Targeting and implementing payments for ecosystem services: Opportunities for bundling biodiversity conservation with carbon and water services in Madagascar

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• Conservation International work on biodiversity conservation

• Targeting payments for multiple ecosystem service conservation in Madagascar

• Madagascar experience with carbon projects: Mantadia-Zahamena

• Forests, climate change and biodiversity benefits: Challenges and recommendations
a future for life
for biodiversity
and for people
Our mission

“To conserve the Earth’s living heritage – our global biodiversity – and demonstrate that human societies are able to live harmoniously with nature.”
Hotspots and wilderness areas
biodiversity and ES*

*Turner et al., 2007
PES: Potential to create new funding opportunity

Targeting PES to maximize benefits to society: multiple services (*Bundling*), cost-effectiveness (opportunity cost) and efficiency (*Additionality*).

**Madagascar**: Opportunities for ‘bundling’ biodiversity, carbon and water in a cost-effective and efficient manner.
Madagascar • Global importance as a biodiversity hotspot: 80% endemic fauna and 90% flora
• Provision of additional services: Local, national and global beneficiaries
• Deforestation and degradation: Less than 15% of the island remains in primary forest
Biodiversity: Mammals, birds and amphibians according to level of threat*

Carbon: Global map of carbon stock** modified***

Water quality: Drinking water, irrigation and mangroves****

* IUCN Red List
** Olson et al. (1983, 1985)
*** Gibbs (2006)
**** HydroSHEDS dataset and population

*Gorenflo, forthcoming
opportunity costs

• Agricultural production: Industrial crops and of subsistence crops

• Ranking system: High opportunity costs for industrial crops and low opportunity costs for subsistence agriculture
BUNDLED ES: percent overlap of three services

TARGETED PAYMENTS FOR ES

results
• Supporting efficiencies in the use of biodiversity finance

• Support development of PES to match the conservation goals based on different funding strategies

• Strategy for mitigation/adaptation activities aimed at minimizing vulnerability to climate change
Reducing deforestation

- Presidential commitment to conservation (2003)

- PAs key to success reduction in deforestation rates:
  1990-2000: 0.83% loss/year
  2000-2005: 0.53% loss/year

- Carbon finance holds the largest potential for funding PES in Madagascar

Deforestation Data: CI/IRG/USAID, 2007
• **Partnership**: Government, non-government and local facilitating organizations.

• **Services**: Carbon emission reductions and biodiversity existence values

• **Approach**: Reduced deforestation, reforestation and livelihood activities.

• **Science**: Mapped the corridor based on biodiversity priority and ES benefits

• **Policy and Markets**: Development of national capacity to trade carbon and influence international policy and market
results

- Conserves 450,000 hectares of rain forest
- Sequesters 10 million tons of CO2 emissions
- Provides livelihoods alternatives to tavy, land tenure clarification, employment opportunities
- Protects flagship species (Indri, gecko, orchids)
CI Carbon forest projects

Existing Efforts

Under Development

Existing Efforts
Recommendation and challenges

• Forests carbon projects have potential for multiple benefits goal: Climate mitigation, biological diversity and sustainable development

• Community and conservation protected areas: Proven effective tools that have reduced deforestation and resulting emissions

• Inclusion of degradation: Most forests are steadily degraded prior to being “deforested”

• Inclusion of historically low deforestation countries where future deforestation is likely higher
thank you