

Presentation for the E3B Graduate Seminar

Ecological Foundations of Payment for Ecosystem Service Schemes

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Ecosystem Services and Payments for Ecosystem Services at WCS





Outline

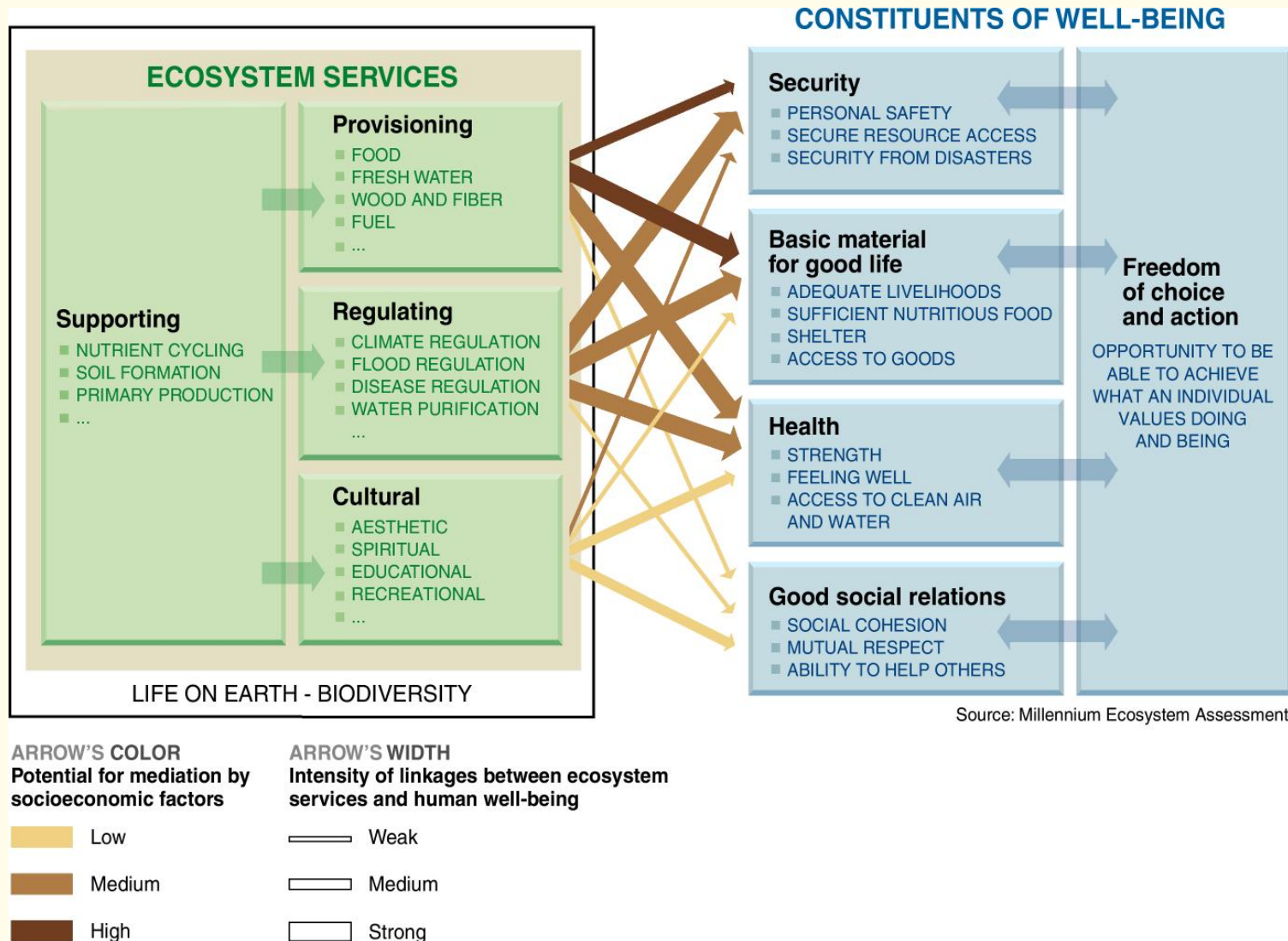
- Concepts of Ecosystem Services (ES) and Payments for Ecosystem Services (PES)
- PES projects underway at WCS
- New ES/PES program goals and objectives



Why should WCS care about ES and PES?

