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BIODIVERSITY AND DEVELOPMENT CO-OPERATION

This document is the second part of a scoping paper on Biodiversity and Development Co-operation, which was requested by the DAC ENVIRONET in June 2013 [DCD/DAC/ENV/M(2013)1/PROV]. The paper looks at development co-operation practice in: mainstreaming biodiversity and ecosystem services; managing for results, with a particular focus on trade-offs and synergies; monitoring and evaluation; and alignment and harmonisation. It was written by Anna Drutschinin, Juan Casado-Asensio, Dilys Roe and Jan Corfee-Morlot and has benefited from review and comment from the ENVIRONET "Friends of Biodiversity" group and other expert reviewers. This document is now being circulated for review and comment to the DAC ENVIRONET and, in parallel, to EPOC Working Party on Biodiversity, Water and Ecosystems. It will be prepared as an OECD Working Paper following the incorporation of any last comments.

Comments are requested by 12 December 2014.

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ABSTRACT

Biodiversity underpins ecosystem functioning and the provision of ecosystem services, which are directly or indirectly essential for all human well-being. The poor are disproportionately dependent on biodiversity and ecosystem services due to their inability to purchase or access substitutes when these are lost. While biodiversity issues have garnered much research and policy attention in the last decade from the environmental policy community, much less attention has been given to these issues from a development co-operation perspective. This paper considers how development co-operation is addressing the twin objectives of biodiversity conservation and sustainable use on the one hand, and development and poverty reduction on the other. It outlines how development co-operation is and can a) further support mainstreaming biodiversity and ecosystem services into development, b) manage for results and in particular manage trade-offs and synergies, c) address challenges and successes in monitoring and evaluating development co-operation activities related to biodiversity and ecosystem services, and d) better align and harmonise providers' activities with partner country priorities and guidance. The paper showcases positive examples of how development co-operation is supporting conservation and sustainable use of biodiversity and ecosystem services. It also identifies a number of areas where more research would be required to gain a more comprehensive understanding of how development co-operation is working to support biodiversity and development objectives, what is successful and what is not, and why.

I. INTRODUCTION AND MAIN FINDINGS

1. Biodiversity underpins ecosystem functioning and the provision of ecosystem services, which are directly or indirectly essential for all human well-being. Biodiversity and ecosystem services provide, inter alia, food security, fuel, and clean air and water, and they also contribute to human health, local livelihoods and economic development. The poor are disproportionately dependent on biodiversity and ecosystem services for their subsistence, income, health and risk management needs, and are particularly vulnerable to the loss and degradation of these due to their inability to purchase or access substitutes such as food, fertiliser, clean water, fuel, medicine and protection against natural disasters (CBD, 2009a; Billé et al., 2012; Roe, 2010a; Roe et al., 2011; Turner et al., 2012; OECD, 2008a). Biodiversity and ecosystem services are therefore essential for resilient and lasting development outcomes, including poverty reduction (MA, 2005; CBD, 2010b; UNGA, 2012; OECD, 2013c).

2. This scoping paper considers how development co-operation is addressing the twin objectives of biodiversity conservation and sustainable use on the one hand, and development and poverty reduction on the other.[1] While biodiversity issues have garnered much research and policy attention in the last decade from the environmental policy community, much less attention has been given to a development co-operation perspective.

3. The majority of the world's biodiversity, and in particular of the world's "biodiversity hotspots", are located in developing countries (Hannah et al., 2013; Joppa et al., 2013; Parker et al., 2012; Myers et al., 2000). "Biodiversity hotspots" are those areas containing exceptional concentrations of endemic species that are undergoing exceptional loss of habitat (Myers et al., 2000). Many of the developing countries with rich levels of biodiversity also have high levels of poverty (Fisher and Christopher, 2007), particularly those in Asia and Sub-Saharan Africa (Roe, 2010a). This suggests that biodiversity, ecosystem services, poverty and development overlap (see Box 1 for definitions to these and other key concepts).

[1] The authors would like to acknowledge Katia Karousakis and Christina Van Winkle from the OECD Environment secretariat for their careful review. Helpful comments and illustrative examples were also provided by ENVIRONET members: Austria (Elisabeth Soetz), Belgium (Luc Janssens), European Union (Arnold Jacques-De-Dixmude), France (Emmanuelle Swynghedauw), Sweden (Anders Ekbom and Karin Isaksson), the African Leadership Group on Mainstreaming Biodiversity and Development, the Institute for Sustainable Development and International Relations (Renaud Lapeyre), the International Institute for Environment and Development (Steve Bass), the Secretariat of the Convention on Biological Diversity (Markus Lehmann and Nadine Saad), United Nations Development Programme (Jamison Ervin, David Meyers and Alice Ruhweza), and United Nations Environment Programme (Ersin Esen).

Box 1. Key concepts

The concepts of biodiversity, ecosystem services, conservation and sustainable use and poverty are essential for framing the key issues explored in this paper. They impact where and how mainstreaming biodiversity occurs (Section 2) how trade-offs and synergies between the conservation and sustainable use of biodiversity and ecosystem services and poverty reduction are understood (Section 3), and how policies, programmes and projects related to biodiversity, ecosystem services and poverty reduction are monitored and evaluated (Section 4). The definitions underpinning these concepts are outlined below.

***Biodiversity*:** The Convention on Biological Diversity (CBD) defines biodiversity as "the variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems" (Article 2, CBD, 1992). This is the definition used in this paper. Measuring the multiple facets of biodiversity is complex. Biodiversity has often been measured narrowly, in terms of species richness in a defined area (Davies et al., 2013). However, progress is being made in increasing the variety and availability of information on the state of and trends in biodiversity, such as through the Biodiversity Indicators Partnership (BIP) and the Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES).

***Ecosystem services*:** Ecosystem services are defined as the benefits that people obtain from ecosystems (Mace et al., 2012). The Millennium Ecosystem Assessment (MA, 2005) has categorised these into supporting services, regulating services, provisioning services and cultural services. Although research is ongoing regarding the link between biodiversity and ecosystem services (Mace et al., 2012), biodiversity has been shown to be key for the delivery of a large number of ecosystem services (Elmqvist et al., 2010; Cardinale et al., 2012). This paper therefore considers biodiversity and ecosystem services as going hand-in-hand, and addresses both together.

Biodiversity conservation: In this paper, biodiversity conservation is taken to mean the protection and maintenance of living natural resources (encompassing biodiversity and ecosystem services) to ensure their survival over the long term (see Roe et al., 2011). This can refer to a species or a natural habitat for example. Notwithstanding this, biodiversity conservation is interpreted and applied in a variety of ways. A narrow interpretation of biodiversity conservation implies protection, i.e. protected areas with very limited human intervention or use (Roe et al., 2011). Others view biodiversity conservation in a broader sense, which allows some level of human intervention or use, such as the extraction of non-timber forest products for local use, or visiting national parks for recreational purposes (see Roe, 2010a).

***Sustainable use**:* refers here to the use of biodiversity and ecosystem services (e.g. forests and timber, fish, soil) a rate that allows the environment to renew itself, thereby maintaining their potential to meet current and future human needs and aspirations and preventing their long term decline (CBD COP 7 Decision VII/12).

Poverty: In this paper, poverty is understood as being multidimensional, encompassing not only economic wealth but also deprivation of basic needs (e.g. education, work, health, nutrition), lack of political voice and empowerment, lack of social dignity, and vulnerability to risk (OECD, 2013a; Roe, 2010a OECD, 2001). Measuring the multiple dimensions of poverty is difficult. New indicators are being developed (OECD, 2013a), yet often studies – including those on the biodiversity-poverty nexus - only measure changes in the economic dimension of poverty in terms of income per capita (Roe, 2010a).

Poverty reduction and development: In this paper we use the term poverty reduction, which refers to the goal of lifting people above the poverty line[2]. This is the particular element of development that the paper is focused on. Development in general is understood as the effort to improve human well-being (OECD, 2007). Other ways of measuring the impact of development is whether it aims to alleviate poverty (improve the living conditions of the poor, but not necessarily to lifting them above the poverty line) and/or prevent poverty (prevent vulnerable populations from falling below the poverty line). Discussions of alleviating and reducing poverty are frequent in the literature, and the terms are often used interchangeably. "Poverty eradication" is also used, particularly by the CBD. While poverty eradication/reduction/alleviation remains paramount, more recent literature has pointed to the need to also pay attention to the importance of preventing poverty (Roe, 2010a; OECD, 2013a), and reducing inequality (OECD, 2013a; Billé et al., 2012).

[2] The poverty line is the minimum level of income required to meet the basic needs in a particular country. The World Bank defines the international poverty line as USD 1.25 per day.

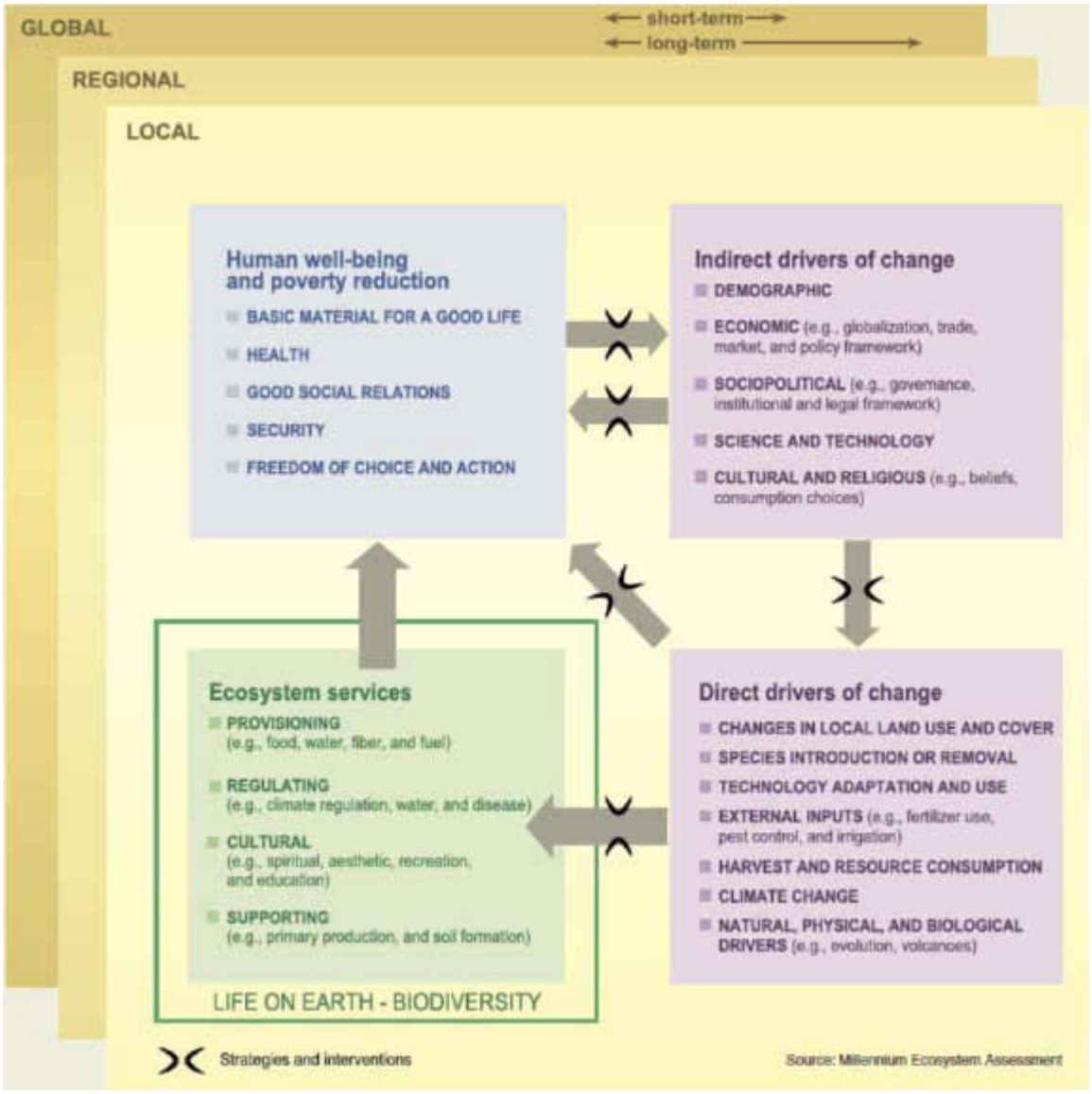
Sources: OECD (2013a), *Development Co-operation Report 2013: Ending Poverty*, OECD Publishing, Paris; Elmqvist et al. (2010) 'Biodiversity, Ecosystems and Ecosystem Services', in Kumar, P. (ed.) (2010) *The Economics of Ecosystems and Biodiversity Ecological and Economic Foundations*. London/Washington, D. C.: Earthscan; Cardinale et al. (2012), "Biodiversity loss and its impact on humanity", *Nature,* vol. 486 no. 59; Billé, R., Lapeyre, R., and Pirard, R. (2012), "Biodiversity conservation and poverty alleviation: a way out of the deadlock?", *S.A.P.I.E.N.S,* Vol.5, No.1; Mace, G.M., Norris, K. and Fitter, A.H. (2012), "Biodiversity and ecosystem services: a multi-layered relationship", *Trends in Ecology and Evolution,* January 2012, Vol. 27 No. 1; MA (Millennium Ecosystem Assessment) (2005), *Millennium Ecosystem Assessment – Ecosystems and Human Well-being: Synthesis*, World Resources Institute, Washington, DC; Roe, D. (2010a). "Linking Biodiversity Conservation and Poverty Alleviation: A State of Knowledge Review", *CBD Technical Series* 55, Secretariat of the CBD, Montreal. OECD (2007), *Promoting Pro-Poor Growth: Policy Guidance for Donors,* OECD, Paris; OECD (2001) *The DAC Guidelines: Poverty Reduction,* OECD, Paris; Roe, D., et al. (2011), "Biodiversity and Poverty: Ten Frequently Asked Questions – Ten Policy Implications"*, Gatekeeper 150*, IIED, London; CBD (Convention on Biological Diversity) (1992), 'Text of Convention'; Davies, T.E. et al. (2013), "Missing the trees for the wood: Why we are failing to see success in pro-poor conservation", *Animal Conservation,* 21 November 2013.

4. Evidence shows a decline in the global state of biodiversity and ecosystem services (Butchart et al., 2010; CBD, 2010a; UN, 2014). Indicators and monitoring under the CBD in particular reveal that current efforts to reverse this global decline are insufficient (CBD, 2014a). These trends are not new; a sharp acceleration in the absolute loss of biodiversity and the damage of ecosystems has been observed since the middle of last century (Steffen et al., 2011).[3] It is estimated that the level of biodiversity loss has exceeded the safety threshold by one to two orders of magnitude, and is coming dangerously close to a "tipping point" beyond which abrupt, irreversible changes to biodiversity and ecosystems could occur, with dire consequences for human well-being and development (Rockstrom et al., 2009; CBD, 2010a).

5. The Millennium Ecosystem Assessment (2005) highlights the drivers of the rapid decline biodiversity and ecosystem service (Figure 1). Recent analysis underscores that the scale and pace of the change in these drivers is either constant or intensifying, which in turn is leading to a further loss and degradation in biodiversity and ecosystem service (Butchart et al., 2010; CBD, 2010a; OECD, 2012a). The *OECD Environmental Outlook to 2050* projects that, under a business-as-usual scenario, biodiversity will continue to decline by a further 10% between 2010 and 2050 (OECD, 2012a). The key direct drivers of loss and degradation are land-use change and unsustainable land management, habitat encroachment and fragmentation, infrastructure development, over-exploitation of resources, chemical and organic pollution, invasive alien species, and climate change (CBD, 2010a; OECD, 2012a). Changes in these drivers in turn stem from broader, indirect forces including demographic change, macro-economic policy, global consumption and production patterns and technology developments (MA, 2005).

[3] There are some local system-specific exceptions – for example, the Water Quality Index in Asia has improved 7.4% since 1970, and a number of species have had their categories of extinction risk downgraded on the IUCN Red List following successful conservation action – indicating that with political will and financial and human resources, biodiversity loss can be reduced or reversed (Butchart et. al., 2010).

Figure 1. Millennium Ecosystem Assessment Conceptual Framework of Interactions between Biodiversity, Ecosystem Services, Human Well-being, and Drivers of Change



Source: Millennium Ecosystem Assessment (2005), *Millennium Ecosystem Assessment - Ecosystems and Human Wellbeing: Synthesis*, World Resources Institute, Washington, DC

6. Collective international action for biodiversity and ecosystem services is organised under the Convention on Biological Diversity (CBD) (1992). The three objectives of the CBD are: the conservation of biological diversity; the sustainable use of the components of biological diversity; and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources (CBD, 1992). The CBD posits that a reduction in the rate of biodiversity loss would be a key contribution to poverty reduction (CBD, 2002a) and calls for the integration of biodiversity into poverty reduction and development strategies (CBD, 2010c; CBD, 2012a). The Strategic Plan for Biodiversity 2011-2020, adopted in 2010 by the Conference of the Parties to the Convention at its tenth meeting (COP 10), is composed of five strategic goals and twenty targets, the so-called "Aichi Biodiversity Targets" (CBD, 2010b) (see Annex 1). This framework guides countries' efforts to improve biodiversity and ecosystem services outcomes in order to contribute to human well-being and poverty eradication.

7. Collective international action on poverty reduction is incentivised and co-ordinated in part through the Millennium Development Goals (MDGs) (2000). MDG 7, on environmental sustainability, specifically calls for a reduction in the rate of biodiversity loss and recognises that the failure to meet the CBD target of a significant reduction in biodiversity loss by 2010 is a constraint to achieving the rest of the MDGs (UN, 2010).The CBD and MDG international policy frameworks thus both encourage countries to address biodiversity and poverty reduction together, including in their development co-operation activities.

8. The MDG framework expires in 2015, and work through the Open Working Group (OWG) on Sustainable Development Goals has defined the possible goals and targets of the post-2015 framework for development. Biodiversity and ecosystem services are likely to be integrated into the post-2015 development agenda as the final report of the OWG has proposed two biodiversity-related stand-alone goals (on marine and terrestrial biodiversity), and has mainstreamed biodiversity and ecosystem services across a number of the other proposed goals (e.g. water).[4]

9. Although the academic literature is divided as to whether (and how) biodiversity conservation and sustainable use and poverty reduction can be achieved simultaneously, practitioner opinions suggest an emerging consensus of positive synergies (Roe et al., 2013). While there are examples of synergies being achieved on the ground (Munang et al., 2014), combining these objectives in development planning, policy and co-operation presents a number of challenges many of which are explored in this paper.

