Chapter 9

Comparing across the mechanisms: Insights and lessons

This chapter provides a comparative analysis of the six biodiversity finance mechanisms – environmental fiscal reform, payments for ecosystem services, biodiversity offsets, markets for green products, biodiversity in climate change funding, and biodiversity in international development finance – and summarises the circumstances and conditions under which they are most likely to be effective. It then examines cross-cutting issues, such as environmental and social safeguards and capacity and governance needs for effectively implementing biodiversity finance mechanisms.

Drawing on the literature and on a variety of case studies, this report has examined six finance mechanisms available for biodiversity conservation and sustainable use. More specifically, it:

- provides an overview of the finance that has been mobilised across these six mechanisms and considers the potential for scaling these up
- examines the key design and implementation issues that need to be considered so as to ensure that they are environmentally effective, economically efficient and distributionally equitable.

Clearly, these six finance mechanisms fall into a much broader set of instruments available for biodiversity conservation and sustainable use (Chapter 2). To effectively address the global biodiversity challenge, governments will need to also draw on regulatory (e.g. command-and-control) approaches, as well as other economic, information and voluntary instruments, and to identify the most appropriate policy mixes. This is particularly important in the case of biodiversity, as the drivers of loss and degradation are often multiple and stem from market and government failures prevalent in biodiversity policy, as well as policies in other sectors of the economy. The appropriate choice of policy mix will depend on:

- the nature of the environmental problem and drivers of loss
- socioeconomic, cultural and political circumstances
- the governance and institutional capacity needed to effectively implement instruments.

This chapter aims to provide a comparative analysis of the six finance mechanisms and to summarise the circumstances and conditions under which they are most likely to be effective. It then looks at cross-cutting issues, namely the environmental and social safeguards and the capacity needed to effectively implement them.

Comparing across the six biodiversity finance mechanisms

How do these six biodiversity finance mechanisms compare? PES resemble incentive-based environmental taxes and subsidies. The latter aim more at changes in broader patterns of production and resource use, whereas the PES approach of purchasing conservation and/or sustainable use conditionally is even more direct (Wunder, 2007). The ecological value-added tax programme practiced in several Brazilian federal states is a borderline case between PES and fiscal environmental instruments: federal states use tax transfers to reward municipalities for the size and quality of conservation areas for watershed protection and recreational benefits (Grieg-Gran, 2000; May et al., 2002).

Biodiversity offsets impose additional costs on development that adversely impacts on biodiversity. As such, they resemble incentive-based environmental taxes.[1] One of the main differences between these two types of instruments is perhaps that whereas the application of taxes should entail an estimation of marginal biodiversity damages in monetary terms, the units used in biodiversity offsets is biodiversity itself.

Whereas EFR, PES and biodiversity offsets are economic instruments, green markets are facilitated by ecolabelling, which is an information instrument. Ecolabels provide consumers with information to enable them to preferentially purchase products that have been developed in an environmentally and socially responsible way. When consumers are willing to pay a price premium for these products, green markets in some ways overlap with PES, although the former is less direct. Where certified products are demanded by customers but do not fetch a price premium, the costs are borne by the producer; in this regard, green markets more closely resemble taxes.

Biodiversity in climate change funding is a way of harnessing and promoting synergies between the objectives for mitigating and adapting to climate change, and conserving and sustainably using biodiversity. The degree of directness provided by biodiversity in climate change funding will vary depending on the climate change instruments being used. These can be in the form of climate change-related ODA (including ecosystem-based adaptation, REDD+), and via afforestation/reforestation activities in the Clean Development Mechanism, amongst many others.

Finally, with regard to biodiversity in international development finance, biodiversity objectives can be fairly indirect and will depend on the specific projects and programmes that international development finance is intended to support. There may often be considerable overlap between biodiversity in international development finance and the other five mechanisms. For example, international development finance may be delivered in the guise of climate change finance (e.g. REDD+), biodiversity offsets (e.g. FDI projects financed by financial institutions that adhere to the Equator Principles), or PES (e.g. programmes with third-party financing from the World Bank, GEF, or UNEP). International development finance can also be used to fund the capacity building needs that are necessary for the effective development and implementation of each of the other five mechanisms.

