

Prospects for mainstreaming ecosystem goods and services in international policies

Marcel T.J. Kok ^{*1}, Stephen Tyler ², Anne Gerdien Prins ¹, László Pintér ², Heike Baumüller ²,
Johannah Bernstein ², Elsa Tsioumani ², Henry David Venema ², Richard Grosshans ²

Abstract. Although most management decisions affecting ecosystem goods and services (EGS) are made at a local level, these local decisions are conditioned by national and international policies. International policy domains provide clear opportunities to mainstream (integrate) EGS in ways that can support poverty reduction. However, positive poverty reduction and EGS outcomes cannot be taken for granted. Mainstreaming EGS needs careful consideration because many of the opportunities identified can reduce poverty, but may have the opposite effect if poorly managed or implemented. A major challenge is to ensure consistent policies across scales and policy domains based on analysis of the local situation. In order to support poverty reduction it matters how the mainstreaming is done and who benefits locally. Based on an analysis of EGS delivery and poverty reduction in drylands, tropical forests and coastal areas in the tropics, this paper analyses the prospects of mainstreaming EGS in a number of relevant international policy domains including: i) development assistance; ii) trade; iii) climate change and; iv) international financial institutions. For these policy domains it is analyzed how mainstreaming EGS can contribute to reaching poverty reduction and development goals, what relevant policy tracks for mainstreaming EGS exist, and what priority issues should mainstreaming focus on. The paper next provides an overview of possible tools and mechanisms for mainstreaming and ends with conclusions on what the role of the CBD can be in mainstreaming.

AUTHORS' ADDRESSES:
¹Netherlands Environmental Assessment Agency (PBL)

²International Institute for Sustainable Development (IISD)

* Corresponding author
marcel.kok@pbl.nl

INTRODUCTION

Ecosystems, even if heavily modified by humans, produce a variety of goods and services that humanity depends upon. The extent and immediacy of the loss of ecosystem goods and services (EGS) is becoming increasingly evident. The Millennium Ecosystem Assessment (2005a) documented recent changes in the ability of global ecosystems to deliver 24 services fundamental to human well-being. While the delivery of some provisioning services (chiefly agriculture) has increased, about 60% of the services delivered by ecosystems are degrading, and the rate of degradation in most cases is accelerating. Improving delivery of EGS is especially challenging in the poorest regions of the developing world, where the resource base is fragile and degrading, resource users have few practical livelihood options that they could rely on instead of an overuse of EGS, and conflicts among resource claimants over resources of higher quality frequently exacerbate the pressures (Tyler 2006). Such marginal areas are home to probably 25% of the planet's poorest people. They will most directly feel the impacts of losing EGS.

Environmental and biodiversity policies alone, however, will not stop the factors driving the degradation of EGS (Malayang III *et al.* 2005; MA 2005c). These factors have more to do with economic drivers, livelihood choices, demographics, the structure and function of markets, conditions of local security, and the multi-dimensional links between various actors making decisions on investment, consumption and land use in distant corners of the planet, when there are no mechanisms to identify and attribute ecological costs (Netherlands Environmental Assessment Agency 2010). In contrast, environmental policies often deal with environmental problems in a narrower sense, and they are executed by agencies with a mandate that is too limited to effectively address deeper structural causes. In an increasingly globalised world, the way international and national policies reflect such linkages can make a huge difference to outcomes on the ground. More careful design

of policies beyond the environmental domain with respect to EGS may therefore have positive effects for poverty reduction and the delivery of EGS.

The objective of this paper is to help increase understanding of the linkages between the local provision of EGS and the levers available in international policy processes to contribute to poverty reduction through the provision of EGS. This includes better aligning policies that are currently contradictory, addressing trade-offs explicitly, and finding opportunities for positive synergies. This paper intends to strengthen the case for mainstreaming (integrating) EGS in other international policy domains and to broaden the portfolio of policy options beyond environmental and biodiversity policies. This includes development assistance, climate, trade and international financial institutions, which represent part of the broader context for national and local measures that are relevant for sustainable EGS delivery. It is argued that such mainstreaming strategy can become a potentially important element of natural resources and biodiversity policies.