10. Weak governance and market failures are two overarching challenges to achieving synergies between poverty reduction and biodiversity and ecosystem conservation and sustainable use and to stemming biodiversity loss. Weak governance is repeatedly identified as a *key* barrier in this respect (Sayer et al., 2013; Manzoor Rashid et al., 2013; Gardner et al., 2013; Vaz and Agama, 2013; Armah et al., 2013; Sandker et al., 2012; Billé et al., 2012; UNDP, 2012; Roe et al., 2011; Roe, 2010a). Governance challenges relate to ineffective or non-existent government institutions and rule of law, which engenders other problems including a lack of clearly defined, secure and enforceable property rights/land tenure; a lack of clearly defined roles and responsibilities and of accountability; and elite capture and corruption (see Box 6 in Section 3 on some of these governance challenges).

11. Market failure is a second central factor hindering the achievement of synergies and contributing to the decline in the state of biodiversity and ecosystem services. Their values are not reflected in market prices, and when considered they are often undervalued. As a result, integrating biodiversity-related considerations into decision- and policy-making processes has proven difficult (UNDP, 2012; TEEB, 2010a).

12. This scoping paper provides an overview of the state of play of biodiversity and ecosystem services in development co-operation, taking the dependence of the poor upon biodiversity and ecosystem services and the serious and declining state of biodiversity as a starting point. It is based on a literature review of academic and secondary sources from OECD DAC providers,[5] developing country partners and other stakeholders (e.g. international organisations and civil society organisations).

[4] Proposal available here: http://sustainabledevelopment.un.org/sdgsproposal.html

[5] "Providers" refers to DAC donors.

13. The following four sections address a set of policy challenges for biodiversity and ecosystem services in development co-operation. Section 2 looks at mainstreaming biodiversity into development co-operation. Section 3 looks at managing for results, with a particular focus on identifying and assessing trade-offs and synergies encountered in biodiversity and poverty reduction projects. Section 4 looks at the monitoring and evaluation frameworks for development co-operation activities targeting biodiversity. Finally, Section 5 looks at alignment with partner country priorities and the co-ordination of activities of development country providers.

Mainstreaming biodiversity and ecosystem services into development co-operation

14. Mainstreaming biodiversity and ecosystem service considerations into development planning- and policy-making processes helps decision-makers to: (a) assess the inter-connections between the two; and (b) to identify how best to steer investments and policies to maximise synergies and minimise trade-offs. These processes operate across sectors and levels of governance, and function best when all relevant stakeholders are included. Policy-makers can use a range of policy instruments, measurement and assessment tools and approaches adapted to the needs and priorities identified by different partner countries and their local contexts. Policy instruments include regulations governing use, spatial planning, taxes and subsidy reform, and eco-labelling and certification. Measurement and assessment tools include ecosystem accounting, economic valuation and budget assessment. Approaches include education campaigns, regional co-operation and voluntary business standards.

15. Although mainstreaming biodiversity and development has high support in international policy circles, there are a number of challenges to implementing mainstreaming on the ground. These include a lack of awareness about the importance of biodiversity and ecosystem services, insufficient financial resources, and a lack of capacity, information, data and technical skills to develop the business case for biodiversity. Development co-operation can play an important role in providing both financial and technical support to build capacity in developing countries to overcome these challenges.

16. Mainstreaming biodiversity into the strategies, plans, policies and practices of development co-operation agencies is also important. Many agencies automatically screen every development co-operation activity for potential harmful impacts upon biodiversity and ecosystem services. For activities found to have potentially significant negative impacts on biodiversity and ecosystem services, a Strategic Environmental Assessment, Environmental Impact Assessment or Environment Management Plan must be carried out. There are also a number of recent examples of development co-operation agencies producing biodiversity strategies that target the mainstreaming of biodiversity and ecosystem services across all of the agency's activities, policies, sectors and strategies as one of the main pillars of action. This includes training for staff across the aid agency and in other ministries on the importance of biodiversity and ecosystem services, and how to integrate them into all development co-operation activities.

Managing for results in biodiversity-related development activities

17. Focusing on results is crucial to ensure that development co-operation activities and the plans, policies, programmes or projects developed and led by partner countries and supported by development co-operation have a lasting development and biodiversity-related impact. One crucial element is to clearly identify the objectives that the activity is to achieve and how these can be measured; the System for Economic and Environmental Accounting (SEEA) and the Biodiversity Indicators Partnership (BIP) may be useful frameworks in this regard.

18. In order to ensure that intended results are achieved, trade-offs and synergies will need to be carefully identified, assessed and managed. Trade-offs concerning biodiversity, ecosystem services and poverty reduction frequently arise from management choices concerning competing uses of land, water and living resources. These trade-offs may relate to the distribution of costs and benefits over space (between the local, national and global levels, or within a specific geographic area), across time or across beneficiaries. However, synergies between biodiversity, ecosystem services and poverty reduction also need to be harnessed on e.g. health benefits, jobs, food security, resilience against natural disasters, gender and adaptation benefits to local communities as well as global climate change mitigation benefits.

19. Managing trade-offs and synergies require ex ante assessment tools to identify the interface and interaction between different objectives. Several tools are reviewed here, including the software modelling tool InVEST, GIS mapping, and the planning software Marxan (see Table 4). Assessment can also be supported through a variety of decision-making or analytical approaches. These include cost-benefit analysis, multi-criteria analysis and targeted scenario analysis. A number of overarching practices are recommended to minimise trade-offs and maximise synergies. These include ensuring open, multi-stakeholder dialogues; adopting the landscape or the ecosystem approach for the integrated management of land, water and living resources; adopting a precautionary approach when an activity may have serious negative consequences for biodiversity and ecosystem services; identifying, compensating and involving local communities that may be negatively affected by biodiversity conservation activities; building strong governance, institutions and legal frameworks; and pursuing policy coherence for biodiversity, ecosystem services and poverty reduction.

Monitoring and evaluation of biodiversity and development interventions

20. Monitoring and evaluation for biodiversity and development activities is an integral part of the policy-making process, as it helps keep track of progress in the implementation of an intervention, and appraises the results achieved to then feedback into on-going and future activities. Yet there are several challenges that agencies face when monitoring and evaluating biodiversity-related interventions. Indeed, the limited knowledge base, the large scale of biodiversity and ecosystem services and programmes to manage these, and the long time frames required to observe results pose specific methodological and practical problems to monitoring and evaluation. This section reviews the monitoring and evaluation practice of nine providers of development co-operation, illustrating current good practice in the area and taking the five evaluation criteria put forward by the DAC (relevance, effectiveness, efficiency, impact and sustainability) as reference point. In sum, the section provides evidence that these criteria are implemented in a variety of ways and that DAC members' ability to demonstrate results is also constrained by the challenges noted above.

Towards more effective biodiversity-related development co-operation: alignment and harmonisation

21. The *Paris Declaration on Aid Effectiveness,* the *Accra Agenda for Action* and the *Busan Declaration on Effective Development Co-operation* lay out the international principles for aid effectiveness and effective development co-operation, which have been endorsed by DAC members. One of these principles is alignment, which looks at the extent to which providers of development co-operation align their activities with partner countries' needs and priorities. This section compares external development finance flows targeting biodiversity objectives with the national priorities put forward by five partner countries (Azerbaijan, Guyana, Lao People's Democratic Republic, Kiribati and Malawi) in their National Biodiversity Strategies and Action Plans (NBSAPs). The assessment finds that although a certain degree of alignment can be observed, it is unclear the extent to which and why this is occurring, The second aid effectiveness principle studied here is harmonisation; that is, how providers co-ordinate, simplify procedures and share information to avoid duplication. A review of the literature illustrates that progress on biodiversity and ecosystem services has taken place through the use of "sector-wide approaches" as a means to co-ordinate provider activities in a particular partner country, and through the use of "joint assistance strategies" and co-ordination mechanisms (e.g., in Kenya and Zambia).

II. MAINSTREAMING BIODIVERSITY AND ECOSYSTEM SERVICES INTO DEVELOPMENT CO-OPERATION

22. Mainstreaming can be understood as including or incorporating an issue or practice that is typically dealt with in a separate and marginalised form into another, often into a dominant or prevailing institution or system (Huntley and Redford, 2014). Mainstreaming is often used interchangeably with policy integration, which implies the integration of a given issue into policy- and decision-making processes, outputs and outcomes. In the biodiversity and development context, mainstreaming refers to "the recognition and integration of biodiversity and ecosystem services and development considerations across different levels of governance and entry points (e.g. national, sectoral, local)" (IIED and UNEP-WCMC, 2013a; OECD, 2013c).

23. This section looks at mainstreaming biodiversity and ecosystem services into policy, planning and projects, with a particular focus on the role of development co-operation. It reviews the rational and international mandate for mainstreaming biodiversity and ecosystem services into development, presents some of the entry points, policy instruments, tools and approaches available for mainstreaming, and provides examples of how development co-operation providers have been supporting mainstreaming in partner countries and mainstreaming biodiversity into their own strategies and policies.

Why is mainstreaming biodiversity and ecosystem services into development important?

24. The potential for synergistic linkages, or trade-offs, between biodiversity and ecosystem services on the one hand and poverty reduction and development on the other means that it is important to address them together. Biodiversity and ecosystem services are often invisible in markets and to policy makers, yet they are essential for human well-being, particularly that of the poor, and for economic growth, income generation (e.g. through export or selling biodiversity-related assets in global or local markets) and development. The Economics of Ecosystems and Biodiversity (TEEB) study (2009) highlights the disproportionate contribution that biodiversity and ecosystem services often make to the income of poor people; for example, the study estimates that in India, these make up 47% of the "GDP of the Poor", 75% in Indonesia, and 89% in Brazil (TEEB, 2009). Biodiversity and ecosystem services also provide the "natural capital" or "environmental assets" that provide the inputs and enabling environment for production and consumption activities, and upon which development and economic growth will depend (; MA, 2005; GIZ, 2012a; Smith, 2013; World Bank, 2006). This may particularly be the case in sectors such as agriculture, forestry, fishing and tourism, to name a few. The importance of biodiversity and ecosystem services for the poverty reduction and for the economy provide the rationale for mainstreaming.

25. Biodiversity can be mainstreamed into sectoral policy documents, plans and activities, budgets, legislation, and indicators and monitoring systems, with the aim of: reducing the negative and enhancing the positive impacts that the sector has on biodiversity; enhancing or restoring biodiversity and ecosystem services; securing and promoting their sustainable use; and ensuring the long-term productivity of sectors (CBD, 2011). Biodiversity mainstreaming should occur across all levels of government (see Figure 3) and include all relevant stakeholders (IIED and UNEP-WCMC, 2013a).

26. Mainstreaming biodiversity and ecosystem services into development planning, policies and projects can help decision-makers assess interconnections and identify how best to steer investments to maximise positive biodiversity and development outcomes. It is equally important to reciprocally mainstream development considerations into biodiversity policies, such as into National Biodiversity Strategies and Action Plans (NBSAPs); however analysis of this reverse process goes beyond the scope of this paper. The type of biodiversity, ecosystem services and development outcomes that are likely to arise from mainstreaming biodiversity and ecosystem services into development will range from "upstream" effects (governance, policy, plans, budget or related policy decisions), to "downstream" effects (behavioural change to deliver progress "on-the ground"; see Dalal-Clayton and Bass, 2009 and Figure 2 for further details).

Figure 2. Upstream and downstream outcomes of mainstreaming biodiversity and ecosystem services into development

	Outcome	
UPSTREAM	Governance outcomes	e.g. Improved involvement of directly biodiversity-dependent (sometimes vulnerable) stakeholders
	Policy and political outcomes	e.g. High-level sector, fiscal, development and social policies, constitutions and statements of national vision, include biodiversity considerations, and vice versa
	Plan outcomes:	e.g. Inclusion of biodiversity-poverty linkages in development and poverty reduction strategies and in biodiversity strategies
	Budget outcomes	e.g. evidence of public-private sector resource mobilisation, inclusion of development-biodiversity linkages in national public and sector budgets
	Institutional and capacity outcomes	e.g. strengthened capacity within biodiversity-related institutions to understand development and economic processes and interact in a constructive manner
	Investment outcomes	e.g. improved domestic resource mobilization for poverty-biodiversity investments or recognition of potential trade-offs in sector investments such as mining
	Behavioural outcomes	e.g. key patterns and processes of production, consumption and waste treatment in sectors and localities are informed by biodiversity and poverty considerations.
	Pro-poor biodiversity and ecosystem management outcomes	e.g. maintenance/restoration/enhancement of pro-poor ecosystem services, such as medicinal, cosmetic or edible plants; healthcare, wild foods, soil fertility; traditional breeds and crop varieties; water purification
DOWNSTREAM	Ultimate (biodiversity and developmental) impacts of these outcomes	e.g. improved productivity and sustainability of use of biodiversity assets and ecosystem services on which the poor depend; protection and management of targeted species populations

Source: Source: IIED (Internal Institute for Environment and Development) and UNEP-WCMC (United Nations Environment Programmes World Conservation Monitoring Centre) (2012), *Biodiversity mainstreaming: A rapid diagnostic tool*, IIED and UNEP-WCMC, London and Cambridge

The international mandate for mainstreaming

27. Mainstreaming biodiversity and ecosystem services into development is mandated by the CBD and recommended by the OECD in development co-operation policies and practices (CBD, 2010b; OECD, 2010b; CBD, 2008). In the CBD, Articles 6(b) and 10(a) of the Convention call for the mainstreaming of biodiversity and ecosystem services; the former into "relevant cross-sectoral plans, programmes and policies", and the latter "into national decision-making" (CBD, 1992). The mainstreaming of biodiversity *into development* and vice versa, however, was first raised at CBD COP 7 in 2004 (Decision VII/2 and Decision VII/28). Each subsequent CBD COP has re-emphasised the importance of mainstreaming biodiversity and ecosystem services into development. In particular, the current mandate is found within the Strategic Plan for Biodiversity 2011-2020 (Aichi Target 2) and Goal 5 of the CBD *Strategy for Resource Mobilization* 2008-2015.

28. In 2010, the OECD Development Assistance Committee issued a *Policy Statement on Integrating Biodiversity and Associated Ecosystem Services into Development Co-operation* (OECD, 2010b). The statement emphasises the importance of development co-operation agencies supporting partner countries to "integrate biodiversity and ecosystem services into development policies, sector plans and budget processes" and to support the development of the tools, practices, capacity, awareness and governance framework necessary for this mainstreaming process to succeed. The statement also urges development co-operation agencies to mainstream biodiversity into their activities, to strengthen their country's policy coherence for the sustainable management of ecosystem services, to engage at the global level on biodiversity issues, and to monitor and track progress towards integrating biodiversity and ecosystem services into development co-operation.

29. A number of other key actors in the international arena of development co-operation also support the mainstreaming of biodiversity and ecosystem services into development. These include the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP), the International Union for the Conservation of Nature (IUCN), BirdLife International, the Global Environment Facility (GEF) and a number of development non-governmental organisations such as the International Institute for Environment and Development (IIED), The Nature Conservancy or the World Resources Institute (WRI). Box 2 below provides details on some of the support that these actors are providing.

Box 2. Examples of international initiatives on mainstreaming biodiversity and development

The NBSAPs 2.0 Mainstreaming Biodiversity and Development project: Co-ordinated by the International Institute for Environment and Development (IIED) and the UNEP World Conservation Monitoring Centre (WCMC), the *NBSAP 2.0* initiative is building African leadership and sharing experience and good practice in mainstreaming biodiversity and development in four pilot countries as they revise their NBSAPs: Botswana, Uganda, Namibia and the Seychelles.

Project for Ecosystem Services (Proecoserv): Co-ordinated by UNEP and funded by GEF, *Proecoserv* aims to better integrate ecosystem assessment, scenario development and economic valuation of ecosystem services into national sustainable development planning at the national, regional and local levels. The three pillars of *Proecoserv* are i) providing support tools for policy making, ii) providing assistance for policy implementation, and iii) bridging the gap between science and policy. *Proecoserv* is currently operating in 5 pilot countries: Chile, South Africa and Lesotho, Trinidad and Tobago, and Vietnam (UNEP, 2014b).

Mainstreaming biodiversity: What does success look like? A series of fact sheets: Following a call from countries at the Global Workshop on Reviewing Progress and Capacity for NBSAP Revision (Nairobi, 11-15 November 2013) for more evidence of how biodiversity mainstreaming works on the ground, and in order to complement existing (yet mostly theoretical) guidance on mainstreaming biodiversity, IUCN and BirdLife International initiated a project with seed funding from the French Government to document successful mainstreaming cases through a series of simple fact sheets to inspire further mainstreaming efforts and contribute to the achievement of Aichi Target 17 by 2015 and beyond.

The Global Environment Facility (GEF) biodiversity mainstreaming programme: The 6th cycle of the GEF (GEF-6) has allocated USD 1.4 billion to the biodiversity focal area (out of a total resource envelope USD 4.9 billion). The programming directions for the biodiversity focal area define a specific programme (Programme 10) to integrate biodiversity and ecosystem services into development and finance planning. This programme will pilot national-level interventions that link biodiversity valuation and economic analysis with development policy and finance planning. The outcome from these projects will be valuation of ecosystem services that informs policy instruments and fiscal reforms designed to mitigate perverse incentives leading to losses in natural capital and biodiversity.