These and other elements distinguish these six finance mechanisms. Table 9.1 summarises the extent to which they are able to mobilise finance from local, national and/or international scale; whether the source of finance is public and/or private; the extent to which they impact on the drivers of biodiversity loss and degradation; and whether they are based on the polluter or the beneficiary pays approach.

Table 9.1. **Summary characteristics of the six biodiversity finance mechanisms**

Finance Mechanism	Scope of finance	Source of finance	Direct vs. indirect revenue raising	Impact on drivers of biodiversity loss	Beneficiary vs. polluter pays
Environmental Fiscal Reform	Local, national	Private (and public)	Direct	Direct	Polluter
PES	Local, national, international	Private and public	Direct	Direct	Beneficiary
Biodiversity offsets	Local, national	Private (and public)	Direct	Direct	Polluter
Markets for Green Products	Local, national, international	Public	Indirect	Indirect	N/A
Biodiversity in climate change funding	Local, national, international	Public and private	Indirect	Depends	Polluter
Biodiversity in international development finance	International	Public (and private)	Indirect	Depends	N/A

The transaction costs associated with designing and implementing these different mechanisms will also vary. While it is difficult to say with certainty which mechanism inherently is associated with higher or lower transaction costs (as this will also depend on how they are designed and implemented), EFR for example may be expected to have lower transaction costs than, say, biodiversity offsets. As indicated in Chapter 3 however, the transaction costs of administering and monitoring EFR for dispersed or "non-point" source pollution will be higher than that for point source pollution. And, the generally high transaction costs that may be anticipated with administering biodiversity offsets can be reduced via the introduction of biobanking (Chapter 5). Similarly, the transaction costs associated with administering and monitoring a PES programme are likely to increase as the geographical scope of the benefits from ecosystem services increases and hence the beneficiaries are more widely dispersed as well. Examples of issues to consider to help ensure lower transaction costs in PES design include simple application procedures and contract design.

It is also important to note that the experience and insights amassed over time across these different mechanisms vary. For example, while there is substantial experience with PES programmes and much literature devoted to analysing this mechanism, biodiversity offsets have only more recently begun to proliferate and better monitoring, reporting and verification systems for these programmes will enable more information to be collected so as to learn how they can be improved over time. Pilot systems, such as those undertaken in the United Kingdom are a useful way to learn and adapt the design and implementation of such programmes.

Finance mobilised and scalability

It is difficult to estimate with certainty the amount of finance that has been mobilised (either directly or indirectly) by each of these finance mechanisms. Information available for some mechanisms is more comprehensive than for others. The OECD/EEA database on environmentally related taxes, for example, indicates that while total revenue from environmental taxes in OECD countries in 2010 was slightly below USD 700 billion, taxes on pollution and resources (i.e. those most likely to be relevant to biodiversity) constitute a very small fraction of this (as per Figure 3.1).

While there is no comprehensive figure available on the amount of finance mobilised globally by PES, it is estimated that national PES programmes in five countries alone have mobilised more than USD 6 billion (OECD, 2010a). Another study finds that in 2008, payments for watershed services transactions totalled over USD 9 billion (Stanton et al., 2010 cited in Parker and Cranford, 2010).

A more comprehensive study which attempts to estimate the finance mobilised across all existing biodiversity offset programmes or those where some form of compensatory conservation is required, finds that between USD 2.4 and USD 4 billion have been mobilised across 45 programmes in 2011 (Madsen et al., 2011).

While markets for green products have increased markedly in recent years, only some of these goods and services fetch price premiums. Comprehensive estimates are not available and are likely to be difficult to obtain. Although markets for green products serve to scale up biodiversity outcomes, they do not necessarily generate revenue, at least not in a direct way.

