Developing markets for watershed protection services and improved livelihoods

Early findings from country work and literature review

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Prospects of PES in Europe and NIS

WWF Workshop

Sofia, 19 and 20 October 2005

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Outline of this presentation

1. **IIED project "Developing markets for watershed protection services and improved livelihoods"- outline**

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2. **Literature review: early findings**

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1. “Developing markets for watershed protection services and improved livelihoods”- outline
2. Literature review: early findings
3. **Emerging Issues and Plans for the Future**

Watershed Markets
Overall project outline

- **Goal**: “to promote the maintenance of watershed services that support local livelihoods”
- **Purpose**: “to increase understanding of the potential role of market mechanisms in promoting the provision of watershed services for improving livelihoods in developing countries”
- **Keywords:** equitable, market-mechanisms, watershed environmental services

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Watershed Markets
Project outputs

- **Output 1**: **Action-learning** supported in four countries: India, Indonesia, Caribbean and South Africa.
- **Output 2**: **Diagnostics** in Bolivia and China.
- **Output 3**: Improved information through networking, **review of existing initiatives**, development of guidance and dissemination with other countries and institutions.

Baseline – where did we start?

Action-learning in four countries suggest:

- Global trends in watershed management are creating new categories of watershed service 'providers'
- But the links between them and downstream beneficiaries are weak or non-existent
- Market-like mechanisms are widely used, but not recognised as such
- As watershed services decline, inequity in their allocation increases
- Many similarities – but substantial differences require individually tailored responses

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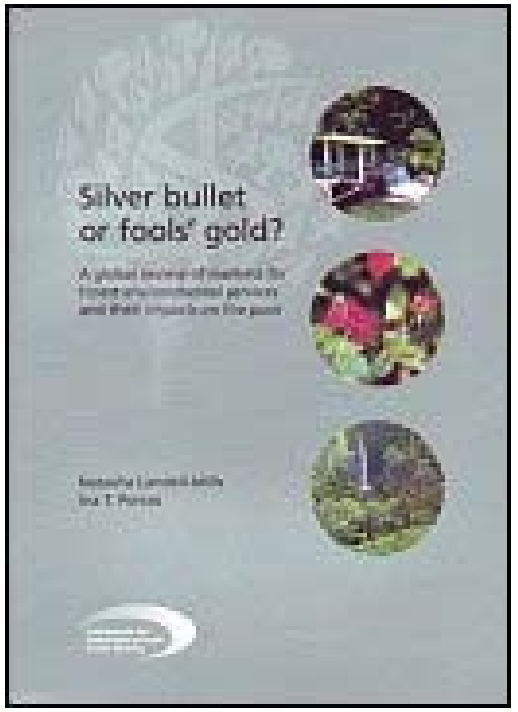
Outline of this presentation

1. “Developing markets for watershed protection services and improved livelihoods”- outline
2. **Literature review: early findings**

Literature Review

In 2002 Landell-Mills and Porras published a review of 61 cases of MWS and developed a framework for analysis.

- What has happened since then, and what are we learning so far?
- What are the trade-offs between economic efficiency, environmental goals and poverty reduction?
- How can we make this information available to all?



