ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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
- Case study: Tasmanian Forest Conservation Fund in Australia
- Lessons learned

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 services
  - National scale examples: Canada, China, Costa Rica, Estonia, Mexico, South Africa, US, UK
  - Many more local scale PES programmes
  - ➢ Large proliferation of PES… More than 300 programmes to date
- 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 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 in realising gains in cost-effectiveness

➢ Environmental and cost-effectiveness of PES depend crucially on programme design and implementation

4 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 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, should be removed
  - Steering committee for PES with multiple stakeholders can help ensure policy coherence e.g. Costa Rican PSA
- *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 or individuals, or government and organisations
    - i.e. user financing vs. 3rd party financing
  - 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* environmental benefit indices (EBI), scoring systems, and spatial mapping tools, to compare potential conservation outcomes, allowing ecosystem services with highest benefit per cost to be selected
- *Bundle or layer 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

Additionality, Leakage, Permanence

- *Baselines and additionality*
  - Payments must lead to additional benefits relative to the status quo (business as usual) 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. differentiated payments*
  - Uniform payments set the same price for all
    - e.g. average opportunity costs
  - Differentiated payments aim to set the payment equal to each individual landowners opportunity costs
    - ➢ Differentiated payments maximise the benefits from fixed budget (i.e. enhanced cost-effectiveness)
      - ➢ Used in Australia, Canada, US, pilot PES in Indonesia, etc
    - ➢ 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 requires 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 strict enforcement to avoid problems of moral hazard

