



Enhancing the Cost-Effectiveness of Payments for Ecosystem Services

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Structure

- Introduction and context
- Principles for effective PES
- PES programme design and criteria

Introduction

- PES definition:
 - A voluntary, conditional agreement between at least one “seller” and one “buyer” over a well-defined environmental service – or a land-use presumed to produce that service (Wunder, 2007)
- Applied to internalise local and national public good benefits of biodiversity and associated ecosystem service
 - National: Canada, China, Costa Rica, Mexico, the US
 - Many local scale PES programmes
 - Large proliferation of PES
- Estimated to channel over USD 8.2 billion per year, increasing by 10-20% per year
- Key instrument for biodiversity and ecosystem service conservation and sustainable use >> CBD COP-10

Why are PES important?

- PES provide direct payments to private landowners and users to support conservation and provision of ecosystem services.
 - Potentially large gains in cost-efficiency from PES compared to indirect payments or other regulatory approaches (Engel et al. 2008)
- But often cited criticism is lack of cost-effectiveness
- Environmental and cost effectiveness of PES depend crucially on programme design and implementation

Principles for effective environmental financing mechanisms (including PES)

- Identifying clear objectives and goals
- Identifying eligibility criteria and priorities
- Securing sufficient and long-term sources of PES financing
- Monitoring and evaluation of performance over time

PES Design and Implementation Criteria for Enhanced Cost-Effectiveness

- **Remove perverse incentives**
 - For PES incentives to function properly, other market distortions, such as environmentally harmful subsidies, need to first be removed
 - Steering committee for PES with multiple stakeholders can help ensure coherent policy e.g. Costa Rica
- **Clearly define and enforce property rights**
 - Ownership of land (*de jure* right) not necessarily required, but a clear institutional model is essential to legitimise payments and legally enforce contracts

PES Design and Implementation Criteria for Enhanced Cost-Effectiveness

- **Identify buyers and ensure long-term and sustainable financing for PES**
 - Buyers can be private sector firms, organisations, or government
 - Programmes financed by beneficiaries are more likely to set the efficient price (Engel et al, 2008)
 - In reality, often collaboration between users, governments and institutions e.g. Romanian and Bulgarian stretches of the Danube
 - Private sector examples: Vittel in France, hydroelectric companies in Costa Rica, mussel farms in Sweden

PES Design and Implementation Criteria for Enhanced Cost-Effectiveness

- **Target ecosystem service benefits**
 - Spatial heterogeneity in ecosystem service benefits
 - Can use *inter alia* mapping tools, scoring systems, and environmental benefit indices to compare potential conservation outcomes, allowing ecosystem services with highest benefit per cost to be selected
- **Bundle multiple ecosystem service benefits**
 - Bundling and layering simultaneously targets multiple environmental concerns – depends on spatial correlation
 - Can increase the asset value of an ecosystem and reduce transaction costs
 - Can use weights (e.g. in an EBI) to trade-off discrete priorities

- **Baselines and additionality**

- Payments must lead to additional benefits relative to the status quo baseline level of service provision
- Prioritise sites with high risk of ecosystem service loss

- **Leakage**

- Securing an ecosystem service in one location can lead to increased pressure to convert or degrade services in another location
- Trade-off between additional monitoring expenses and increased risk of leakage

- **Permanence**

- Importance of long-term benefits > need for continuous payments

Reflecting sellers opportunity costs in payments

- **Uniform vs. discriminatory payments**

- Uniform payments set the same price for all
 - e.g. average opportunity costs
- Discriminatory payments aim to set the payment equal to each individual landowners opportunity costs
 - Discriminatory payments maximise the benefits from fixed budget (i.e. enhance cost-effectiveness)
 - Equity considerations might lead to preference for uniform payments (e.g. Mexican PSAH programme)

Reflecting sellers opportunity costs in payments

- Setting the Payment Level

- Information asymmetries between landowners (who know their opportunity costs), and the administrator (who does not)
 - Use costly-to-fake signals to infer opportunity costs, e.g. soil productivity
 - Use inverse auctions as a price revelation mechanism. Competition in auctions forces participants to trade-off requesting a higher payment with the risk of being under-bid

- Performance-based payments

- Performance-based payments help ensure service provision, and reduce enforcement requirements. However, performance-based payments may not always be feasible due to monitoring costs
- Effort-based payments are a second best option, but require stricter enforcement to avoid problems of moral hazard

Robust Monitoring and Enforcement

- Monitoring is fundamental to PES performance assessment and allows policy-makers to improve programme over time
- Monitoring of payment transaction, contracts, and ecosystem service provision
 - Example of Costa Rica: monitoring is conducted through GIS, and an Integrated Project Management System (IPMS) with several modules: contracts, finance, accounting, monitoring and evaluation, planning and budget, PES

Some key messages

- Remove perverse incentives - coherent PES policy requires other prevalent market distortions to be removed
- Clearly define and enforce property rights
- Ensure sufficient and long-term financing for PES
- Targeting mechanism allows conservation priorities to be evaluated, and most cost-effective contracts selected
- Additionality, leakage and permanence should be addressed
- Discriminatory payments are more cost-effective than uniform payments
- Performance-based payments are preferable to effort-based payments
- Monitoring and performance evaluation is key