Presentation for the E3B Graduate Seminar

Ecological Foundations of Payment for Ecosystem Service Schemes

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Fall 2010

This seminar was generously supported by the American people through the United States Agency for International Development (USAID), under the terms of the TransLinks Cooperative Agreement No.EPP-A-00-06-00014-00 to the Wildlife Conservation Society (WCS). TransLinks is a partnership of WCS, The Earth Institute, Enterprise Works/VITA, Forest Trends and the Land Tenure Center. The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States government.

Payments for Ecosystem Services

Biodiversity

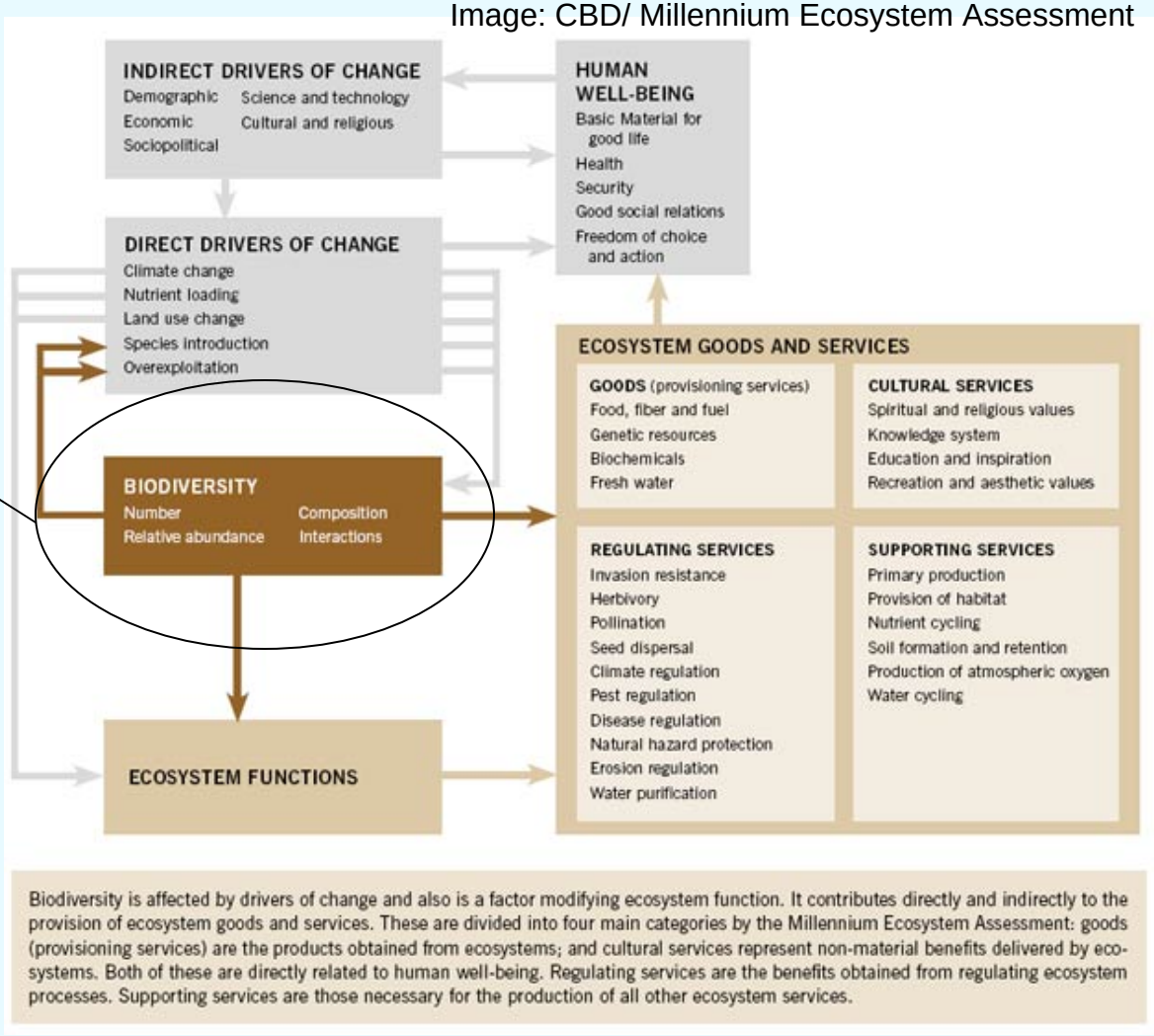
Image: TrekNature

Introduction

Image: CBD/ Millennium Ecosystem Assessment

Biodiversity:

-Number
-Relative abundance
-Composition
-Interaction



Biodiversity is affected by drivers of change and also is a factor modifying ecosystem function. It contributes directly and indirectly to the provision of ecosystem goods and services. These are divided into four main categories by the Millennium Ecosystem Assessment: goods (provisioning services) are the products obtained from ecosystems; and cultural services represent non-material benefits delivered by ecosystems. Both of these are directly related to human well-being. Regulating services are the benefits obtained from regulating ecosystem processes. Supporting services are those necessary for the production of all other ecosystem services.

Search Methodology

Databases & Resources:

- OAS
- Eco-Index
- IUCN-CEM
- Consvalmap.org (and other NGO project lists)
- Academic Journals

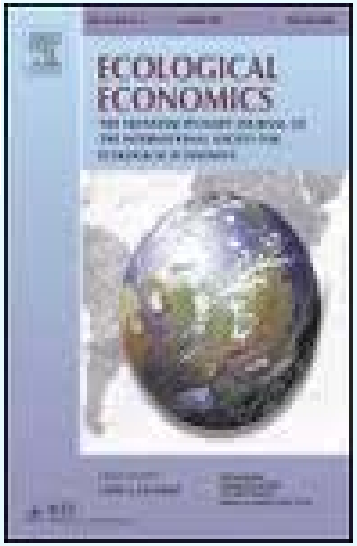
Search Keywords:

- Eco-tourism
- Pollination
- Biodiversity offsets
- Conservation concessions/ easements
- Biodiversity +
  - pharmaceuticals
  - ecosystem services
  - payment




Results

- Analyzed 28 case studies
- Primary literature from journals
- Gray Literature
  - Government reports
  - NGO reports



The Inclusion of Natural Science

- Baseline data
- Involvement of natural scientists
- Biodiversity focus
- Threats
- Ecosystem service involved

Awesome Example

Attribute	BENCHMARK				Pre/Post-Project Conditions	Condition Class 1: Quasi pristine primary forest		Condition Class 2: Disturbed primary forest		Condition Class 3: 0		Habitat Hectares Lost
	Reference Level #	Reference Level Units/ Bands	Weight	Trad'ble/ Non? (T/NT)		Condition/ Level	Net Loss	Condition/ Level	Net Loss	Condition/ Level	Net Loss	
Steams	1015	stems number/ha	0.15	NT	Pre-Project	911		285				89.19445714
					Post-Project, High Impact Sites	0	911	0	285		0	
					Post-Project, Medium Impact Sites	911	0	285	0		0	
					Post-Project, Low Impact Sites		0		0		0	
Number of tree species	41	Tree species/ha	0.2	NT	Pre-Project	43		18				148.4436098
					Post-Project, High Impact Sites	0	43	0	18		0	
					Post-Project, Medium Impact Sites	43	0	18	0		0	
					Post-Project, Low Impact Sites		0		0		0	
Canopy height	11.5	Meter	0.05	NT	Pre-Project	8.98		5.45				30.77179043
					Post-Project, High Impact Sites	0	8.98	0	5.45		0	
					Post-Project, Medium Impact Sites	8.98	0	5.45	0		0	
					Post-Project, Low Impact Sites		0		0		0	
Basal area	19.6	m2/ha	0.05	NT	Pre-Project	19.42		3.55				30.06911276
					Post-Project, High Impact Sites	0	19.42	0	3.55		0	
					Post-Project, Medium Impact Sites	19.42	0	3.55	0		0	
					Post-Project, Low Impact Sites		0		0		0	
Doh	9.74	cm	0.05	NT	Pre-Project	13.29		9.95				57.90240452
					Post-Project, High Impact Sites	0	13.29	0	9.95		0	
					Post-Project, Medium Impact Sites	13.29	0	9.95	0		0	
					Post-Project, Low Impact Sites		0		0		0	
Propithecus diadema density	0.033	number/ha	0.2	NT	Pre-Project	0.033		0				105.772
					Post-Project, High Impact Sites	0	0.033	0	0		0	
					Post-Project, Medium Impact Sites	0.033	0	0	0		0	
					Post-Project, Low Impact Sites		0		0		0	
Allocebus density	0.025	number/ha	0.1	NT	Pre-Project	0.0248		0				52.886
					Post-Project, High Impact Sites	0	0.0248	0	0		0	
					Post-Project, Medium Impact Sites	0.0248	0	0	0		0	
					Post-Project, Low Impact Sites		0		0		0	
Indri indri density	0.013	number/ha	0.2	NT	Pre-Project	0.013		0				104.9645802
					Post-Project, High Impact Sites	0	0.013	0	0		0	
					Post-Project, Medium Impact Sites	0.013	0	0	0		0	
					Post-Project, Low Impact Sites		0		0		0	

