRSPs) and found that just over 25% show a relatively high level of recognition of the importance of biodiversity; just under 25% have a low level of recognition and 50% fall in between). Just under half of the PRSPs reviewed have a relatively narrow interpretation of biodiversity – the focus being on wildlife, forests or protected areas – but some interpret biodiversity in a broader sense, noting the importance of genetic resources (e.g. Dominica) and agricultural biodiversity (e.g. Bangladesh, Nepal, Viet Nam) and others recognise the link between biodiversity and ecosystem services (e.g. Cambodia, Lao, Liberia, Uganda, Zambia).
13. Aichi Target 2: “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.”
14. This can be explained by a major transition the country is currently undergoing from a centralised top-down planning process to one that is bottom-up (Peninsula Press, 2013). Following liberalisation, Myanmar has faced the need to revisit its policy directions and formulate new short-term and long-term strategies (OECD, 2015a). Despite the challenges with the government’s insipient transition, biodiversity mainstreaming has started to gain importance on the government’s agenda. Mainstreaming biodiversity conservation into development planning has been identified as one of the priority actions by the 80 experts from the government and civil society gathered at a stakeholder consultation in 2012. The consultation produced the Myanmar Biodiversity Conservation Investment Vision (2013), with biodiversity mainstreaming identified as a strategic direction.
15. According to the World Bank’s *PRSP Sourcebook*, a PRSP should contain a poverty analysis; a prioritisation of the programmes needed to achieve development objectives, targets and indicators; a plan for keeping track of progress towards goals and evaluating effectiveness of implementation of programmes; and a description of the participatory process in preparing the strategy (<http://go.worldbank.org/3I8LYLXO80>).
16. For instance, Ethiopia’s PRSP (2010) constitutes its national Growth and Transformation Plan I 2010/11-2014/15, Nepal’s PRSP (2003) coincides with Nepal’s Tenth Plan 2002-2007, and Uganda’s PRSP (2010) is the country’s NDP 2010/11-2014/15 (www.imf.org/external/np/prsp/prsp.aspx).
17. Brazil (MDS, 2014), China (2011), Ethiopia (MOFED, 2010), Madagascar (2007), Nepal (NPC, 2004), Peru (MIDIS, 2014), Philippines (NAPC, 2010), Uganda (Republic of Uganda, 2010) and Viet Nam (Viet Nam Government, 2003).
18. Commitment 7: Cherishing the environment.
19. The closest link to biodiversity and ecosystems on the ANSPE’s agenda is the first private social investment meeting held to discuss Ecosystem Services for Overcoming Extreme Poverty (ANSPE, 2014).
20. Moreover, ecological balance in ecosystems is also clearly included as one of the priorities in the country’s Social Reform and Poverty Alleviation Act (Republic of Philippines, 1997), which in turn feeds into the National Anti-Poverty Action Agenda (Republic Act No. 8425 [www.lawphil.net/statutes/repacts/ra1997/ra_8425_1997.html]).
21. The other core objectives of the strategy are to enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations and to provide for equity within and between generations.
22. Other countries that have prepared or are preparing green growth strategies include Cambodia, Chile, Ethiopia, Indonesia, Peru, Uganda and Viet Nam. France has developed an Energy Transition for Green Growth Act (2015).
23. www.oecd.org/env/resources/workshop-biodiversity-development-2015.htm.

24. Established by National Decree No. 2003-439 of 27 March 2003, requiring an environmental unit within each ministry.
25. The NRMCM has since been absorbed into the Standing Committee on Primary Industries.
26. Target 17.3 in the NBSAP of Myanmar is that “by 2020, BSAPs are under preparation in at least three states/regions.”
27. AFB website: www.gouvernement.fr/en/a-biodiversity-agency-for-a-new-relationship-between-humankind-and-nature.
28. The Intergovernmental Platform on Biodiversity and Ecosystem Services provides a Catalogue of Assessments of Biodiversity and Ecosystem Services, a heterogeneous collection of assessments produced by a variety of actors (<http://catalog.ipbes.net/>).
29. TEEB for Business Brazil was released on 20 March 2014 (www.teebweb.org/countryprofile/brazil/).
30. <https://seea.un.org>
31. The SEEA is currently undergoing a multi-year revision process. The central framework devised as part of the revision was adopted by the UN Statistical Commission as the first international standard for environmental-economic accounting. The other two outputs of this process have been the Experimental Ecosystem Accounting and the Applications and Extensions of the SEEA, which contains subsystems of the SEEA framework for specific resources or sectors including: energy, water, fisheries, land and ecosystems, and agriculture.
32. WAVES is currently working with the following core implementing countries to develop natural capital accounting: Botswana, Colombia, Costa Rica, Guatemala, Indonesia, Madagascar, the Philippines and Rwanda (www.wavespartnership.org/en/partners).
33. <http://biodiversityadvisor.sanbi.org>.
34. www.sibbr.gov.br/.
35. www.biodiversityfinance.net/. These countries include Botswana, Brazil, Chile, Colombia, Costa Rica, Ecuador, Fiji, Guatemala, India, Indonesia, Kazakhstan, Malaysia, Mexico, Peru, the Philippines, Seychelles, South Africa, Thailand, Uganda and Zambia.
36. www.oecd.org/environment/green-budgeting.

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