Sasumua water treatment plant, Kenya
Sasumua water treatment plant, Kenya
What’s the problem?

- Treating for contamination: $100,000/year
- Clearing silt from water intakes: $50,000/year
The problem

Benefits to land users

Deforestation and use for pasture

Costs to downstream populations

Conservation
Past responses have largely failed

- Direct government intervention
- ‘Demonstration’ approaches
- Regulatory approaches
- Short-term subsidies (in cash or in kind)

- Low adoption rates
- Adoption followed by abandonment
Payments for environmental services: An Introduction

The logic of payments for environmental services

Benefits to land users

Costs to downstream populations

Deforestation and use for pasture

Conservation with payment for service

Payment

Important!
This logic is repeated every year

» Need annual payments
» Need sustained financing

Stefano Pagiola, World Bank, 2006
Definition of PES

A mechanism to improve the provision of indirect environmental services in which

- Those who provide environmental services get paid for doing so (‘provider gets’)
- Those who benefit from environmental services pay for their provision (‘user pays’)
- Payments are conditional
- Participation is voluntary

Service providers — Service users

Payment
What makes payments for environmental services attractive?

- Generates it’s own financing:
  - Brings new financing not previously available for conservation

- Efficient:
  - Focuses efforts where benefits of conservation highest and costs lowest

- Potentially very sustainable:
  - Not based on whims of donors, NGOs, but self-interest of service users and providers

- For this to work, need to:
  - Base payments to providers on payments by users
  - Actually deliver services: getting the science right is critical
  - Tailor mechanism to specific local conditions
## Examples of PES mechanisms

<table>
<thead>
<tr>
<th>Country</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombia</td>
<td>Cauca Valley water user associations</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>FONAFIFO/ <em>Pagos por servicios ambientales</em> (PSA)</td>
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<td>Heredia: Environmentally adjusted water tariff</td>
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<td>Ecuador</td>
<td>Quito: FONAG</td>
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<td></td>
<td>Cuenca: ETAPA</td>
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<td>Pimampiro</td>
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<td>El Salvador</td>
<td>Tacuba, San Francisco de Menéndez, Yamabal</td>
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<tr>
<td>Mexico</td>
<td><em>Pago por servicios ambientales Hidrológicos</em> (PSAH)</td>
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<td></td>
<td>Coatepec</td>
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<tr>
<td>South Africa</td>
<td>Working for Water Program</td>
</tr>
</tbody>
</table>
## Costa Rica: Payments by water users

(US$/ha/yr):

- **10** Energía Global
- **15/30** Platanar S.A.
- **40** CNFL/Río Aranjuez
- **40** CNFL/Río Balsa
- **40** CNFL/Río Laguna Cote
- **45+22** Florida Ice & Farm y Heredia ESPH
- **45** Azucarera El Viejo
- **45** Hidroeléctrica Agua Zarcas
- **45** Misc

<table>
<thead>
<tr>
<th>Water Use</th>
<th>Area (ha)</th>
<th>Payment (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydropower producer</td>
<td>10</td>
<td>300</td>
</tr>
<tr>
<td>Bottler</td>
<td>15</td>
<td>450</td>
</tr>
<tr>
<td>Domestic water supply</td>
<td>30</td>
<td>900</td>
</tr>
<tr>
<td>Irrigated agriculture</td>
<td>30</td>
<td>900</td>
</tr>
<tr>
<td>Hotel</td>
<td>20</td>
<td>600</td>
</tr>
<tr>
<td>Misc</td>
<td>40</td>
<td>1800</td>
</tr>
</tbody>
</table>

Total 18,000ha ca US$500,000/year

Stefano Pagiola, World Bank, 2006
World Bank support to PES

Projects under implementation:

- **Costa Rica**: Ecomarkets Project (US$33 million WB + US$8 million GEF)
- **Colombia/Costa Rica/Nicaragua**: Regional Integrated Silvopastoral Ecosystem Management Project (US$4.5 million GEF)
- **South Africa**: Cape Action Plan for the Environment (US$9 million GEF)
- **El Salvador**: Environmental Services Project (US$5 million WB + US$5 million GEF)
- **Mexico**: Environmental Services Project (US$83 million WB + US$15 million GEF)
- **Costa Rica**: Mainstreaming Market-Based Instruments for Environmental Management Project (US$30 million WB + US$10 million GEF)

Projects under preparation:

- **Venezuela**: Canaima National Park Project
- **Kenya**: Agricultural Productivity and Sustainable Land Management Project
- **Panama**: Rural Poverty and Natural Resource Management II Project
- **Worldwide**: LULUCF carbon projects (US$12 million in sales already signed; expected to reach US$30 million by early 2007)

Capacity building: Courses in Colombia, Dominican Republic, Ecuador, El Salvador, Kenya, Mexico, Panama, Peru, Senegal, South Africa, Venezuela

Research: Case studies; Hydrological aspects; Poverty links; Valuation
Payments for environmental services: An Introduction

1. Understanding the science...

2. Charging service users

3. Paying service providers

4. Establishing the institutional framework

From theory to practice

Payment

Stefano Pagiola, World Bank, 2006
Key problems

- Getting the science right
- Getting the institutions right
For more information

www.worldbank.org/environmentaleconomics