



Poverty, livelihoods and the conservation of nature

Bouma, J.A., Joy, K.J., Vu Cong Lan, Lopez Ramirez, A. and Steyn, M.

IASC, Hyderabad; 14 January 2011



This research has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement No. 211392



Introduction: The major premises

- Influential reports like MA (2005) and TEEB (2009) are suggesting that biodiversity protection benefits local livelihoods and even alleviates poverty
- The literature on integrated conservation-development approaches suggests that there might be important conservation-development trade-offs
- This paper assesses the linkages between poverty, livelihoods and nature in four biodiversity hotspots
 - to analyze how biodiversity might be protected while avoiding potential negative livelihood effects



Introduction: The major premises

- Biodiversity contributes to local livelihoods directly by providing food, medicine, craft, building materials and generate recreational returns
- Indirectly, biodiversity contributes to local livelihoods through the provision of ecosystem services
- Biodiversity can also have cultural and spiritual value, but in this paper this will not be addressed



Introduction: The major premises

- The most effective way of conserving biodiversity is through the establishment of protected areas (Bruner et al. 2001)
- This usually implies restrictions on biodiversity and ecosystem use, but it can also generate benefits (tourism)
- Restrictions may affect local livelihoods, and increase local vulnerabilities, benefits might improve livelihoods
- Since in most biodiversity hotspots poverty is high (Fisher and Christoph 2007), important to avoid adverse effects



Introduction: The major premises

- Involving communities in protected area management can improve biodiversity conservation and reduce negative livelihood impacts (Barrett et al. 2005)
- This requires that the communities have an interest in protected area management, that they perceive the park as legitimate and that they trust park management (Danielsen et al. 2008, Stern 2008)
- Interest mostly determined by benefits, ie, the extent to which livelihoods and conservation are linked



The paper

- Using household survey data from 670 households spread over 22 villages in Costa Rica, South Africa, Vietnam, and India, the paper assesses:
 - linkages between livelihoods and nature in four biodiversity hotspots around the world
 - differences in household willingness to participate in protected area management
- While accounting for factors such as trust in authorities, income, poverty, livelihood strategies, assets, etc.



This paper

- To assess linkages, we compare averages for important poverty, livelihood and ecosystem dependence indicators and discuss the differences between the sites
- In addition, we assess the factors that determine the probability that a respondent considers the collection of natural products important, using a probit model (Stata)
- To address the household's willingness to participate in park management, we also develop a probit model to assess what determines that a household is willing



Study sites

- Study sites selected as part of EU fund LiveDiverse project:
 - South Africa: the Mutale basin (incl. Makuya park and the indigenous protected area lake Fundudzi)
 - India: the Warana basin (incl. Chandoli national park)
 - Costa Rica: the Terraba basin (incl. the Terraba-Sierpe wetland and the Boruca indigenous reserve)
 - In Vietnam: Ba Be national park and Na Hang nature reserve



Study sites

- In each site, 4-9 villages selected on the basis of their location near (or inside) the protected areas
- In each village, 10-20% of the households selected randomly for household survey
- In addition, village meetings and in-depth interviews were conducted regarding park co-management and household livelihood strategies
- Survey implemented between April-June 2010



Results

- Significant differences in livelihood strategies between the sites:
 - In Vietnam and India, agriculture is the main livelihood strategy, whereas in the Costa Rica and South Africa agriculture plays a relatively minor role
 - In Costa Rica, this is because large scale commercial agriculture is dominant in the region
 - In South Africa, apartheid fundamentally changed livelihoods from agriculture-dependant to migration labor-dependant and most households now depend on government grants



Results

- Monetary incomes are, on average, low:
 - between 25-60% of the households is income poor; this is likely to be an overestimate since non-monetary income sources were not included
- Better indicator is whether people have sufficient to eat:
 - 85-90% of the households in Costa Rica and India have sufficient to eat, but only 60% in Vietnam and 30% in South Africa
 - In South Africa many households depend on food aid



Results

- Direct dependence on the ecosystem also strongly differs between the sites:
 - in South Africa more than 50% of the households depends on surface water for domestic purposes, in Costa Rica all households have piped water supply
- Use of firewood and charcoal is important in all sites:
 - 100% in South Africa, 98% in Vietnam, 84% in India and 15% in Costa Rica



Results

- Collection of natural products (fruits, vegetables, medicines, materials) considered important in all 4 sites
 - Probit analysis indicates that collection of natural products important especially for the poor
 - In South Africa and Vietnam, the ecosystem seems to play an important safety net function



Results

- Almost half of the households in India, Vietnam and South Africa indicated that they had been affected by protected area establishment
 - In India impacts were perceived as mostly negative, more neutral in the other sides
- This seems to reflect:
 - the extent to which households were involved in park establishment
 - the extent to which households benefited from the establishment of the park



Results

- Respondent's perceptions of influence in protected area (PA) decision-making mostly depend on whether they feel capable of influencing decisions in general
 - In Costa Rica and India, agricultural households feel more able to influence PA decision-making, whereas in Vietnam households active in tourism and the public sector are more influential
- Trust in others relatively low in Costa Rica and South Africa, but high in India and Vietnam



Results

- Effectiveness of PA management and the enforcement of rules regarding the use of natural resources in the PA
 - Rule enforcement is perceived to be relatively strong in Vietnam, and relatively weak in India
 - The potential willingness to report rule breakers in all sites relatively high



Conclusions

- The livelihood-nature linkages differ between the study sites:
 - In Vietnam and India linkages are the strongest, whereas in Costa Rica and South Africa they are relatively weak
- Poor people depend more on the collection of natural products from nature in all study sites
 - In Vietnam, they are the food insecure households, in India and South Africa they are the landless households and in Costa Rica and India they are the income poor



Conclusions

- Generic approaches for addressing biodiversity protection and poverty alleviation jointly are unlikely to work
- Giving local communities a role in PA management would allow them to express their own needs and interests, and could improve the effectiveness of PA management at the same time
- The analysis suggests that households in Vietnam and Costa Rica might be more willing to cooperate in PA management than in South Africa and India



Thank you!

- Jetske Bouma: jetske.bouma@ivm.vu.nl
- K.J. Joy: joykjjoy@gmail.com
- Lan Vu Cong: htqt-niapp@hn.vnn.vn
- Alexander Lopez Ramirez: alope@una.ac.cr
- Maronel Steyn: MSteyn@csir.co.za