Entry points, policy instruments and approaches for mainstreaming

30. There are several entry points to mainstream biodiversity and ecosystem services into development (see Figure 3). These include:

1. Overarching development strategies, plans, policies and budgets, in order to consider the opportunities that biodiversity and ecosystem services provide in contributing to broad development objectives, the potential impacts that development might have on key biodiversity-related resources, and to allocate resources to mainstreaming;

2. Sectoral plans and policies that are intended to realise the over-arching national plan;

3. Sub-national strategies, plans and policies;

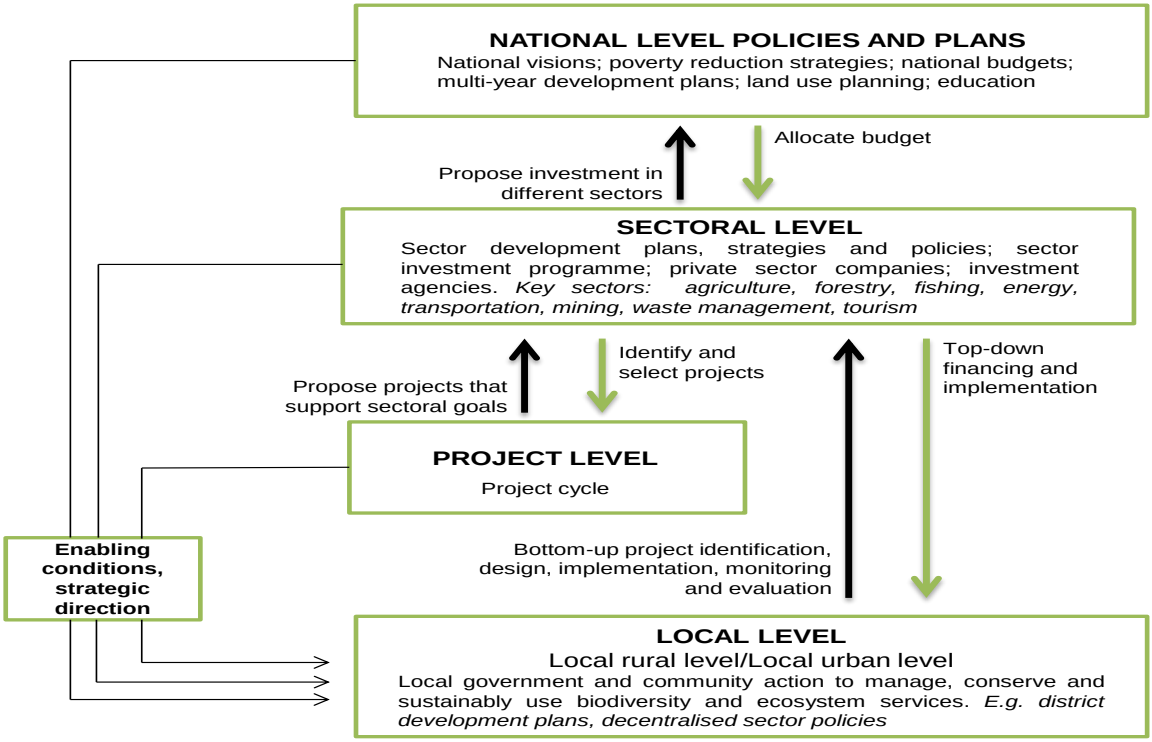
4. Development co-operation programmes or projects that support national, sectoral and sub-national strategies, plans and policies.

31. Sectoral entry points to be prioritised may be those where the links between biodiversity the traditional economic sector, and human wellbeing are clearest and can be most easily communicated (CBD, 2011). One example may be taking systematic measures to combat and prevent invasive alien species, which has direct linkages with both biodiversity conservation and with the agriculture sector, as invasive alien species can affect agricultural productivity and consequently food security.

32. These entry points may interact with each other and may be located at different levels of governance (Figure 3). For example, including attention to biodiversity and ecosystem services within the narrative of a national or sectoral development plan is a key step in the mainstreaming process but will not result in any changed outcomes on the ground if, for example, there is no budget allocation to implement the activities outlined in the plan. Similarly, doing so will be insufficient if sub-national and sectoral level activities are not co-ordinated and aligned with the national vision and strategy.

33. Development co-operation agencies can support mainstreaming and promote cohesion by targeting their interventions at the entry point(s) that are prioritised by partner countries and that are most timely, e.g. targeting the mainstreaming of biodiversity into a law, strategy or policy when it is being drafted or revised; or targeting the mainstreaming of biodiversity into the budget at the time of the cycle when the next budget it being prepared (CBD, 2011). Development co-operation can also support the processes that link the different entry points, e.g. enabling conditions for the implementation of sectoral and local interventions; environmental fiscal reform that *inter alia* helps allocate budget to sectoral mainstreaming, and monitoring and evaluation of interventions.

Figure 3. Entry points for mainstreaming biodiversity, ecosystem services and development



Source: Adapted from OECD (2009a)

34. Intervening at any of these entry points for mainstreaming biodiversity, ecosystem services and development may operate using a wide variety of policy instruments. These range from environmental fiscal reform to information and awareness raising policies. Table 1 below gives an overview of the policy instruments available and a number of illustrations for each of them.

Table 1. Examples of policy instruments to help mainstream biodiversity and ecosystem services into development

Policy Instrument	Examples
Legal/regulatory approaches	
Regulations governing use	Nature protection and conservation such as the establishment of protected areas; forest management; prohibitions and restrictions on use; permits and quotas such as for logging and fishing
Laws governing access	Ensuring that the poor and traditional and indigenous communities have clear and enforceable property rights over the land, resources and ecosystem services upon which they live and depend
Spatial planning	Integrated land, water and living resources management (such as the ecosystem approach)
Planning requirements	Making the use of environmental impact assessments (EIA) and strategic environmental assessments (SEA) compulsory (see Table 3 for more details)
Economic instruments	
Price-based instruments	Environmental Fiscal Reform e.g. Taxes, fees and charges such as taxes on pesticide use, fees for natural resource use and access to national parks, reform of environmentally harmful subsidies
Biodiversity offsets	Last step in the environmental impact mitigation hierarchy to offset residual negative environmental impacts of activities in e.g. mining, energy, pulp and paper sectors.
Information/education and other instruments	
Voluntary agreements	Between businesses, civil society and government for nature protection and conservation, voluntary offset schemes
Eco-labelling and certification	Forest Stewardship Council; Rainforest Alliance
Green public procurement	Using certificated products to guide procurement, e.g., of sustainably harvested timber

Source: adapted from OECD (2012a)

35. Additionally, a number of measurement and assessment tools[6] are available to assist the mainstreaming process. Table 2 outlines a number of these and examples.

[6] These are called policy support tools by the work under the Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES).

Table 2. Measurement and assessment tools for mainstreaming biodiversity and ecosystem services into development

Tool	Examples
Ecosystem accounting	Use of *System of Environmental-Economic Accounting (SEEA) - Experimental Ecosystem Accounting* in national statistical systems (European Commission et al., 2013) can help to integrate the value of biodiversity and ecosystem services into traditional accounting frameworks
Biodiversity indicators	Indicators can help to assess the health of biodiversity and ecosystem services and whether this is improving or declining e.g. marine fish stocks, forest cover, threatened species and species abundance (see OECD, 2012a and the Biodiversity Indicators Partnership)
Economic valuation	The Wealth Accounting and the Valuation of Ecosystems (WAVES) programme, co-ordinated by the World Bank is an example of a programme used to help partner countries to assess the economic value of ecosystems, e.g. in terms of protection against natural disasters, provision of jobs
Planning and project assessment	The following tools can be used to assess the possible impact that a plan or a project could have upon biodiversity, and how these may be managed: Strategic Environmental Assessment (TEEB, 2010b; OECD, 2010c, UNEP, 2014a) Environmental Impact Assessment (TEEB, 2010b) A manual developed by GIZ called *Integrating Ecosystem Services into Development Planning* (GIZ, 2012a).
Sector assessment	Targeted Scenario Analysis can be used for mainstreaming biodiversity and ecosystem services into production sectors (Aplizar & Bovarnick, 2013)
Budget assessment	Public Environmental Expenditure Review (IIED, 2008)

Source: Authors

36. Finally, a number of different approaches may be adopted to engage different stakeholder communities to assist the mainstreaming process. A number of these are outlined in Table 3.

Table 3. Engagement approaches for mainstreaming biodiversity and ecosystem services into development

Approach	Examples
Education campaigns	Increasing awareness of the importance of biodiversity through national Clearing House Mechanisms and information sessions in local communities
Community strengthening and engagement	Engagement and consultation of local and indigenous communities directly using and depending on biodiversity and ecosystem services, e.g. inclusive mapping of biodiversity and ecosystem services, mapping of timing and location of different economic activities (such as mining, agriculture). Community strengthening can include improving communities' negotiating skills to convince local authorities and businesses to integrate biodiversity considerations into laws, policies and practices.
Regional co-operation	Regional co-operation and the creation of appropriate institutional structures may be useful to help to integrate biodiversity and ecosystem services considerations into the management of transboundary natural resources such as watersheds, marine areas and forests, e.g. the Mekong River Commission.
Voluntary standards for business, led by business	The Equator Principles are a voluntary framework adopted by 78 banks to apply the International Finance Corporation Standards, which includes Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources, to all projects over USD 10 million.

37. A combination of policy instruments, tools and engagement approaches may be relevant and used by country governments and development co-operation partners to support the mainstreaming of biodiversity and ecosystem services into development; inevitably the mix of approaches and instruments will be tailored to the individual cultural, political, economic and institutional contexts of each country (OECD, 2012a; IIED and UNEP-WCMC, 2013a).

Mainstreaming biodiversity and ecosystem services into development in partner countries

38. A review of all NBSAPS from both developed and developing countries (Prip et al., 2010) found biodiversity and ecosystem services mainstreaming to be strong only in a few sectors; it is well integrated into forestry and tourism, partly integrated into agriculture, and poorly integrated into fishing and into extractive and energy sectors. More recent reporting to the CBD revealed that 85% of Parties to the Convention (both developed and developing countries) have considered biodiversity in their national priorities or development plans (CBD, 2014d). However, the CBD Secretariat found that some of this integration appears to be incidental or random, often with no institutionalisation or planned process involved, in both developed and developing countries.

39. Specific to developing countries, two reviews in 2010 found that mainstreaming of biodiversity and ecosystem services was not yet widespread in National Development Plans, Poverty Reduction Strategy Papers (PRSPs), cross-sectoral policies or in development co-operation agencies' policies (Prip et. al., 2010; Roe, 2010b). Furthermore, financial resources have been insufficient to implement of biodiversity and development mainstreaming. For example, in reporting under the CBD, only seven developing countries indicated that biodiversity was explicitly integrated into national budgetary processes (Burundi, Comoros, Ecuador, Kyrgyz Republic, Mozambique, Tunisia, Vietnam) (CBD, 2014d). This evidence indicates that there may be a gap between planning to act and action on the ground.

40. The limited mainstreaming of biodiversity and ecosystem services in all countries may be due to a lack of awareness, recognition or understanding of the importance of biodiversity and ecosystem services themselves, of biodiversity-poverty linkages, and of biodiversity-economy linkages (Dalal-Clayton and Bass, 2009; Prip et al., 2010; OECD, 2013a). This is exacerbated by the following elements (IIED and UNEP-WCMC, 2013a):

- The complexity and the multidimensional nature of these links;
- Lack of economic valuation of biodiversity and ecosystem services;
- Insufficient evidence in the form of case studies and success stories on the advantages of mainstreaming.

41. In developing countries in particular, a lack of sufficient data, information, skills and capacity raises the difficulty of making a convincing case for the importance of biodiversity and ecosystem services for poverty reduction and for the economy (Dalal-Clayton and Bass, 2009). This is part of a much broader capacity challenge faced by developing countries (e.g. OECD, 2013a; OECD, 2012b). Furthermore, even where there is interest and demand from developing country government actors, limited resources and structures for communicating and co-ordinating between multiple ministries, sectors, stakeholders, and levels of governance can present a challenge to mainstreaming (Dalal-Clayton and Bass, 2009).

42. As the preamble of the Convention recognises, "economic and social development and poverty eradication are the first and overriding priorities of developing countries" (CBD, 1992). Developing country governments will not prioritise biodiversity and ecosystem services if they cannot be shown to influence high-priority economic and social issues for development such as poverty reduction, food security, health, job creation and economic growth. This has implications for development co-operation, which should be driven by priorities determined by partner countries (Paris Declaration on Aid Effectiveness, 2005; Accra Agenda for Action, 2008; Busan Partnership for Effective Development Co-operation, 2011; CBD COP Decision XI/4; Roe, 2010b).

43. Development co-operation activities in partner countries can provide essential financial and technical assistance to mainstream biodiversity and ecosystem services into development planning and policies (UNEP-UNDP, 2009a). Some examples of development co-operation illustrate how these activities make use of the range of possible policy instruments, assessment tools and approaches outlined above in different partner country contexts:

- *Education and information campaigns:* Belgium supports communication, education and public awareness campaigns through the use and strengthening of Clearing House Mechanisms (CHM)[7] in partner countries. For example, in Benin, Belgium supported a year-long campaign through the CHM to raise public awareness about everyday actions to conserve biodiversity and water (Centre d'échange d'informations du Bénin, 2014). In Niger, Belgium also provided capacity-building training for rural development and environment advisors to the Prime Minister's Cabinet and members of the Technical Commission on Biodiversity in order to improve the understanding of Niger's CHM (Centre d'échange d'informations du Niger, 2014) so that they can better use this as a communication and education tool on biodiversity and development. Since 2010, Belgium has integrated communication, education and public awareness into national biodiversity strategies and policies of its aid practice and has called for the CBD or

[7] The central Clearing House Mechanism is a biodiversity knowledge sharing network to facilitate scientific and technical co-operation, established by the CBD in order to contribute to the implementation of the Strategic Plan for Biodiversity. National clearing house mechanisms are intended to facilitate effective information services in order to facilitate the implementation of national biodiversity strategies and action plans.

national CHM focal points to propose projects to establish indicators and baseline studies for Aichi Target 1[8]. Belgium's recent aid strategy - *Building capacities for biodiversity for sustainable development and poverty reduction strategy 2014-2023* -- commits to the twin objective of "strengthening the exchange and the use of information in governance" and "contributing to public awareness (of biodiversity and ecosystem services for the reduction of poverty)" (RBINS, 2013).

- *Land use plans:* Japan provides technical support to assist with the data collection, conceptualisation and capacity to develop sustainable management plans of areas that balance socio-economic considerations and environmental considerations, in particular biodiversity. For example, Japan is working on the "Sikkim Biodiversity Conservation and Forest Management Project" in India that is, *inter alia*, helping the local community develop ecotourism so as to continue to benefit from the increasing tourists visiting Sikkim without increasing the negative impacts on the local ecosystems (JICA, 2010a).

- *Certification schemes:* France's *Fonds Français pour L'Environnement Mondial* (FFEM) supports certification schemes as a way to integrate biodiversity and ecosystem service considerations into production systems in partner countries. For example, FFEM is working with Fair Trade Africa in Western African countries to support and build the capacity to put in place 15 organisations of certified producers, of which at least three will be specifically in the domain of biodiversity protection (FFEM, 2014).

- *Legislation, Strategic Environmental Assessment*: Germany is providing technical support to help countries to implement legislation and SEA (GIZ, 2010; GIZ, 2012b). Namibia offers one success story, where Germany has been working with the government since 1994 to support the development of a policy and legal framework that strikes a balance between economic development and conserving the environment. In 2007, the Namibian Parliament passed the Environmental Management Act (EMA). Germany is supporting the implementation of the EMA through technical and financial assistance for local experts in developing the regulatory and institutional framework, for drafting regulations and procedures, and for efforts to raise public awareness and networking. Additionally, experts from Namibia and Germany have worked together to develop an SEA training course and to facilitate the use of this instrument. For example, Germany is supporting the use of this tool in the mining sector and in biofuel production (GIZ, 2010).

- *Regional co-operation:* Sweden has a long history of supporting the Mekong River Commission, comprised of representatives from Cambodia, Lao PDR, Thailand and Vietnam, in order to promote regional co-operation for the mainstreaming of biodiversity and ecosystem service objectives into regional decision-making processes. The Mekong River is an important source of livelihood for over 60 million people, with the fish, rice and vegetables harvested in the watershed providing both food and sources of income for the local population. Regional co-operation is therefore necessary to ensure that the Mekong River continues to provide essential ecosystem services to the poor in all four countries.

44. There are a number of emerging and overarching good practices for development co-operation's support of mainstreaming biodiversity and development. Those listed below have been identified through the literature (Huntley and Redford, 2014 and OECD, 2010a) and through feedback received from eight

[8] Aichi Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably. See Annex 1 for all twenty Aichi Targets.

African countries (Botswana, Liberia, Malawi, Namibia, Seychelles, South Africa, Uganda, Zimbabwe)[9]. Namely, providers may:

- Provide technical support and institutional capacity building for the formulation and implementation of plans/policies/programmes/projects that are developed and owned by the partner country according to their needs and priorities to secure alignment, ownership and sustainability after providers' interventions have ceased;

- Allocate sufficient time to see change – mainstreaming is an organic and long-term process requiring at least 10-15 years of sustained support;

- Identify and involve all relevant stakeholders in a transparent and inclusive manner; create a learning and listening process whereby all stakeholders can voice their views and develop solutions together;

- Develop and implement monitoring and evaluation methods – this allows for learning from past experience, and for modifications to be implemented based on these learnings;

- Ensure that efforts to integrate biodiversity and development are evidence-based, using scientific findings, biophysical and socio-economic data collection and economic assessments (e.g. biodiversity and ecosystem valuation);

- Support the development of transparent and accountable frameworks and processes; which are a pre-requisite to successful mainstreaming;

- Streamline and simplify the process by which partner countries can apply for aid for mainstreaming projects; biodiversity-related aid has declined in some countries because governments lack the time, technical knowledge and skills to develop proposals that meet the requirements set out by development co-operation agencies;

- Support partner countries to make the case for biodiversity. This may involve helping to identify the right target audience and tailoring the messages to that audience, and providing support to develop the evidence that might support the case such as the economic valuation of biodiversity and ecosystem services.

Mainstreaming biodiversity and ecosystem services in development co-operation agencies

45. Development co-operation agencies take a range of different approaches to mainstreaming biodiversity and ecosystem services into their own policies and programmes, to ensure that biodiversity is taken into account in all of the agencies' development co-operation activities. While some agencies have the environment (in which biodiversity is either implicitly or explicitly included) as a cross-cutting theme across their aid programme (e.g. Denmark, New Zealand, Portugal, Spain, Sweden), others have a specific Environmental Policy of which biodiversity and ecosystem services are a component (e.g. Austria, Finland, Ireland, Japan, Norway) and many now have a stand-alone strategy or policy for biodiversity and ecosystem services in their development co-operation agencies (e.g. Austria (in addition to its environmental policy), Belgium, European Union, France, Germany, United States) (CBD, 2014d).

[9] This feedback was received at the third workshop of the NBSAP 2.0 Mainstreaming Biodiversity and Development project, held in Namibia on 23-25 July 2014. A summary of the workshop (Thomas, 2014) is available online at http://pubs.iied.org/G03827.html.

46. A comprehensive overview of mainstreaming biodiversity into development co-operation in 2010 found that while about half of OECD DAC members' development co-operation agencies paid significant attention to biodiversity,[10] climate change remained a more prominent focus (Roe, 2010b). However, more stand-alone biodiversity policies in development co-operation agencies have been developed since 2010.[11] Stand-alone policies for biodiversity indicate a heightened awareness within agencies, which may translate to biodiversity and ecosystem services being taken into account more broadly and explicitly in development co-operation activities. Additionally, these stand-alone biodiversity policies generally contain mechanisms for implementation (including dedicated financial means) to integrate biodiversity into all activities of the development co-operation agency.