Efforts to track total climate change finance flows indicate that this could range between USD 70-120 billion annually in 2009-10 (Clapp et al., 2012). Looking across biodiversity-related climate change finance from multilateral sources (such as the Forest Carbon Partnership Facility, the BioCarbon Fund, and others) indicates that this currently amounts to approximately USD 8 billion (Table 7.1).

Finally, more comprehensive data are available for biodiversity-related official development assistance, which is tracked by the OECD DAC. This increased from an average of USD 3.3 billion per year in 2005-06 to USD 5.7 billion per year in 2009-10 (OECD, 2011a).

In terms of the potential to scale-up these mechanisms, it is likely that those mechanisms that are also able to mobilise finance directly from the private sector will have higher potential than those that do not. Overall, the climate change agenda has been arguably more successful in tapping into private sector finance than the biodiversity agenda, due to the national greenhouse gas

emissions reduction targets in the so-called Annex I countries, some of which have then passed these on to firms in the form of mandatory emissions trading programmes. It is easier however to pass on these types of comprehensive targets to the private sector in the context of climate change, as from a spatial perspective, it does not matter where emission reductions take place. Effective biodiversity policy requires more spatially specific interventions. Despite this greater complexity, a number of the mechanisms reviewed here are able to mobilise the private sector (Table 9.1), and have the potential to be scaled-up. Government will have a critical role to play in providing the necessary legislative frameworks so as to provide the appropriate incentives for the private sector to engage in biodiversity conservation and sustainable use.

While some of the mechanisms reviewed here will have greater potential for scalability than others (whether this refers to legislating new programmes, expanding the geographical scope of existing programmes, or making existing programmes for ambitious), it is important that attempts are made not only to scale-up these mechanisms, but to also design and implement existing and new ones as cost effectively as possible. Ill-designed mechanisms amount to a waste of scarce resources.

Key features and the conditions under which finance mechanisms are likely to be most effective

As noted, overall key features that need to be considered in the establishment of any type of environmental financing mechanism are (Karousakis and Corfee-Morlot, 2007):

- identifying clear goals and objectives of the mechanism
- identifying eligibility criteria and priorities (i.e. for disbursement of funds or for participation in the mechanism)
- securing sufficient and long-term sources of financing – including from the private sector
- monitoring and evaluation of performance to ensure that the objectives of the mechanism are being met, together with appropriate sanctions in the case of non-compliance.

Other design and implementation features that need to be considered are often more specific to the individual mechanism. Ensuring additionality is one feature that applies to several of the mechanisms (e.g. PES, biodiversity offsets, green markets, biodiversity in climate change funding), though it does not, for example, apply to environmental taxes, as the introduction or increase in a tax rate should impact directly on behaviour.

Each of these mechanisms is also likely to be more effective under different particular circumstances and/or conditions. Some examples of these are listed below.

Environmental fiscal reform:

- a strong, stable governance framework, particularly in relation to financial governance
- an established tax system that is capable of levying, collecting and re-distributing revenues
- transparent, competent and accountable public financial management
- biodiversity impacts are visible and the cause of loss/degradation is clearly identifiable.

Payments for ecosystem services:

- ecosystem beneficiaries and providers can be clearly identified
- property/land tenure rights are firmly with potential ecosystem service providers
- one does not want to impose additional costs on these potential providers (e.g. through environmental taxes and biodiversity offsets)
- biodiversity and ecosystem service benefits are not exceptionally high, irreplaceable or vulnerable (as PES is a voluntary instrument)
- large social benefits and insufficient private benefits
- uncertainty of benefits is low.

Biodiversity offsets:

- good metrics and indicators for biodiversity are relatively easy to identify and construct
- biodiversity and ecosystem service benefits are not exceptionally high, irreplaceable or vulnerable
- there are available offset sites and known conservation approaches to achieve the desirable offset outcomes.

Green markets:

- there is likely to be sufficient demand for certified products (i.e. if products are produced in developing countries, that products are generally exported; if governments have policies in place to encourage green procurement)
- producers have access to finance to cover transition costs.

