Developing Markets for Watershed Services and Improved Livelihoods

Current research in IIED

By Ina T Porras



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General purpose

• To increase understanding of the potential role of marketbased approaches in promoting environmental services that improve livelihoods in developing countries

• **Joint Effort** of:

- Environmental Economics Programme (EEP) and
- Forestry and Land Use Programme (FLU)
- External permanent collaboration with other institutions, like CLUWRR, and in-country collaborators.

Current Projects

- Policy learning in action: developing markets for watershed protection services and improved livelihoods
- Socio-economic impacts and market opportunities associated with land use and hydrological change in tropical montane cloud forest areas in Arenal, Costa Rica

Policy learning in action

Inception phase 2002
Implementation phase 2003-2006

- 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.

Project inception phase (18 months)

- IIED reviewed 61 efforts to establish markets for watershed services in 22 countries (*plus general review in Silver Bullet*)
- Found weak science on the links between land management, particularly forests, and water services
 - Forest effects on dry season flows, flood and erosion control and other cherished beliefs all depend on site-specific factors - terrain, soil type, tree species, vegetation mix, climate and management regimes
- Also found weak analysis of impact of markets particularly on poor households

Inception phase (cont..)

- Funded by DFID-Policy Division (*Global-Local environment team*).
- Diagnostic studies in the Caribbean, India, Indonesia and South Africa looking at the potential for market mechanisms
- Case studies of active markets for watershed protection in Costa Rica, Ecuador and the Phillipines; and carbon markets in CR, Ecuador, Brazil and Bolivia.
- Offered insights into the potential opportunities for market mechanisms around watersheds to promote poverty alleviation
- Started an effective international network ("policy community"),
- Outputs available on IIED website very soon: www.iied.org/forestry

Implementation phase (2003-6)

- **South Africa** negotiation of the role of incentives and market-based instruments integrated with the development of catchment management institutions and effective water licensing and allocation approaches.
- *India* –Development of intra and inter-village incentive mechanisms, and investigation of potential payments between corporate downstream beneficiaries and upland communities, and application in pilot approaches in Himachal and Madhya Pradesh.
- Indonesia creation and facilitation, in the context of wholesale reform of water policy and decentralisation to the district level, of space for directly interactive negotiation of roles for water resource managers and downstream users in catchments in West Lombok and Java.
- *The Caribbean* formation of a cadre of change agents, interventions in pilot sites, who can influence the increasing use of economic instruments and the nature of emerging markets in Grenada, Jamaica, St. Lucia and Trinidad and Tobago.

Challenges for pro-poor markets

- Upstream poor communities could benefit from increased income, improved diversity of forest-linked livelihoods and stronger cooperative institutions
- But depends on their ability to negotiate for payments and market freedom (danger of eviction and bad deals)
- Downstream poor communities could benefit from new mechanisms to ensure improved and sustainable water supplies
- But depends on access to water, quantities used and price (danger of loss of access and high costs)