47. A number of OECD DAC members have a compulsory screening system in place, whereby every development co-operation activity must be screened for potential harmful impacts upon biodiversity and ecosystem services. For activities found to have potentially significant negative impacts on biodiversity and ecosystem services, a Strategic Environmental Assessment, Environmental Impact Assessment or Environment Management Plan must be carried out. Members with this policy include Australia, Austria, the European Commission, France, Germany, Japan, Sweden (see Box 3) and the United States (AFD, 2013; AusAID, 2012; European Commission, 2011; GIZ, 2010; JICA, 2010b).

Box 3. Mainstreaming biodiversity and the environment at the Swedish International Development Cooperation Agency (Sida)

Sida's Environmental Management System aims to ensure that Sida is not supporting environmentally unsustainable activities, including those that would harm biodiversity. Programmes that are screened and found to have a significant environmental impact require an extensive, detailed and formal environmental assessment. For activities that are expected to have a small or insignificant environmental impact, the environmental assessment can be brief. The main purpose of Sida's environmental assessment and review procedures is to identify, in a systematic manner, the environmental risks and opportunities of every proposed development co-operation activity. An assessment early on in the programme cycle can improve development results by limiting or eliminating negative impacts, and by ensuring that opportunities for positive outcomes are taken advantage of. The assessment process itself, including the necessary dialogue between Sida and the partner country, can also help to improve development results by building the capacity of partner country to analyse and address the environmental and social aspects of development and in the longer term to strengthen their ownership of environmental issues. Finally, an environmental assessment early in the planning cycle may also save costs further on in the process, thereby helping to make the contribution of Swedish international development cooperation to sustainable development more efficient.

Source : Example provided by SIDA

[10] i.e. the development co-operation agency either has a stand-alone strategy or policy for biodiversity, or biodiversity is explicitly integrated into the agency's environmental strategy/policy.

[11] E.g. Belgium, France, United States.

48. A number of development co-operation agencies have processes in place to train and raise the awareness of staff working across the agency, and even in other federal administrations, about how to take biodiversity considerations into account in their work. Examples include:

- Belgium has "[improving] the mainstreaming of biodiversity and ecosystem services in policy sectors that have high relevance for development" as one of the six objectives of its *Building capacities for biodiversity for sustainable development and poverty reduction strategy 2014-2023*. The Royal Belgian Institute of Natural Sciences (RBINS) and Directorate General for Development Co-operation (DGD) have organised a series of nine-hour training sessions on biodiversity and ecosystem services that have been delivered to programme and project managers of DGD and staff in other federal administrations. Feedback from these sessions is being used to design more specialised training for staff working across Belgian Development Co-operation, e.g. on options for the sustainable management of ecosystems (RBINS, 2013).

- Sweden's Sida established a Helpdesk function for Environment and Climate Change in 2011, to help Sida staff to integrate environmental considerations (including biodiversity) into Swedish development co-operation. The Helpdesk gives support, on demand, by providing advice and strategic guidance on environmental integration at the policy, programme and project level. The Helpdesk also develops tools and methods for environmental mainstreaming and facilitates dialogue concerning environmental issues.

- USAID's Biodiversity Policy, released in July 2014, has "integrating biodiversity as an essential component of human development" as one of its two goals with the other being to "conserve biodiversity in priority places". The policy states that USAID will promote the integration of biodiversity into: agriculture, food security, climate change, health, democracy and governance, economic growth, and trade. Implementation of the policy is primarily focused on improving the internal capacity and awareness of staff and improving existing processes in USAID to ensure that biodiversity is integrated into all of USAID's activities. For example, this may include integrating biodiversity values and externalities into USAID's Cost-Benefit Analysis and Growth Diagnostic models, integrating biodiversity conservation approaches into existing sectoral trainings, and refining development practices and tools to support the achievement of biodiversity conservation outcomes (USAID, 2014).

- France's *Agence Française de Développement* (AFD) has developed a Biodiversity Cross-Sectoral Intervention Framework 2013-2016 that has, as one of three pillars, the obligation that all actions, projects and programmes financed by AFD "integrate the conservation of ecosystems and the services that depend on them into development policies and all their sectoral dimensions". This is done, *inter alia*, by ensuring that biodiversity and ecosystems are integrated into strategic documents during the drafting or updating of Sectoral Intervention Frameworks or Regional and Country Intervention Frameworks; ensuring that no projects funded by AFD cause a net loss in the biodiversity of critical habitats; ensuring that a "Sustainable Development Second Option" outlining the contribution of potential projects to sustainable development, including preservation of biodiversity, is included as an annex during the appraisal of projects funded by AFD (AFD, 2013).

Gaps identified and possible areas for future work

49. While this section gives an initial overview of mainstreaming and development co-operation, further work could be done to gain a deeper and more comprehensive understanding of this topic. Further research on the barriers that explain why there is often a gap between planning to mainstream and action may be of use. Additionally, it would be useful to develop more case examples of how different policy instruments, measurement and assessment tools, and engagement approaches to mainstreaming have been used, which have proven to be more successful or efficient in different contexts, and why. Turning to mainstreaming in development co-operation agencies, while the existence of screening tools across most agencies is positive, further work would be necessary to understand whether these screening tools are having the intended positive environmental impact, including with regard to biodiversity and ecosystem services. Furthermore, while the examples of biodiversity mainstreaming in development co-operation agencies highlight positive practices, further work would be necessary to gain a more comprehensive understanding of how mainstreaming biodiversity and ecosystem services is performed across all development co-operation agencies. It would also be interesting to return to current good practice (e.g. in Belgium, France or the USA) to assess if and how providers have increased the mainstreaming of biodiversity and ecosystem services across their development co-operation agency.

III. MANAGING FOR RESULTS

50. Focusing on results is a crucial element of development co-operation, as emphasised in the *Busan Declaration on Effective Development Co-operation* (OECD, 2011). This means ensuring that development co-operation investments and efforts have a lasting impact upon reducing poverty and inequality and on achieving sustainable development, which encompasses the conservation and sustainable use of biodiversity and ecosystem services. This should be done through enhancing developing countries' capacities, aligned with the priorities and policies set out by developing countries themselves (Busan Declaration, 2011) (see Section 5 and Box 8 for more details). Such results are important for any country-led plans, policies, programmes or projects that development co-operation may support.

51. In order to manage for results, it is essential to clearly identify from the start the objectives of the development co-operation activity. This is important for the design of the activity and is also a pre-requisite for neutral evaluation during and after the activity (OECD, 1991; see Section 4 and Annex 3 for more details). In the context of biodiversity and development, there are likely to be objectives focusing on poverty reduction and on the conservation and sustainable use of biodiversity and ecosystem services. However, practice to date shows that while it is possible to achieve synergies between these, (Munang et al., 2014; Kareiva et al., 2008), trade-offs are likely to remain (Hirsch et al., 2010; Barrett et al., 2011; McShane et al., 2011; Roe et al., 2011; Salafsky, 2011; Redpath et al., 2013). Therefore, clarifying whether there are priorities among the different objectives of the activity, i.e. whether they are more poverty-centric or nature-centric, is important from the outset to guide design of the activity and to help manage any inevitable trade-offs.[12] Doing so requires participation and full engagement from both development co-operation providers and partner countries (Barret et al., 2011; Salafsky, 2011).

52. Once the objective of the activity has been established, it will be necessary to measure it. This is important for the design of the activity, to monitor progress and to evaluate results, and will require clarity in how key concepts are understood and operationalised (see Box 1). There are several frameworks that can help in this respect. First, the Biodiversity Indicators Partnership (BIP) can help to assess the state, pressures and changes related to biodiversity and ecosystem services. The BIP was established in 2007 to promote and co-ordinate the development and delivery of biodiversity-related indicators, thereby supporting countries to evaluate progress towards meeting the twenty global Aichi Biodiversity Targets (see Annex 1) and national goals such as those expressed in NBSAPs. There are 39 indicators to date, covering issues such as trends in the extent, condition and vulnerability of ecosystems, biomes and habitats, trends in pressures from unsustainable agriculture, forestry, fisheries and aquaculture, and trends in coverage, condition, representativeness and effectiveness of protected areas and other area-based approaches. One element of the BIP is the "National Indicator Development Toolkit", which provides guidance, training materials and examples of how to develop national and sub-national level indicators for biodiversity and ecosystem services.

[12] A poverty-centric approach prioritises how biodiversity and ecosystem services can be instrumental in reducing poverty, and will often target areas outside of biodiversity hotspots, while a cost- and nature-centric approach prioritises biodiversity hotspots in developing countries to deliver the greatest biodiversity benefits and achieve the global Aichi Targets at the lowest cost. These approaches are not mutually contradictory but prioritise different aspects of an intervention (for further information see Miller, 2014).

53. The System for Economic and Environmental Accounting (SEEA)[13] provides another useful framework to support decision-making, notably through, its specific module on Experimental Ecosystem Accounting (European Commission et al., 2013). SEEA is an internationally agreed methodology, based on the System of National Accounts, which integrates information on the environment into economic accounting frameworks, thereby reflecting biodiversity, ecosystem services and all other element of the environment as assets ("natural capital"); its use allows use and depletion of natural capital to be tracked. SEEA can generate data that can be used to develop indicators on the state of biodiversity and ecosystem services, pressures upon them, driving forces of these pressures, policy and management responses, and changes in the state of biodiversity and ecosystem services ("impacts"). SEEA can also be used to help answer important questions, such as: who benefits from the use of biodiversity and ecosystem services, how their depletion affects the real income of the country, and whether production and consumption trends impacting upon biodiversity and ecosystem services are sustainable (SEEA, n.d.). The Wealth Accounting and the Valuation of Ecosystem Services (WAVES) programme, run by the World Bank, is an example of putting SEEA into action (see Box 4).

Box 4. The Wealth Accounting and the Valuation of Ecosystem Services (WAVES) programme

The Wealth Accounting and the Valuation of Ecosystem Services (WAVES) programme, run by the World Bank, is supporting eight developing countries (Botswana, Colombia, Costa Rica, Guatemala, Indonesia, Madagascar, the Philippines and Rwanda) to compile accounts of their natural resources, such as water, forests and mangroves. These natural resource statistics are used to build the evidence base and inform decision makers about the contribution of this natural capital to the country's economy. For example, accounting in the Philippines is being used to assess the current state of mangroves, to evaluate the success of existing mangrove reforestation programmes, show the contribution of mangroves to local income (e.g. how many people are employed and what the revenue is from fishing, timber and non-timber products, and tourism associated with mangroves), and show the contribution of mangroves to climate change resilience. WAVES aims to help governments understand and determine the most sustainable uses of key natural resources (WAVES, 2014).

Source: Wealth Accounting and the Valuation of Ecosystem Services (WAVES) (2014), *Philippines,* https://www.wavespartnership.org/en/philippines, last accessed 24 October 2014.

54. With the objectives of the activity clearly established and measurement options identified, a key consideration in the design of biodiversity-related development co-operation activities is that of trade-offs, synergies and co-benefits across biodiversity, poverty reduction and other development objectives. Trade-offs may pose a challenge to the achievement of the objectives of the activity, while synergies and co-benefits present opportunities and impact mainstreaming success.

[13] This may be known more generally as natural capital accounting or environmental accounting.

Identifying and managing trade-offs and synergies

55. In the context of biodiversity, ecosystem services and poverty reduction, trade-offs may exist where there are management choices concerning competing uses of land, water and living resources (Sayer et al., 2013). These trade-offs relate to the distribution of costs and benefits over space (some benefits in one place, some costs in another – either between local, national and international levels, or between different local areas), time (some benefits now, some costs later, or vice versa) or beneficiaries (some actors win, others lose) (Roe et al., 2011; McShane et al., 2011). Since the economic value of biodiversity and ecosystem services is most often not reflected in market prices, these services are generally undervalued or not considered in decision- making processes concerning different land, water and/or resource use options (OECD, 2002; TEEB, 2010b; UNDP, 2012). Land, water and other resource use choices present inherent trade-offs as they change the type, magnitude and relative mix of biodiversity and of services provided by ecosystems, entailing long term ecological, economic and social consequences (Redpath et al, 2013; GIZ, 2012a; McShane et al, 2011).

56. Synergies and co-benefits between biodiversity, ecosystem services and poverty reduction are also possible, where there are mutually reinforcing, positive outcomes across these objectives for any particular activity or set of activities. Policy and project design can aim to maximise these. For example, a number of recent reviews show that conserving and sustainably using biodiversity and ecosystem services can provide health benefits (e.g. via clean air, water and nutrition), food security, jobs, resilience against natural disasters, gender and adaptation benefits to local communities, as well as supporting global efforts in climate change mitigation (Munang et al., 2014; Harvey et al., 2013; CBD, 2009b). Additionally, biodiversity and ecosystem services provide traditional medicines used by an estimated 60% of the world's population (WHO, 2014) and can reduce the spread of infectious diseases (Stem et al., 2014; WHO, 2014; Roe, 2010b). Another example where synergies exist is ecosystem-based adaptation (EbA), which is the use of biodiversity and ecosystem services to help people and communities adapt to climate change (Munang et al., 2014). For example, in Togo, the EbA approach was used to rehabilitate water reservoirs to boost water security and quality, and to increase the capacity of women and youth to work in irrigation and crop-related employment, leading to greater agricultural production, greater crop diversity (and therefore greater food security), and greater social inclusion (Munang et al., 2014). Another example is the work of "Mangroves for the Future", which supports local communities across 12 countries in Asia to restore and sustainably manage coastal ecosystems to increase resilience against natural disasters and to improve livelihoods for local communities (Mangroves for the Future, 2014).

Identifying trade-offs and synergies

57. Trade-offs and synergies between biodiversity, ecosystem services and development, in particular poverty reduction, can be highly complex and multidimensional, making them difficult to identify. Notwithstanding the complexities, there are several tools available to assist with identification and management of trade-offs and synergies in the design of development activities, which in turn can strengthen development co-operation outcomes (see Table 4).

Table 4. Support tools to identify trade-offs and synergies

Name of tool	Description	Countries covered
Mapping tools • *InVEST (Integrated Valuation of Environmental Services and Trade-Offs)*[1] • *Vital Signs*[2]	Mapping can be used to improve the spatial understanding of where land and water use conflicts and synergies, and biodiversity-poverty-development tensions and synergies are most likely to occur. Dramatic improvement in Geographic Information Systems (GIS) has led to the development of a number of free online tools that can be used to this effect. InVEST is a software tool developed by the Natural Capital Project that models biodiversity and ecosystem services over different spatial and time scales, under different scenarios. InVEST can be used to support spatial planning, SEAs, EIAs, Payments for Ecosystem Services (PES), permits and mitigation, and climate adaptation strategies. This tool is already used widely; for example, in China, Colombia, or Indonesia (TEEB, 2010b). Vital Signs is a support and risk management tool designed specifically for designing and monitoring policies, plans, programmes and projects targeting agricultural development. It provides near real-time integrated data on agricultural management and productivity, ecosystems and human well-being.	Mapping tools can potentially be used in any country. For example of mapping in Kenya see WRI et. al. (2007) InVEST can be applied to any country, provided that there is the data to feed into the model. To date, Vital Signs is in Ghana and Tanzania Imminent: Uganda, Ethiopia, Mozambique Intended to then expand to other parts of Africa and the globe.
Landscape Outcomes Assessment Methodology (LOAM)[3]	LOAM is a process and a methodology developed by the World Wildlife Fund (WWF) to measure, monitor and communicate the nature and extent to which a landscape is changing over time with respect to a small number of agreed conservation and livelihood outcomes. It can be used as a tool to facilitate dialogue and understanding between different stakeholders using the landscape, to understand landscape change, and to determine priorities for the use of a landscape.	All countries
The Open Source Impacts of REDD+ Incentives Spreadsheet (OSIRIS)[4]	OSIRIS is a suite of free, transparent, open-source, spreadsheet-based decision support tools specifically for estimating and mapping the climate, forest and revenue benefits of alternative policy decisions for reducing emissions from deforestation and forest degradation (REDD+). Although originally designed from a climate change mitigation perspective, it can be a useful tool for assessing potential synergies between biodiversity and climate change involved in different policy decisions.	All countries.
Carbon Biodiversity Calculator[5]	This tool is useful for understanding the synergies between biodiversity conservation and restoration on the one hand, and climate change mitigation on the other. The calculator allows the user to define a particular area of interest on the map, and to calculate an estimated contribution of this area to climate change mitigation, while simultaneously providing information on the area's conservation values, protected areas, forest status and opportunities for forest and landscape restoration.	Almost all countries
Marxan[6]	Marxan is a free conservation planning toolset that supports design and decision making by, among other functions, producing a number of different options that meet both welfare and conservation objectives. Marxan has also been used to support multiple-use zoning plans that balance the different interests of a wide range of stakeholders.	All countries. For an example of Marxan in use by the Africa Biodiversity Collaborative Group, see note 6 below.
Participatory Appraisal[7]	In addition to using software tools to understand trade-offs, it is also important to directly engage with the relevant stakeholders to understand how these trade-offs are perceived. Participatory appraisal involves asking stakeholders how the biodiversity and ecosystem services in question affect them, how they affect the biodiversity and ecosystem services, how they perceive and value biodiversity and ecosystem services, and how each scenario elaborated would impact them. Participatory appraisal should be a collective, transparent process, generally run by a facilitator who is not a part of any of the stakeholder groups. To assist this process, a variety of techniques can be used, such as participatory maps (e.g. on which stakeholders can map resource boundaries, health and education services, places where cultural and spiritual activities take place etc.), Venn diagrams (to reflect how issues are interconnected), seasonal calendars (to reflect annual schedules of activity and variation) and trend analysis (to see how ecosystem services have changed over years, and the impact that that has had on stakeholders). Participatory appraisal can help to conceptualise not only the costs and benefits of each policy/programme/plan/project option, but also of the distribution of these costs and benefits.	All countries

Source: Various – see notes.

Notes:
1) InVEST: http://www.naturalcapitalproject.org
2) Vital Signs: http://vitalsigns.org/
3) Landscape Outcomes Assessment Methodology (LOAM): http://wwf.panda.org/?120980/Landscape-Outcome-Assessment-Methodology-LOAM-in-Practice
4) OSIRIS: http://sp10.conservation.org/osiris/Pages/overview.aspx
5) Carbon Biodiversity Calculator : http://carbonbiodiversitycalculator.unep-wcmc.org/
6) Marxan : http://www.uq.edu.au/marxan/. For an example of Marxan in use, see http://www.abcg.org/news?article_id=19.
7) TEEB (2010b) provides an overview of participatory appraisal and mapping

Managing trade-offs and synergies

58. Assessing and managing the trade-offs and synergies flowing from different possible activities is an important ex ante step in decision-making, which will help prioritise among different activities in a given context. A number of frameworks are available to do so, such as cost-benefit analysis (CBA), multi-criteria analysis (MCA), and targeted scenario analysis (TSA) (see Annex 2 for more details). An important step for each of these is putting a comparable value on the outcomes of different development activities or policy interventions and comparing these to a baseline. Some but not all frameworks require monetising the costs and benefits of the activity (e.g. CBA requires this, MCA does not). Attaching a monetary value to biodiversity and ecosystem services can ensure that it is properly integrated into decision-making processes (UNDP, 2012; TEEB, 2010b; OECD, 2002). While the economic valuation of biodiversity and ecosystem services is essential in CBA, it can also be partial (due to lack of data) and controversial (e.g. some services may be irreplaceable by physical or man-made capital). Multi-criteria analysis and targeted scenario analysis may be preferred or complementary approaches to support decision making.