IMPORTANCE OF EGS FOR POVERTY REDUCTION AND DEVELOPMENT

Ecosystem goods and services are the benefits that humanity obtains from ecosystems. These include, among others, food and water, timber and many of the fibres used in manufacture. Ecosystems may moderate the effects of extreme weather events and reduce the impacts of climate change. They break down waste, purify water and regulate all life on the planet through photosynthesis, nutrient cycling, and soil formation. The risk of loss of EGS is increasingly evident and particularly impacts the poorest people of the world.

Reducing the degradation of ecosystem services can help reduce the vulnerability of the poor who are most dependent on them. From a policy point of view, the relationship between EGS and poverty reduction objectives have particular relevance. Sustainable delivery of EGS is directly linked

with achieving the Millennium Development Goals (MDGs) because most of the approximately two billion people targeted by the MDGs are farmers and subsist on immediately available ecosystem services.

To understand the concept of EGS, we use the ecosystem framework developed by Costanza *et al.* (1997) and Daily (1997) and further elaborated in the Millennium Ecosystem Assessment (2005). The framework helps to communicate the logic of maintaining intact ecosystems, highlights their economic value, and underlines their importance in meeting basic human needs. Local ecosystems supply a portfolio of different services. Therefore, interventions should be aimed at improving the integrity of whole ecosystems rather than specific services such as cash crop production (Millennium Ecosystem Assessment 2005b). This philosophy, known as the ecosystem approach, is embedded in the Convention on Biological Diversity (CBD).

WHY DO WE NEED TO MAINSTREAM EGS IN INTERNATIONAL POLICY-MAKING?

Managing ecosystems to strengthen their delivery of goods and services for human well-being is mainly a local task. In this paper, we take the perspective that EGS are most directly affected by local practices which are, in turn, influenced by regional, national, or more indirectly, international factors. International policies can either reinforce or undermine incentives for local sustainable ecosystem management practices. We use the term ‘international policy’ here to include a wide array of inter-governmental policies, policies of international organisations, as well as national policies of which the main focus goes beyond country borders.

International policies may directly affect biodiversity and ecosystems and their ability to provide EGS, but they may also influence direct or indirect drivers of change on multiple scales. While the influence of multilateral environment agreements (MEAs) on EGS delivery is relatively easily recognised, the more powerful pressures for ecosystem change are often local behavioural factors linked to policies that are not focused on environmental issues at all. EGS degradation is an unintended, indirect, or second-order effect of these policies which are designed to achieve completely different objectives.

Global assessments underscore the limited extent to which these drivers can be mitigated by environmental policies alone (MA 2005c; CBD 2006, 2010; UNEP 2007; IAASTD 2009). Addressing these unintended effects requires engagement with diverse economic actors to build wider awareness of EGS issues, modification of the institutional context and incentive structure for decision-making, the strengthening of transparency and accountability, and reduction or mitigation of negative impacts. As a consequence, a growing body of work has started to highlight the importance of employing coherent policy levers for EGS delivery on the ground, beyond the reach of environmental policies (CBD 2006; Malayang III *et al.* 2005). The Global Biodiversity Outlook 2 states that

‘this transformation represents the essence of mainstreaming biodiversity across economic sectors’ (CBD 2006, p.64).

International policies can thus play an important role in EGS functioning – for better or for worse. This requires mainstreaming of EGS concerns into other policy domains, such as development assistance, trade, investment, or in sectoral policies on various levels of policy-making. This has also been well recognised in international nature and biodiversity conservation policy documents. However, despite well-documented problems, the emerging evidence of linkages between EGS and various international policies and good intentions, the integration of EGS issues into international policy processes has not been a serious enough consideration beyond the environmental domain. In our analysis of different policy domains we only found scant evidence for its proactive use in international policies (see also Ranganathan *et al.* 2008; Swiderska *et al.* 2008).