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Methodology

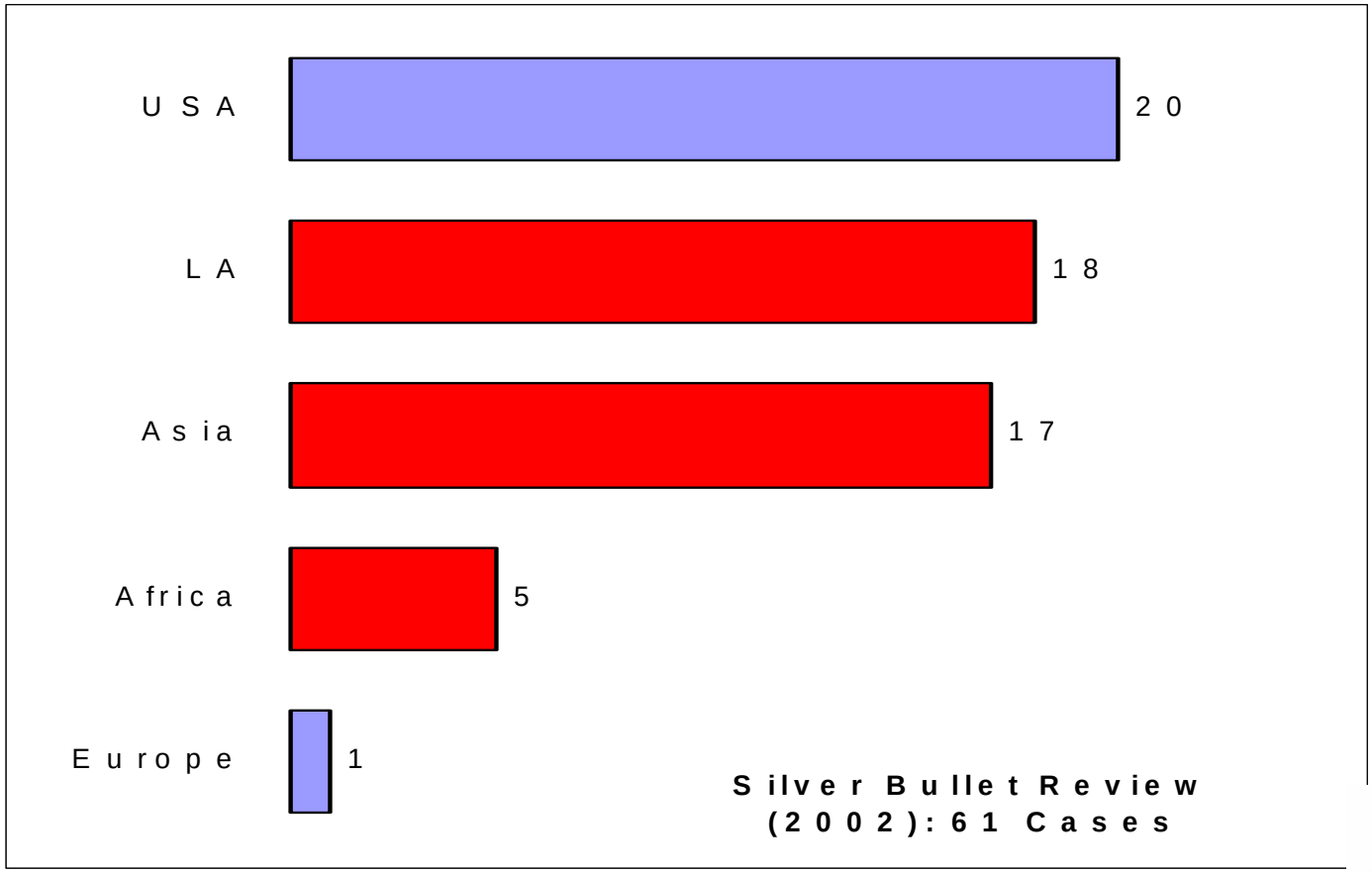
- Develop a framework for collection of information (*ficha*)
  - Policy issues: Driver, legislation issues, lessons learned, main obstacles,
  - Stakeholders (supply, demand, intermediary)
  - Market design (environmental service, commodity, payment mechanism, type of payment, funds involved)
  - Impacts: (economic, environmental, social, with emphasis on ***poverty impacts***)
  - Technical issues (monitoring)

(We'll see this in a minute…)

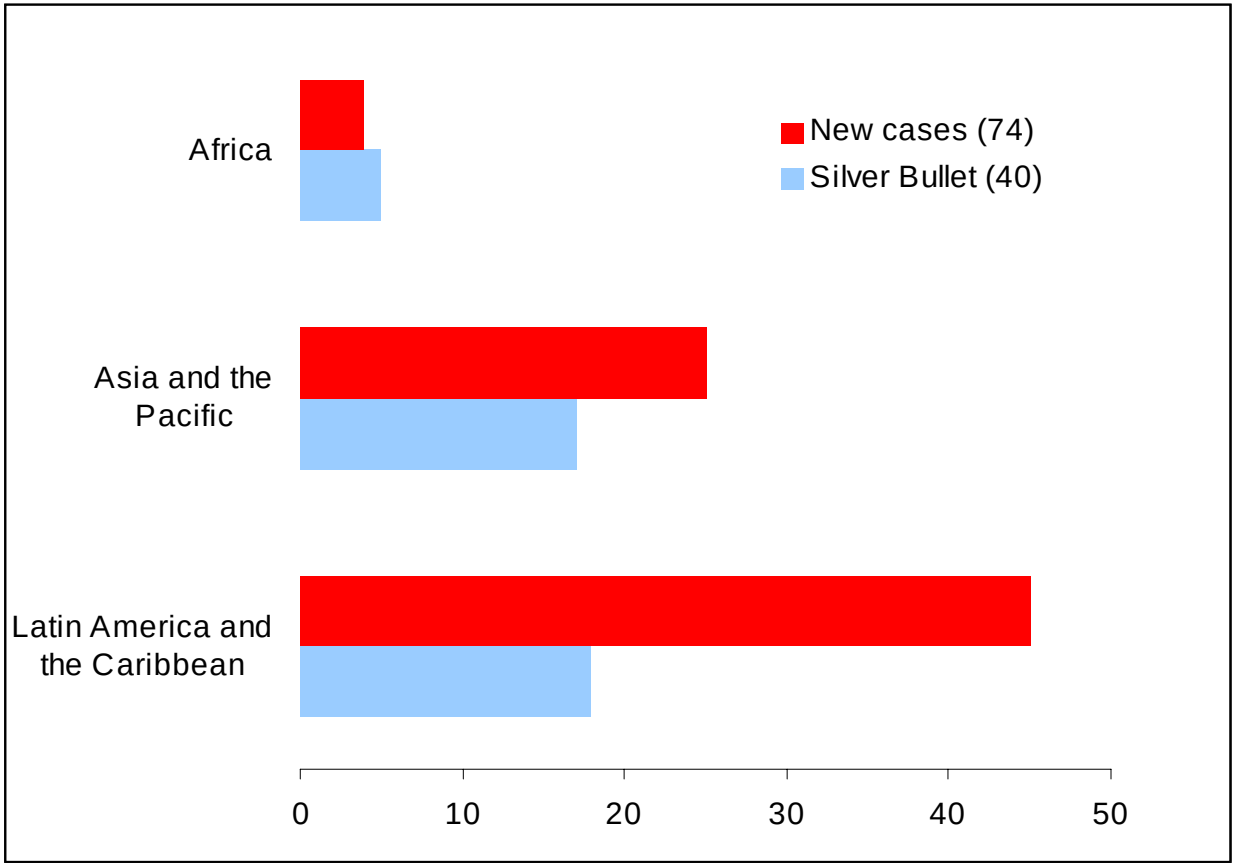
Methodology (cont..)

