PAYMENTS FOR ENVIRONMENTAL SERVICES

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Introduction. Natural ecosystems provide a wide range of environmental services that benefit society as a whole. These services, nevertheless, are often lost because of the lack of financial incentives to preserve them. This problem has been increasingly recognized in recent years, leading to the development of new systems as alternatives to past approaches, which proved ineffective in the preservation of ecosystems. One of the more recent conservation approaches is the one that promotes Payments for Environmental Services (PES). Different programs for the payment of environmental services are now being implemented worldwide and are instrumental to the provision of a wide variety of environmental services. In effect, a recent review by the International Institute for Environment and Development (IIED) identified over 280 cases of actual and proposed payments schemes for environmental services.[1]

Logic behind PES. The logic behind PES is that those who provide environmental services should be directly compensated while those who receive the services should pay for their provision. As land users generally do not receive compensation for the environmental services their land provides, they do not take them into account when making decisions regarding land use, thus reducing the chances of adopting practices that generate benefits for ecosystems. By compensating them for the environmental services their land generates, they are more likely to choose an environmentally sustainable land use.

For example, conversion to pasture – which implies deforestation – is profitable in economic terms for a land user. Nevertheless, this deforestation can impose extra costs on downstream populations who no longer benefit from services such as water filtration. A payment to the land user from the downstream beneficiaries can encourage him to choose the practice that is most environmentally sustainable, while still making a profit. This payment must be more than the additional benefit to land users of the alternative land use, and less than the value of the benefit to downstream populations, in order to change the behavior of the land owners and obtain a payment from the beneficiaries.[2] PES makes the most sense at the margin of profitability, when small payments to landowners or land users can tip the balance in favor of a desired land use.

Every dollar invested in meeting the water and sanitation targets, could provide a return ranging from US$3-$34. Interventions targeted at the poor, including improved household water treatment and storage can bring returns of up to US$60 per US$1 invested.[3]

Enabling conditions. In order to implement a scheme of PES, the wide variety of environmental services that ecosystems provide needs to be clearly defined. The Millennium Ecosystem Assessment[4] divides these services into the following categories:

Category of services	Type of services
Support services	Soil formation, nutrient cycling, primary production
Provisioning services	Food, fresh water, fuel wood, fiber, biochemical, genetic resources
Regulating services	Climate, disease, water regulation and water purification
Cultural services	Spiritual and religious, recreation, aesthetic, inspirational, educational, sense of place, cultural heritage

Once identified, environmental services need to be assessed in order to value them correctly. The difficulty is due in part to the variety and complexity of conditions in the field. Hydrological benefits, for instance, depend on many factors including the rainfall regime, on the type of soil and vegetation and on topography, so working out a program can prove to be complex. Another difficulty lies in the fact that there can be a diversity of objectives being sought in one same place. Indeed, regulating water flows to prevent flooding and the effects of the dry season require different actions. A basic assessment of opportunity costs can help set PES rates competitively and target limited resources to the particular sectors where they can really make a difference. A baseline is necessary for buyers of environmental services to set up PES programs and later assess them; otherwise the risk is that they may be paying for something that would have happened anyway. Moreover, for PES to have the desired effects, they must reach land users in a way that motivates them to change their practices to more sustainable ones. The lack of information – about how to quantify environmental services, about buyers and sellers, about how these markets work, about how to design and monitor payments systems – is generally the biggest obstacle to the development of markets for PES.[5]

A recent survey of PES schemes[6] shows that a multiplicity of models exists but there is no secret formula to follow for success, given PES schemes need to be adapted to the local conditions where they are established and to the specific characteristics of the environmental services they are meant to preserve. However the only constant is the essential need for financing. Financial resources for PES implementation can come from several sources that could be combined – public and private – including donations and grants from intergovernmental organizations, bilateral donors, private firms, foundations and NGOs. Private funding may come from firms that have adopted a zero biodiversity loss policy or from agro-business industries wishing to compensate for degradation of agricultural land by restoring degraded land elsewhere.