Biodiversity in climate change funding:

- there is strong correlation between areas with high carbon and biodiversity benefits (and sufficient data is available to identify these); i.e. where carbon policies can create synergies so that biodiversity co-benefits can be harnessed.

Biodiversity in international development finance:

- enabling conditions need to be fostered, property and land tenure rights require further clarification and enforcement
- development projects and policies can yield biodiversity co-benefits and vice-versa.

In addition to these mechanism-specific considerations, there are a number of cross-cutting issues that are relevant to the finance mechanisms discussed in the report. These include addressing the need for environmental and social safeguards (due to the possible distributional implications on vulnerable sections of the population) and having in place appropriate governance frameworks and sufficient institutional and technical capacity to effectively implement the mechanisms. These issues are examined below.

9.2. Environmental and social safeguards and capacity needs

Environmental and social safeguards

The terms environmental and social safeguards are increasingly being used in the environmental domain, most notably in the fields of climate change finance, as well as in international development finance, to refer to measures that are put in place to help identify and address possible adverse impacts of environmental policy on other environment media or on specific sections of the population due to their distributional implications. A number of the design and implementation features discussed in Chapters 3 to 8 are related to environmental and social safeguards. For example, leakage – when policy introduced to reduce pressure on biodiversity in one geographical area results in increasing pressure on biodiversity in another location – is an issue that merits consideration in PES and biodiversity in climate change finance. If the risk of leakage is anticipated to be high, environmental safeguards can be introduced to address this, including broadening the geographic scope of the monitoring, reporting and verification framework to identify leakage, and, for intra-property leakage, broadening the scope of non-compliance beyond the specific area receiving payments to encompass the entire area of a private or communal property. Another example of an environmental safeguard is environmental impact assessments (EIAs). EIAs are applied in several ecolabelling schemes (e.g. the RSPO; Chapter 6), and prior to the implementation of biodiversity offsets (Chapter 5). They can help identify

the different environmental elements that need to be safeguarded in a given project.

In terms of social safeguards, it is important to note that the transmission channels identified to assess the likely winners and losers from environmental fiscal reform (discussed in Chapter 3) are, in fact, likely to apply to *any* form of new policy intervention, whether this is through regulatory, economic, or information/voluntary instruments. These transmission channels include: prices, employment, access to goods and services, assets, and transfers and taxes. Similarly, the initial allocation of tenure rights has distributional implications for each of the six finance mechanisms. Governments will need to ensure these are allocated equitably and that they are clearly defined.

During the design phase of a project, ex-ante appraisals should be conducted to help identify potential impacts on people's well-being. Some of the approaches employed to do this are social impact assessments, such as those applied in the UN-REDD SEPC, stakeholder consultation and cost-benefit analyses. The costs and benefits related to biodiversity manifest at different spatial scales, and ex-ante appraisals need to take this into account. Monitoring, reporting and evaluation of social impacts is another important safeguard, and is necessary to inform the management of existing projects as well as the design of future policy and projects. Grievance mechanisms or ombudsmen need to be in place and easily accessible to allow stakeholders, such as local or indigenous communities, to voice their concerns about the way in which a finance mechanism is implemented and managed.

Designing and implementing environmental and social safeguards will entail additional costs to the administrator of the mechanism. Many of the safeguards however, are in fact features that should be incorporated into the design and implementation of these instruments so as to ensure that they are environmentally and thus also cost-effective. A balance will need to be found between the risks and magnitude of possible undue harm and the associated measures put in place to identify them, as the risks are likely to vary across different circumstances. There are ample opportunities however to better document and derive insights from existing programmes. In many cases, it may be prudent to start with smaller programmes, including pilots, ensuring that the necessary capacity is in place to implement these effectively, rather than with larger scale, but ill-designed programmes. This leads to another cross-cutting issue, namely the capacity and appropriate levels of governance that is needed to successfully implement the finance mechanisms.