- Funding opportunities
 - Donors are increasingly interested in ecosystem services
 - PES can represent an opportunity to fund conservation and rural livelihoods
- Land and sea-scape planning
 - Incorporating ecosystem services into land/sea scape planning could help identify/reduce potential threats to wildlife
 - Payments for Ecosystem Services is a hook for building constituencies for conservation and conserving ecosystem services

Categories of ecosystem services



Payments for Ecosystem Services (PES)

Key Criteria:

- the mechanism must involve a transaction where a well-defined environmental service (or a land use likely to secure that service);
- is being 'bought' by a (minimum of one) service buyer
- from a (minimum of one) service provider and
- if and only if the service provider secures service provision (conditionality)

(Adapted from Wunder, 2005)





Market and Payment Types

Environmental Commodities Comprising Current PES Programs

- **Carbon**
 - Payments for carbon sequestration or storage for climate change mitigation
- **Water**
 - Payments for management activities that improve the flow and/or quality of water
- **Biodiversity**
 - Payments to maintain habitats (offsets or for scenic beauty) or species (i.e. tourism, direct payments or species banking) or payments for wild harvested products (i.e. Wildlife Friendly Enterprises)

Major Payment Types

- **Compliance market:** Driven by regulation and enforcement
- **Voluntary markets:** Driven largely by CSR and/or the threat of future regulation
- **Government-mediated markets:** Government run programs that use public funds to pay individuals for ecosystem service management