59. CBA, MCA, TSA, and economic valuation of biodiversity and ecosystem services are technical, data intensive exercises that require expertise, time and a commitment of funding over what may be an extended period of time. Where valuation or economic analysis occurs, it is possible to use simple methods so as to limit the time and resources required for assessment (Drakenberg, et al. 2008). Aligning the assessment with policymakers' priorities (e.g. priority development objectives, such as economic growth, poverty reduction, fiscal balance and public health) will increase the influence on policy decisions. Further, use of such approaches only yields meaningful results if developed in consultation with the local communities affected. Successfully managing such engagement processes also requires a commitment of time and resources. Though costly to carry out, such formal assessments provide an important foundation of knowledge upon which to base decisions (e.g. Annita James, 2013) and a means to manage trade-offs and maximise synergies, and can also support ex-post evaluation and a means to manage performance over time (see Section 4).

60. Providers can help partner countries with technical expertise, training and capacity building to gather data to carry out these assessments and update them as necessary (see Box 5 for a practical example).

Box 5. BUILD: An example of development co-operation support for trade-offs and synergies assessment

Biodiversity Understanding in Infrastructure and Landscape Development (BUILD), funded by USAID and the Gordon and Betty Moore Foundation and implemented by the Conservation Strategy Fund, aims to create lasting human capacity for energy and transport infrastructure analysis in partner countries that assesses the ecological and economic trade-offs involved in infrastructure investment decisions. It does this through a series of training courses (e.g. covering economic tools such as environmental valuation methods and cost-benefit analysis, plus communication and negotiation techniques), regional forums, and in-depth analyses of specific infrastructure projects with partner governments and other organisations. To date, BUILD has been applied in activities in the Andes-Amazon region (Peru, Bolivia, Brazil), and in the Albertine Rift (Uganda, Rwanda, Kenya, Tanzania, Democratic Republic of Congo), and will be expanding to the Himilayan region (CFS, 2014).

Source: Conservation Strategy Fund (CSF) (2014), *Biodiversity Understanding in Infrastructure and Landscape Development (BUILD),* http://conservation-strategy.org/en/node/1031#.U-EilPmSxHV, last accessed 5 August 2014.

Principles and key practices to achieve results

61. In addition to identifying and assessing trade-offs and synergies, the literature points to a number of overarching principles and practices that may help to achieve positive biodiversity and development outcomes.[14] These apply to all stages of decision- and policy-making, and include the necessity to build strong governance, institutions and legal frameworks; ensuring open, multi-stakeholder dialogues; compensating local communities that are negatively affected; adopting a landscape or other ecosystem approach; adopting a precautionary approach; and pursuing policy coherence.

Build strong governance, institutions and legal frameworks

62. Strong governance, institutions and legal frameworks are crucial to ensure that the biodiversity-related intervention is implemented and has the intended impacts (Armah et al., 2013; Gardner et al., 2013; Manzoor Rashid et al., 2013; Sayer et al., 2013; Vaz and Agama, 2013; Sandker et al., 2012; Billé et al., 2012; UNDP, 2012; Roe et al., 2011; Roe, 2010a). Key elements in this respect include: clearly defined, enforceable property rights and land tenure; clearly defined roles and responsibilities, and accountability; combatting elite capture and corruption; protecting local customs by building them into national legislation; and ensuring that there are robust monitoring and enforcement mechanisms (see Box 6 for further information).

Box 6. The importance of strong governance, institutions and legal frameworks

Land tenure and property rights are important for determining who has the right to use what land and natural resources, and consequently for who reaps the benefits from their use. The poor often have low social capital and a weaker voice in the political process (which are two of the multiple dimensions of poverty), and therefore are often the most likely to be the worst off in any land dispute, resulting in a restriction in their access to and benefits from natural resources (OECD, 2013b; Armah et al., 2013; Roe, 2010a).

When the roles and responsibilities for example of national, sub-national and local governments and resource management institutions are not clearly defined, conflicts are more likely to arise. Additionally, when accountability mechanisms are not in place, corruption is likely to be higher. Once again, as the poor often have the weakest social capital and political voice, they are the most likely to lose from these conflicts and this corruption (Armah et al., 2013; Manzoor Rashid et al., 2013).

Elite capture is the phenomenon whereby the elite – those with more assets, power and a higher social status – capture the bulk of the benefits from the exploitation of biodiversity and natural resources, with little regard for the poor communities living in these areas, meaning that the benefits are not distributed to the poor. If laws intended to govern the sustainable use of natural resources, or other relevant laws such as property rights, are violated without sanction due to a lack of compliance and enforcement permitted by corrupt practices, this can lead to negative outcomes for biodiversity and for the poor (Mohammed and Inoue, 2014; Manzoor Rashid et al*.,* 2013; Sandker et al., 2012; Roe, 2010a; OECD, 2008a).

Sources: Armah, F.A. et al. (2013), "Management of natural resources in a conflicting environment in Ghana: unmasking a messy policy problem", *Journal of Environmental Planning and Management,* http://dx.doi.org/10.1080/09640568.2013.834247; Manzoor Rashid, A.Z.M. et al. (2013), "A journey towards shared governance: Status and prospects for collaborative management in the protected areas of Bangladesh", *Journal of Forestry Research,* Vol. 24, Issue 3, pp.599-506; Mohammed, A.J. and Inoue, M. (2014), "Linking outputs and outcomes from devolved forest governance using a Modified Actor-Power-Accountability Framework: Case Study from Chilimo forest, Ethiopia", *Forest Policy and Economics,* Vol. 39, Issue C, pp.21-31; OECD (2013b), *Scaling-up Finance Mechanisms for Biodiversity*, OECD Publishing, Paris, doi: *10.1787/9789264193833-en*; OECD (2008a), *Natural Resources and Pro-Poor Growth: The Economics and Politics,* DAC Guidelines and Reference Series, OECD Publishing, Paris; Roe, D. (2010a). "Linking Biodiversity Conservation and Poverty Alleviation: A State of Knowledge Review", *CBD Technical Series* 55, Secretariat of the CBD, Montreal. Available at www.cbd.int/doc/publications/cbd-ts-55-en.pdf.

[14] Many of these are principles and practices are applicable to the management of trade-offs and synergies and general. Here their explanation has been adapted to be specific to biodiversity, ecosystem services, poverty reduction and development.

Ensuring open, multi-stakeholder dialogue

63. An essential ingredient for strong biodiversity and development planning and policy is a multi-stakeholder approach that is inclusive, transparent and built upon trust (Roe et al., 2011; Redpath et al., 2013; Sayer et al., 2013). Such an approach acknowledges that trade-offs are possible, and that different stakeholders are likely to perceive them differently; engagement will ensure that stakeholder needs and concerns are considered, fostering joint ownership of the plan, programme, policy or project. As a result, reaching a compromise is made possible through engagement (Roe et al., 2011). A multi-stakeholder approach can ensure that a compromise is more acceptable to most people, and can deliver a clearer picture of the broader context within which the intervention is operating (McShane et al., 2011; Hirsch et al., 2010; Redpath et al., 2013; Sayer et al., 2013).

Compensating communities that are negatively affected

64. If an area is chosen for an intervention, e.g. the creation of a protected area, the local communities affected can be assisted so that their livelihoods and welfare are not negatively affected. Similarly financial transfers can avoid perverse incentives (e.g. illegally exploiting the land or water resources). This assistance can include:

- The establishment of Payment for Ecosystem Services (PES), so that local communities are compensated for maintaining the ecosystem service instead of exploiting the land, water or living resources for alternative purposes (e.g. see "compensation for opportunities skipped (COS), van Noordwijk and Leimona, 2010). Here, however, it is important that 1) the payment is at least as high as the income that the community would earn from the highest paying alternative use of the land and 2) that the local community supports and believes in the programme – that is, they want to conserve or more sustainably use the area. This second step would require the local community to be fully involved in the design of the PES programme from the beginning, and education and training in the value and importance of biodiversity and ecosystem services (Sandker et al., 2012).

- The development of alternative livelihood options: if a biodiversity-related intervention limits the ability of the local population to use land, water and living resources for income in a particular way, assistance could aim to provide an alternative means to raise revenue (Gardner et al., 2013; Sandker et al., 2012). One example comes from the Anjozorobe-Angavo and Loky-Manabato protected areas in Madagascar. These are co-managed by the Malagasy NGO Fanamby and local community institutions, which together have been working to build partnerships between the local communities and the private sector in order to develop income alternatives. These include the establishment of a tourist lodge and a market garden, which provide local employment, and opportunities for organic and fair trade certification (Gardner et al., 2013).

- Provision of training and upfront capital for the adoption of sustainable management practices of land, water and living resources (Gardner et al., 2013, also see "asset building PES, (Pirard, Billé and Sembrés, 2010) and "co-investment in environmental stewardship PES (van Noordwijk and Leimona, 2010); see Box 7 for an example in the context of sustainable park management.

Box 7. Supporting sustainable parks management in Chad

One example of the creation of a protected area that ensures that benefits flow to local communities is the EU-funded project for Zakouma National Park in Chad (2011-2015). This project aims to support the conservation and good governance of natural resources and ecosystems, for the benefit of local development, thereby exploiting biodiversity and development synergies. The project involves the African Parks Network (APN), the Chad Ministry of Agriculture and Environment, the Wildlife Conservation Society (WCS), the Network of Protected Areas of Central Africa (RAPAC) and UNESCO, which are in the process of setting up the Zakouma National Park foundation. Besides considerable investments in strengthening the management capacity of the park itself (e.g. equipment, organisation, communication and transport network and infrastructure, wildlife monitoring, marketing), a key element of this project is to strengthen relations between the park and local communities. This has been successful; thirteen agreements have been signed with local communities, security forces and the national parks agency to date. The project has also supported two local health care initiatives, supplying medicine and providing accommodation for the health centre manager. The project has also improved the provision of schooling in three villages through building a school and providing six teachers, teaching materials and school books. To help local communities gain benefit from park tourism, women in one village have created three typical dwellings, and tourists can purchase local products at the park entrance in an improved visitors centre. Other tourism infrastructure is also being upgraded: the park maintains 655 km of tracks each year, has improved picnic areas and is offering tourists the option to visit villages and sleep beneath the stars in mobile 'fly camps'.

Source : Example provided by the European Commission. For more details see African Parks (2014), "Zakouma National Park, Chad", http://www.african-parks.org/Park_6_Zakouma+National+Park%2C+Chad.html, last accessed 27 October 2014.

Adopting a precautionary approach

65. A precautionary approach is often recommended with policies or activities that may have negative effects on biodiversity and ecosystem services because of the interactions between different ecosystems, and their thresholds and tipping points leading to irreversible changes, which are still not well understood (Rockstrom et al., 2009). Furthermore, there may be interactions between tipping points associated with climate change and changes in biodiversity and ecosystem services, or vice versa, and these interactions are not well understood. The precautionary approach is enshrined in Principle 15 of the Rio Declaration. It states that "In order to protect the environment…where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation" (Rio Declaration on Environment and Development, 1992). In other words, if an activity risks having a large negative effect upon the environment, decision makers should err on the side of caution.

Adopting a landscape or ecosystem approach

66. The landscape or ecosystem approach is a strategy for the integrated and multi-disciplinary management of land, water and living resources that promotes livelihoods and the conservation and sustainable use in an equitable way (CBD, 2006; FAO, 2012). It is widely recommended as the best way to explicitly seek synergies between biodiversity and ecosystem services, poverty reduction and other development goals, as well as climate change mitigation and adaptation goals (Harvey et al., 2013; Sayer et al., 2013; Vaz and Agama, 2013; Sandker et al., 2012; Roe et al., 2011; CBD, 2006). It is achieved through multi-stakeholder dialogue, and requires the consideration of both spatial and sectoral integration within the landscape (FAO, 2012). Adopting this approach can be challenging as it requires a shift from project-oriented to a process-oriented way of thinking, without a clear starting or end point, and it requires long-term engagement of all relevant stakeholders (Sayer et al., 2013). The CBD has developed 12 guiding principles of the ecosystem approach (see Annex 3).

Policy coherence for development: biodiversity, ecosystem services and poverty reduction

67. Development co-operation that supports biodiversity and ecosystem services does not operate in a policy vacuum; these activities may be undermined by other aid or non-aid policies, both in OECD countries and by OECD countries in partner countries. The interaction between non-aid or development policies and development outcomes is the main concern in the notion of "policy coherence for development" (PCD). In the case of biodiversity, particular policy areas where policy coherence for development issues may occur are: fisheries access agreements, which may lead to overexploitation; regulation concerning food products whose production harms biodiversity, such as palm oil; regulations concerning the use and export of chemicals and pesticides; regulations concerning the exploitation of genetic resources in partner countries; support for biofuel production in partner countries; trade in endangered species; and mining in partner countries (King, 2013; OECD, 2012c). These sorts of challenges may be addressed by pursuing PCD. PCD aims to minimise the adverse impacts that public policies can have in developing countries, and therefore "entails the systematic application of mutually reinforcing policies and integration of development concerns across government departments to achieve development goals along with national policy objectives" (OECD, 2012c).

68. A whole-of government approach is recommended to achieve PCD, first in making a high-level commitment to PCD, then in establishing working practices and co-ordination mechanisms to work between ministries on the elaboration and implementation of policies, and finally in improving the monitoring, analysis and reporting on the outcomes of these policies (King, 2013; OECD, 2012c). Specific recommendations to take biodiversity and ecosystem services into account in OECD policies that affect development include: taking measures to limit trade in endangered species, e.g. by making it non-lucrative; reassessing biofuel policies to consider their potential impact on biodiversity and ecosystem services; supporting sustainable fisheries management, certification schemes and policies to avoid excess fishing in partner countries; recognising the authority of partner countries (particularly local and traditional communities) to determine access to genetic resources; and legislating the increased transparency and sustainability of extractive industries operating in partner countries (King, 2013; OECD, 2012c).

Gaps identified and possible areas for future work

69. This section has laid out the importance of clarifying the objective, of measurement approaches, and of identifying, assessing and managing trade-offs and synergies in order to achieve the intended results of an activity. An important area for further work would be to gather more examples to illustrate how the tools in Table 4 and the principles and practices to manage for results, listed above, have been implemented in the field and to understand their effectiveness to deliver results. This would help to develop and strengthen the evidence base for how to best use these tools and how to best minimise trade-offs and maximise synergies on the ground across biodiversity and development objectives.

IV. MONITORING AND EVALUATION

70. Monitoring for development refers to the systematic collection of data along specific indicators to provide information and manage an on-going intervention (OECD, 2009a). Monitoring informs progress in the use of allocated funds and achievement of stated objectives. Importantly, this exercise is underpinned by a theory of change that explains how long-term goals are achieved – and which maps backward the expected causal chains and necessary preconditions for success (White, 2009). Effective monitoring also depends upon clearly defining the intended results of an intervention, as well as identifying the factors that can affect how those results are achieved – and depends on the knowledge base available and how this knowledge is used to inform haw the intervention is designed. In turn, this will determine what can be achieved and what is to be measured (see Section 3).

71. While monitoring can provide useful information to policy-makers, evaluation provides in-depth insights into whether and how results were actually attained. Development evaluation is the systematic and objective assessment of an on-going or completed intervention, including its design, implementation and results (OECD, 2009b). The evaluation process aims to: (a) adjust and improve on-going and future aid interventions and policy by providing credible, independent analysis and recommendations, and by linking past and future activities through feedback mechanisms; and (b) provide a basis for transparency and accountability on the policy process. Concretely, development evaluations assess the relevance, effectiveness, efficiency, impact and sustainability of an intervention (the five DAC evaluation criteria; see OECD, 2011a). These criteria also apply to biodiversity-related interventions.

72. This section explores the frameworks used by development co-operation providers to monitor and evaluate their biodiversity and ecosystem service interventions in partner countries. In particular, it looks at specific features of and challenges posed by biodiversity and ecosystem service interventions to monitoring and evaluation; and at how the five OECD DAC evaluation criteria have been applied. This is illustrated with a number of good practice cases. The analysis draws primarily from the academic and grey literature, and the development co-operation agency evaluations posted in the DAC Evaluation Resource Centre (DEReC).[15] The evaluations analysed were selected on the basis of their relevance to biodiversity and ecosystem services, quality regarding the explanation of methodologies used to evaluate an intervention and the clarity of the results presented (see Annex 5 for an overview of these).

Key features and challenges for monitoring and evaluating biodiversity and development

73. Monitoring and evaluation processes for biodiversity and ecosystem services and development have typically been constrained by a shortfall in the resources allocated to this task (e.g., due to reluctance from managers of biodiversity-related interventions to divert resources from implementation or hesitancy to expose shortcomings of an intervention; Davies et al. 2013). Since the 1990s, however, monitoring and evaluation have been common in the field (see Joppa et al. 2008; Bottrill et al. 2011), reflecting a growing desire to increase learning and accountability from biodiversity-related interventions, as well as to ensure that thinly stretched budgets go as far as possible (and possibly increase) by demonstrating effectiveness in achieving desired outcomes.

[15] For further information see: http://www.oecd.org/derec.