Capacity needs for effective biodiversity finance mechanisms

A prerequisite for effective implementation and scaling up of finance mechanisms for biodiversity conservation and sustainable use is the underlying technical and institutional capacity needed to support these measures. Capacity

refers to "the ability of people, organisations and society as a whole to manage their affairs successfully" (OECD, 2006). Capacity is also fundamental to "good governance", which is expressed through accountability, transparency, participation, equity, and the rule of law (UNDP, 1997; World Bank, 1994; Woods, 2000), among other things.

The OECD recognises three levels of capacity: individual capacity, organisational capacity and enabling conditions. Individual capacity refers to individual competencies, such as the knowledge, skills and the ability to set and achieve objectives. This can include both "soft" competencies such as building relationships, trust and legitimacy and "hard" competencies such as the technical expertise needed to conduct environmental valuation and cost-benefit analysis, and to develop biodiversity metrics and indicators.

Organisational capacity refers to organisational structures, functions and systems that enable the capacities of individuals to come together to effectively fulfil the mandate of the organisation and to achieve set objectives. Organisational structures will need to have adequate financial and staff capacity (e.g. for monitoring and enforcement), as well as internal systems and processes to promote participation, transparency and accountability. Institutional audits, for instance, help to ensure scarce resources are used appropriately and efficiently.

The enabling conditions refer to the policy, legal, regulatory, economic and social support systems in which individuals and organisations operate. The enabling environment is determined by international regimes, national policies, rule of law, accountability, transparency and information flows (OECD, 2006). In the context of biodiversity more generally, these may include national plans (e.g. multi-year development plans) and budgets, sectoral policies and strategies (e.g. agriculture, fisheries, forestry), poverty reduction strategy papers, spatial planning, tenure laws, indigenous rights, and contract and trust fund laws. These need to be established in a comprehensive and coherent way, through multi-stakeholder dialogue. Environment agencies, in particular, have an important role to play in promoting biodiversity conservation and sustainable use, ensuring these are appropriately addressed and receive sufficient funding. Other enabling conditions may include the availability of biodiversity and ecosystem services data, including maps showing the spatial distribution of ecosystems and threatened species, green accounting, and ecosystem valuation.

The relations between the three levels of capacity are complex and in many cases can be seen as inter-dependent. This is one of the reasons why capacity development efforts are most effective when multiple strategies, targeting all three levels, are employed together (OECD, 2012b). For example, technical and managerial competencies are a precondition for establishing organisational capacity. In turn, organisational capacity reinforces these competencies. Similarly, while the enabling conditions provide the legal framework within

which organisations operate, organisational systems designed to promote transparency and accountability reinforce the rule of law.

How do these levels of capacity relate more specifically to the six finance mechanisms? Table 9.2 highlights some of the types of capacity needs for each of these. Clearly, the level of capacity varies considerably between countries, and different approaches to capacity building will be required depending on the existing organisational systems and structures. Development finance has an important role to play in this.

Table 9.2. **Overview of capacity needs for biodiversity finance mechanisms**

Finance Mechanism	Capacity Needs		
	Individual capacity	Organisational capacity	Enabling condition
Environmental Fiscal Reform	• Trained economists to establish appropriate tax/subsidy rates • Environmental staff have the analytical, economic and communication skills to identify and make the case to finance/planning/sector ministry decision makers for environmental taxes/removal of perverse subsidies • Skilled advocates to secure political acceptance and public support for EFR through e.g. awareness campaigns	• Finance ministry has tools and mechanisms to assess economic value of environmental policies • Environment agencies participate in drafting budget proposals and finance ministry adopts its guidance • Processes for dialogue and consultation, information dissemination and advocacy with key stakeholders (including via civil society groups)	• Environmental stakeholders involved in institutional process of preparing national budget • Established tax system capable of levying, collecting and redistributing revenues • Clear rules and principles for public expenditure management, supported by a well functioning audit system
PES	• Land users and ecosystem beneficiaries are aware of the principles of PES and how to engage in programmes/agreements • Experts (external or internal) can identify metrics and carry out assessments to inform targeting of payments for public PES programmes • Land users and beneficiaries have the capacity to establish reasonable proposals (both content and price), and to monitor and measure environmental performance	• Tools and systems in place to consolidate and build on existing foundation of research concerning biological patterns and processes, local environmental services and needs for conservation and sustainable use • Systems in place to ensure that payments are delivered efficiently and to the appropriate recipient avoiding elite capture etc. • Institutions to co-ordinate small landholders who otherwise would not have access to finance	• Inclusion of ecosystem service provisions in sector strategies, Poverty Reduction Strategy Papers, etc. and coherency between policies • Legal framework in place that supports buying and selling of ecosystem services • Tenure arrangements are clear and enforceable