Transparency and Completeness

- Focus mainly on the scheme and outcome
- Little info on methodology, budget, etc.
- Might be more “out there”

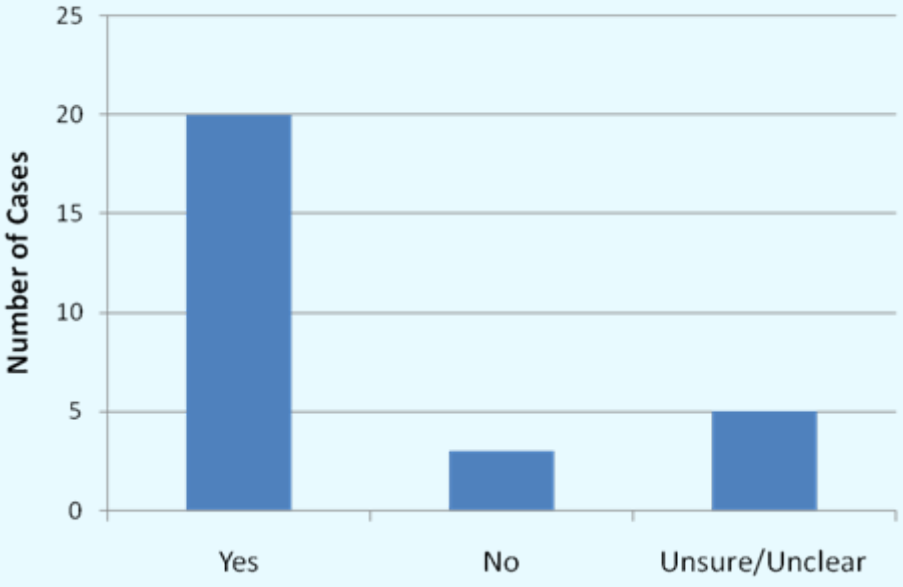
Monitoring and Reporting Results

- Most case studies had monitoring plan
- Many projects are in very early stages, so data not yet credible
- Difficult to directly link positive results to existence of PES project
  - Third variable?
- Possibly reporting bias

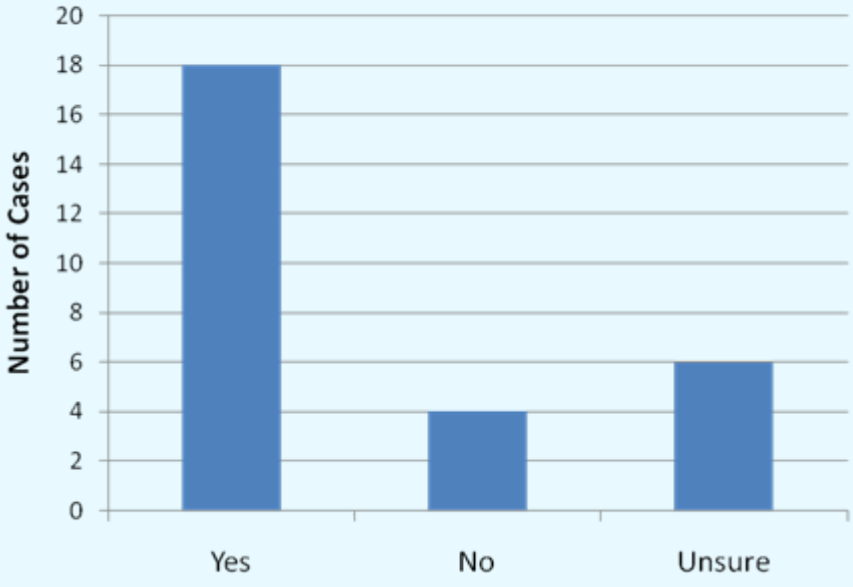
Biodiversity PES Trends Across Sector

- NGOs and businesses tend to have the most robust scientific information available for public viewing
- Significant bias towards schemes in the tropics
- Latin America rich in biodiversity PES schemes
- Buyer/seller trends: NGOs are the most common buyers, and communities/individuals are the most common sellers
- Accessibility: Finding the “public blurb” is usually easy, but finding the complete report is often difficult

