Linkages & Opportunities: Preserving Biodiversity in a Changing Climate

Structuring REDD to Preserve Biodiversity

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Loss of Biodiversity

Biodiversity loss may be the most pressing environmental issue:
- millions of years to recover
- fundamental life support
- inadequate legal structure
Biodiversity & Tropical Forests

Tropical Forests:
- among the biologically richest ecosystems
- 16 of 25 biodiversity “hotspots”

13 million hectares of forest destroyed annually, much of it tropical. (FAO 2005)
Globally:
- 3% loss 1990-2005
Tropical Forests:
- Africa: 9% loss 1990-2005
- South America: 11% loss 1990-2005
Drivers of Biodiversity Loss

Tropical forest ecosystems:

- Habitat Change: Past & Present Driver. Future?

- Climate change: Present & Future Driver (up to 37% extinction globally)

Preserving tropical forests combats habitat drivers directly and facilitates survival during climate change.
Existing Legal Mechanisms are Inadequate

Convention on Biological Diversity:

Unable to:
- preserve key habitat
- create necessary incentives for preservation

Limited ability to:
- link with other issues, including climate change and deforestation.

Forest law:
- Non-binding, facilitative.
- Ineffective in combating tropical deforestation.
Drivers & Location of Deforestation

Primary Direct Drivers:
- Agricultural expansion
- Timber extraction
- Infrastructure growth

Major Indirect Drivers:
- Governance & institutional capability deficits
- Uncertain land rights
- Poverty
Forests & Climate Change

Deforestation accounts for 20% of GHG emissions (roughly equal to US fossil fuel emissions).

Mature tropical forests provide a sink absorbing about 18% of CO2 emissions annually.
Linkages
Biodiversity, Forestry & Climate Change: Interdependent Issues
Inadequate Regulation at the Linkage

• Current climate change regime:
  – Recognizes only afforestation and reforestation under CDM
  – Examines only aggregate, net CO$_2$ outcome
  – Defines forests too broadly (over 10-30% tree crown cover)
  – Does not promote biodiversity and primary forest preservation

• Biodiversity & Forest regimes:
  – No binding provisions for key drivers

• Potential approaches to regulating at the intersection of climate change, primary forests and biodiversity:
  – Greater awareness of linkages
  – Enhanced legal protection of forests & biodiversity
  – Consideration of biodiversity in climate regime
Building Primary Forests Into the Climate Regime: REDD

• Carbon credit for “Reducing Emissions from Deforestation and Degradation” (REDD)

• REDD was excluded from Kyoto Protocol because of:
  – Uncertainty about magnitude of deforestation emissions
  – Perceived threats to sovereignty and right to develop
  – Difficulty monitoring deforestation
  – Fear of flooding the carbon market and undermining mitigation

Substantial progress has been made on all of these.

• Hope for REDD:
  – 2005 push from Coalition of Rainforest Nations
  – Bali Action Plan: Decision 2/CP.13
The Promise of REDD: Financial Mechanism to Preserve Forests

• Estimates of opportunity costs for preserving tropical forests are low.
  – Estimated opportunity cost for ton of CO$_2$ through avoided deforestation is approximately $2.50.

• The estimates of market value for carbon offset credits are relatively high.
  – Mid-2008 price on EU Emissions Trading Scheme is $35 - $40 per ton of CO$_2$.

• However, REDD will not inevitably:
  – Combat indirect drivers
  – Provide co-benefits for biodiversity preservation
The Value of Primary Forests & Biodiversity Preservation for the Climate Change Regime

• Forests:
  – Mitigation value
  – Adaption value: resilience (favors primary forests)

• Biodiversity (insurance during climate change):
  – Adaption value = increased ecosystem resilience
    • Protection against extreme weather events
    • Maintenance of ecosystem services
    • Offset biodiversity loss caused by climate change

• These values support using the climate change regime to reduce biodiversity loss through deforestation.

• To ensure co-benefit, tropical forest biodiversity value must be recognized in the post-Kyoto climate regime.
Recognition of REDD for Biodiversity

• UNFCCC:
    • Calls for exploration and development of REDD
  – Country Proposals: Australia, Japan, Norway
  – SBSTA/2008/L.23:
    • Annex paragraph 1(d) emphasizes need to explore co-benefits for biodiversity.

• CBD: COP 9 (2008) Decision IX/16:
  •Welcomes REDD as a conservation tool
  •Supports inclusion of forest-management and biodiversity perspectives
  •Recognizes potential biodiversity benefits (and threats)
  •Encourages collaboration with UNFCCC
Forest mitigation Value: avoided emissions and sink value

Adaption Value: resilience to weather impacts, preserving ecosystem services, offsetting biodiversity loss caused by climate change.

Biodiversity preservation as a key goal in addressing climate change.

Carbon offset credits for forest preservation and restoration.

REDD: Financial incentive for habitat preservation
Experiences With REDD

• Demonstration projects focus on strengthening capacity and readiness for REDD in key areas.

