Developing International Payments for Ecosystem Services

Towards a greener world economy

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The unifying language of ecosystem services

Talk of 'ecosystem services' has recently risen to the forefront of environmental discussions. Studied extensively in the recently completed Millennium Ecosystem Assessment (MA), this increasingly popular topic offers an enhanced perspective on the many ways in which the natural environment sustains and fulfills human life. Some typical examples of ecosystem services are the provision of genetic resources for medicine and biotechnology, plant pollination, carbon sequestration, and soil formation. Biodiversity, which is an integral component of ecosystem functioning, plays a fundamental role in determining the delivery of these services.

The MA reported that 60 to 70% of our world's ecosystem services are deteriorating, with dramatic consequences for those who are most dependent on their steady provision, such as subsistence farmers. Throughout the MA, the 'ecosystem services' concept is used to highlight the relationship between human welfare and natural wealth.

The attractiveness of the 'ecosystem services' concept is also largely due to its capacity to provide a unifying language between the economic, business and environmental communities; as beneficiaries of valuable services are identified, previously uninvolved actors are recognizing that they have a stake in conserving the environment. This offers a strategic opportunity to further engage economic policy makers and the private sector in conservation efforts.

The term '**ecosystem services**' refers to the many natural processes by which ecosystems, and the species that make them up, sustain and fulfill human life.
(Daily, G. 1997)

Services are a large and increasingly important sector of all economies. Ecosystem services, however, are hardly comparable to a haircut or a car wash. Most significantly, ecosystem services are hard to put a price on. Indeed, when dealing with natural phenomena that are often considered to be free or public goods, it is not always easy to define exactly what an ecosystem service is, who benefits from it, and who should be rewarded for its provision.

Despite its novelty, the concept of ecosystem services is already shaping environmental policies and actions. Researchers and practitioners have developed considerable expertise and experience on the theory and practice of payments for ecosystem services (PES). The next challenge is to develop and extend this knowledge to a wider range of environmental challenges and contexts.

The privatization of Nature?

By offering economic incentives for maintaining ecosystem services, PES operates on the basis that market forces can offer an efficient and effective means of supporting sustainable development objectives. One of the key advantages of PES is its potential to tap additional sources of funding by creating new demand for 'environmental' goods and services.

The idea of creating markets for ecosystems is hard for some to accept. Understandably so; it is indeed unusual to conceive of Mother Nature as a marketable asset.

Yet nature is an asset. Its values may be difficult to quantify, but they are definitely real. By considering the global ecosystem as the provider of indispensable goods and services (i.e. natural capital), we are just one step away from creating markets for the flows of services that nature provides. If doing so can yield positive results for both people and nature, why hold back?

Payments for Ecosystem Services can be defined as a voluntary transaction whereby a well-defined ecosystem service, or a land-use likely to secure that service, is being 'bought' by at least one buyer from at least one provider – if, and only if, the provider secures the provision of the service.
(adapted from Wunder, 2005)

The question is whether the establishment of PES will provide additional social and environmental benefits at an acceptable cost. We need to remain focused on the larger picture. The end goal is not market creation, but sustainable development. Consequently, PES should not be seen as an end in itself, but rather as a specific policy tool to be handled with care and applied where it can deliver the desired results.

By valuing the economic benefits of ecosystems, PES is achieving more than simply creating new markets; it is highlighting the critical importance of natural capital in our global economy. Natural resources are indeed becoming increasingly limited by urbanization and economic growth. PES schemes can serve as a catalyst for the major behavioral shifts that are necessary for our descendants to inherit a healthy and viable planet.