We explain this by the novelty of the concepts and by the lack of understanding of the complex mechanisms linking local ecosystems to international policy levers and well-articulated and practical conceptual framework and clear examples of operational mechanisms linking these different scales of endeavour, as well as supporting information that can be monitored transparently. An additional barrier is that the benefits from ecosystem exploitation are often enjoyed by a different group of people than those who bear the costs of EGS degradation. Often these differences cross national and generational boundaries. Different actors and countries have different motivations for taking policy action, and strong international consensus on this is rare.

Positive examples of international policy initiatives that target EGS include Millennium Development Goal 7 on Ensuring Environmental Sustainability and the REDD programme in climate policies. The Economics of Ecosystems and Biodiversity report (TEEB 2009), the Poverty and Environment initiative of UNDP and UNEP, and several international private sector initiatives, such as those trying to come to agreement on common standards, criteria and indicators for the sustainable production of agricultural products (e.g., OECD Agri-Environmental Indicators, ISEAL Alliance), forest products (Montreal Process, Forest Stewardship Council), or the management of fisheries (Marine Stewardship Council) have started to directly or indirectly address EGS (Russillo and Pintér 2009).

FROM LOCAL-LEVEL EGS DELIVERY TO INTERNATIONAL POLICY-MAKING

Building on the EGS framework (MA 2005; CBD 2006), we developed a framework to identify plausible pathways through which priority EGS issues are, or could be, influenced by international policy measures and vice versa. Shown in Figure 1, the framework highlights the focus of this study - international policy influences on local policies and practices as local drivers of change. This framework enabled us to connect and bridge human well-being, local ecosystem

functions and structures and their capacity to deliver EGS, relevant policies and practices at the local level, and policies at higher levels of decision-making.

Through an analysis of three key biomes we illustrate how positive and negative EGS outcomes are related to national and international policies. Common features of ecosystem degradation include the role of trade in driving land use conversion locally, and the failure of conventional resource tenure policies in creating incentives for sustainable ecosystem management.

In *drylands*, land degradation is often a result of policies favoring agricultural development in high-risk areas, land use conflicts, and inappropriate agricultural practices. These may be exacerbated by trade liberalisation and by export-oriented development projects (trade policies) if not accompanied by technical and extension support and incentives for sustainable practices (development policies).

Degradation of *tropical forests* is most often a direct result of agricultural colonisation, mostly linked to road construction or to commercial forestry. These processes are encouraged by national policies to subsidise infrastructure, provision of credit and land conversion. Incentives to align the value of forest EGS with economic returns to local users need to include resource tenure and supportive institutions for collective management, and policies against EGS conservation must be changed.

In *coastal wetlands*, land-use conversion to urban or industrial uses and intensive aquaculture are a major threat to ecosystem

goods and service delivery. Better assessment of the economic value of these ecosystem services would be helpful, as would support for appropriate local intensification measures (either aquaculture or agriculture). Rehabilitation of wetlands is very difficult once they have been developed for a certain purpose, so protective strategies are preferred.

Successful contributions of EGS delivery to poverty reduction have typically required combinations of local responses, that can be supported by consistent national and international policy measures (see also Tyler 2006; Irwin and Ranganathan 2007):

- Build on local knowledge and social relations, but introduce new information about ecosystem services.
- Invest in collective action to develop or strengthen institutions for shared ecosystem management to reward sustainable practices.
- Strengthen local tenure (both private and collective) and resource control, and secure local benefits from long-term sustainability.
- Invest in technical, community based innovations (new or improved production techniques) and access to improved production technology and extension services.
- Provide mechanisms for monitoring and shared learning.
- Strengthen accountability and transparency in governance processes.
- Align national and international policy and market incentives with key local enabling factors to achieve sustainable outcomes.