74. Monitoring and evaluating biodiversity-related interventions in the context of development has sometimes been unable to facilitate an understanding of causal impacts across a number of relevant variables and to foster learning and accountability (e.g., Davies et al. 2013; Roe et al. 2013). On the one hand, this is due to the fact that the available knowledge base underlying what is causing biodiversity loss (see Figure 1) is not always informing the types of interventions designed, which in turn thwarts the effectiveness of monitoring and evaluation as an exercise that can help improve on-going and future interventions (see White, 2009). On the other hand, this may be the result of specific biodiversity-related features that make monitoring and evaluation more difficult than in other fields of development evaluation, such as (e.g. Ferraro and Pattanayak, 2006):

- Definitions of biodiversity and ecosystem services, and agreement on how to measure these over time, are often ambiguous, as are definitions of other concepts typically targeted with biodiversity-related interventions (see Box 1). This "cascades to vague objectives and difficulty in developing targets and indicators to gauge performance" (Davies et al. 2013; also see Section 3 of the paper on managing for results);

- The outcomes targeted by interventions related to biodiversity and ecosystem services tend to be local in nature. Yet strong and complex spill-over and leakage effects over a broader geographic area are common and these are difficult to capture through routine monitoring of individual programmes;

- Enforcement and "cheating" in many interventions (e.g., conservation or certification schemes) can be hard to verify. This may also compound with weaker governance structures and unclear property rights in many developing countries, thus making it difficult to find counterfactuals against which monitoring and evaluation could be performed from a cross-section perspective and over time (Honey-Rosés et al. 2011);

- Outcomes related to biodiversity and ecosystem services often respond slowly to interventions (e.g., forest or wildlife stocks change over many years). Measuring progress is relatively difficult because the time required to demonstrate positive change to social and ecological systems is lengthy and often extends well beyond the lifespan of most interventions (Hildén 2009). Moreover, stretched time horizons reduce the incentives to learn from an evaluation for the staff involved in the exercise (e.g. due to staff promotion policy);

- Relevant data and information related to biodiversity and ecosystem services is often poor or lacking, especially at the community or local level in many developing countries (Roe et al. 2013b);

- Monitoring and evaluation is further complicated by a lack of understanding of social science research by natural scientists implementing biodiversity-related interventions, and vice-versa (Davies et al. 2013). Few multi-disciplinary methodological approaches are readily available to conduct development evaluation in the field of biodiversity and ecosystem services.

75. These features result in three specific methodological challenges that affect monitoring and evaluation of interventions related to biodiversity and ecosystem services and development, namely: (a) the problem of outcome attribution of biodiversity and ecosystem service interventions; (b) difficulties setting baselines and targets given relatively uncertain operating contexts in developing countries; and (c) the challenge of monitoring and evaluating biodiversity and ecosystem services over time (Dinshaw et al., forthcoming). While this is not a comprehensive list and these challenges are not unique to biodiversity and ecosystem services, their combined scope and scale are.

76. Depending upon the assumptions and methods used, these challenges can bias monitoring and evaluation results. The time frame and spatial scale chosen for an intervention may provide a first explanation on why this is the case, for these determine which activity options are socially and environmentally optimal or desirable (WRI, 2008; Perrings and Halkos, 2012). In general, the longer the time frame and the broader the spatial scale, the more likely for biodiversity and ecosystem services interventions to have socially optimal outcomes. Alternatively, a second explanation may have to do with how objectives (what the intervention is trying to achieve and for whom) are defined in an intervention, e.g. by taking poverty-centric and/or cost- and nature-centric approaches (see Section 3).

77. Providers can draw from the work of the Biodiversity Indicators Partnership (BIP)[16] and the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) [17] to prioritise, plan, monitor and evaluate biodiversity-related interventions. The BIP (see Section 3) helps to evaluate progress towards meeting the global Aichi Biodiversity Targets, and may also be adapted to help track progress towards national biodiversity goals as expressed, for example, in NBSAPs. The widespread adoption of the BIP approach could help to harmonise the measurement of changes in biodiversity and ecosystem services initiated by development interventions across providers.

78. The IPBES is an independent inter-governmental body established in 2012 and a learning body to assess the state of biodiversity, its ecosystems and the essential services they provide to society. IPBES provides a mechanism recognised by both the scientific and policy communities to synthesise, review, assess and critically evaluate relevant information and knowledge generated worldwide by governments, academia, scientific organisations, non-governmental organisations and indigenous communities. IPBES also aims to strengthen capacity for the effective use of science in decision-making on biodiversity and ecosystem services at all levels. By doing so, it can support existing processes ensuring synergies and complementarities in all stakeholders' work. This practice would facilitate the improved targeting of funding and investments to the most vital needs and ensure better harmonisation among providers (see also Section 5).

[16] http://www.unep-wcmc.org/featured-projects/a-partnership-to-monitor-biodiversity

[17] http://ipbes.net/about-ipbes.html

Evaluation of biodiversity and development: overview of current practice

79. The OECD DAC's Network on Development Evaluation[18] has developed common Principles for Evaluation of Development Assistance (OECD, 1991; reviewed in 1998) to guide the management and institutional arrangements of the evaluation system within development co-operation agencies (see Annex 4). These principles are at the heart of on-going efforts to make development co-operation more effective, while helping to demonstrate results from development activities (OECD, 2013f). For example, these principles pertain to the need of communicating evaluation findings in a clear, accessible and easily understood manner to the relevant stakeholders shaping the domestic policy agenda, and dedicating sufficient resources to monitoring and evaluation. These principles also apply to interventions in the area of biodiversity and ecosystem services and underpin the findings presented in this section.

80. A preliminary study of nine evaluations from Austria, Denmark, Finland, France, Norway, Spain, Switzerland, the United States, and the World Bank, available at the OECD DAC DEReC database (for more details see Annex 5) illustrates that providers typically follow OECD DAC principles and criteria, although the extent to which this is done varies. The tools used to identify causal chains and assumptions, and the selection of indicators to monitor progress, vary across cases. As a way of illustration, the preliminary review conducted here shows that, for example, in the US, funding was tied to clear, evidence-based justifications for the programme design; while in Spain it was not. In Finland, the evaluation provided lengthy background documentation; while Austria and Switzerland provided a more targeted evaluation of a project or programme respectively. France, Spain and the US conducted their evaluations internally, while Austria and Finland relied on external consultants. The interventions monitored and evaluated in this sample of studies concern supporting the development of protected areas, payments for ecosystem services, and certification schemes, integrating biodiversity into development plans and policies, and helping with the decentralisation of natural resource management to the local and community level – some also target more than one of these elements.

81. The background review provided in this paper confirms that providers do not always gather relevant ecological and social data systematically over time to conduct monitoring (e.g., on conservation, Kapos et al., 2008). Without appropriate baseline information, using alternative highly-aggregated or descriptive data and indicators to measure progress (even if these are already collected and used on a regular basis) may be unfit for purpose: they may be too narrow, broad or partial to capture the multidimensional impact of many biodiversity-related interventions (Axford et al., 2008; Pullin and Knight, 2009). From the sample of evaluations analysed here, only four (Finland, France, US, World Bank) specified indicators to measure progress.

82. Evaluations in the field of development are generally weaker at looking at interventions over long periods of time, a critical element for biodiversity and ecosystem services. However, comprehensive evaluations of biodiversity-related programmes stretching over many years and covering many interventions were identified in the cases of Finland, France, the US and the World Bank. Yet in the majority of evaluations reviewed, case-study narratives from individual field initiatives were included, raising questions on their rigour, e.g., they lack explicit theories of change linking interventions to impacts and outcomes (White, 2009). Methodologically, this approach prevents providers from further exploring the use of counterfactuals, or from better demonstrating causality and attribution in complex contexts (see Ferraro and Pattanayak, 2006; Margoluis et al. 2009; Gaarder and Annan, 2013; Roe et. 2013b).

[18] The Network on Development Evaluation is a subsidiary body of the OECD DAC. Its purpose is to increase the effectiveness of international development programmes by supporting robust, informed and independent evaluation (see: http://www.oecd.org/development/evaluation).

83. Finally, the evaluations analysed consider the political economy and context in which interventions take place (see also Kennedy et al. 2009; Miteva et al. 2012), but this generally reflects an ex post consideration. This limits the effectiveness of many interventions because, e.g., uncertain property rights, corruption or the lack of strong institutions can impact how biodiversity and ecosystem services interventions are carried out, but they are not considered from the outset (Vincent, 2010). Moreover, evaluations are typically performed shortly after completion of an intervention, which usually happens before the full impact of the intervention can become apparent. Examples of long-term evaluations (e.g., over 10-15 years after completion) are rare.

Understanding the general DAC criteria for best practice in monitoring and evaluation

84. The OECD DAC has developed a set of evaluation criteria to support evaluation activities based on relevance, effectiveness, efficiency, impact and sustainability (OECD, 2011a). The extent to which these evaluation criteria have been adapted to biodiversity-related interventions is explored here, illustrating each criterion with good practice based on the evaluations selected (see Annex 4).

85. *Relevance* refers to the extent to which an activity is suited to the priorities and policies of the target group, partner country and provider of development co-operation (OECD, 2011a). The Mesoamerican Green Corridor (MBC) project implemented since 1997 by the World Bank provides a good illustration of how this criterion is approached. The project's evaluation, performed by the World Bank's Independent Evaluation Group, found the MBC to be "highly relevant" (IEG, 2011). This was based on a comprehensive analysis of irreversible biodiversity loss in the Mesoamerican area, using quantitative and qualitative criteria (e.g., number of unique species, land mass to be covered, community engagement), and a concrete theory of change based on the creation of core, buffer, multiple use and corridor zones in the region to protect biodiversity. To ensure community participation, support was provided to market an array of environmental goods and products growing in the area to the Central American and global society. The result was the creation of a few large areas of intact natural habitat connected by strips of sustainably managed habitat.

86. *Effectiveness* is a measure of the extent to which an aid activity achieves (or is likely to achieve) its objectives (OECD, 2011a). Norway's International Climate and Forest Initiative (NICFI) provides a good example of an effective programme. NICFI aimed to contribute to the development of an international regime to Reduce Emissions from Deforestation and forest Degradation (REDD+) and biodiversity loss by influencing climate negotiations; supporting relevant bilateral and multilateral initiatives and related institutional frameworks; and funding research and policy advocacy to develop a relevant body of practice and methods. Progress towards these policy goals was assessed using indicators relating to policy and institutional requirements needed to deliver a working REDD+ regime. The results of a 2010 "real time" evaluation of NICFI show that Norway has been effective in: (a) injecting overall momentum into UN climate negotiations through the strategic direction and financial commitments provided by NICFI; (b) contributing to an agreement on a phased approach towards a fully functioning, results based financing system; (c) supporting institutional capacity building through the UNREDD programme, the Forest Carbon Partnership Facility, and the Congo Basin Forest Fund; (d) and contributing to the development of the Interim REDD+ Partnership (Norad, 2010). These objectives remain relevant given the underlying, broader objective of halting biodiversity loss (but could have been even more relevant if evaluated by taking trade-offs into consideration).

87. *Efficiency* is an economic term which is used to assess the extent to which aid uses the least costly resources possible in order to achieve the desired results (OECD, 2011a). This is not only limited to the efficiency of reaching an output, but also concerns the relationship of this output with the driving factors identified in the theory of change of the intervention. This is probably one of the most challenging principles and from the sample of evaluations analysed here, the Austrian project on "Sustainable coffee production and processing coupled with income diversification in Mbeya and Mbozi District in Tanzania" provides a good illustration of the first part of the efficiency criterion. The project aimed to increase farm income through sustainable coffee farming and promotion of other promising crops in a cost-effective manner. The evaluation of the project concluded that the management was professional and the resources disbursed were used efficiently, a conclusion arrived at after analysing alternative staffing and other cost configurations. The project was implemented through a number of partner organisations and NGOs, which provided highly specialised knowledge in a relatively lean manner (GPPI, 2009). Concerning the second part of the criterion, however, no evaluation surveyed for this paper considered the scale of their intervention to achieve broader results (e.g., in the case of the Austrian project, there was no consideration of how could the project halt and/or reverse biodiversity loss and the benefits of avoiding this loss more generally).

88. *Impact* is the positive and negative change(s) and effect(s) produced by a development intervention, directly or indirectly, intended or unintended, along local, social, economic, environmental and other development-relevant dimensions (OECD, 2011a). The USAID LIFE Project assisted the Namibia National Community Based Natural Resources Management (CBNRM) programme for 15 years (Jones, 2004), thus providing for a comprehensive analysis of immediate and long-term impacts of intended and unintended effects of the intervention. The evaluation of the project determined that the project provided an additional 59% of landmass compatible with Namibia's existing protected area network (Jones, 2004), which is particularly significant to the biodiversity health of Namibia's park system, where low and sporadic rainfall frequently requires extensive movements of wildlife between parks and adjacent communal lands. Moreover, the project was adapted to ensure conservation areas could be accessed and used by local communities, promoting new opportunities for wildlife and tourism. This has reduced poaching, wildlife recoveries and innovative land-use planning processes that are widespread across Namibia. Other studies also provide robust evaluations of this project on poverty reduction outcomes in Namibia (World Bank, 2004; Bandyopadhyay et al., 2009).

89. *Sustainability* measures whether the benefits of an activity are likely to continue after provider funding has ceased, and includes environmental and financial sustainability (OECD, 2011a). A good example of this criterion is the evaluation of Finnish Support to Forestry and Biological Resources that reviewed the portfolio of forestry programme interventions in Kenya, Lao PDR, Mozambique, Nicaragua, Tanzania, Vietnam and Zambia, as well as regional interventions in Central America and the Western Balkans (Ministry of Foreign Affairs of Finland, 2010). A central requirement for sustainability identified by the evaluation is having the institutional capacity to carry out sustainable forest management and take it forward after the original intervention, as well as policy reforms and political commitment, and supportive legislation and regulations that are also endorsed and applied. The evaluation found that the institutional capacity in Vietnam, Western Balkans and Central America looked positive based on achievements reached and the level of investments made by the partner country institutions. Also, regarding policy reforms and political commitments in Kenya, the evaluation found that the government was carrying key forest sector reforms forward. Other possible intervening factors, however, such as the trade-offs with market forces or economic growth were not analysed.

Gaps identified and possible areas for future work

90. There are a number of research streams where potential future work could be fruitful to strengthen monitoring and evaluation and hence understanding of biodiversity-related development activities. These include (a) better testing and refining of theories of change that underpin biodiversity-related interventions, especially the most common ones (e.g. on payments for ecosystem services); (b) the expansion of case studies to examine a broader range of country experiences, e.g. countries where monitoring and evaluation is more advanced compared to those countries where it is not, and/or evaluations from non-OECD countries, including a more systematic review of how OECD DAC members manage and arrange their monitoring and evaluation systems; (c) the identification and application of methods and approaches from other scientifically complex (non-biodiversity) development co-operation areas (in particular with respect to including broad special scales and long time frames); (d) the deeper study of trade-offs and synergies that can be achieved through biodiversity-related interventions, notably poverty reduction; and (e) a meta-analysis of monitoring and evaluation findings from a broad sample of case studies e.g., making sure the DAC criteria are an appropriate and sufficient set of criteria, by taking into account the specific objectives and theory of change of the intervention being evaluated, as well as the purpose of the evaluation.

91. These research streams could strengthen the current practice of monitoring and evaluation and thus inform better biodiversity-related interventions. In particular, this information in hand, providers could then determine what works well (or not) in the biodiversity and ecosystem services space, and thus scale-up and/or transfer their successful interventions to other settings. Such work would help fill the practical gaps identified in the literature regarding how monitoring and evaluating biodiversity-related interventions are typically performed.

IV. EFFECTIVE DEVELOPMENT CO-OPERATION: ALIGNMENT AND HARMONISATION

Introduction

92. Current understanding of what is "effective development co-operation" has its roots in the early-2000s. At this time, the formulation of the Millennium Development Goals gave increasing impetus to the need to make development aid more effective. By 2005, various initiatives to improve the impact of aid were brought together under the *Paris Declaration on Aid Effectiveness*, which sets out five principles for aid effectiveness: country ownership, alignment, harmonisation, managing for results and mutual accountability. In 2008, the *Accra Agenda for Action* reiterated the Paris principles and set out three further pillars around which to concentrate efforts, including the support of country ownership through greater use of country systems and provision of "demand driven" capacity development. The subsequent *Busan Declaration on Effective Development Co-operation* (2011) further refined these (see Box 8), adding the need for inclusive development partnerships and for transparency.

Box 8. International principles of effective development co-operation

The *Paris Declaration on Aid Effectiveness* (2005) outlines five fundamental principles for making aid more effective, born out of decades of experience of what works and what does not work for development (country ownership, alignment, harmonisation, managing for results and mutual accountability). These principles are further elaborated by the *Busan Declaration* (2011), which fleshed out some of these principles to form the foundation of effective development co-operation, namely:

- **Ownership of development priorities by developing countries**: Partnerships for development can only succeed if they are led by developing countries, implementing approaches that are tailored to country-specific situations and needs.
- **Focus on results**: Investments and efforts must have a lasting impact on eradicating poverty and reducing inequality, on sustainable development, and on enhancing developing countries' capacities, aligned with the priorities and policies set out by developing countries themselves.
- **Inclusive development partnerships**: Openness, trust, and mutual respect and learning lie at the core of effective partnerships in support of development goals, recognising the different and complementary roles of all actors.
- **Transparency and accountability to each other**: Mutual accountability and accountability to the intended beneficiaries of co-operation efforts, as well as to respective citizens, organisations, constituents and shareholders, is critical to delivering results. Transparent practices form the basis for enhanced accountability.

Source: Paris Declaration on Aid Effectiveness, 2005; Busan Declaration on Effective Development Co-operation, 2011.

93. All members of the OECD Development Assistance Committee (DAC) have endorsed these principles, which are applicable to all development co-operation activities, including those related to biodiversity and ecosystem services. In fact, the OECD DAC *Policy Statement on Integrating Biodiversity and Associated Ecosystem Services into Development Co-operation* (OECD, 2010b) reiterates the principles of the Paris Declaration and Accra Agenda for Action.

94. Implementation of these principles and commitments to integrate them into development co-operation activities of DAC members is well under way and the OECD has been monitoring progress since 2006 (OECD, 2007, 2008, 2012, 2014). To this end, a number of indicators have been developed and adapted over time, a number of which will be elaborated upon below.

95. This section explores how providers of development co-operation have applied the principles of alignment[19] and harmonisation[20] (see Box 9 on key points emerging from the Third Annual Workshop on the NBSAPs 2.0 on these two principles). This is based on preliminary desk research that draws on grey and academic literature, on a quantitative analysis of biodiversity-related finance at the sector level in selected countries using the OECD DAC Creditor Reporting System database, and on discussions with stakeholders. Illustrations of good practice, key challenges encountered and gaps for future work are highlighted.

Box 9. Key points emerging from Third Annual Workshop on the NBSAPs 2.0 on alignment and harmonisation

During the meeting of the Third Annual Workshop on the NBSAPs 2.0: Mainstreaming Biodiversity and Development Project: "Mainstreaming Biodiversity and Development – What does success look like?", 23-25 July 2014, Okahandja, Namibia (see Section 2) a session was devoted to looking at partner country experiences of development co-operation related to biodiversity and ecosystem services. The key points emerging from the discussion with participants relating to alignment and harmonisation, and which could be explored in future work included:

- Ownership by partner countries can be supported by building common accountability mechanisms and by waiting to harmonise positions across providers around partner country priorities, as opposed to the development co-operation providers imposing their priorities.
- There is a need to support processes of implementation of strategies and plans that the partner country has developed, instead of supporting isolated projects. Implementation processes require sustained support over long periods of time, i.e. at least 10 years.
- There is a need to build local capacity, including at the technical and policy levels, and to build and strengthen institutions in partner countries to deal with biodiversity instead of delivering related projects that do not empower the country.
- There is a need to support local communities to manage biodiversity, and to ensure that funds provided through budget support are ear-marked for biodiversity (otherwise they might end up financing infrastructure unrelated to the topic).
- Often providers work through civil society and do not consult with the governments – making it difficult for the partner country government to own the activity.
- Partners need to target provider's local offices and embassies – they have to become "biodiversity champions", especially because these officials are often sitting in provider co-ordination bodies (such as the Joint Assistance Strategies of Kenya or Zambia).