Public funds such as government payments and subsidies to land users can also finance PES. The logic behind this is that the government may already be paying for these services through other, less efficient, means or it may be forced to invest public resources to compensate for already degraded lands. Moreover, the government can serve as a bridge between private firms and land users as it can channel payments through a public structure. Financing may also come from the direct beneficiaries of environmental services who pay for their continuous provision. Self-sufficient markets for ecosystem services are very rare and the most successful examples involve a mix of public, private and non-governmental funding with support from multilateral agencies[7] regulated by supporting institutional infrastructure.

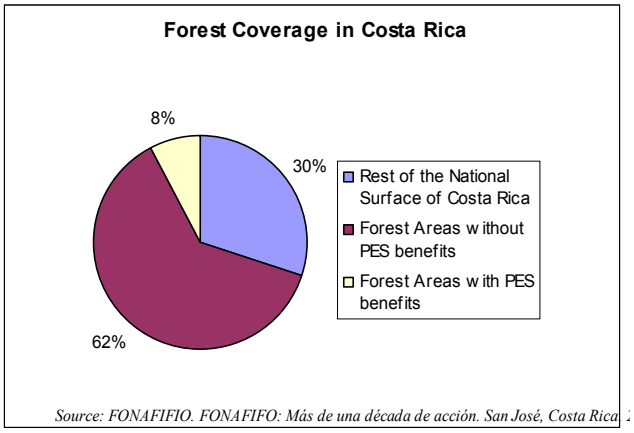
Regardless of the type of funding involved, the objective is to generate a continuous flow of financial resources to fund payments over the long term to avoid land users returning to unsustainable practices if payments stop. Two main principles to be followed have emerged over time.[8] First of all, payments need to be *ongoing*. The benefits need to be enjoyed by land users year after year as long as the appropriate land uses are observed and the ecosystem services provided. Previous attempts have failed because payments were cut after a few years with the expectation that land users would maintain sustainable land uses even after payments stop. However, experience shows that when payments cease, land users also cease to maintain desirable practices. Secondly, because environmental services greatly vary depending on the location and the particular land use, payments also need to be *targeted*. Undifferentiated payments that compensate everyone the same way regardless of the particular service they provide will be more expensive in the long run, even if the immediate cost of setting up a targeted payments scheme is elevated.

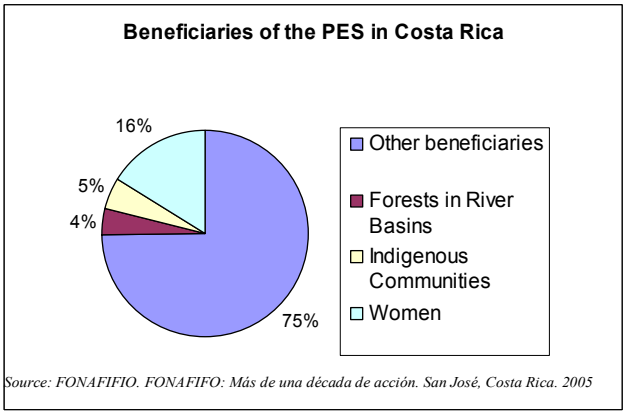
Lessons learned. There has been considerable experimentation with PES in recent years, Latin America being a fertile ground for such work. Many different schemes have been set up throughout the region ranging from local schemes in pilot phases to nationwide government supported programs.

Costa Rica has been a pioneer in the development of a nation-wide program for Payments for Environmental Services (*Pagos por Servicios Ambientales - PSA*) implemented by the National Fund for Forestry Financing (FONAFIFO). Under the 1996 Forestry Law, land users can receive payments for the services forestry provides, such as the reduction of green house gas emissions, watershed and biodiversity protection as well as scenic beauty conservation. Funding for the program comes from: (i) public resources (taxes on gasoline and on forestry resources); (ii) agreements with private firms (such as Energía Global, Compañía Nacional de Fuerza y Luz) and (iii) projects and market mechanisms (such as the Ecomarkets Project funded by the World Bank).