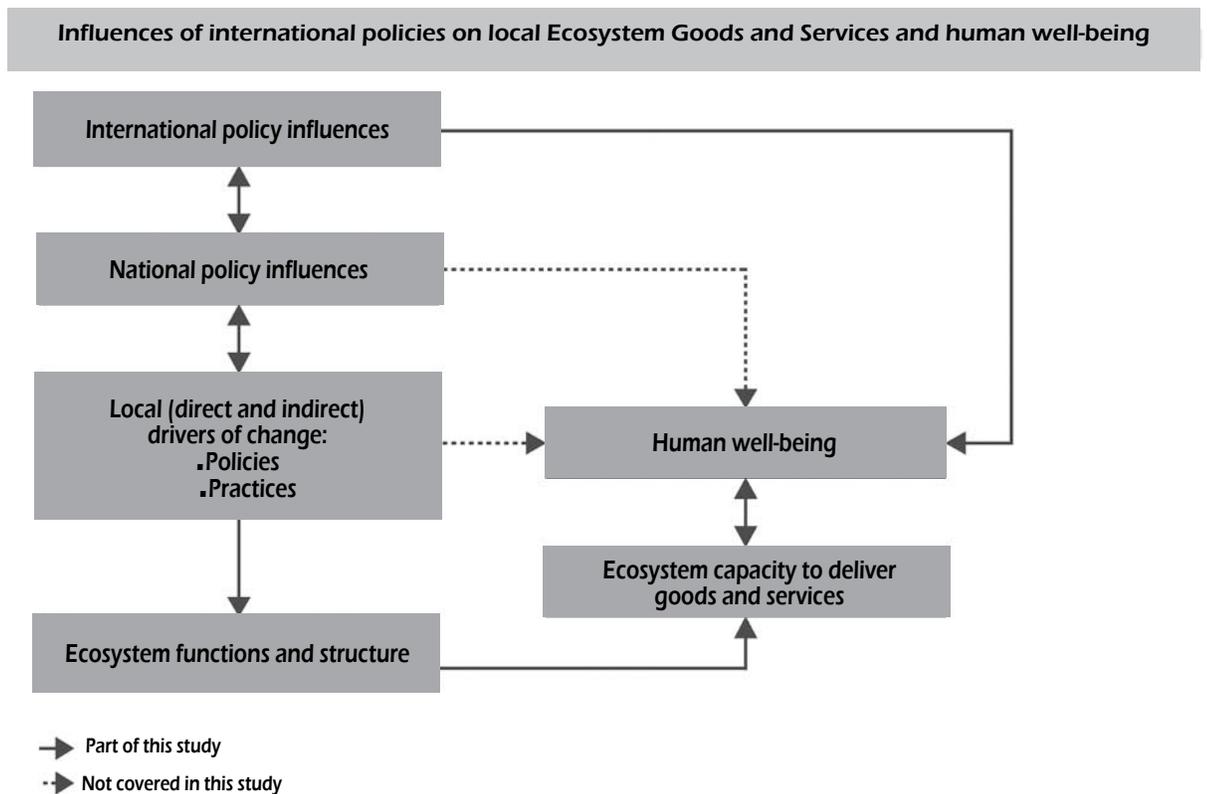


Figure 1. Framework to analyse international policy influences related to local EGS delivery and human well-being (after CBD 2006).

OPPORTUNITIES FOR MAINSTREAMING EGS IN INTERNATIONAL POLICY DOMAINS

The basis for mainstreaming EGS in various policy domains can be found in many goals and policies already agreed upon by governments. We argue that integrating EGS into the relevant international policy domains can contribute to reducing poverty while also improving EGS delivery at the local level. Policy coherence is critical here. While individual policies matter, consistent constellations of policies across scales and policy domains will be needed for positive impact on both poverty reduction and EGS delivery. This requires an upfront consideration of why EGS are important in a specific international policy domain and identifying policy tracks, priority issues and tools that can support mainstreaming. We focused this analysis on development assistance, climate change, trade, and the role of international financial institutions (see table 1 for a summary).

Mainstreaming EGS in development assistance

As already argued above and in other contributions to this special issue (e.g. “Ecosystem services, financing and the regional economy: a case study from Tatra National Park, Poland” by Michael Getzner) EGS provide important assets for the rural poor, whereas a lack of natural resources and sustainable EGS delivery increases their vulnerability. Investment in conserving and strengthening ecosystem service delivery can contribute to poverty reduction for the rural poor. Development assistance can play a key role in this. The potential contribution of EGS to poverty reduction and development is increasingly recognised in development assistance, but implementation is still in its initial phase.

