Namaste & Welcome

Nepal, carbon sequestration, forest management: Emerging opportunities

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Presentation outline

• Introduction to Nepal
• History of forest, forest governance and management
• Current problem, issues and opportunities in forestry sector (REDD+, poverty alleviation, biodiversity conservation)
• WFI project (Oregon small woodlands owners survey)
• Lessons learned
High Himalayans (8 out of top 10)

Annapurna Range

Bengal Tiger (125)

• 2nd rich country in fresh water

Source: Topographic Survey Branch, Survey Department, HMG Nepal, 1987 and Digital Chart of the World
Distribution of forest according to physiographic regions

Source: HMG, 1988
Distribution of forest according to physiographic regions

Major Physiographic Features

Physiographic Divisions:
- High Himalaya
- High Mountain
- Middle Mountain
- Shivalik
- Terai
- Glaciers

Source: Topographic Survey Branch, Survey Department, HMO Nepal, 1987 and Digital Chart of the World

- 26%
- 8%

Sal tree
Wild buffalo
Distribution of forest according to physiographic regions

Major Physiographic Features

- 33%
- 26%
- 8%

Physiographic Divisions:
- High Himalaya
- High Mountain
- Middle Mountain
- Shivalik
- Tarai
- Glaciers

Source: Topographic Survey Branch, Survey Department, HMS Nepal, 1997 and Digital Chart of the World
Distribution of forest according to physiographic regions

800 bird species

Major Physiographic Features

Physiographic Divisions:
- High Himalaya
- High Mountain
- Middle Mountain
- Siwalik
- Tarai
- Glaciers

Source: Topographic Survey Branch, Survey Department, HMO Nepal, 1997 and Digital Chart of the World
Distribution of forest according to physiographic regions

- Snow leopard (350-500)

- Major Physiographic Features

- Physiographic Divisions:
  - High Himalaya
  - High Mountain
  - Middle Mountain
  - Siwalik
  - Tarai
  - Glaciers

Source: Topographic Survey Branch, Survey Department, HMO Nepal, 1997 and Digital Chart of the World

Yarshagumba (Cordyceps sinensis)
Land use statistics

- Agricultural land cultivated: 21%
- Agricultural land uncultivated: 7%
- Forest land: 29%
- Shrub land: 10%
- Grass and pasture land: 12%
- Water: 3%
- Others: 18%

Source: Ministry of Agriculture and Cooperatives, GON, 2004
Forest in Nepal

2% annual deforestation rate (past 30 years)

Adapted from FAO report, 2010

Almost 80% energy from fuel wood
Nepal: Distribution of forest power over time

Before 1957:
- Nationalization of forest

Between 1957 - 1978:
- Until early forms of CF initiated through Panchayat Forestry Regulations

Between 1978 - 1995:
- When the new Forest Act was enforced

After 1995 till now:
- Diverse actors, complex field, diverse issues

Slide Source: Hemant Ojha, PhD, Forest Action Nepal
Forest management

Category of forest area in million ha

- Government managed forest: 3.9, 67%
- Community forest: 1.2, 21%
- Leasehold forest: 0.014, 0%
- Religious forest: 0.000543, 0%
- Protected forest: 0.71, 12%
- Private forest: 0.0023, 0%

Deforestation is high in government forest - open access

Tree for meditation

Religious importance
Operational structure of Community Forest

- Locally selected candidate for forest governance, Community forest users group
- Submit proposal to local Department of forest
- Forest officer study and conduct forest inventory and survey
- Handover to forest users group
- Make forest management plan, involve indigenous people, involve women and poor people

- Can use forest resource according to forest management plan.
- Cut down tree and re-plant without permission from Department of forest
- Can sell forest resource and generate income
- 25% income goes to government and 75% income is used to fence forest, perform management practice, and construct school, water supply, health post and other developmental activities.

15,000 users group
40% households
Global issues that relate to forestry in Nepal

• 20-24% of GHGs emissions is from deforestation and forest degradation and 2\textsuperscript{nd} largest source of carbon emission (IPCC 2007).
• Emission reduction from avoided deforestation has been regarded as cost-effective future climate change policy (Stern 2006).
• Action needed: 1\textsuperscript{st} need to prevent carbon emission and 2\textsuperscript{nd} increase carbon stock.