- Collection of information through desk-review, internet searches, e-mails and telephone calls to practitioners and project coordinators ***(closing now)***
- Comparative analysis, lessons learned, all written in non-technical language.
- Information available in a searchable (visual) form on internet (at end of this financial year)

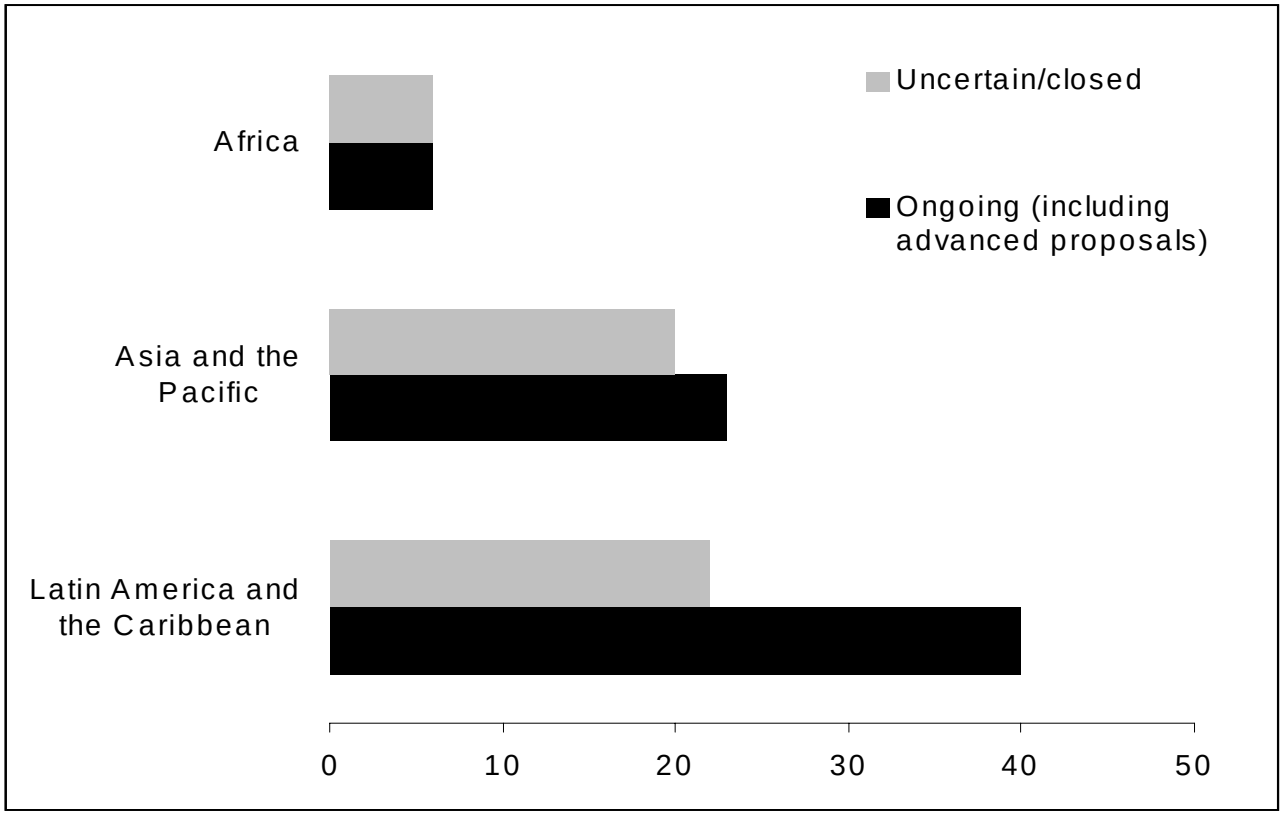
What's happened since Silver Bullet? In 2002:



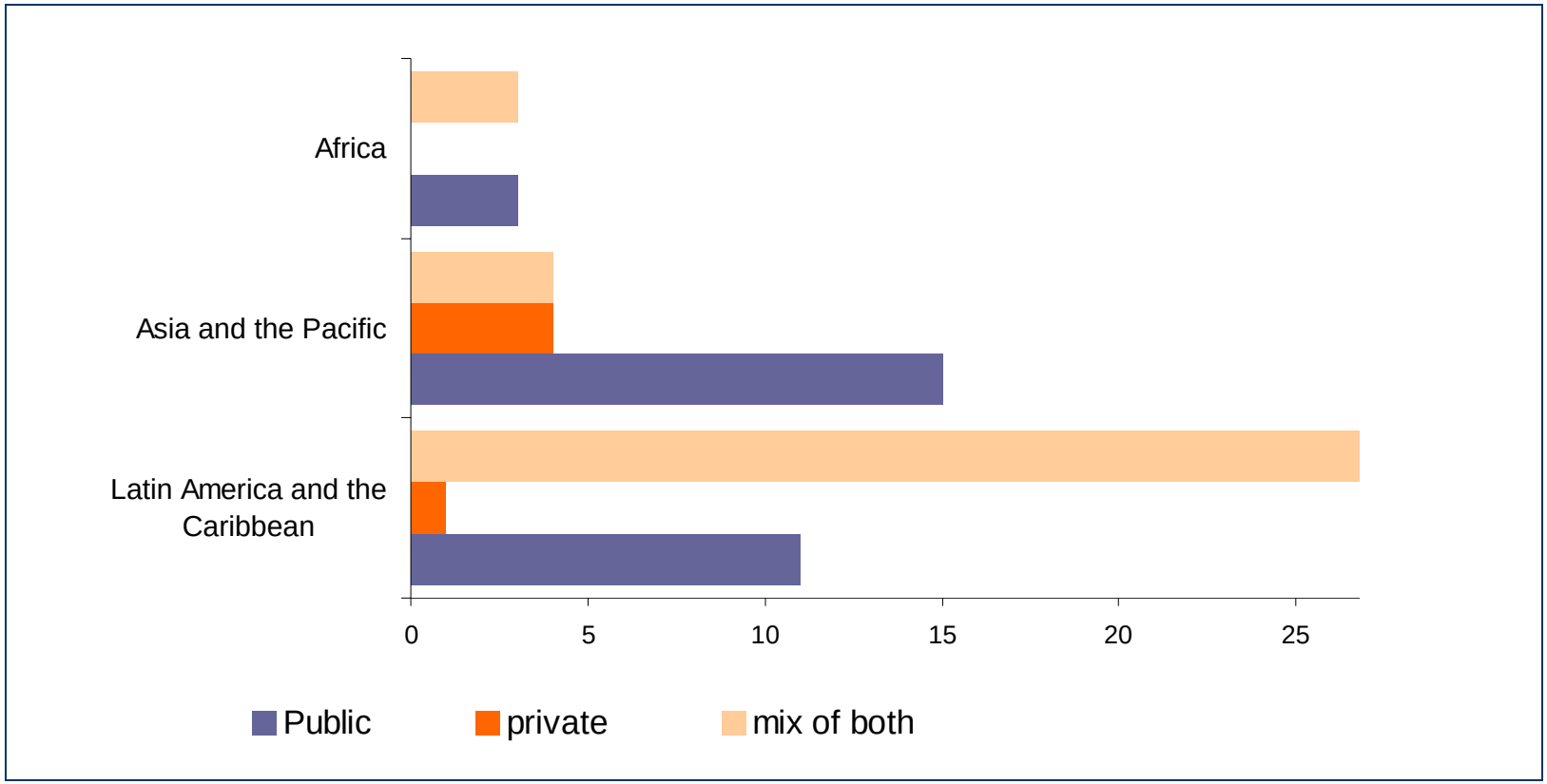
What's happened since Silver Bullet? In 2005:



How many are on-going?



Public or private initiatives?



Country case

SUMMARY			
NAME OF THE INICIATIVE			
MATURITY OF THE INITIATIVE		old ongoing/closed old advanced proposals ongoing/closed old early proposals ongoing/closed new ongoing/closed new advanced proposals ongoing/closed new early proposals ongoing/closed	active since when? (ongoing and proposed cases)
DRIVER		unclear, government regulation, supply side, demand side (It would be good to get some good "stories" about the development of the initiative.)	
STAKEHOLDERS	SUPPLY	categories: Public gov.land Public communal land Private landowers Private reserves Local NGOs and trusts	Small involved? (info on the size of properties involved)
	DEMAND	National level Government Local government (municipality) Corporate business HEP Local NGOs and trusts International NGO Donors	
	INTERMEDIARY	National level Government Local government (municipality) Corporate business National/Local NGOs and trusts International NGO Research groups, universities	about the intermediary… also its funding/ affiliation? (ie. Independent donor, percentage charged over the payment, etc) , is it a participant or a stakeholder?