Main policy tracks in which development assistance can play a positive role are the implementation of the UN Millennium Development Goals, various forms of financial and technical bi- and multilateral development assistance and increasing efforts in the donor community to enhance ‘Policy Coherence for Development’ (for example via OECD/DAC and EU Development Policy) (OECD/DAC 2008; European Commission 2009). Priority issues that development assistance could focus their efforts on are raising the profile of EGS in national development mechanisms like the Poverty Reduction Strategies and national MDG strategies, building capacity for addressing EGS concerns in financial and planning ministries, scaling up investments in food security and agriculture and improving tenure and access to natural resources for local people.

The most replicable policy tool to strengthen EGS is likely to involve the promotion of consistent institutional processes relating to resource management and tenure for local benefit. Official Development Assistance (ODA) support for building local capacity for ongoing adaptive, ecosystem-based management would be complementary to both MDG and EGS goals, but the techniques required are diverse and experiential, so do not lend themselves to standardised (training) approaches (Armitage *et al.* 2008; Tyler 2008).

Mainstreaming EGS in international climate policy

Strengthening EGS in the forestry and agriculture sectors

is consistent with emissions mitigation and supportive of ecosystem-based adaptation, both important potential elements of international climate policy. These connections are increasingly appreciated in climate policy.

EGS options for delivering climate policy objectives are important because they are relatively low cost and could deliver very large emission reductions. The best opportunity for integrating EGS in climate policy is through the proposed UNFCCC programme for *Reduced Emissions from Deforestation and Forest Degradation* (REDD). This programme offers, for the first time, a market-based mechanism that could create economic values for standing forests that rival the value of alternative uses of forest lands. However, there are methodological and institutional issues that need to be resolved in order to assure effective implementation. Particularly, the question is how to avoid “leakage” by ensuring benefits are captured locally and agricultural colonization is not simply displaced. Other opportunities for incorporating EGS in climate policy include Nationally Appropriate Mitigation Actions (NAMA) and adaptation policy frameworks and finance related to the UNFCCC.

In order to improve forest and agricultural EGS through climate policy, institutions and incentives for ecosystem conservation need to better counter the complex drivers of deforestation, which vary significantly in different contexts. An important element of this puzzle is a restored emphasis on agriculture as both an instrument of ecosystem management and of climate policy, as well as sustainable food production. This requires greater investment and incentives for sustainable agricultural systems, including agricultural intensification.

Mainstreaming EGS in international trade policies

International trade policy, including tariffs and non-tariff measures like intellectual property rights and standards, play an important role in setting the framework for their application, and thereby influencing the resulting EGS impacts. Therefore, the impact of trade policy measures on EGS will depend on how and in which context the measures are applied. Opportunities for mainstreaming EGS considerations into international trade policy exist in the context of the WTO (subsidy reform for agriculture and fisheries, Trade Related Intellectual Property Rights in relation to CBD), bilateral and regional free trade agreements and multilateral environmental agreements. While some progress has been made in these fora, environmental considerations remain an add-on rather than an integral part of trade policy-making.

International trade policy is intended to reduce the distorting effects of subsidies and tariffs on commercial exchange. Agricultural trade barriers have damaging effects on EGS in most developing countries, because they reduce the returns to local producers and constrain market access. This discourages investment in better management practices at the farm level, and increases exposure of agro-ecosystems to degradation. But trade liberalisation, on its own, is not a sufficient response: it must be combined with better product information and

Table 1. Opportunities for mainstreaming EGS in various international policy domains