[19] Alignment means that development co-operation providers align behind the objectives of developing country strategies and use local systems.

[20] Harmonisation means that providers co-ordinate, simplify procedures and share information to avoid duplication) to their biodiversity-related interventions.

- Co-ordination bodies were criticised by these partner countries as being "talking shops" lacking effectiveness, due to a lack of resources and no Secretariat to carry out work.
- Project proposal templates are cumbersome for partner countries – and in some cases positive discussions with the provider do not lead to the project being adopted.
- Countries are aware of activities being funded and implemented by the GEF, World Bank and UNDP, but they rarely mentioned bilateral donors; it appears that bilateral donors do not have a high profile in these countries, or at least are not well known to partner country officials working in the Ministry of Environment.

Development co-operation providers' alignment with partner countries' priorities

96. Alignment means that providers base their support on partner countries' national development strategies, institutions and processes. For example, providers commit to use country systems as the default option for programmes managed by the public sector. In return, partner countries improve the quality and transparency of their public financial management systems. A lack of alignment leads to unsustainable outcomes, as well as undermining national institutions and processes; and reflects efforts to build the institutional strength of partner countries (Birdsall and Kharas, 2014). By supporting this dimension, providers signal their willingness to make a long-term investment in the ability of partner countries to develop and implement their own strategies.

97. Given the multi-dimensionality of the principle, measuring alignment relies on a variety of indicators. Until 2011, monitoring progress towards more effective development co-operation by increasing alignment has been monitored by the OECD by looking at: the extent to which reliable country systems are being built (indicator 2), the degree of alignment of aid flows with national priorities (indicator 3), co-ordination of support to strengthen capacity technical co-operation (indicator 4), using strengthened country systems (indicator 5), avoiding parallel implementation structures (indicator 6), providing more predictable aid (indicator 7), and untying aid (indicator 8) (OECD, 2007). With the Global Partnership for Effective Development Co-operation (2011), alignment is monitored through a related and reduced set of indicators, namely (a) meeting developing countries' priorities, (b) aid is on budgets which are subject to parliamentary scrutiny, (c) developing countries' systems are strengthened and used, and (d) aid is untied (OECD, 2014). A number of alternative indicators to measure alignment have also been proposed by academia, civil society and think tanks, such as coverage of forward spending plans, aid predictability, and the share of aid to partners with good operational strategies (see Birdsall and Kharas, 2014 for an overview).

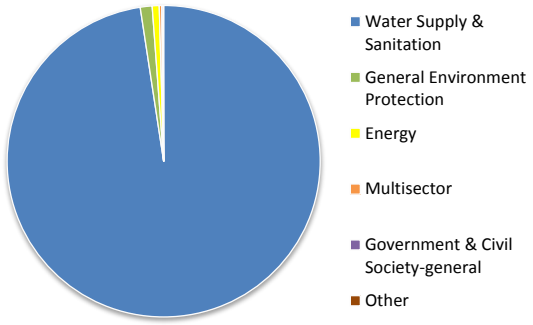
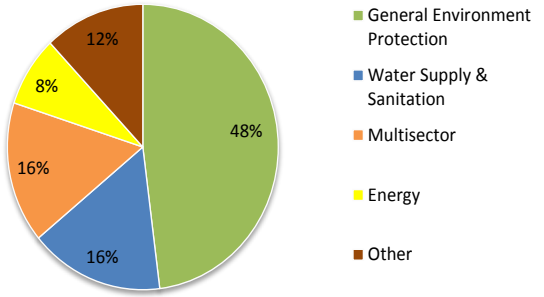
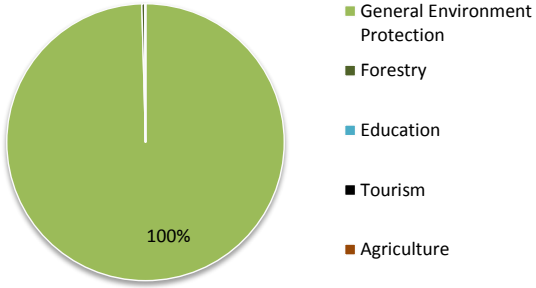
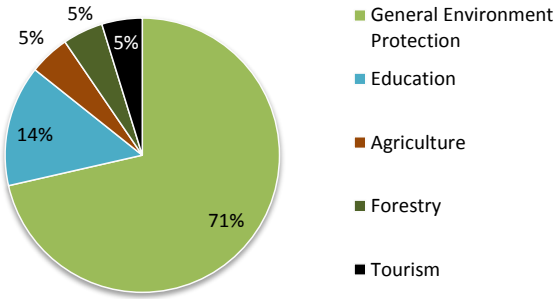
98. Overall, providers have made progress on giving countries a greater say in their own development. For example, the share of aid going to priorities identified by the partner country has doubled since 2008, the use of parallel project implementation units has halved, and most aid (over 80%) is now recorded on government budgets (Birdsall and Kharas, 2014; OECD, 2014). At the same time, a number of challenges have also been identified, for example regarding the use of country systems and country results frameworks (OECD, 2012c; OECD, 2014).

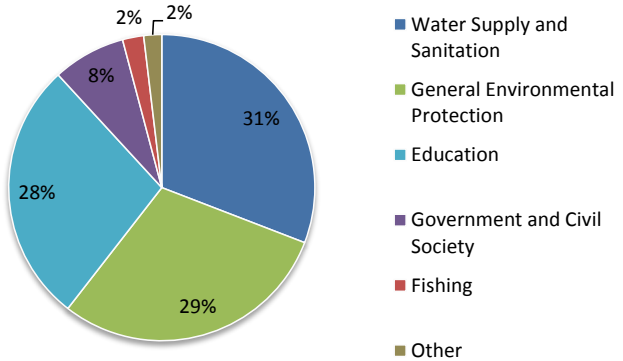
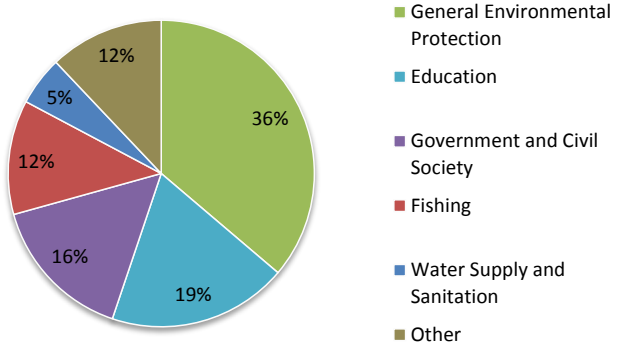
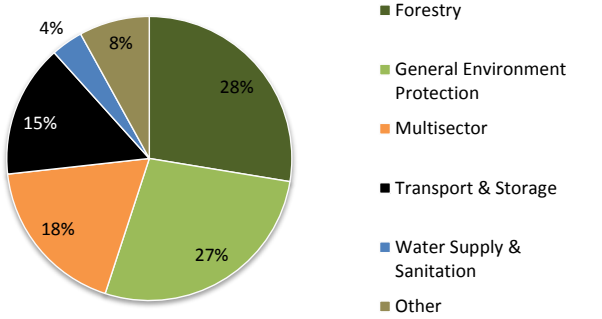
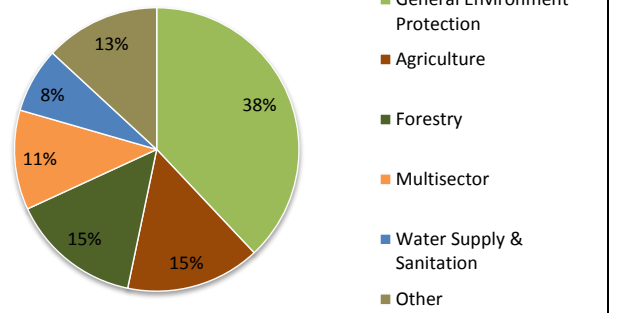
99. There is relatively little work on the issue of alignment in the field of biodiversity and ecosystem services. Some studies have shown that providers tend to prioritise particular kinds of objectives, which may not always reflect those put forward by partner countries in this space. For example, biodiversity-related interventions do not always target poverty reduction objectives, and as a result these tend to be unstated or poorly articulated (Pullin et al., 2013). Also, biodiversity-related interventions need to be based on long-term commitments that reflect the time needed for impact (Blom et al. 2010), but providers tend not to focus on short-term and flexible funding, and do not or cannot accept trial-error type of ventures (Bottrill et al. 2011). Finally, substantial work has been performed on Sector-Wide Approaches (SWAps), which emerged in the 1990s out of a growing dissatisfaction with the traditional project approach which has often been viewed as "fragmented [and] donor-driven" and as entailing high transaction costs for aid recipient countries (AfDB, 2004). SWAps emphasize greater reliance on government institutions, common implementation procedures and stronger and closer country partnership with providers of development co-operation.

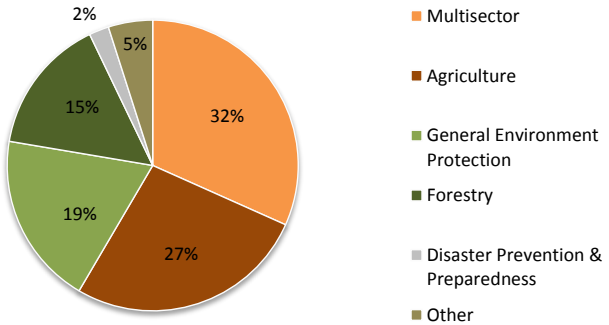
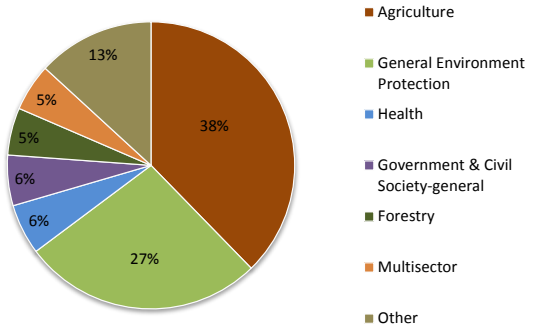
100. Progress on alignment can be considered by looking at the share of aid flowing to partners' top biodiversity-related priorities through reviewing a sample of how SWAps operate in practice. First, developing country priorities are identified through National Biodiversity Strategy and Action Plans (NBSAPs) and are compared to the main sectors targeted by bilateral aid. Analysing ODA data is a good starting point for this analysis given that ODA is likely to remain a key source of funding for biodiversity for many developing countries in the near future (Development Initiatives, 2013). However, providers may have a major impediment to enhance funding for biodiversity and ecosystem services if a partner country fails to identify biodiversity and ecosystem services as priorities in its national development plan (see WWF 2008 on the European Institutions). Providers may sponsor activities that raise awareness among key stakeholders in partner countries on the importance of addressing biodiversity and the value of ecosystem services.

101. The selected partner countries for this exploratory analysis are Azerbaijan, Guyana, Kiribati, Lao People's Democratic Republic (Lao PDR) and Malawi. These provide a geographical range, their NBSAPs are relatively recent (2004-10), and the proportion of total ODA committed to the country that targets biodiversity and ecosystem services is above the global average. It is noteworthy that the more recent NBSAPs (i.e. after 2010) are relatively clearer on what the priorities and capacity needs of countries are (e.g., Botswana). However, not all countries have developed a second generation NBSAP, and those that have are often too recent for this analysis; the DAC CRS database extends until 2012 (at the time of the analysis), thus making it difficult to compare flows with recently-set country priorities. Table 5 provides an overview of the five main sectoral priorities identified by these countries in their NBSAPs and the top five sectors targeted by providers in their biodiversity-related interventions there. The sectoral distribution of ODA is presented both in terms of US dollars and in terms of number of activities, as large projects can heavily influence the distribution in terms of US dollars.

Table 5. Main sectoral priorities identified by partner countries in their NBSAPs, and targeted by development co-operation providers

Country	Areas prioritised by country	Areas targeted by bilateral aid (USD) (2004-12)	Areas targeted by bilateral aid (number of activities) (2004-2012)
Azerbaijan (2/5)*	1. Capacity building 2. Agriculture 3. Water supply and sanitation 4. Forestry 5. Tourism	 Share of biodiversity aid targeting capacity building: 0%	 Share of biodiversity activities targeting capacity building: 44%
Guyana (3/5)*	1. Capacity building 2. Agriculture 3. Forestry 4. Fishing 5. Health	 Share of biodiversity aid targeting capacity building: 93%	 Share of biodiversity activities targeting capacity building: 38%

Country	Areas prioritised by country	Areas targeted by bilateral aid (USD) (2004-12)	Areas targeted by bilateral aid (number of activities) (2004-2012)
Kiribati (3/5)*	1. Capacity building 2. Fishing 3. Forestry 4. Agriculture 5. Water supply and sanitation	 Share of biodiversity aid targeting capacity building: 85%	 Share of biodiversity activities targeting capacity building: 49%
Lao PDR (2/5)*	1. Capacity building 2. Forestry 3. Energy 4. Mining 5. Agriculture	 Share of biodiversity aid targeting capacity building: 35%	 Share of biodiversity activities targeting capacity building: 44%

Country	Areas prioritised by country	Areas targeted by bilateral aid (USD) (2004-12)	Areas targeted by bilateral aid (number of activities) (2004-2012)
Malawi (3/5)*	1. Forestry 2. Agriculture 3. Fishing 4. Health 5. Capacity building	 Share of biodiversity aid targeting capacity building: 33%	 Share of biodiversity activities targeting capacity building: 38%

* Numbers in brackets indicate the number of sectors in the top five priority list of partner countries are targeted as top five sectors for biodiversity-related bilateral aid to the partner country.

Source: NBSAPs for Azerbaijan (2008), Guyana (2000), Kiribati (2005), Lao PDR (2006) and Malawi (2008), Available online at www.cbd.int/nbsap/search/default.shtml; OECD DAC CRS database, August 2014.

Notes:

(1) Although "capacity-building" is not a sector in the OECD DAC CRS database, it can be calculated by looking at the sub-categories within each of the sectors in the CRS. In this paper, "capacity building" was calculated by pulling out all sub-categories that included the following words: research, education, training, policy and administration management, and finance. Upon reading sub-category descriptions, the following sub-categories were added: statistical capacity building, agricultural extension, anti-corruption organisations and institutions.

(2) General Environment Protection" covers activities concerned with conservation, protection or amelioration of the physical environment without sector allocation. The category comprises aid to: environmental policy and administrative management (capacity building); biosphere protection; site preservation; flood prevention/control; environmental education/training; environmental research; and a specifically-coded "biodiversity" sub-sector which specifically covers the conservation, protection or amelioration of natural reserves and actions in the surrounding areas, and other measures to protect endangered or vulnerable species and their habitats, such as wetlands preservation.

(3) For activities cutting across several sectors, the "Other Multisector" category is applied.

102. Azerbaijan developed a National Action Plan for the Programme of Work on Protected Areas in 2002, and a NBSAP in 2008. The main area identified in this Strategy related to capacity building to support environmental research, technology, education, policy and administration management (e.g. for the conservation of forests and lakes, assess the value of forests or map biodiversity-related hotspots). Other sectors identified are agriculture, water supply and sanitation, forestry and tourism. Comparing this to biodiversity-related aid flows over 2004-12 shows that providers of development co-operation have focused heavily on water supply and sanitation in dollar terms (98%), but although 98% of funds have been directed towards water supply and sanitation, more activities have been dedicated to general environmental protection (much of which is capacity-building)).

103. Guyana's first NBSAP of (2000) prioritised capacity building activities (human resources and institutional capacity building, research and information, consolidation of the policy, legal and administrative framework, public awareness and education). The other priority activities target the agriculture, forestry and fishing sectors, as well as the health sector. Providers of development co-operation have primarily focused on the general environmental protection sector (99% of all biodiversity-related flows to Guyana), of which an important component is capacity-building for environment-related policy, administration and management. Virtually all of its biodiversity-related aid and activities flow to general environmental protection, agriculture and forestry. Fishing, and health, by contrast, have not received biodiversity-related funds over this period.

104. Kiribati developed its NBSAP in 2005, stating capacity building as the main priority for international development co-operation interventions (education and awareness, assessment of terrestrial and marine biodiversity, etc.), followed by fishing, forestry, agriculture and water supply and sanitation. Providers have been focusing on water supply and sanitation (31% of total bilateral biodiversity-related commitments over 2004-12), general environment protection and other capacity building activities in the education or civil society sector (65% of total biodiversity-related commitments over 2004-12) and fishing (2% of total biodiversity-related commitments over 2004-12). Agriculture accounts for less than 1% of total biodiversity-related commitments over 2004-12, while no forestry intervention had a biodiversity-related objective over that period.

105. Lao PDR NBSAP (2006) also aims at improving biodiversity through capacity building (e.g., improved data, research, management and monitoring, human resource development, awareness). The other sectors that Lao PDR prioritises are forestry, energy, mining and agriculture. Providers have been focusing on the forestry sector (28% of total biodiversity-related commitments over 2004-12, 15% of activities), general environmental protection (27% USD of total biodiversity-related commitments over 2004-12, 38% of activities), multi sector activities (18% of total biodiversity-related commitments over 2004-12, 11% of activities), transport and storage (15% of total biodiversity-related commitments over 2004-12, concentrated in two activities) and water supply and sanitation (4% of total biodiversity-related commitments over 2004-12, 8% of activities) over 2004-12. The energy sector accounts for under 3% of total biodiversity-related commitments over 2004-12, while the mining sector for under 1%.

106. Finally, Malawi's NBSAP (2008) focuses on forestry, agriculture, fishing, health and capacity building activities (policy and legislation, community participation and awareness). Looking at the major sectors targeted by providers of development co-operation, these are multi sector activities (32% of biodiversity-related aid, 5% of activities), agriculture (27% of biodiversity-related aid, 38% of activities), general environment protection (19% of biodiversity-related aid, 27% of activities), and forestry (15% of biodiversity-related aid, 5% of activities). Only two biodiversity-related aid activities out of 281 have targeted fishing over 2004-2012, and 10 activities have targeted health.