MARKET DESIGN	SERVICE	water flow regulation, water quality maintenance, erosion and sedimentation control, land salinisation reduction/water table regulation, maintenace of aquatic habitats. For more detail see page 112 SBFG NOTE: if stated, make clear which service is being demanded by each of the different buyers (between brakets, include the name of the buyer)	
	COMMODITY	**- Asset-building (restoration/improvement)**: through best-management practices, etc. (salmon habitat restoration contract, Ecotree plantings,) **- Use-restriction (conservation)**: through conservation, easements, protected areas, etc. (best management practice contracts (BMP), watershed protection contract;) **- Credits, licences and use rights (**water rights, stream flow reduction licenses, salinity credits, salmon habitat credits, transpiration credits, water quality credits) **- Environmental-friendly products** (more info on p.117 SBFG)	
	PAYMENT MECHANISM	Direct Negotiation Intermediery based transactions (trust, government agency, NGO) Pooled transaction Over-the-counter Clearing House transaction Auctions Internal Trading Retail-based market (environmental service) User fees	What are the eligibility criteria/requirements for participating in the scheme eg formal land title, minimum size of landholding Is it voluntary or compulsory? How do they avoid free-riding? what exit strategy can buyers use if they wish to stop buying the ES? (from Wunder and Robertson) ???? Are its incentives aligned for a successful system, better environment, happy people, low transactions costs, PR, etc?
	TYPE OF PAYMENT	- in kind (describe which eg. Training; support to access loans, markets; behives) - cash one-off - cash instalments (describe period and conditions)	
	FUNDS INVOLVED		

Strength of the link: at least half of the funds coming from direct users? Yes/No

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Translation of ES into commodity:

The commodity tends to be linked not so much to the level of environmental service provided, but based mostly on land use practices that are expected to deliver them.

What are the eligibility criteria/requirements for participating in the scheme eg formal land title, minimum size of landholding
Is it voluntary or compulsory? How do they avoid free-riding?
what exit strategy can buyers use if they wish to stop buying the ES? (from Wunder and Robertson) ????
Are its incentives aligned for a successful system, better environment, happy people, low transactions costs, PR, etc?

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Literature Review

ANALYSIS	COSTS AND BENEFITS	ECONOMIC	includes the costs of institution building (e.g. transaction costs). This should be a focus of this new review. How much (roughly) are they? It might be worth to try to obtain indicator (number of people involved, since when did the proposal begin, etc). Who is paying for setting up costs? For how long? Who will pay for them after? Is the initiative likely to be self-sustainable?	
		ENVIRONMENTAL	Describe the physical characteristics of the upstream area and why is it important to protect (this is already on the demand point of view); environmental impacts other than on the environmental service being considered, Proportion of the whole watershed under the scheme? Scientific Evidence? has each case made studies? Have trade-offs been considered? What type of land use activities were taking place there before the system? Have these activities stopped or are they taking place somewhere else? (leakages) (see also monitoring)	**- state if costs and benefits are verifyed and which ones are perceived/expected** **- try to relate the costs and benefits to the different stakeholder groups** **- remember to check for examples of possible costs and benefits in the tables in annex (or pages SBFG 141 on), perhaps I can spot something that has not been mentioned directly**
		SOCIAL	Describe the socio-economic characteristics of the upstream area – main land uses, livelihood strategies, stakeholder groups, size and distribution of landholdings, income groupings, etc; impact of the payments onto the family's income (we have to estimate this from standard minimum wage, for example **Impacts on vulnerable groups:** Impacts for current welfare flows (economic, social, environmental) Impacts on assets (physical, financial, human, social, environmental capitals) Impacts on security (e.g. property rights) , livelihood, financial, etc) Impacts for empowerment	