Policy domain and main type of policy measures	Policy Tracks	Priority issues
<p>Development Assistance - Budget and sector support - Support for programmes and projects</p>	<p>Realisation UN Millennium Development Goals Bi- Multilateral Development Assistance (ODA) Policy Coherence for Development (PCD)</p>	<p>Raising the profile of EGS in national development planning mechanisms; Contributing to building capacity for implementation; Scaling up investments in food security and agriculture; Improving tenure and access to natural resources.</p>
<p>Climate Change - Mitigation options and carbon offset - Adaptation</p>	<p>LULUCF in CDM REDD Nationally Appropriate Mitigation Action (NAMA) Adaptation Policies</p>	<p>Recognition of the role of agricultural practices and land-use management; Recognition of the linkages between agriculture and forest carbon sequestration in REDD; Integrating Ecosystem-based Adaptation into climate adaptation policy.</p>
<p>Trade - Tariffs - Non-tariff measures</p>	<p>World Trade Organisation (WTO) Bilateral and regional trade agreements Multilateral Environmental Agreements (MEAs)</p>	<p>Regional free trade agreements and cooperation on EGS; Certification and private standards; Subsidy reforms.</p>
<p>International Financial Institutions (IFIs)</p>	<p>IFI reform process IFI governance IFI lending practices</p>	<p>Measuring and valuing what matters; Integrating EGS into IFIs safeguard policies; Finance of pro-poor EGS projects.</p>

certification to ensure consumers in importing countries can likewise choose to support these better management practices. With market access and better consumer information to align production incentives, farmers are more likely to demand the local research and extension services to support better management practices, so that they can deliver products to high-value markets.

The EGS approach can be useful in mobilising political interest in mainstreaming environmental considerations in trade policy, by helping to strengthen the economic argument for environmental protection and allay fears among developing countries over Northern protectionism.

Mainstreaming EGS through policies of international financial institutions

In many of the above analysed policies, International Financial Institutions (IFIs) like IMF, World Bank and regional development banks play an important role. EGS are important for IFIs to consider, partly because through their lending practices and the attached conditions they provide incentives and/or disincentives that affect EGS, and partly because the status of its EGS is an important element of a country's overall risk profile.

Dialogue on the reform of IFIs initiated by the G20 provides an opportunity to raise the profile of EGS concerns. The process has gained momentum because of the need to support global economic recovery. However, limited access by the broader international community and lack of binding commitments with regard to the environment lead to reduced expectations. A central issue is the need to recognise EGS and their economic

value in national accounts and the economic models that guide IFI policies and practices. Initiatives to complement current national account systems with environmental and social indicators can help shift attitudes.

IFIs already have tools, such as strategic environmental assessments, the World Bank environmental safeguard policies, valuation and payments for EGS, country environment analyses, and portfolio screening. These and other tools would need to be more systematically used by both public and private sector lending arms of IFIs.

TOOLS FOR MAINSTREAMING

An important step in mainstreaming strategies is to identify and apply tools that help catalyze a shift towards a view in which investing in EGS is seen as essential for supporting long-term development (UNDP and UNEP 2009). The previous sections have discussed the rationale and opportunities for integrating EGS into several international policy domains and started to indicate some of the tools for mainstreaming EGS that could be applied. Mainstreaming tools can be used to identify opportunities and risks and give EGS delivery the required attention in decision-making and implementation.

While there is significant literature on the tools and processes for mainstreaming the environment in general, there is much less experience with the tools for mainstreaming EGS (UNDP and UNEP 2009; Dalal-Clayton and Bass 2002, 2009). Nevertheless, the experience concerning mainstreaming tools for the environment can serve as a starting point for integrating EGS into international policy. What is important, from the EGS perspective, is building on existing mainstreaming experience

while also highlighting the specific risks and opportunities that arise from the perspective of the EGS approach. From this perspective, valuable tools are those that help highlight the positive or negative implications of changes in EGS delivery for human development and economic conditions, in either monetary or non-monetary ways, but nevertheless from an explicitly utilitarian perspective.

Mainstreaming EGS is starting to happen as evidenced by tools for mainstreaming becoming available in various policy domains. Some early initiatives are underway to identify options for guiding decision-making in different stages of the policy cycle (planning, implementation, review) to better attend to ecosystem goods and services.

Table 2 provides an overview of a number of mainstreaming tools, the phase of the policy cycle that they fit in and examples of uses in the specific policy domains discussed above. Context is important here – different mainstreaming tools may fit different policy domains, and in some cases established non-EGS or even non-environmental policy tools can serve as a vehicle and be modified to integrate EGS perspectives. Given however the inherent complexity and uncertainties of the management of various EGS, the selection and application of policy tools should follow an adaptive learning approach,

with scope for modifications in case efforts do not produce expected poverty and EGS outcomes.