Since its conception, the program has been successful in stopping deforestation as well increasing the forest coverage in the country. Furthermore, even though it was not initially designed to reduce poverty, there is no doubt the scheme has managed to alleviate it, especially in rural areas. Since the inception of the program to date approximately US$84,000,000.00 have been invested from different public and private sources and the impacts have

been significant for over 7,000 beneficiaries, including more than 10 indigenous communities.[9]





In Brazil, the Social and Environmental Development Program (PROAMBIENTE) is a credit program that focuses on family-based agricultural production. It presents platforms at state and local levels that encourage participatory planning through the formation of new partnerships and networks for the negotiation of the use of resources.[10] The rationale behind the PROAMBIENTE is to help producers make the transition from the traditional agricultural practices that currently prevail in the Amazon frontier toward more diversified and sustainable agricultural and extractive practices, thus slowing down forest conversion and emissions. Unlike existing agricultural credit programs, the PROAMBIENTE creates an incentive for more sustainable economic activities by compensating, directly or indirectly, family based producers for good agricultural practices and associated environmental services such as forest conservation and management, reduction of forest fire and fragmentation, maintenance of stream and river margins, soil conservation, recuperation of degraded areas and biodiversity conservation. The proposal is innovative both in its origin (it is being proposed by producers themselves), and because it would be one in the first instances of a market based economic instrument (credit) being used to modify the behavior of family based producers to help contain deforestation.[11]

The World Bank has also had an important role in developing PES systems in various countries in Latin America. The afore-mentioned Ecomarkets Project in Costa Rica supports the country's PES program with a US$ 32.6 million loan from the Bank and a US$ 8 million grant from the Global Environment Facility (GEF) to assist in the conservation of biodiversity. Also, in Colombia, Costa Rica and Nicaragua, the Regional Integrated Silvopastoral Ecosystem Management Project uses PES to encourage land users to resort to sustainable silvopastoral practices in Colombia, Costa Rica and Nicaragua. In the Dominican Republic, Ecuador and El Salvador, the World Bank has pilot PES programs under preparation. In addition to these projects, the World Bank Institute (WBI) has developed a technical training course aimed at personnel in ministries, conservation agencies and NGOs involved in the implementation of PES programs.

Many environmental NGOs have been active in establishing PES systems worldwide that concentrate on different environmental services. For example, in the last decade the World Wildlife Fund (WWF) and The Nature Conservancy (TNC) have developed many new conservation financing schemes that, if not in name, are very close to PES schemes (e.g. community conservancies, debt for nature swaps, conservation easements, environmental funds, certification schemes and conservation trust funds). Since 2000, NGOs have also been developing a portfolio of PES schemes. A majority of these PES projects are local in scale and regard the selling of environmental services provided by the conservation of a local watershed or the management of a protected area. Some of the PES schemes in full operation include, for example, the Guatemala's Sierra de las Minas Watershed program through the work of WWF Central America and its local partners, where large downstream users of water – including soda bottling companies and hydroelectric plants – have agreed to contribute to a fund that supports upstream conservation efforts.[12]

TNC also has projects focused on Watershed Conservation Payments in Chiapas, Mexico; Lago de Yojoa, Honduras; and Quito, Ecuador. TNC's Climate Change Initiative has developed several model carbon offset projects that have been implemented in places such as Noel Kempff Mercado National Park in Bolivia, Guaraqueçaba in Brazil and Rio Bravo in Belize.[13]

With an increasing loss of watersheds and biodiversity – among others – due to unsustainable land use, payment schemes for environmental services stand out as innovative instruments for the management of natural resources.

Evidence today shows that PES have been crucial to the conservation of ecosystems and have managed to stop their degradation as the lessons learned from the programs in Costa Rica and other places show. In addition, PES are an example of a system that combines a market-based approach with societal objectives as the benefits are not limited to conservation but also affect people's well-being. The adaptability of the system to different contexts and environmental services makes PES programs an option applicable in a wide range of situations worldwide.

Questions for Workshop Participants.

- How can information about PES be made more widely available those concerned? For example, how can upstream land users and downstream populations be associated?
- What mechanisms could help ensure a continuous flow of resources for PES? What kind of institutional framework is needed in order to manage these funds?
- Is it possible to replicate existing PES models? If so, how can the lessons learned so far be applied in different countries?
- How can experiences in one region be leveraged through the OAS ministerial process?

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