107. This preliminary analysis shows that all five selected NBSAPs highlight the need for capacity building, and in all five cases, biodiversity-related capacity building interventions account for at least a third of biodiversity-related aid activities from bilateral donors. More generally, if "General Environmental Protection" is broadly equated with capacity building, for each of the five selected countries, two to three of the top five sector priorities for biodiversity identified by these countries are within the top five sectors targeted by biodiversity-related bilateral aid to these countries. This suggests that there is a certain degree of alignment of providers with these partner countries' priorities and needs. However, in other cases, less alignment is displayed. For example, in Azerbaijan, providers heavily focus their biodiversity-related aid on water supply and sanitation, which is only the fifth priority in this country's NBSAP, and Lao PDR receives 15% of its biodiversity-related aid in the transport and storage sector, which is not mentioned in its NBSAP. It should be borne in mind, however, that bilateral aid is not the only form of finance used to meet biodiversity-related needs in these countries; other biodiversity-related financial flows may be targeting other sectors.

108. A number of Sector Wide Approaches (SWAps) were also reviewed to understand the extent of alignment in biodiversity-related development activities. An increasing number of providers are adopting SWAps as a process for facilitating sustainable development and enhancing the development impact of aid resources (AfDB, 2004). Among the key defining imperatives for an effective SWAps process are: the existence of a government-led and co-ordinated comprehensive sector development programme; the existence of a conducive policy environment or policy reform agenda leading to it; and the commitment and availability of provider resources in the form of sector investment loans and grants for institutional capacity building and studies to underpin sector development issues (AfDB, 2014). SWAps also require the existence of a strong and co-ordinated approach by providers to the relevant sector's challenges as well as the presence of an effective consultation mechanism between the aid recipient or partner country and its development co-operation providers. The approach generally envisages the pooling of providers' financial resources in support of government budget, the use of a common government-led implementation and co-ordination mechanism and a streamlined/harmonised disbursement and procurement procedures.

109. Several recent reviews of SWAps have concerned interventions that include biodiversity-related aid. For example, Denmark has worked with Uganda to prepare a Joint Water and Environment Sector Support Programme (Government of Uganda, 2013), which has contributed to policy development, strategic planning and budgeting, implementation of monitoring and evaluation frameworks for sector reforms, and had a strong co-ordination focus, including on financial management, performance review, joint decision-making and technical support. Similarly, the Netherlands has been active in Colombia (ODI, 2008), Senegal and Vietnam (Meta Management et al., 2007); here the SWAps are shown to be helping to align their contribution as much as possible with policy and management frameworks of the country in question and, in particular, to consider how biodiversity and ecosystem services can help reduce poverty.

Harmonisation among providers operating in partner countries

110. Harmonisation responds to concerns that providers' practices do not fit well with national development priorities and systems such as budget, programme and project planning cycles. The demands on partner countries to meet with different providers' objectives, reporting processes and procedures, along with unco-ordinated country analytical work and missions may create excessive transaction costs and reduce the effectiveness of the assistance provided. Providers and partner countries therefore have recognised that urgent, co-ordinated and sustained action is required to reduce overlap, waste and fragmentation among them and to reduce the burden placed upon partner countries (Birdsall and Kharas, 2014).

111. As with the concept of alignment, harmonisation is a multi-dimensional principle. Illustrative examples include harmonising efforts in research, decentralising governance to the sub-national level in partner countries or extension efforts with other sectors, and developing functional linkages between site-based activities run by different development co-operation providers. The *Paris Declaration* called for monitoring progress on harmonisation, and a number of indicators were developed, namely using common arrangements (indicator 9), and conducting joint missions and sharing analysis (indicator 10) (OECD, 2007).[21] Other possible indicators found in the literature include the significance of aid relationships (in terms of volume of aid flows) or the total fragmentation across donor agencies (Birdsall and Kharas, 2014).

112. This sub-section provides a preliminary snapshot of some of the harmonisation activities in the biodiversity and ecosystem services area, in particular by focusing on the existence and effectiveness of using common arrangements to harmonise approaches across providers in a given country. Recent studies show little progress in reducing the burden placed on partner countries (Birdsall and Kharas, 2014), and no academic literature was found on monitoring progress in the area of biodiversity and ecosystem services. However, development co-operation agency documents show that at least some providers are considering harmonisation in their development co-operation activities related to biodiversity and ecosystem services.

113. Harmonisation of provider approaches is first considered at the strategy level and identified as a priority for action at the project level. For example, at the strategy level, the German Strategy on Biological Diversity, which serves as a guideline for country and regional programmes on biodiversity and for the priority strategies of German development co-operation and its positioning in the international debate, has a chapter on in-country target groups and partners. The chapter calls for co-ordination with other development co-operation providers at the national, regional and international level (BMZ, 2008).

114. Development co-operation providers are also encouraged to pursue harmonisation with other providers on the ground. For example, the USAID Fisheries Integration of Society and Habitats (FISH) project aims to consult with the broad community of actors involved with biodiversity conservation of fisheries in Malawi. FISH's objectives are to improve sustainable fisheries co-management and to achieve resilience to climate change. To do so it asks for the integration of FISH activities with other environment-related development efforts in Malawi to leverage mutual benefits (in particular with Norway, the UK, the EU, UNDP, Iceland, the World Bank and Japan). Illustrative examples of co-ordination efforts under FISH are harmonising efforts in research, decentralisation of governance or extension efforts with other sectors, developing functional linkages between site-based activities.

115. Once formulated and identified as a priority of action, harmonisation tends to be operationalised in the form of Joint Assistance Strategies, which are comprehensive frameworks to manage development co-operation in-country. A number of these have been formulated and evaluated, and include environment- and biodiversity-related chapters, depending on the focus placed on these topics by partners and providers (e.g. the Gambia, Kenya, Tanzania, or Zambia). A preliminary study of the Joint Assistance Strategies of Kenya and Zambia is illustrated below.

116. The Kenya Joint Assistance Strategy (KJAS, 2007-12) provides the basis for the implementation of the government's development strategy, including the country's 2030 Vision. It groups 17 DAC and multilateral donors and serves as a forum to discuss and if necessary formalise the bilateral programmes and agreements with the government. The Strategy recognises that sustained economic growth depends on better environmental management, including of forest ecosystems, wetlands, and semi-arid and arid lands, which contain the key biodiversity habitats; and identifies deforestation and forest degradation as the main causes for the current decline in biodiversity in the country. One key biodiversity-related target of the

[21] With the Global Partnership on Effective Development Co-operation, however, the principle of harmonisation is no longer monitored.

KJAS is to maintain and safeguard habitat and biodiversity from encroachment and species loss. The KJAS is currently being evaluated by external consultants.

117. The first Joint Assistance Strategy in Zambia (JASZ) is an instrument developed by 16 DAC and multilateral donors to co-ordinate their development assistance and align their activities to the country's national development plans. The Strategy has been reviewed and updated with the introduction of successive national development plans. Among the key priorities identified by the JASZ are the sustainable management of fisheries, forests, land, renewable energy and wildlife (IIED, 2009). Additional priorities are: reforming and enhancing the capacity of key government institutions working on the environment; strengthening co-ordination mechanisms; addressing equity and transparency issues in the access and control of natural resources; capturing data on the environment and natural resources sector's contribution to the national economy and in poverty reduction; and assessing the impact of natural resource base degradation on sectors underpinning growth in the country, such as tourism and agriculture (Ministry of Foreign Affairs of Denmark, 2010).

118. The first evaluation of the JASZ concluded that the mechanism led to a more structured process to support the environment in Zambia (Ministry of Foreign Affairs of Denmark, 2010). Information sharing through the JASZ reduced duplication of activities and, where relevant, provided more co-ordinated support to the development of government systems. The dialogue architecture that emerged from the Strategy has made a considerable contribution to encouraging harmonisation. However, the co-operating partners identified generic drawbacks that significantly weakened the Strategy's ability to achieve its objectives (Ministry of Foreign Affairs of Denmark, 2010). For example, the Strategy neither contains specific targets nor does it define indicators against which progress can be measured. A work plan was developed in late 2007 and some elements of this have been implemented but there have been no subsequent work plans and no systematic processes to follow up on the commitments and actions agreed. Also, the government of Zambia was initially neither a signatory to the JASZ nor to the work plan, despite the success of the JASZ depending on government actions and the effective aid principles. Finally, there were doubts regarding the government's leadership and the capacity for the Ministry of Finance and National Planning to manage aid (Ministry of Foreign Affairs of Denmark, 2010). The government has since taken steps to develop a mechanism for taking an effective cross-sector strategic view on development co-operation issues. In important respects, too, existing consultative mechanisms are driven by co-operating partners and often do not respect governmental processes, an issue that would need to be explored in the future. A renewed JASZ II builds on the lessons learned from JASZ I but has not been evaluated yet (Co-operating Partners to the JASZ II, 2011).

119. A final co-ordination instrument is the Informal Donor Meeting (IDM) of the Mekong River Commission (MRC). This instrument groups a dozen DAC providers, including Australia, Denmark, European Union, Finland, Germany, Japan, Sweden, Switzerland, and the United States. The Meeting is helping strengthen relationships between the Commission and the provider community and has fostered transboundary dialogue among riparian countries and other stakeholders, notably in reaching consensus on conducting further study on sustainable management and development of the Mekong River, including the impacts of mainstream hydro-power projects. Providers consider the Meeting a solid co-ordination instrument, allowing them to "speak with one voice" and facilitating provider contact, information exchange and reporting, which in turn is also appreciated by the MRC (MRC, 2013).

Gaps identified and possible future work

Several avenues for future work have been identified in this section on both alignment and harmonisation. First, further work would be necessary to understand what drives the extent of alignment identified here, and how well provider priorities are integrated (or not) into partner arrangements (in particular the linkages between NBSAPs and National Development Plans). Another area requiring further study would be to consider how these alignment efforts could help achieve other development objectives, such as poverty reduction, in biodiversity-related development activities as more broadly enshrined by the Aichi Targets or the forthcoming Sustainable Development Goals. Additional work could explore the other dimensions of alignment, as well as study how bilateral ODA links with other sources of finance, such as domestic resources, multilateral lending and private sector flows. Second, on harmonisation, further work is necessary to understand whether and how providers formulate the harmonisation principle in their strategies, and how individual projects integrate harmonisation into their interventions. Why and how harmonisation is occurring on the ground is another area for future research, which could focus in particular on how providers jointly could support partner countries in reaching the Aichi Biodiversity Targets and on implementing the proposed biodiversity-related Sustainable Development Goals (and the goals where biodiversity has been streamlined), without compromising the need for alignment with national priorities, and what makes some of the instruments reviewed effective (or not) in the area of biodiversity.

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ANNEX 1. STRATEGIC PLAN FOR BIODIVERSITY 2011-2020 AND THE AICHI TARGETS

The CBD Strategic Plan for Biodiversity 2011-2010 and the Aichi Targets were agreed upon at the 10th Conference of the Parties to the Convention on Biological Diversity, in Nagoya in October 2010.

The Strategic Plan is comprised of a shared vision, a mission, strategic goals and 20 ambitious yet achievable targets, collectively known as the Aichi Targets. The Strategic Plan serves as a flexible framework for the establishment of national and regional targets and it promotes the coherent and effective implementation of the three objectives of the CBD.

The vision

"By 2050, biodiversity is valued, conserved, restored and widely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people".

The mission

"Take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication. To ensure this, pressures on biodiversity are reduced, ecosystems are restored, biological resources are sustainably used and benefits arising out of utilisation of genetic resources are shared in a fair and equitable manner; adequate financial resources are provided, capacities are enhanced, biodiversity issues and values mainstreamed, appropriate policies are effectively implemented, and decision-making is based on sound science and the precautionary approach."

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

Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

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.

Target 3: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.

Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use

Target 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Target 6: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Target 9:By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Target 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services

Target 14: 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.

Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Target 16: By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building

Target 17: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

Target 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Target 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Target 20; By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.

ANNEX 2. FRAMEWORKS FOR ASSESSING COSTS AND BENEFITS

Name of framework	Description
Cost-Benefit Analysis (CBA)	CBA monetises and weighs up the costs and benefits of a particular intervention, and generally follows these steps: 1. Project definition – as outlined in steps 1 and 2 above 2. Identify the incremental costs and benefits that are expected from the intervention. These may be divided into once-off administrative costs and ongoing implementation costs. Also identify the expected benefits (which can also be framed as avoided costs) 3. Convert the impacts of the intervention into monetary values. This is generally the most technical and time-consuming step in a CBA. 4. Choose the discount rate. This may be the most sensitive step in the CBA, as it determines what value is placed on immediate versus future costs and benefits associated with the intervention. 5. Adjust for equity and distributional concerns (optional). This can be done by applying a weighing or a distributional adjustment on the net costs and benefits to different stakeholders (see OECD, 2006). For an activity targeting poverty reduction, for example, the poor can be given a privileged weighting. 6. Evaluate whether the intervention presents net costs or net benefits, by calculating the Net Present Value or the Internal Rate of Return 7. Conduct a sensitivity analysis, e.g. by varying the time frame or the discount rate of the analysis.
Multi-Criteria Analysis (MCA)	MCA can complement CBA, providing scope for decision-makers to take into account social, environmental and technical criteria in addition to economic and financial aspects. It generally follows these steps: 1. Structuring the problem involves determining criteria for decision-making – these can be quantitative and qualitative, and fall into economic, social and environmental categories. 2. Through multi-stakeholder dialogue and discussions with experts, rank the criteria and transform them into common measurable units. This is the most technical step in the exercise. Using these criteria, evaluate the different intervention options. 3. Choose the best option based both on the scoring and on a sensitivity analysis.
Targeted Scenario Analysis (TSA)	TSA is a framework targeted for use at the production sector level. It weighs the costs and benefits of continuing on a business as usual (BAU) pathway, or following a sustainable ecosystem management (SEM) pathway. It is therefore provides a framework for a dynamic analysis overtime, instead of providing a snapshot at one point in time. The steps of a TSA are: 1. Define the purpose and scope of the analysis. 2. Define the BAU baseline and the SEM intervention. 3. Select criteria and indicators. 4. Construct the BAU and SEM scenarios. 5. Make an informed policy or management recommendation/choice.

Source: Aplizar, F. and Bovarnick, A. (2013), Targeted Scenario Analysis – A New Approach to Capturing and Presenting Ecosystem Service Values for Decision Making, UNDP; TEEB (2010b), TEEB for Local and Regional Policy Makers, TEEB, United Nations Environment Programme, Geneva; OECD (2006b), Cost-Benefit Analysis and the Environment: Recent Developments, OECD, Paris.

ANNEX 3. THE 12 GUIDING PRINCIPLES OF THE ECOSYSTEM APPROACH

The 12 guiding principles of the ecosystem approach

1. The objectives of management of land, water and living resources are a matter of societal choice.
2. Management should be decentralised to the lowest appropriate level.
3. Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems
4. Recognising potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should: a) Reduce those market distortions that adversely affect biological diversity; b) Align incentives to promote biodiversity conservation and sustainable use; c) Internalise costs and benefits in the given ecosystem to the extent feasible.
5. Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.
6. Ecosystems must be managed within the limits of their functioning.
7. The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.
8. Recognising the varying temporal scales and lag-effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long term.
9. Management must recognise that change is inevitable.
10. The ecosystem approach should seek the appropriate balance between the integration of, conservation and use of biological diversity.
11. The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.
12. The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

Source: Adapted from CBD (2006) Biodiversity in EIA and SEA; Background Document to CBD Decision VIII/28: Voluntary Guidelines on Biodiversity Inclusive Impact Assessment; Commission for Environmental Assessment, Netherlands.

ANNEX 4. DAC PRINCIPLES FOR EVALUATION OF DEVELOPMENT ASSISTANCE

Adopted at the OECD DAC High Level Meeting in 1991, the evaluation principles were published in 1992 as part of the DAC Principles for Effective Aid. The principles provide general guidance on the role of aid evaluation in the aid management process, with the following central messages:

Aid agencies should have an evaluation policy with clearly established guidelines and methods and with a clear definition of its role and responsibilities and its place in institutional aid structure;

The evaluation process should be impartial and independent from the process concerned with policy-making, and the delivery and management of development assistance;

The evaluation process must be as open as possible with the results made widely available;

For evaluations to be useful, they must be used. Feedback to both policy-makers and operational staff is essential;

Partnership with recipients and donor co-operation in aid evaluation are both essential; they are an important aspect of recipient institution-building and of aid co-ordination and may reduce administrative burdens on recipients;

Aid evaluation and its requirements must be an integral part of aid planning from the start. Clear identification of the objectives which an aid activity is to achieve is an essential prerequisite for objective evaluation (paragraph 4).

Impartiality and independence from the process concerned with policy making and the delivery and management of development assistance (paragraph 11).

Credibility depends on the expertise and independence of the evaluators and the degree of transparency of the evaluation process, and that both successes and failures are reported, as well as on participation of recipients (paragraph 18 and on participation of donors and recipients see paragraph 23).

Usefulness and relevance to have an impact on decision-making (paragraph 21) and timely to have this impact (paragraph 22).

Donor co-operation to learn from each other and avoid duplication of effort (paragraph 26).

An overall plan must be developed by the agency for the evaluation of development assistance activities, with the various activities to be elaborated, with priorities and timetable (paragraph 27).

Design of evaluations by defining purpose and scope, identification of recipients, methods used, standards against which project/programme performance are assessed and the resources and time for the evaluation (paragraph 32).

Source: OECD (2011a), DAC Principles for Evaluation of Development Assistance, Paris: OECD.

ANNEX 5. BIODIVERSITY-RELATED EVALUATIONS CONSULTED

Austria: 2009 Evaluation of the project on "Sustainable coffee production and processing coupled with income diversification in Mbeya and Mbozi District in Tanzania."

Denmark: 2010 Evaluation of Programmatic Approaches to Support for the Environment in Africa (1996-2009).

Finland: 2010 Evaluation of Finnish Support to Forestry and Biological Resources (Main Report).

France: 2011 Evaluation of Projects to Support the Management of National Parcs in Morocco.

Norway: 2011 Real-time Evaluation of Norway's International Climate and Forest Initiative, Contributions to a Global REDD+ Regime (2007-2010).

Spain: 2007 Evaluation of the ARAUCARIA Programme for biodiversity conservation and sustainable development in Latin America.

Switzerland: 2009 Evaluation of SDC's contribution towards biodiversity: impact in the Andean region.

United States: Principles, Processes and Products: Best practices in project design and implementation. Lessons learned from the Living in a Finite Environment Project (LIFE), Namibia 1993-2004.

World Bank: 2011 Regional Program Review of the Mesoamerican Biological Corridor.