Public expenditure reviews can contribute to making the case for EGS in public finance, for example as part of a national poverty reduction strategy. **Portfolio screening** can build awareness of the implications of current programmes and policies on EGS. Various tools for applying environmental criteria in portfolio screening for socially responsible investment may need to be modified to reflect ecosystem degradation. **Schemes for payment for ecosystem services** have been attempted in many settings but struggle with the challenge of determining fair prices and monitoring benefits in relation to quantities of EGS provided. While these difficulties may be resolved within a defined sub-national setting such as a medium-sized watershed, this may be more difficult on a national or global scale. **Strategic environmental/sustainability impact assessment** can help to make explicit the environmental implications of proposed policy measures or projects by assessing indirect and linked EGS effects. **Integrated environmental / ecosystem assessments** focused on specific contexts (ecosystem, political entity or both) are increasingly common and help establish links between ecosystem change, the underlying drivers

Table 2. Main categories of mainstreaming tools for EGS and the phase in the policy cycle they relate to.

Tools	Planning	Implementation	Review	Examples of uses in specific policy domains
Environmental guidelines for mainstreaming	X	X	X	Development planning
Public expenditure reviews			X	As part of PRSP process
Portfolio screening			X	In investment, in development assistance
Payments for EGS		X		REDD, water management
Strategic/sustainability impact assessments	X		X	Development project evaluations, trade policies
Country-specific assessments and strategies	X		X	Poverty Reduction Strategy Paper (PRSPs), Country Environmental Assessments (CEAs).
Certification and private standards		X		In trade, in combination with development assistance
CBD-related frameworks and action plans	X	X	X	National Biodiversity Strategies and Action Plans (NBSAP)

and impact on human well-being. They often also include a scan of policy alternatives and their implications for the future that could have a sharper EGS focus. **Standards and certification mechanisms**, which are frequently voluntary, are increasingly popular in the private sector and sought after by consumers looking for products and services with environmental and sustainability credentials. There is a need to ensure that new product and process standards specifically include EGS considerations that can be monitored, verified and harmonised to ensure comparability and consistency. The role that the Convention on Biological Diversity can play in this is discussed in the conclusions (CBD 2009).

CONCLUSIONS

THE ROLE OF THE CONVENTION ON BIOLOGICAL DIVERSITY

This paper has shown that to secure the essential goods and services provided by ecosystems, policy responsibilities must be equally and broadly based. Most economic sectors and actors have a direct effect on local ecological integrity. International policies dealing with these sectors need to consider these effects, and responsible agencies need to be held accountable for reducing their unintended impacts. Governments have already committed to much of this through the CBD, but the necessary accountability and compliance mechanisms have not yet been put in place.

The Convention on Biological Diversity (CBD) could play an important role in mainstreaming EGS, but its current influence on the behaviour of economic actors appears to be too weak to do so. The CBD has been actively trying to mainstream EGS into various policy domains, but with limited success. Recent and updated National Biodiversity Strategies and Action Plans (NBSAP) tend to have a stronger emphasis on mainstreaming and greater recognition of national development objectives (CBD 2010). Given the CBDs mandate and biodiversity's essential role in influencing EGS, mechanisms under the CBD have the advantage of being able to target EGS delivery most directly. Their weakness, however, is that the CBD has a very limited impact on those underlying economic development-related factors that are some of the most important determinants of EGS.

Tools developed within CBD could support mainstreaming EGS in other policy domains. Biodiversity integration has been a key obligation for CBD parties since the Convention came into force, and a number of initiatives and tools have been developed with regard to the international, national and local levels. Lessons learnt from their implementation so far indicate that an objective, such as mainstreaming of EGS, cannot be left to the constituency supporting conservation objectives alone. Inter-sectoral participation in the preparation of National Biodiversity Strategies and Action Plans (NBSAP) could increase awareness of EGS issues outside the more traditional environment agencies and build support for implementation.

The full report on which this paper is based can be downloaded at <http://pbl.nl/en/publications/2010/Prospects-for-Mainstreaming-Ecosystem-Goods-and-Services-in-International-Policies.html>

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