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**Panel C**

Private investments to support protected areas

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**Paying for the Environmental Services of Protected Areas:  
Involving the Private Sector**

**Corresponding Authors:**

**Dr. Kristalina Georgieva (Presenter)**

**Mr. Stefano Pagiola**

**Ms. Payton Deeks**

Environment Department

The World Bank

1818 H St, NW

Washington, DC 20433

Tel: 202 473 0397

Fax: 202 477 0565

[kgeorgieva@worldbank.org](mailto:kgeorgieva@worldbank.org)

**Abstract**

The environmental services provided by natural ecosystems are often taken for granted until they are lost. These services may include hydrological benefits, sedimentation reduction, disaster prevention, and biodiversity conservation. A new approach known as Payment for Environmental Services (PES) charges downstream users for the services they receive and uses the proceeds to finance upstream conservation. Private sector companies are among the most important users of environmental services, and need to play a large role in PES efforts.

**Introduction**

Protecting the environmental services provided by natural ecosystems has been an important motivation for the creation of protected areas. Fiscal constraints and the need to satisfy many other pressing social needs often mean, however, that conservation budgets are severely limited. As a result, protected areas often continue to degrade, and with them the valuable environmental services they provide. The Payments for Environmental Services (PES) approach attempts to address this problem by charging service users (such as downstream water users) for the services they receive and using the proceeds to compensate those who provide the services (such as upstream land users or protected areas). As major users of environmental services, private sector companies can and should play an important role in such mechanisms.

# Payments for Environmental Services

Natural ecosystems can provide a number of benefits, including:

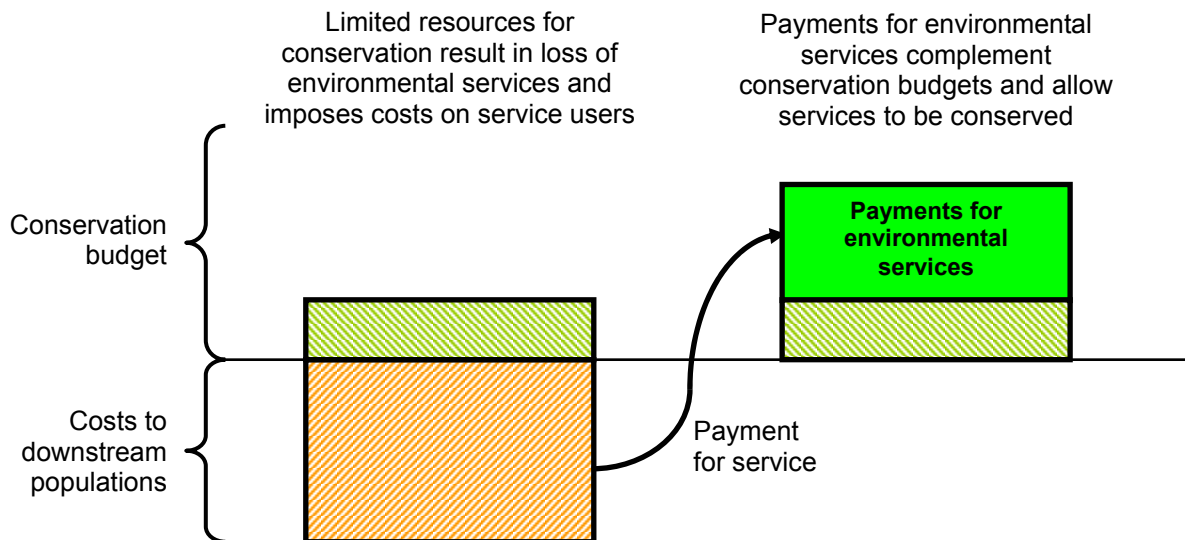
- Hydrological benefits. Controlling the timing and volume of water flows; improving the quality of water.
- Reduced sedimentation. Avoiding damage from sediment to downstream reservoirs and waterways and hence their uses (hydroelectric power generation, irrigation, recreation, fisheries, domestic water supplies).
- Disaster prevention. Preventing flooding and landslides.
- Biodiversity conservation. Providing habitats to increase biodiversity.

Environmental services are often taken for granted until they are lost. The hydrological services provided by forested areas, for example, are often only noticed after deforestation results in flooding or declining water quality. On private lands, these services are often lost because land users typically receive no compensation for the services their land generates for others, and so do not take these values into account in making land use decisions. On public lands such as protected areas, these services are often lost because of insufficient conservation budgets. We focus here on the latter aspect.

Recognition of this problem of lost services and of the failure of previous approaches to solve it has led to efforts to develop PES in which land users are compensated for the environmental services they generate. The logic of the approach, as it applies to protected areas, is illustrated in Figure 1. This approach has been the subject of considerable interest in recent years, as it promises to be more efficient and more effective than alternative approaches.

Three World Bank projects under implementation use the PES approach: Ecomarkets Project in Costa Rica; the Regional Silvopastoral Management Project in Colombia; Costa Rica, and Nicaragua, and the Western Altiplano Natural Resources Management Project in Guatemala. Additional projects that uses this approach are under preparation in El Salvador, Venezuela, South Africa, and Mexico.

Figure 1. The logic of payments for environmental services in protected areas



## Payments for Environmental Services in Protected Areas

Recent work of the World Bank/WWF Alliance for Forest Conservation and Sustainable Use highlights the importance of forested protected areas to drinking water in urban centers around the world. About 1/3 of the world's largest cities obtain a significant portion of their drinking water directly from protected areas. Research found that, when comparing natural forests to other catchments, the forests almost always provided higher quality water that had less sediment and fewer pollutants. Given that the economic value of watersheds is almost always under-estimated or unrecognized, it may be possible to collect user fees from people and companies that benefit from the drinking water to help pay for the management of the protected area. As population and urbanization continues to grow, it will be increasingly important to value protected areas as part of a system that provides urban centers with drinking water.