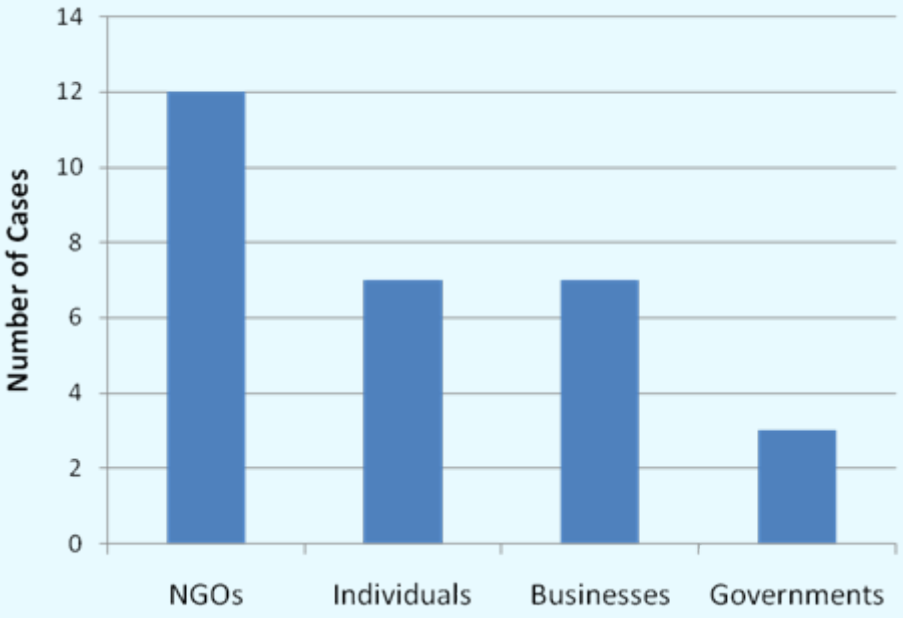
Baseline Data Collected?



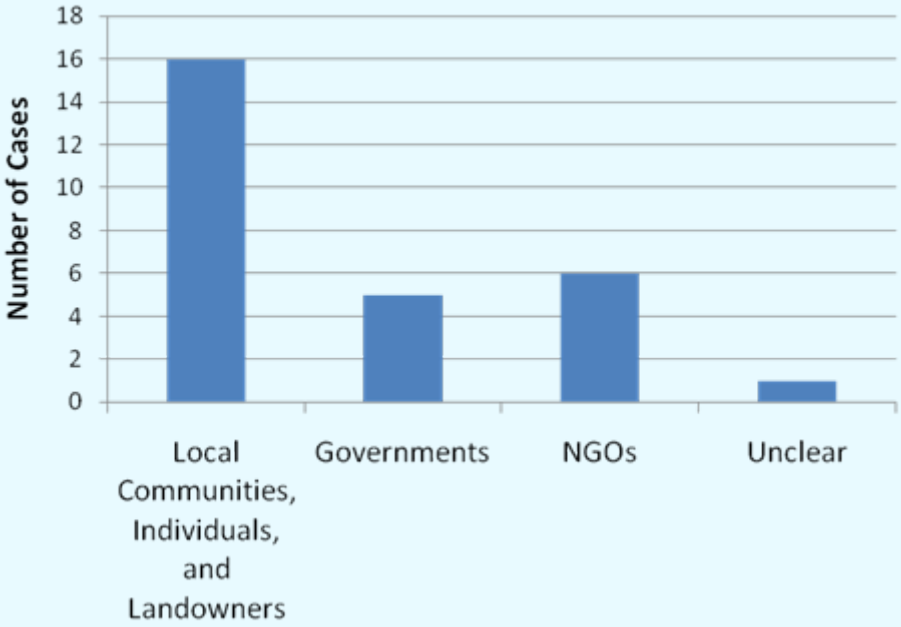
Natural Scientists Involved?



Buyers



Sellers



Organizational Matrix

Biodiversity-specific goals & questions

- Goals and focus
- Scientific information
- Threats
- Tradeoffs, replicability and feedbacks
- Sustainability and monitoring
- https://spreadsheets0.google.com/ccc?key=tty6RpLF0LB0QbNfxfCSMzg&hl=en#gid=0