ANALYSIS	LEGISLATION ISSUES	**Legislation issues: Preconditions for market establishment (and operation),** e.g. legislation, institutional capacity, mechanisms for ensuring local participation, the development of partnerships, government support, educational programmes, finance, etc. *Legislation issues.* country-wide regulations? Local initiative? Existing laws for water and land use? Overlapping and contradicting laws. How is the initiative dealing with this. There might not be much information about this, but it will provide useful insights for on-going initiatives that have to deal with water being controlled by many authorities.
	MONITORING	Monitoring (contingency issues) What has been the degree of/ likelihood of compliance so far, and what factors have influenced it? What's the mechanism for monitoring and performance assessment? Are the payments directly contingent on ES provision (e.g. on water quality) or rather on the land use that is supposed to produce the ES (e.g. on conservation of native vegetation)? Time/frequency of monitoring. Monitor: external or internal? Certification squemes? Establishment of baseline. Biophysical monitoring? Leakages? How are different fluctuations and risks which ES providers traditionally have little/ no control over being dealt with (e.g. drought, fire, external intruders' actions)?
	MAIN CONSTRAINS (PROBLEMS)	**Main Obstacles** faced in market establishment and how these have been overcome. Obstacles to market development can be **split between demand side** (e.g. low willingness to pay, lack of information) and **supply-side factors** (e.g. insecure property rights, lack of finance, political risk, inadequate legal framework).
	MAIN POLICY LESSONS	is sustainable joint production with other forest goods and services possible? Impacts for current welfare flows (economic, social, environmental) Impacts on assets (physical, financial, human, social, environmental capitals) Impacts on security (e.g. property rights) livelihood, financial, etc) Impacts for empowerment
	OUTSTANDING ISSUES	

Literature review:
Problems encountered

- Terminology (payment, reward, markets, incentives, compensations, etc).
- CIFOR definition: a mechanism by which:
  - service user(s) pay *(at least one)*
  - service provider(s)
  - to provide a well-defined service (or land use that provides it)
  - in a conditional and
  - voluntary transaction
- Few of them private, more likely a continuum between public/private.
- Collection of information has been, at best of times, difficult Poverty impacts are still poorly analysed and reported.

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Literature review:
Problems encountered cont..

- **Analytical framework**: how to show **tradeoffs** between achieving a PES that can be:
  - **Environmental effective**
  - **Socially progressive**
  - **And economically sustainable**
- **Display cases in a "market- continuum**" (where the strength of the link provider-user is clear)

Literature review:
Problems encountered cont..

- Analytical framework: how to show **tradeoffs** between achieving a PES that can be:
  - **And economically sustainable**

Situation	Indicator
Appropriateness of the tool	Is MES the best way to deal with the problem?
	Other tools should be more appropriate (eg deal with water rights first, or implement infrastructure measures, etc)
CONTEXT	Is the scheme part of a larger project (i.e. involving sustainable management, etc)
	Are payments de-linked from other land use activities? **Not all cases are about payments…rewards, pes actions…**
Origin and sustainability of the payments. **Funds?**	The direct user is aware and involved in the scheme: **direct users are involved (or at least one)** .i.e. users are paying, a system is in place, there's political will, etc.
	Funds come from international donors and are short-lived.
	Funds come from indirect users (eg national funds like FONAFIFO or Mexico).

Literature review:
Problems encountered cont..

- Analytical framework: how to show **tradeoffs** between achieving a PES that can be:
  - **Socially progressive**

Situation	Indicator
Selection of upstream supplier	Vulnerable groups are targeted (not necessarily the only ones). The project deals only with large landowners (wealthier people?), national parks without people, conservation groups, etc.
Intermediary	Active local intermediary facilitates the participation of smaller groups Centralised approaches or direct negotiations without support to small groups.
Support for land use changes	Support is available to assist with land use changes (eg capacity building, funding for initial investments, etc). The schemes assume that the landowners will deal with the changes themselves.
Building on existing capacity	The scheme supports livelihood generation besides payments to the owner of the land. (i.e no jobs are lost, or new jobs are created, scheme builds on local capacity and interests). Pure conservation/protection is required
Land rights	Scheme helps land rights to be formal or informally recognised or strengthened. Scheme is directed only those with land rights and excludes informal landholders.
Downstream users	Payments are made more on ability to pay Are poor downstream users forced to pay? This will be case of a regressive tax.

Literature review:
Problems encountered cont..

- Analytical framework: how to show **tradeoffs** between achieving a PES that can be:
  - **Environmental effective:**

Situation	Indicator
Matching outcomes with policies	The proposed land uses are likely to deliver the alleged environmental service (i.e more trees, more water flows, etc).
	Proposed land uses are likely to generate negative environmental effects. These could be related to the same service (ie. not being delivered) or other environmental situations (leakages).
Targeted area	Is the location of the project a critical area?
	Priority area is decided on other basis rather than environment? (ie social impacts)
Achieving a threshold level	Does the project guarantee a minimum threshold level (proportion of watershed covered? etc)?
	The project is too small/scattered/fragmented to deliver environmental service

Literature review:
Problems encountered cont..

- **Display cases in a "market- continuum"** where the strength of the link provider-user is clear, trying to co-relate:
  - Demand captured
  - Characteristics of the supply: private landowners or publicly owned uninhabited areas (natural parks)

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3. **Emerging Issues and Plans for the Future**

Diagnostic studies reveal

China – the untold story of PES

- State has a massive influence on land use through both environmental programmes and agricultural policy
- Environmental programmes are publicly funded purchases of environmental services
- Blueprints that have low efficacy and attract rent- seeking behaviour
- Actual and potential conflicts with agricultural policy that promotes food self-sufficiency at “any cost”
- Limited opportunities for private sector involvement

Diagnostic studies reveal cont..