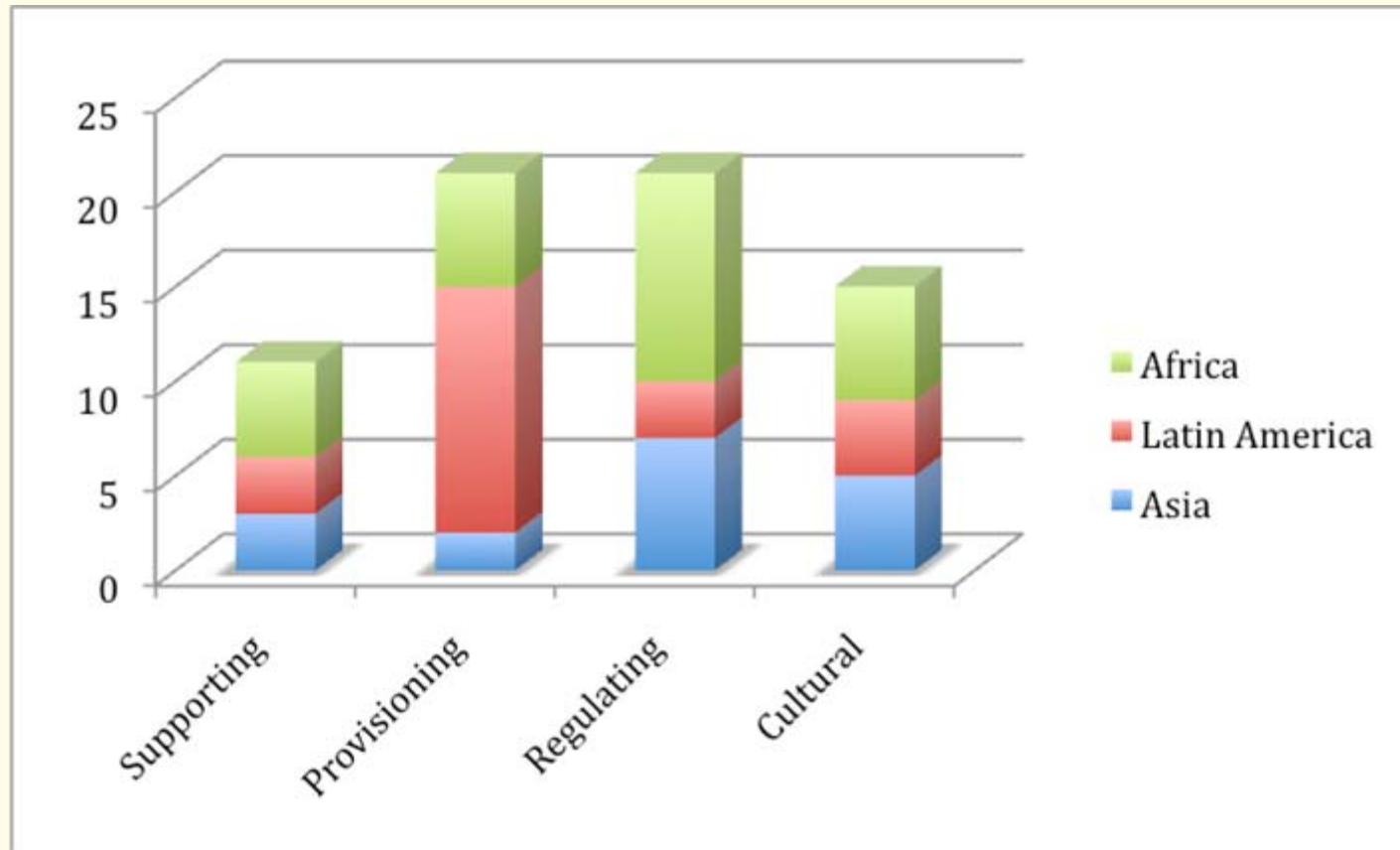


How to identify PES potential?

WCS PES work typically focuses on ecosystem services that:

- When conserved and/or managed well, have a positive impact on wild places and wildlife
- Affect/improve livelihood of local communities and reduce threats to wild places/wildlife
- Ecosystem Services that respond to management
- Ecosystem Services that have current market value (although new ideas welcome!)

WCS PES Initiatives



Number of Countries with PES programs:
Asia=6; Africa=8; Latin America=9

Community-based ecotourism in Tmatbouey, Cambodia (Clements et al. 2008)



- 1 Village of 203 families with average household income of \$300-\$450/year
- Village located in Kulen Promptem Wildlife Sanctuary with a Community Protected area of approximately 1,711 ha
- Area is important habitat for rare bird species
- Ecotourism project developed for birdwatching and income for community
- Agreement between Community, WCS and Government to work together to conserve bird populations in the area for eco-tourism and generate revenue for the community
- Tourists pay \$30 to the community fund if they see an Ibis species and \$15 if they do not, in addition to other services



Community-based ecotourism Tmatbouey, Cambodia (Clements et al. 2008)

Year	Total	Services	Fund	Average Service Payment/Tourist	% revenue for village
2003	\$0	\$0	\$0		
2004	\$498	\$128	\$370	\$ 10	11.4%
2005	\$2,588	\$1,058	\$1,530	\$ 21	14.1%
2006	\$3,553	\$1,453	\$2,100	\$ 21	14.1%
2007	\$5,961	\$3,641	\$2,320	\$ 47	19.9%
2008	\$12,271	\$8,491	\$3,780	\$ 67	23.9%

Year

Total

Services

Fund

Average Service Payment/Tourist

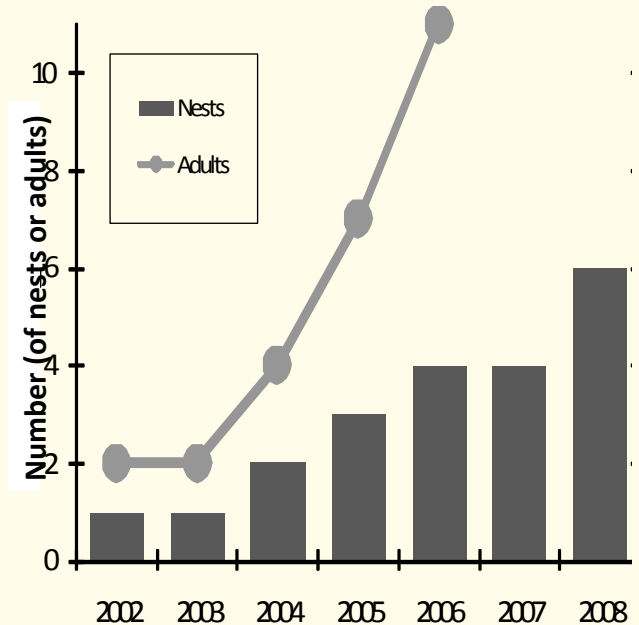
% of overall revenue captured by the village

