

# Are the upland poor benefiting from environmental service reward schemes?

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## 1. Introduction

Payments for Environmental Services (PES) schemes are considered a potential instrument to mitigate environment and development challenges faced in many tropical countries. A strong appeal of PES is the opportunity to develop new and often local financing arrangements to contribute to biodiversity, climate change, resource management and/or poverty reduction goals. Underlining the PES approach is the role that forests, and changing forest trends, play in environmental integrity, economic growth and social development, particularly for poor, forest-dependent people. Findings from research in the Arenal area of northern Costa Rica contributes to improved understanding of the socio-economic opportunities and outcomes from PES. This work informs the development of a Negotiation Support System that will be tested in India to evaluate the replicability of more generic guidelines, methods and approaches for PES design.

## 2. PES and forests

While forest benefits have been acknowledged in terms of world heritage, eco-tourism and, more latterly, carbon fixation values, there has been growing interest in forest-based water services. One example is the Arenal catchment in the northern Tilaran range of Costa Rica, which is a tropical montane cloud forest zone with cascading benefits from water services to national hydro-electric power production, irrigation, a wetland and an important estuary fishery. The Government of Costa Rica has long recognised the ecological (and increasing economic) benefits of forests through innovative legislation to conserve its natural resources. This includes the 1996 Forestry Law, which introduce the first PES programme by recognising forest land use benefits for 1) Landscape beauty; 2) Carbon fixation; 3) Biodiversity; and 4) Watershed (or catchment) services.

However, the effectiveness of the Costa Rica PES programme is questioned by at least three issues:

- 1) biophysical evidence of forest land use impacts on increased water flows compared to agricultural conversion (e.g. pasture);
- 2) economic valuation that accurately and defensibly estimates forest land use value with downstream water demand;
- 3) social opportunities and outcomes of the PES programme, particularly for the upland rural poor.

In relation to issue 1), a sister project led by the Free University of Amsterdam has conducted detailed hydrological experiments in the study area and will report later this year. While the economic valuation study waits to be informed by the hydrological study, details of the socio-economic findings are presented here.

### 3. PES and rural poverty

One aim of the PES programme is to reduce rural poverty by:

- 1) support and outreach for small and medium farmers and landowners, and
- 2) providing income and employment generation in rural areas.

Poor people tend to be found in rural areas in most developing countries. The social impacts of the PES programme in Costa Rica offer lessons for wider replicability and design. Key findings from the socio-economic study include:

1. Perceptions and beliefs of local people are that cloud forests (and lower altitude forests) increase and regulate water flows, and protect water quality;
2. Awareness, adoption and support of the PES programme by local people are constrained by little local presence of programme implementers and insufficient programme funds to meet demand;
3. Local people have significant reservations about entering into a land contract with the government, particularly a fear of losing their land;
4. Increasing bureaucracy and qualification criteria leads to high transaction costs - this fall hardest on poorer people and those living far from towns;
5. Experimental scenario analysis indicates large land owners (> 10 hectares) with land titles are more likely to be able to and willing to commit to the programme;
6. Respondent ratings to scenario analysis of payment levels indicate higher amounts will not necessarily result in higher participation. This is partly due to high opportunity costs from alternative land uses, particularly livestock or coffee;
7. The programme does not benefit people without land.

### 4. Lessons and policy implications

Four lessons emerge from the socio-economic study:

*Lesson 1. Secure land rights are often critical to benefiting from PES schemes.*

The poor and marginalised often have no or uncertain land claims in developing countries. This weakens necessary institutional arrangements between downstream payments to upstream service providers. Examples illustrate here, and in other places, opportunistic elite groups forcibly and/or unfairly appropriating upland areas when land values increase as in the case of a new PES scheme.

Policy implication: if land tenure prevents PES benefits reaching poor groups, more integrative mechanisms should be considered such as wholesaling services from a community/zone and increasing community capacity through education with tangible benefits linked to improved access to credit and market support centres.

*Lesson 2. PES will change land use incentives: scenario analysis should be included in a design phase.*

One methodological advance in the study was the use of a stated choice method (Conjoint Analysis) to explore experimental scenarios of alternative compensation mechanisms (financial and other), which revealed that land owners were less influenced by cash than broader mechanisms, such as road improvements.

Policy implication: understanding land-decision making processes of farmers in highly variable tropical climates will benefit from careful pre-project design. Stated choice methods provide a flexible and rigorous approach to evaluating alternative scenarios in an objective, inclusive and comparative framework.

*Lesson 3. Lack of trust may undermine a good PES scheme.*

A clear message from qualitative studies revealed significant and wide-spread distrust of entering into any land contract with the government. While this may not matter for local institutional arrangements under a reward framework, it presents a challenge for more regulatory approaches that are premised on small-holders entering into legal contracts with government.

Policy implication: PES scheme should attempt to build community capacity or awareness to reduce participant misunderstandings or prejudices against scheme adoption. Financial rewards are only one potential constraint to reaching marginal farmers, others include trust, transaction costs, opportunity cost of land and information.

*Lesson 4: Be realistic about poverty reduction impacts.*

There may not be a close relationship between important environmental services and poor groups. If poverty goals are 'bolted-on' to attract wider donor funding poverty impacts may be limited.

Policy implication: PES schemes with a specific poverty reduction goal may include activities to directly reach the poor and landless. This may include initiatives such as 1) labour-based land management/rehabilitation or 2) promote organic coffee farming as a high-value, labour-intensive land use that benefits the rural poor.

## 5. Future research

It is noted that these lessons are not necessarily representative of the wider national, regional or international context. To better understand the replicability of the lessons and applicability of methods, research is being conducted at the Bhoj wetlands, India, linked to IIED's Markets for Watershed Services programme. A Negotiation Support System will be developed to better understand and provide new tools and approaches for PES schemes in relation to:

1. Applying stated choice methods to evaluate land use decision-making processes across experimental scenarios;
2. Economic valuation methods for environmental services;
3. Guidelines for institutional arrangements for environmental service incentive mechanisms.

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### **Project documents** (available on request)

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