Bolivia

- Political resistance to the idea of “commoditising watershed services”
- Skills and capacity of partner organisations extremely limited
- Severe political turmoil means that there will be no policy changes

Major Issues:
complexity of the process

- **Major issue – changes from a regulatory to a incentive based approach complex and challenging**
- All partners are falling behind planned targets
- Indicative of the complexity of the process
- Skills and capacity within partner organisations can be a problem
- Also seen in many of our literature review case studies: many of the old proposals are still at an early stage and others never evolved to actual PES schemes

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Major Issues:
Hydrology of watershed services

- **Major issue – very difficult to quantify water quantity and quality as a basis for PES.**
- Indonesia – Lombok: Surface water and groundwater, no clear relationships with land use.
- Caribbean – Talvan Watershed little or no measurable impact of group's actions on water quality.

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Major Issues:
WTP for watershed protection services?

- **Major issue – private sector demand for watershed service is low / minimal**
- Caribbean: tourist operators not prepared to pay for upstream land management
- South Africa: mining companies argue that they are already paying a premium price for water
- Indonesia – Lombok: PDAM (Mataram City) not prepared to enter a PWS relationship
- Indonesia – Cidanau & Brantas: Token payments to pilot sites

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Major Issues:
Policy and Legislation

- **Major issue – very difficult to stimulate payments for watershed services without an explicitly supportive policy and legislative framework**
- Costa Rica – government led, private sector followed
- New York – legislation forced watershed management issues to be resolved
- Carbon markets – developed through “cap and trade”
- South Africa – no real legal and policy constraints to the development of PWS, but no direct support either.

Major Issues: Private vs Public?

- **Major issue – In developing countries, with a few notable exceptions, PWS are generally public funded (or at least partly, as we saw in the graf of cases in the current review)**
- Publicly funded PWS do have a role but
  - generally does not represent new means of conservation finance
  - blueprint approaches lower transaction costs but reduce efficacy
  - not likely to be long-term as they are politically vulnerable
  - Livelihood implications – unclear but probably larger, literate farmers who benefit most

Remaining questions:
Can PWS be pro-poor?

- Important that conclusions about livelihoods and poverty alleviation are based on current sites.
- Challenge of facilitating private sector PWS substantial
- Challenge of ensuring that private sector PWS meet pro-poor criteria is therefore even more substantial
- Major constraints
  - poor are often landless
  - poor often suffer from insecure tenure
  - complex land use systems in which there are very few “simple” solutions

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Major Issues..also in Europe?

- **Is the absence of explicitly supportive policy and legislative framework, also be such an issue in Europe?** New agri-environmental legislation, sees farmers as stewards of the land, so this should make it easier to stimulate payments for watershed services;

BUT

- **Would problems with WTP for the protection of environmental services, be any different in Europe**, where we are more used to have these issues taken care off by the government?

Major Issues..also in Europe?

- Perhaps more viable in the case of other environmental services, where:
  - the environmental problem is receiving more attention from potential buyers
  - and sellers could use an incentive to take new legislation on board?
  - Would PES for forest fire protection be a viable option?

Major Issues..also in Europe?

- Could PES an incentive for people to take action (private forest, inherited and forgotten, and abandoned agriculture land) and manage their land to reduce forest fire risk and increase resilience (for example by planting barriers of native vegetation to slow down fire progression?)

Major Issues..also in Europe?

- Thus, following legislation that is not yet being enforced
- Where will the funds to finance municipal forest management come from?
- Some districts will have higher WTP (ie higher forest fire risk than others)
- Many equality and viability issues to consider, but we develop a PES related scheme to address these issues?

Major Issues..also in Europe?

- Does this sound like a possible “environment” to develop a PES related scheme?

“The big challenge in this work is to address the economic concerns of landowners while ensuring the ecological integrity of the landscape as a whole. The project is therefore identifying policy measures and funding mechanisms that will help landowners cover the costs of forest management and restoration.”

in WWF Cork oak landscapes in Cork Land News Vol 1 Issue 2 Feb-Jul 2005

Focus of project over next year: pro-poor nature of markets

- **IIED and project partners need to ask:**
  - What has been learned about the residents of the catchments?
  - If at some point in the future, PWS was an option,

    how would it avoid exacerbating poverty?
  - What indirect benefits might accrue to society?
  - Would direct compensation mechanisms be needed?

Focus of project over next 12 months: key constraints to PWS

- IIED and project partners need to ensure that there is a solid understanding of the **key constraints** to PWS. Are they:
  - political reasons?
  - institutional reasons?
  - economic reasons?
  - agronomic?
  - insufficient hydrological evidence (assurance)?