Table 9.2. **Overview of capacity needs for biodiversity finance mechanisms** *(continued)*

Finance Mechanism	Capacity Needs		
	Individual capacity	**Organisational capacity**	**Enabling condition**
Biodiversity offsets	• Experts to select and apply metrics and indicators to compare expected losses and gains • Well-trained officials to carry out EIAs • Relevant stakeholders trained in the implementation, monitoring and reporting of offsets	• Market support services (e.g. assurance, public registries, brokerage etc.) • EIA enforcement agencies able to ensure EIAs are followed through • Management systems to disburse funds efficiently, record and monitor expenditures	• Laws requiring developers to compensate for their environmental damages • Requirement and completion of EIAs for all key activities impacting on habitat • Overarching guidelines (including metrics) for biodiversity offsets
Markets for Green Products	• Trained consultants to assist in the implementation of ecolabelling standards • Trained experts to carry out certification and accreditation • Consumer awareness and understanding of the ecolabelling landscape (e.g. through sustainable purchasing guidelines)	• Consulting, certification and accreditation services to carry out certification pre-assessment, assessment, and periodic surveillance audits • Distribution channels to deliver certified products in competitive manner (particularly for local communities marginalised from premium markets) • Coordination and harmonisation between standards	• Green procurement policies (including public procurement policies) • Sectors characterised by strong standards and good regulatory oversight • Good practice codes for ecolabelling schemes and mechanisms to assess them
Biodiversity in climate change funding	• Experts in carbon and biodiversity measurement • Experts in applying tools for promoting environmental, social and cultural benefits • Technical expertise and knowledge related to green infrastructure and ecosystem based adaptation approaches	• Systems in place to monitor forest area change and measure biodiversity and social benefits • Procedures for assessing biodiversity benefits of climate change mitigation and adaptation measures • Systems to manage and distribute funds in an efficient and equitable manner	• National climate change mitigation and adaptation strategies explicitly recognising REDD+ and ecosystem-based adaptation options • Carbon accounting framework • Policies and guidelines promoting biodiversity co-benefits in climate change mitigation (REDD+) and adaptation

Table 9.2. **Overview of capacity needs for biodiversity finance mechanisms** *(continued)*

Finance Mechanism	Capacity Needs		
	Individual capacity	Organisational capacity	Enabling condition
Biodiversity in international development finance	• Development support staff have a thorough understanding of the local-level linkages between development, biodiversity loss and poverty • Development support staff have the analytical and economic skills to assess the costs and benefits of different interventions • Development support staff have thorough understanding of the governance and institutional context of the recipient country	• Incentives and processes for collaboration between environment and development agencies • Procedures for integrating environmental issues into country and sector programmes • Guidelines for the application of environmental and social safeguards (e.g. SEA and environmental screening tools)	• Joint Assistance Strategies to harmonise biodiversity-related development support • Development support providers have commitment to environment strategy linked to poverty reduction and the MDGs • Evidence base showing linkages between development, biodiversity and poverty