• World Bank:
  – BioCarbon Fund
  – Forest Carbon Partnership Facility

• Other Parties:
  – NGOs (Conservation International, Nature Conservancy)
  – Partnerships and National Participation

• Funding:
  – Donations
  – Limited voluntary markets
Experience with REDD: Bolivia

- Noel Kempff Climate Action Project:
  - Avoided deforestation (timber harvest) by terminating logging rights, incorporating land into national park and improving enforcement
  - 642,000 ha; avoids 5.8 million metric tons of carbon (MtCO$_2$) over 30 years
  - Verified in 2005, avoided over 1 MtCO$_2$ emission 1995-97
  - Participants: Nature Conservancy, state government, and energy companies
Experience with REDD: Madagascar Examples

• Ankeneny-Matadia-Zahamena Corridor Project:
  – Links three national parks through corridors, including reforestation and avoided deforestation, to benefit species
  – Participants: World Bank, Conservation International, government, local participants
  – 425,000 ha; avoids at least 10 MtCO$_2$ over lifetime

• Makira Forest Project:
  – Avoided deforestation (agricultural encroachment), maintaining sustainable management and links to other forested areas
  – Participants: Conservation International, Wildlife Conservation Society, government
  – 350,000 ha; avoids roughly 9.5 MtCO$_2$ over lifetime
Moving Forward With REDD for Biodiversity Preservation

• Powerful financial potential to offset drivers of deforestation.
• Can preserving *intact, biodiverse* forests become more profitable than destroying them?
• Basic structure of biodiversity-based elements requires definition.
  – Without such definition, REDD poses *threats* to biodiversity.
  – With such definition, REDD offers the most powerful *incentive* for biodiversity preservation yet conceived.
REDD’s Potential Threats

• Without a biodiversity-sensitive approach, REDD may:
  – Allow financing of projects harmful to biodiversity
  – Cause leakage to high-biodiversity forests
  – Reward historically high deforestation rates
  – Facilitate poor governance
  – Displace indigenous peoples and sustainable practices
  – Limit total global mitigation
  – “Flood the market” and reduce value
  – Cause leakage to non-forest ecosystems
Key Issues in Designing a Biodiversity-Sensitive REDD Program

• Focus on Primary & High-Biodiversity Forests
• Funding
• Creating Economic Value
• Payment Control
• Governance Support
• Leakage Prevention
• Permanence
• Additionality
Options for Funding REDD Credits

– Voluntary (non-market) funding:
  • Less potential value than marketable credits
  • Greater ability to target funds to most desirable projects

– Market-Linked:
  • REDD as a side-project, funded by the carbon market
  • Greater potential value, retain targeting control

– Market:
  • Greatest potential creation of economic value
  • Risks must be controlled through initial design to avoid discounting &/or undercutting mitigation
Market Funding

• Fully tradable carbon credits
  – Greatest ability to create value for avoided deforestation
  – Strongest pressures for verification and monitoring
  – This should be the *ultimate* goal of a REDD program

• Need for near-term alternatives: developing capacity
  – Voluntary and market-based systems

• Risks can be overcome by:
  – Banking (re: flooding the market)
  – Stringent emissions reduction targets (re: industrial reductions)
Scale

• Scaling to Avoid Leakage:
  – Moving from the project level to the national level
    • Aids in reducing leakage within countries
    • Possibly use nesting approach to support projects directly
  – Participation Levels
    • Key to reducing international leakage

• Scaling to Address Permanence Concerns:
  – Temporary credits for reduced immediate value
    • An option for demonstrating capacity
    • A necessary compromise approach (avoid discounting & loss of mitigation value)
Value

• Additionality:
  – Defining baselines/targets
  – Demonstrating avoided deforestation

• Protected stocks (countries with low deforestation):
  – Should these countries be rewarded for ongoing preservation? How?
    • Setting early baseline
    • Valuing stocks
    • National (or regional) approach with shared benefits

• Defining values:
  – Carbon value: primary basis of financial valuation
  – Co-benefit values: creating price premiums
Funding Biodiversity Benefits

• Need for Targeted Biodiversity Funding:
  – Forests with greatest threats may be least attractive to carbon investors (fragmented, relatively small)
  – Investment in high carbon forests may cause leakage to high-biodiversity forests

• Options for Funding Enhanced Value:
  – Voluntary Contributions
    • Enhancing payments to states
    • Offsetting costs to investors
  – Market-Related
    • Fixing a price premium percentage (higher overall payment)
    • Creating a fund to support biodiversity-sensitive investment (equal overall payment, lower cost to investors)
Key Elements of Funding Design

• Valuing High-Biodiversity Forests:
  – Agreement needed on assessment techniques
  – Accepted valuation methods necessary to create uniform price adjustments

• Conditional payments:
  – Demonstration of successful management required for any payment
  – Implementation of measures to prevent leakage
  – Staggered payments to ensure permanence
  – Consideration of net forest cover changes to address additionality concerns
Remaining Issues to Consider

• Redefining “forests” to capture biodiversity value and sustainable use
• Targeted use of reforestation and afforestation to support broader ecosystems
• Improving governance capacity and directing funds to sustainable forest uses:
  – Payments: ex post payments upon verification
  – Financial assistance and transfer of expertise
  – Reduce illegal logging (capacity building)
  – Certification of forest products
Conclusions

• Explicit recognition of biodiversity-based preferences in post-Kyoto REDD:
  – valuable for the climate regime
  – vital for REDD’s ability to incentivize preservation

• Funding should become market-driven, payments should be controlled to ensure benefits.

• Mechanisms for establishing biodiversity values should be established from the outset.
Thank You!

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