Role of IIED project in coming year

- Growing realisation across project that substantive PWS unlikely, raises two questions:
  - what is the focus of the project in the remaining 12 months? and
  - what happens to the pro-poor questions that the project was to answer?

Thank you for your attention

And please feel free to ask any questions

IIED PUBLICATIONS
MES series

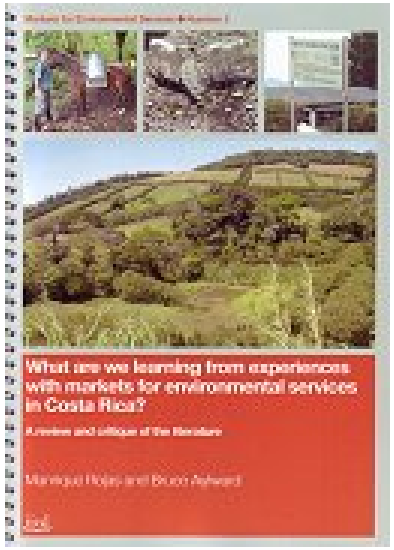
Markets for Environmental Services (MES 1) - **Social Impacts of the Payments for Environmental Services (PES) Scheme in Costa Rica** 2003
Miriam Miranda, *Ina T Porras*, *Mary Luz Moreno*

- By means of a case study of the Virilla watershed in Costa Rica, this report uses the Sustainable Livelihoods Framework to analyse the social effects of the PES programme, and examines the effects the programme has had on financial, human, social, physical and environmental capital.

IIED PUBLICATIONS
MES series

Markets for Environmental Services (MES 2) - **What are we Learning from Experiences with Markets for Environmental Services in Costa Rica?** 2003 Manrique Rojas, Bruce Aylward

- This paper examines the Costa Rica experience to see what has been learned - how technical, scientific and economic information on environmental services has fed into these initiatives, and to what extent they are being monitored and evaluated.



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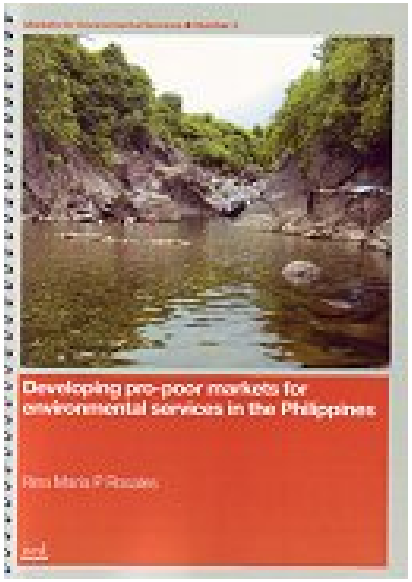
MES series

Markets for Environmental Services (MES 3) -
Developing Pro-Poor Markets for Environmental Services in the Philippines
2003 *Rina Maria P Rosales*

- This study reviews the various efforts made in the Philippines to develop markets for different types of environmental service, and also discusses the institutional support mechanisms that have emerged.



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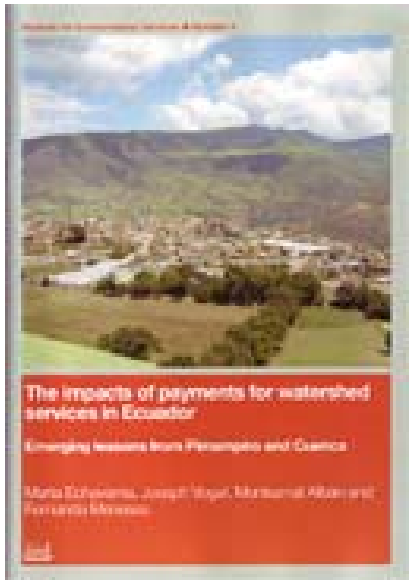
MES series

Markets for Environmental Services (MES 4) -
Impacts of Payments for Watershed Services in Ecuador: Emerging lessons from Pimampiro and Cuenca 2004 *Marta Echavarria*, *Joseph Vogel*, *Montserrat Albán*, *Fernanda Meneses*



- This report focuses on two case studies - Pimampiro and Cuenca. The report recommends inter alia that further understanding of the hydrological functions provided by particular ecosystems is needed, further information is required on the value of watershed services...

IIED PUBLICATIONS
MES series

- Markets for Environmental Services (MES 5) - **Local Sustainable Development Effects of Forest Carbon Projects in Brazil and Bolivia: A view from the field** 2004 Peter H May, Emily Boyd, Fernando Veiga, Manyu Chang

- Markets for Environmental Services (MES 7) - **Un análisis de los impactos sociales y económicos de los proyectos de fijación de carbono en el Ecuador. 2**004 Montserrat Albán y María Argüello