2003

\$0

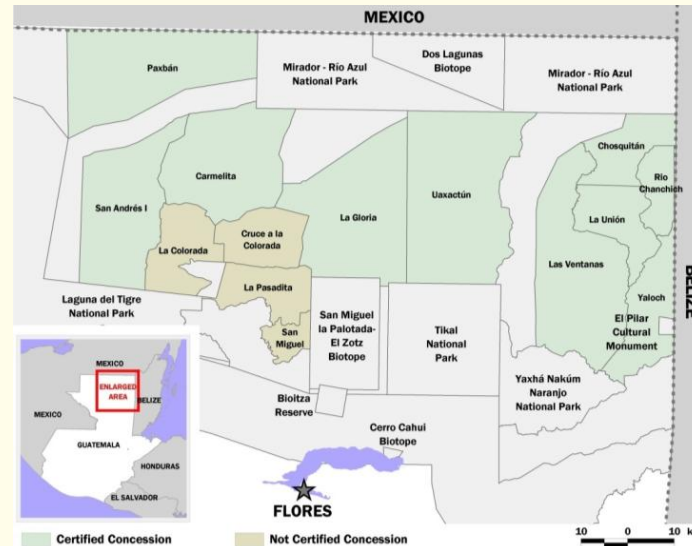
\$0

\$0



Wildlife population trends: White-shouldered Ibis (*Pseudibis davison*).

Community-based trophy hunting Maya Biosphere Reserve, Guatemala (Baur et al. 2008)



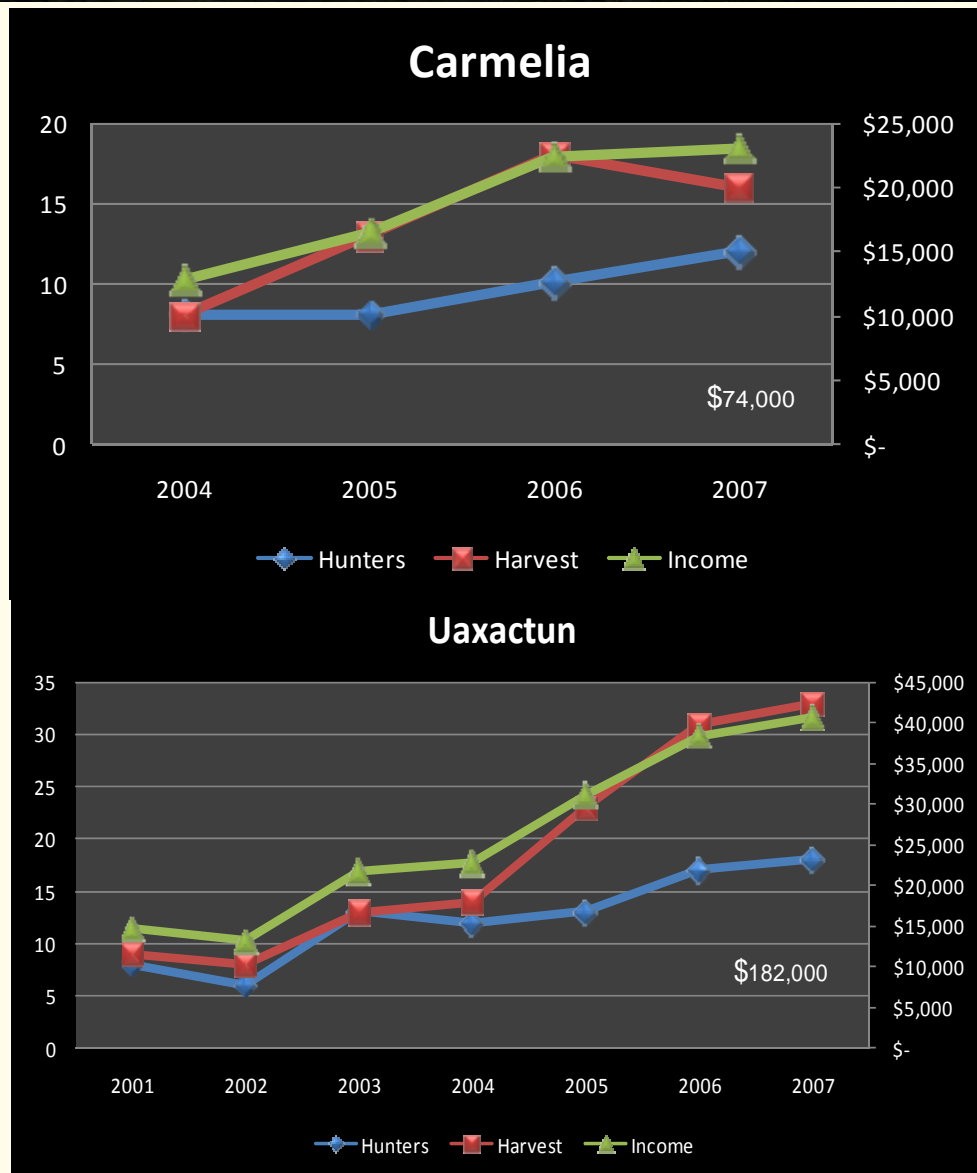
•2 Villages located in the Multiple Use Zones of the Maya Biosphere Reserve:

- Uaxactún: 1,000 people in an area of 835 km²
- Carmelita: 388 people in an area of 562 km²

- Natural resource based economies
- Controlled hunting of the Ocellated Turkey provides additional income to community and encourages sustainable wildlife management
- Hunters pay \$1,450/turkey and \$700/one additional turkey, in addition to other services provided by the community

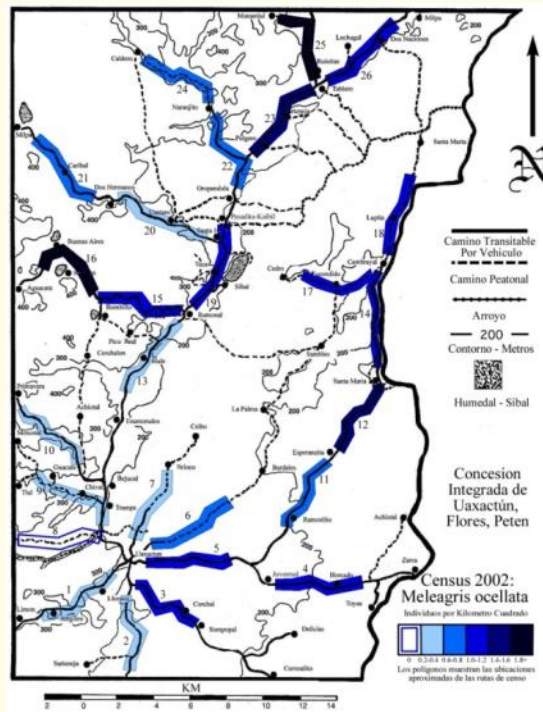


Community-based trophy hunting Maya Biosphere Reserve, Guatemala (Baur et al. 2008)



Community-based trophy hunting Maya Biosphere Reserve, Guatemala (Baur et al. 2008)

	Uaxactún		Carmelita	
Years	2000 - 2004	2005 - 2007	2002 - 2004	2005 - 2007
Mean Density	0.48	0.76	0.37	0.63
Range	0.32-0.54	0.60 - 0.84	0.24 - 0.45	0.41 - 0.81
St. Dev.	0.083	0.136	0.114	0.204



Community Markets for Conservation (COMACO), (Lewis, 2006)

- Average household income is less than \$200/year
- High degrees of food insecurity
- Wildlife often killed with wire snares or locally made firearms and then sold for food





Community Markets for Conservation (COMACO), (Lewis, 2006)

- By giving up snares and adopting conservation farming techniques, community members can become shareholders in COMACO
- COMACO producers earn higher prices (K1000/kg of rice compared to K850/kg farm-gate price)
- 74% of farms surveyed were found compliant
- Over 229 poachers have developed alternative skills for generating income
- More than 38,000 wire snares and 768 illegal firearms have been surrendered contributing to an annual saving of over 4,000 wild animals in Luangwa Valley





Strengthening our work on ES and PES at WCS





ES and PES: What should we do next?

Fundraising: Help raise funds to support work at Scapes related to ES and PES

Dissemination: Document and disseminate WCS case studies and experiences with ES and PES projects for influencing policy, promoting WCS work in this area and supporting fundraising for Scapes

Provide Technical Support:

- Spread and leverage knowledge, skills and guidance materials on development of ES and PES projects across the organization and externally
- Support the development and progress of ES/PES programs at Scapes
- Adapt and development of new tools and ideas: Develop, adapt and provide easy to use tools for assessing Ecosystem Services across a Scape and assessing PES feasibility

Other Ideas???