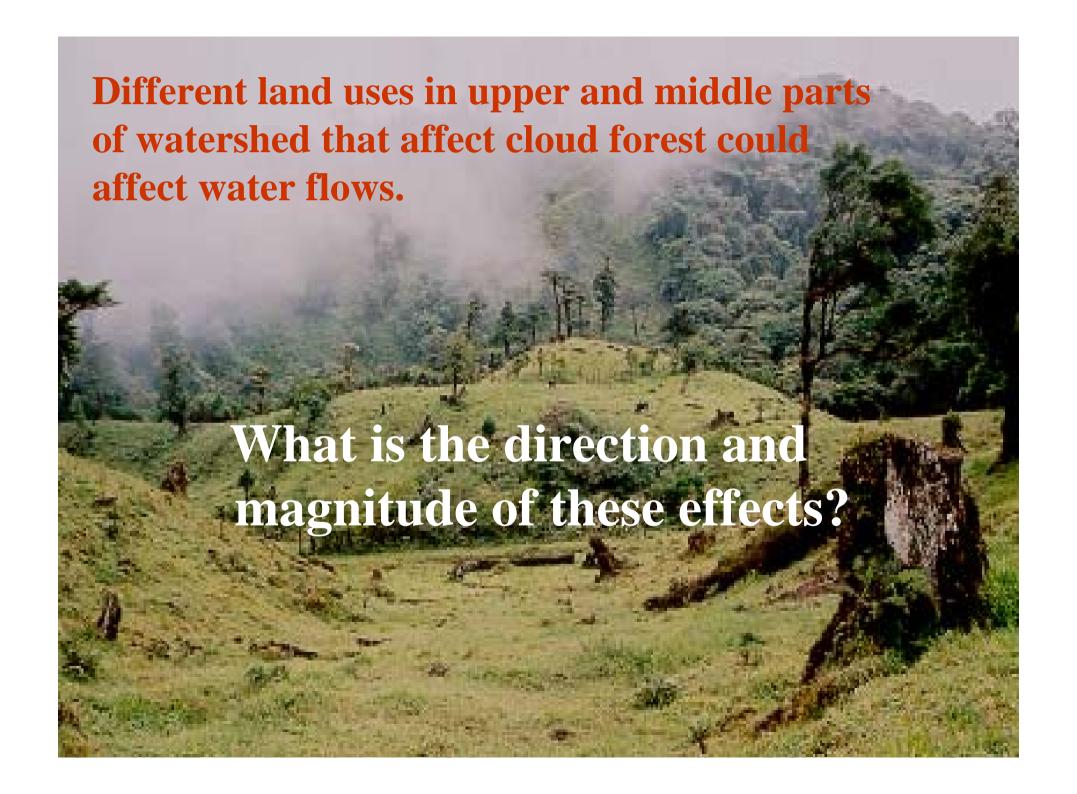
Conclusions so far

- Markets for watershed services are coming but there is inadequate attention to the science and social impacts
- High transaction costs make barriers to entry for the weak – and these rise with poor regulatory capacity and insecure property rights
- Markets are not ends in themselves governments and cooperative institutions need to shape them to ensure equitable outcomes

Land Use, hydrological change and market opportunities

Tropical Montane Forest in Costa Rica (2002-2005)

- Joint research with CLUWRR (Univ of Newcastle); Free University (Amsterdam); National University and Technological Institute (Costa Rica)
- Funded by DFID-FRP (R8174)



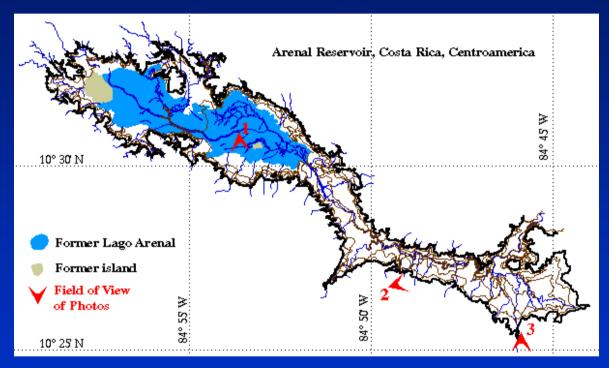
Bio-physical cuantification: Free University (Amsterdam) Instituto Tecnológico de CR