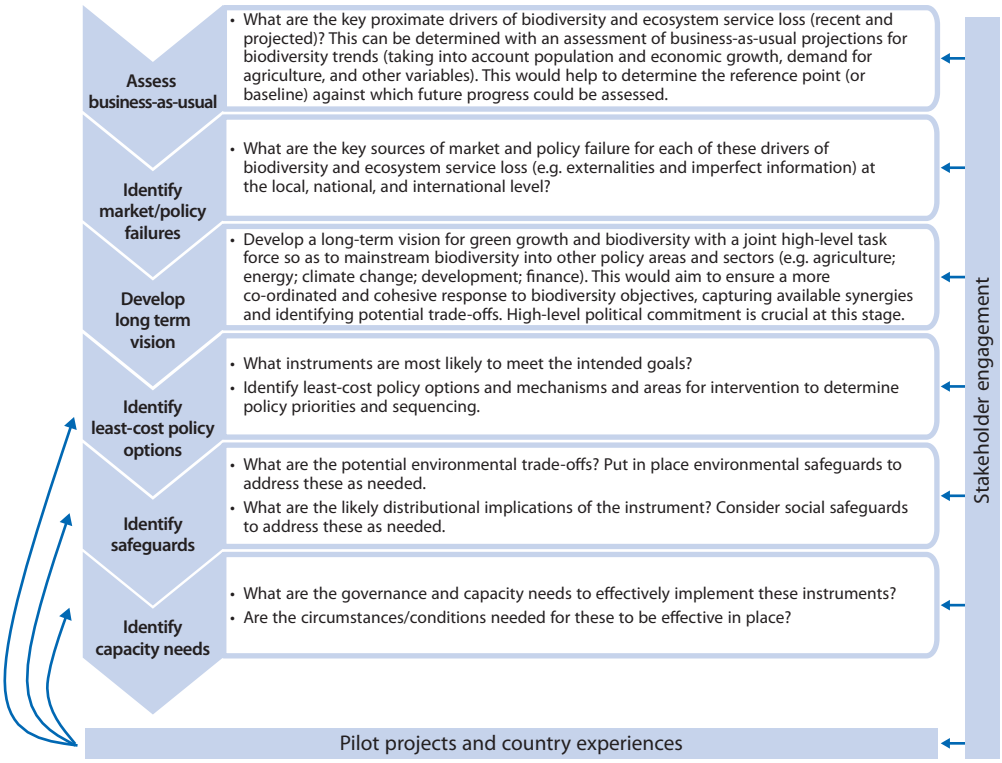
Finally, another major cross-cutting capacity issues is ensuring high-level political commitment. Political resistance, or simply a lack of political will, can obstruct the implementation of biodiversity finance mechanisms. Overcoming this resistance requires strong high-level political commitment accompanied by broad support across government departments (OECD, 2011; Cottrell et al. 2008). Couching biodiversity issues in an overall green growth strategy, addressing communication barriers between governmental structures, and putting in place systems to promote participation and transparency are therefore key. The case for introducing new measures will be more robust when there is good information on the environmental, economic and social implications of the status quo and the advantages of the proposed policy measures.

A proposed assessment framework for biodiversity instruments and mechanisms

The report covers a broad set of issues, from the review of the finance that has been mobilised through each of the six mechanisms, to some of the more technical design and implementation considerations that merit attention so as to ensure that they are as effective as possible. To conclude, Figure 9.1 provides a simplified, bird's-eye view of the types of issues that policy makers may need to consider and the possible sequencing of steps, prior to the introduction of new instruments and mechanisms for biodiversity conservation

and sustainable use. As discussed, high level political commitment and broad stakeholder participation and engagement throughout this process will be key. Incorporating flexibility to allow for adjustments over time as new information becomes available will also be important.

Figure 9.1. **Assessment framework for biodiversity instruments and mechanisms**



Note

1. Taxes allow firms with flexibility to determine how much they want to avoid, minimise (impacts on the environment), and/or pay the tax. Biodiversity offsets are similar in that, through the mitigation hierarchy, they are also required to avoid and minimise. The third stage is to offset (i.e. rather than pay a tax).

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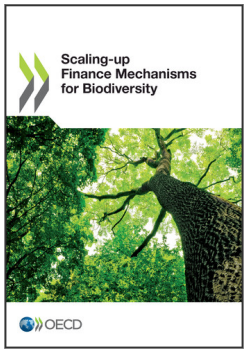

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