## The Private Sector and PES

Private sector companies are among the most important users of water-related environmental services. Bottlers and water supply companies need reliable flows of clean water; hydroelectric power producers depend on sediment-free water flows; and companies of all kinds may be vulnerable to damage or disruption from flooding. Other environmental services may also be important to specific industries. The tourism industry, for example, relies on scenic beauty as a selling point, in addition to needing clean and reliable water supplies for its bathrooms and swimming pools.

There are several examples of private sector companies participating in or even establishing PES mechanisms. Costa Rica's nationwide PES scheme, implemented since 1997 and supported by the World Bank's Ecomarkets Projects, includes provisions for private sector firms to use the mechanism to pay for the conservation of services of interest to them. Several firms are doing so, including hydropower producers and a bottler (Table 1). While the Energía Global and Platanar contracts involve conserving privately-owned areas, the La Manguera contract is for conservation of an area in the buffer zone of the Monteverde Reserve.

**Table 1: Private sector companies paying for environmental services in Costa Rica**

<i>Company</i>	<i>Watershed</i>	<i>Area (ha)</i>	<i>Area to be conserved with service buyer funds (ha)</i>	<i>Payments for conservation (US\$/ha/yr)</i>
<b>Hydroelectric power producers:</b>				
Energía Global	Río Volcán	3,466	2,493	10
	Río San Fernando	2,404	1,818	10
Platanar S.A.	Río Platanar	3,129	1,400	10
La Manguera S.A.	La Esperanza		3,000	10
<b>Bottlers:</b>				
Florida Ice & Farm	Río Segundo	3,870	1,000	42
<i>Source: FONAFIFO data</i>				

The Canaima National Park project in Venezuela, under preparation, will specifically use private-sector PES payments to finance conservation of a protected area. The project will include substantial payments from hydropower producer CVG-Edelca, who obtains water from the watershed in which the Park is located.

Convincing private sector companies to contribute to financing the conservation of protected areas that generate services they use will not be easy. A strong business case needs to be made that this approach

is preferable to alternative approaches, such as suffering the damage resulting from the loss of services, or 'engineering' solutions. Experience with market-based mechanisms is still young, and much remains to be learned. Though the principles are simple, putting them into practice is not. A review of numerous case studies of market-based mechanisms throughout the world suggests some broad initial lessons:

**Clearly identify the services being provided.** Potential buyers are not interested in generic forest, water, or biodiversity services. Rather, they are interested in clean water, or in a reliable dry-season water supply, or in access to genetic information. Without a clear understanding of which specific services a given forest is providing, and to whom, financing through PES is difficult.

**Understand and document the links between ecosystems and services.** Just as important as identifying the services is understanding how these services are generated. Too often, conservation advocates simply rely on conventional wisdom, such as 'forests improve water supply.' Even when the conventional wisdom is right, it is often insufficiently precise to allow effective mechanisms to be designed. What kind of forest is most effective in improving water supplies, for example, and where should it be located? How compatible are other uses? Without answers to questions such as these, the mechanism is unlikely to work effectively.

**Begin from the demand side, not the supply side.** By focusing on the demand for services and asking how best to meet it, it is more likely that an effective and sustainable PES mechanism will be developed. Without demand, there can be no market. Beginning from the supply side risks developing mechanisms that supply the wrong services, in the wrong places, or at prices that buyers are unwilling to pay. Supply-driven mechanisms are likely to have a higher mortality rate than demand-driven ones.

**Create an appropriate institutional structure.** PES programs require a supporting institutional infrastructure. Mechanisms must be in place to collect payments from environmental service beneficiaries, and to channel these funds to the protected areas that provide the services. Private sector firms need to have confidence that the payments they make will be used to protect or generate the services they seek, and not diverted to other uses or frittered away inefficiently.

**Monitor effectiveness.** Monitoring effectiveness is essential to assuring buyers that they are getting what they are paying for, and to adjust the functioning of the mechanism should problems arise. At the same time, excessively burdensome monitoring requirements can discourage potential suppliers without necessarily providing more reassurance to buyers. Finding the right balance of information and compliance costs is an ongoing concern, as seen in the case of markets for certified timber and agricultural products.

**Design flexible mechanisms.** PES mechanisms must also be sufficiently flexible to respond to changing demand and supply conditions and improvements in knowledge about how ecosystems generate services. They should reward efforts to expand and improve service delivery and to reduce costs, while minimizing the incentives for destructive rent-seeking or free-riding.

**Ensure the poor can participate.** Market-based mechanisms have great potential to provide additional income sources to rural land users, as well as reduced risk through diversification and other indirect benefits. However, realizing this potential often requires that particular efforts be made to ensure that the poor are not excluded, through efforts to secure land tenure of marginalized groups, support for cooperative institutions for bundling and bargaining, access to training and start-up capital, and of course the design of the market itself.

**Make payment schemes appropriate.** Make payments ongoing as long as land use is maintained. Target payments to pay those actually providing the service. Avoid perverse incentives; payments for reforestation can encourage deforestation.

## Conclusions

Payment for Environmental Services programs can provide a mechanism for private sector investment in protected areas. With services clearly delineated, flexibility in the mechanism, and appropriate payment schemes, PES can capitalize upon the needs of the private sector to protect areas that are vital for biodiversity, soil protection, and water quality. This approach, being based on the self-interest of private sector firms rather than their generosity, may be hard to implement, but if implemented successfully is likely to prove highly sustainable.

## Further Reading

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