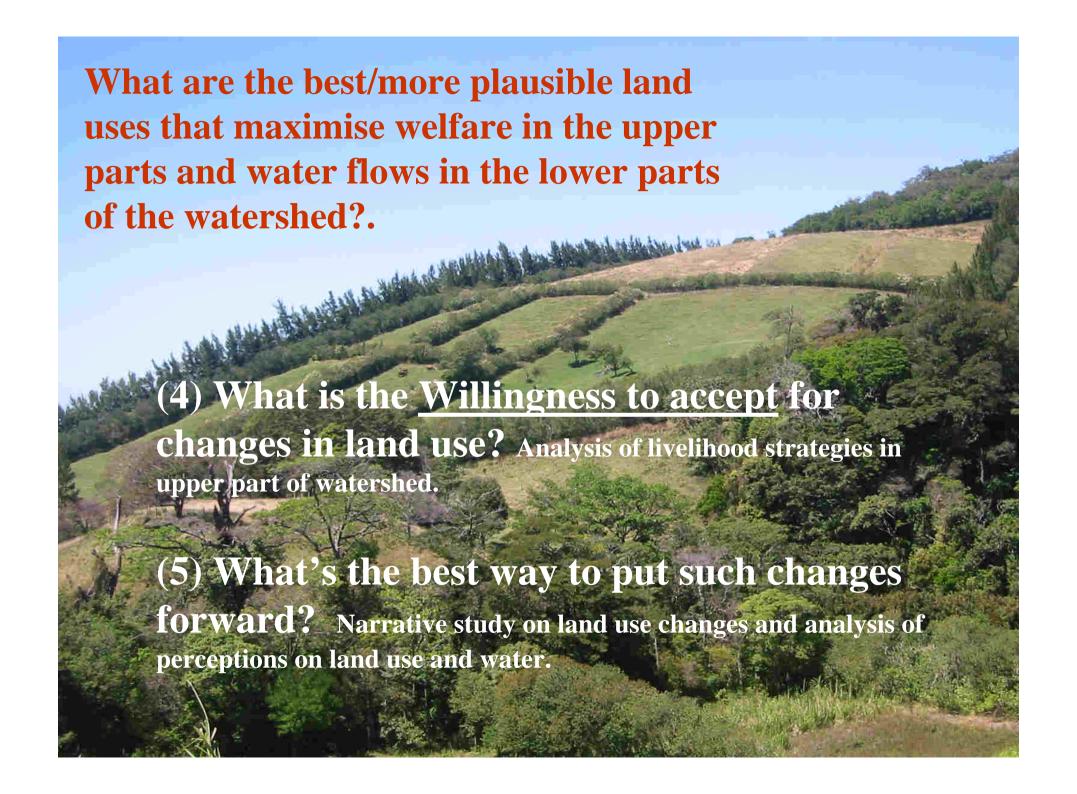


- 1) Results from companion FIESTA hydrological study
- 2) Application of HYLUC model to determine effects on water flows.

Water users downstream (hydroelectricity, irrigation) can be willing to pay to protect and ensure delivery of watershed services. What is their willingness to pay?



(3) Externalities analysis using hydrological info+market information of downstream users



Some initial results from consultation

- People's perceptions on the role of forest is basic: "more forest-more water".
- Forest increase dry-season flows
- More forest is not always good: farmers living in upper watershed complain of the increase in fog and humidity conditions.
- Water flows have decreased in rivers not because of more deforestation but from more water users.

Would you be willing to engage in:

A1

25% más bosque

\$60/haáño conservación

\$150/hañoReforestación

- 5 % Incrementœn recibo eléctrico
- SI Accesaa beneficiosdel gobierno (bono de la vivienda exención de impuestos territoriales tec)
- Mayorinversiónen caminos
- 5 añostiempodel contrato

0 1 2 3 4 5 6 7 8 9 10

Definitely NO

Definitely YES

- Large suspicion to government intervention.
- Concentrate in areas with lower profitability, such as pastures.
- Improve other land uses, such as shade-coffee. What is the effect on water?
- Compensation must be attractive enough, but it is not enough to engage. Ratings were very inelastic to compensation levels.
- Ratings were higher if investment was also directed to improved roads and communications.
- Most properties are relatively small (less than 20ha). Issues on transaction fees and need to guarantee a threshold level.
- What other land uses can co-exist with ES?

Expected Results

- A bio-physical model that can be applied to any cloud forest.
- Guidelines on how to apply socio-economic valuation and what that means for decision-making.
- Final results in 2005, but intermediate results along the way.