Taking it global

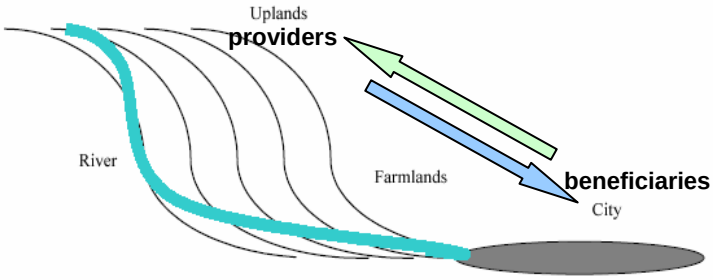
One of the most widespread and easily understood forms of PES is a transaction between downstream water users and upstream landowners to secure the water-related benefits of a sustainably managed watershed (e.g. flow regulation, filtration, and erosion control) (see figure 1). But the PES model has a much wider application. The Clean Development Mechanism (CDM) under the Kyoto Protocol is an example of a truly international PES scheme, whereby carbon sequestration projects in developing countries are paid for by polluters in developed countries. While the CDM has attracted criticism, there is hope that the basic idea of channeling 'sustainable' investments from North to South can be reinforced through other international PES (IPES) systems.

The IPES concept can be apprehended at two distinct levels, depending on whether we are considering (i) ecosystem services of global significance (e.g. provision of genetic information, climate regulation, etc.), or (ii) ecosystem services that have more regional effects (e.g. watershed protection, storm buffering, etc.). Fitting both into a common framework capable of integrating a variety of PES schemes will inevitably imply a multi-scale approach.

The ecosystem services 'beneficiary-provider' connection can also be framed in the context of global poverty reduction. Thus, IPES could help to redress the balance of inequitable and unsustainable economic relations in an increasingly integrated global economy. The international scaling-up of PES from 'downstream-upstream' payments would translate to 'North-South' or 'core-periphery' payments. Such payments could help support the sustainable development of communities currently marginalized by the process of globalization.

The potential scope of IPES is very broad and it is easy to get lost in alternative definitions and objectives. From a practical perspective, it can be helpful to think in terms of when, where, and how IPES has the most potential. As previously mentioned, PES is a specific policy tool, not a one-size-fits-all model for sustainable development. This begs the question: what types of situations are most suitable for an IPES fix?

Figure 1 : Upstream-downstream PES model



Source : Adapted from Heal et al., (2001)

Conservation for sustainable development

The primary objective of PES is to correct market failures that have negative effects on ecosystems. Biodiversity conservation can be considered an implicit objective of this approach. Biodiversity not only defines a natural or cultural landscape, but also offers a vital contribution to the productivity of ecosystems. Moreover, by maintaining and strengthening the capacity of an ecosystem to cope with changes, biodiversity holds a tremendous insurance value, especially to those societies most vulnerable to environmental degradation and disasters. By promoting a greater appreciation of the values of biodiversity, IPES can help finance ecosystem restoration and conservation in many places.

The main objective of IPES would thus be to support sustainable development through biodiversity conservation at a global scale. Such an effort will need to be wary of eventual trade-offs: conservation projects that support the delivery of a given ecosystem service may conflict with the provision of other ecosystem services, or may hinder other development activities. Consequently, it is important to consider the use of PES not just as an incentive for conservation, but more generally as an incentive for more sustainable land-use in inhabited landscapes. In other words, communities living in areas considered 'sources' of ecosystem services should be better off with IPES than without it.

Linking scales

Supporting local livelihoods does not mean neglecting the wider scale of environmental management. Indeed, in an increasingly inter-connected global economy, multi-scale effects are unavoidable. The supply of ecosystem services in one landscape can have important implications thousands of miles away. For instance, water regulation services provided by the forests surrounding the Panama Canal are critical to the maintenance of the channel; a degradation of this specific ecosystem service would have worldwide effects.

Multi-scale approaches to IPES can also be viewed from an 'urban-rural' perspective. Within the broader goal of changing consumer behavior, conservation incentives will be strengthened by highlighting the many ways in which natural ecosystems and rural landscapes support, enable, and define our modern (urban) lifestyles. In this approach, both 'upstream-downstream' and 'North-South' payments are combined, with marginalized rural communities representing the main targets for investment. Thus, IPES can aim to achieve the dual objective of preserving critical ecosystem services and alleviating poverty.