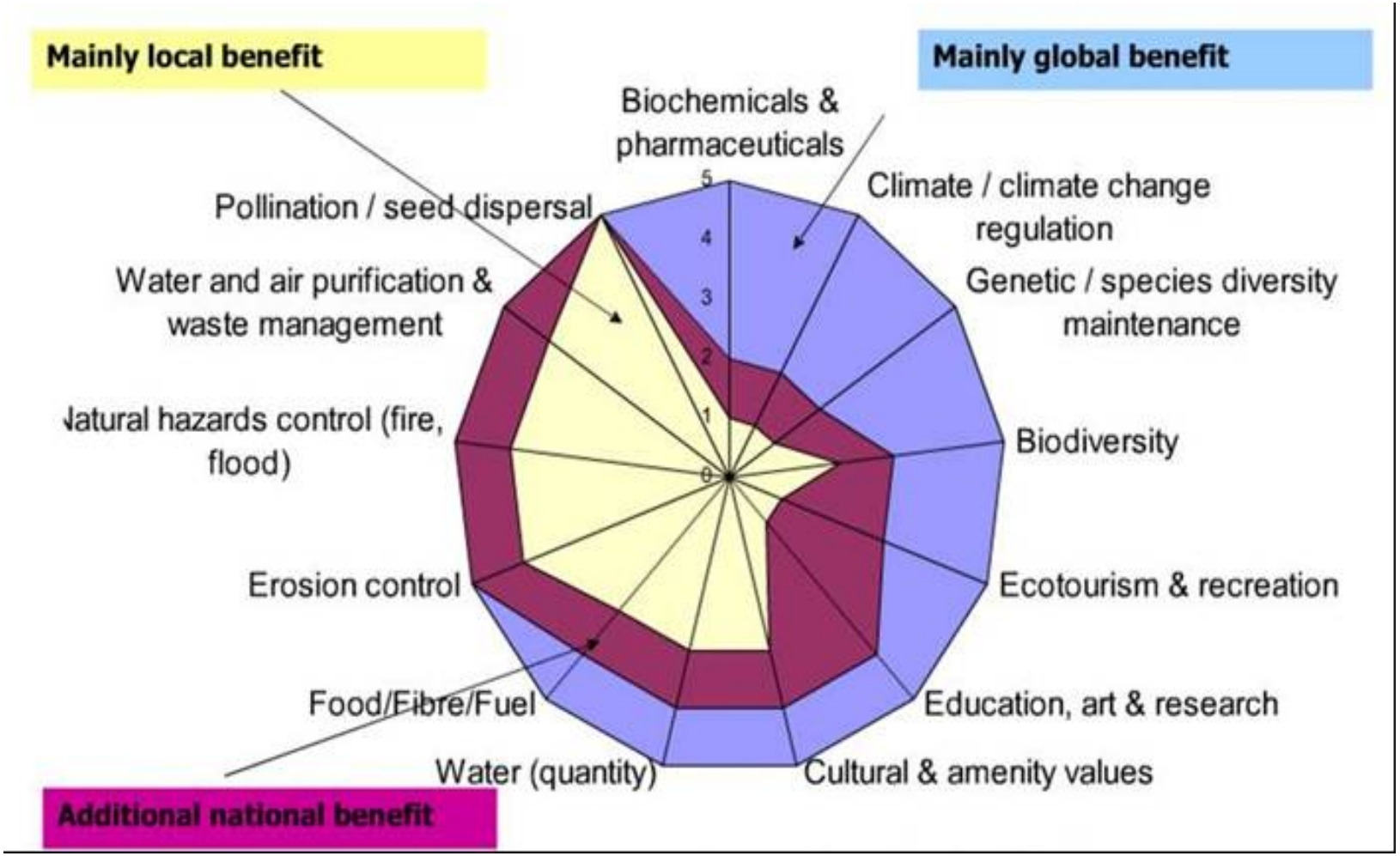
Robust Monitoring and Enforcement

- Monitoring is fundamental to PES performance assessment and allows decision-makers to improve programme over time

- Monitoring of: payment transaction, contracts, and ecosystem service provision

  – e.g. Costa Rican PSA: 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

Mobilising Finance for PES



Source: TEEB

Efficient Targeting of PES

- **Benefits**
  - Identify areas with high ecosystem service benefits
    - Valuation, benefit indices, scoring, spatial mapping
- **Threat**
  - Identify areas with high risk of ecosystem service loss (additionality)
- **Costs**
  - Identify areas with low opportunity costs

Some key design elements

- 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 allows conservation priorities to be evaluated, and most cost-effective contracts selected
- Additionality, leakage and permanence should be addressed
- Differentiated payments are more cost-effective than uniform payments
- Performance-based payments are preferable to effort-based payments
- Monitoring and performance evaluation is key

Tasmanian Forest Conservation Fund

- **Goal:** protect up to 45 600 ha of forest on private land via voluntary market-based measures (mainly old growth)
- PES mechanisms: **reverse auction**, differentiated take-it-or-leave-it offers and direct negotiation – total FCF budget AUD 50 million
- Robust metric (targeting): **Conservation Value Index** (CVI)
- Calculated the CVI based on each proposal to enable ranking based on value for money criteria (AUD/CVI)
- Reverse auctions to further enhance cost-effectiveness

➢ Cost-efficiency gains of 52% compared to a first-come first-served basis

Some key lessons learned

- PES is one instrument in a policy tool-box >> PES are compatible in a wider policy-mix
- Landholders respond differently to alternative design elements of PES programmes >> can run portfolio of PES mechanisms
- Design and implementation is a continuous learning process >> monitoring and evaluation framework is key to improvements over time
- Inverse auctions are an innovative, cost-effective method for selecting ecosystem service providers and allocating payments >> applications in US, Australia, Indonesia and others...
- Many of the criteria for effective local and national PES programmes are applicable to international PES (IPES)

Thank you!

For further information on OECD work on the economics and policy of biodiversity, please visit:

www.oecd.org/env/biodiversity

Key policy areas:

- Biodiversity Indicators, Valuation and Assessment
- Economic Instruments, Incentives and Markets
- Biodiversity Finance, Development and Distributional Issues

- Including information on OECD workshop (25 March 2010) on *Enhancing the Cost-Effectiveness of Payments for Ecosystem Services*
- OECD 2010 forthcoming publication: *Paying for Biodiversity: Enhancing the Cost-Effectiveness of Payments for Ecosystem Services*