Until now, IPES has been assigned many lofty goals towards which it should strive without receiving much attention on how to reach them. The potential for engaging the private sector sounds appealing, yet it still needs to be determined how this can be done in practice. Market experts suggest that the impetus needs to come from the demand side. This is easier said than done. However, an increase in business appetite for ecosystem services might not be too far down the road.

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Next steps: integrating climate and conservation?

As climate change continues its rise to the forefront of global public consciousness, there is a real opportunity to give new impetus to both conservation and sustainable development efforts. Growing interest in carbon sequestration and the conservation of natural carbon stocks could serve as an important stepping stone for IPES. With an established market for carbon emissions, there is reason to believe that carbon sequestration could become an important source of finance for ecosystem conservation. Such a belief is contingent however on the ability of the international community to reach consensus on how to reduce greenhouse gas emissions from deforestation and forest degradation (REDD).

Through new regulations and increased awareness, carbon finance could potentially support a step-change in conservation efforts. However, there are many challenges that will need to be overcome if REDD is to fuel the development of IPES. An equitable and sustainable implementation of IPES will not happen on its own. Whether they relate to the permanence of payments, environmental leakage, or transaction costs, these challenges will inevitably need to be carefully addressed.

As with any innovation, uncertainty remains a major factor for IPES. The scientific knowledge will evolve, the policy context will change, fruitful partnerships may develop, and unseen opportunities may appear around the corner. However, one thing is certain: the availability and distribution of natural capital will become increasingly problematic if nothing is done to correct current trends. IPES can be an efficient and effective tool for encouraging more sustainable behaviors. So long as it remains compatible with the larger objective of sustainable development, IPES should be used to its fullest potential.

Growing interest in IPES:

The IPES concept emerged from growing concern about the loss of biodiversity and ecosystem services, combined with inspiration from the early success of the global carbon market and a desire to scale-up experience with PES at regional and national levels. In response, an initiative on IPES was developed jointly by The World Conservation Union (IUCN) and the United Nations Environment Programme (UNEP), in close collaboration with the Secretariat of the Convention on Biological Diversity (CBD). The initiative was 'launched' at an expert meeting of PES practitioners from around the world, in Geneva, in September 2006. Details of the meeting are available at: http://www.unep.ch/etb/events/2006-PESTD12-13Sep.php

"By valuing the economic benefits of investing in ecosystems, PES is achieving more than simply creating new markets; it is highlighting the critical importance of natural capital in our global economy."

The IPES potential:

- Raising awareness of the values of biodiversity and ecosystems
- Engaging previously uninvolved actors (especially in the private sector) in conservation activities
- Providing opportunities for communities to improve their livelihoods through access to new markets
- Integrating conservation and climate efforts into a common policy framework
- Increasing collaboration amongst Multilateral Environmental Agreements
- ***Facilitating the transition from an economy of production to an economy of stewardship***

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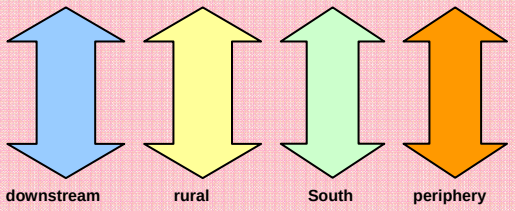
The IPES Framework:
IPES can be viewed from 'urban-rural', 'upstream-downstream', 'North-South' and 'core-periphery' perspectives. In most cases, marginalized rural communities represent the main targets for investment, as they are often the de facto stewards of ecosystems.

The ecosystem services provider-beneficiary relationships:



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For more information, please contact:
David Huberman
IUCN Headquarters - Economics and Environment
28 Rue de Mauverney
1196 Gland, Switzerland

Tel: +41 22 999 0308
Fax: +41 22 999 0025
Website: www.iucn.org/themes/economics
E-mail: david.huberman@iucn.org

Louise Gallagher
UNEP – Economics and Trade Branch
11-13 Chemin des Anémones
1219 Genève, Switzerland

Tel: +41 22 917 8609
Fax: +41 22 917 8076
Website: www.unep.org/etb
E-mail: louise.gallagher@unep.ch