Fodder collection
Global issues that relate to forestry in Nepal

• 13th COP of UNFCC in Bali 2007, agree to address REDD and necessary financial mechanism.
• COP 15 in Copenhagen 2009, REDD+ (biodiversity conservation)
• COP 16 in Cancun, Green climate fund ($100 billion a year by 2020 for mitigation and adaptation for developing countries.
• REDD+ and CDM encourage local and regional government for forest protection, livelihood development and climate change mitigation and adaptation
Key issues in forestry in Nepal

- **Is forest carbon really a low cost** method to mitigation climate change considering the livelihood benefits and tradeoff?

- **Who owns forest carbon** in different regimes of forest governance?
Key issues contd..................

- Will it be possible to retain 40% forest area in the face of growing demand for land for cultivation?

Forestry in USA

Business

Advanced vehicles

Forestry in Nepal

Livelihood

Animals for log transportation
Can Nepal’s forest communities meet the global requirement for carbon trade (leakage, baseline, monitoring and verification, permanence)?

Can market based payment help Nepal to address drivers of deforestation?

What scale of REDD operation ensure equity within the country?
Opportunities in forestry in Nepal

- World leader in community-based forest management
- World Bank supported REDD readiness plan
- Field level piloting on carbon monitoring, measurement and verification
- National level reviews and studies on forest governance
- Expansion of protected area
- New forest sector strategy
- Commissions and studies on forest corruption
- National Adaptation Program of Action
- Forest Resource Assessment (Finish Aid)
- Community forestry, livelihoods and climate change (multi-donor programme)
Objective of World Forest Institute (WFI) Fellowship Program

- Forest management: Private, public, protected
- Forest carbon project: land owners' involvement, operational structure (Registration, verification, monitoring)
- Carbon pool: above-ground biomass
- Baseline: historical trends
- Leakage: shifting of source of emission from other parts of forest
- Additionality: more than business as usual scenario
- Permanence: How can we make sure carbon will be stored for longer term?
WFI Project:
Objective:
1. Small woodland owner’s perception towards forest carbon sequestration and climate change
2. Motivation for managing forest for carbon and other ecosystem services
Methodology:
• Questionnaire survey paper (12), online (13) and email (5)
• 30 responses
Age of respondent

- 86% respondents are above 50 years
- 60% respondents have higher education
Around 60% people owns less than 100 acres

- Half of the owners have forest inventory
- Other half said they want to have forest inventory in future
Source of income from forest land, Oregon

- Almost half of the respondents said they either earn nothing or just less then 10% income from their forest.
Level of knowledge on carbon trading

- Very knowledgeable: 45%
- somewhat knowledgeable: 10%
- heard about it, have no idea how it works: 5%
- No response: 10%

More than 60% people strongly agree on financial benefits from carbon trading, BUT on the cross question, they are not sure if they need cap and trade system. So there is a lack of information and confusion on forest landowners about how forest carbon project works.
Motivation for forest carbon sequestration

- More than 70% people said they will harvest their timber and firewood in next 5/10 years
- Whereas, only 7% people said they will manage forest for carbon
Role of Oregon small woodlands owners for climate change mitigation

- We should manage forest for carbon sequestration (28.6%)
- We are too small to contribute (14.3%)
- Climate change is not [caused] by humans, we cannot do anything to stop (21.4%)
- Aggregation of small land owners will help (10.2%)
- Others (25.5%)
Some of the key quotes regarding this survey

“Cap-and-trade legislation will be devastating to our economy“

“...climate change is based on bad science at best and fraud at worst. It is an attempt for government to grab still more power.”

“I would love to be paid for growing trees.”
Conclusion

- More than 50% people earn nothing from their forest-alternative income from carbon/ecosystem service would be attractive.
- Level of awareness on climate change and cost-benefits of forest carbon project is unclear to small woodland owners.
- Information about the process and operational system of project is lacking.
- Aggregation of small forestland would be positive initiation for the forest carbon project.
Overview of forest carbon project steps

Examples/lessons learned
Examples/lessons learned

Common standards used

- Voluntary Carbon Standards (VCS)
- Clean development mechanism (CDM)
- Climate, community and biodiversity (CCB) standards
- American Carbon registry (ACR) Forest Project standard: available for afforestation and reforestation (AR), Improve forest management (IFM) and Reduce emission from deforestation and forest degradation (REDD)- globally
- Carbon Fix standards (Germany based): based on IPCC good practice guidelines
- Climate action reserve (CAR): California based non-profit organization, covers AR, IFM and REDD, currently applicable inside USA
- ISO 14064: developed by international organization for standardization (ISO).
- Plan Vivo Standards: developed for small-scale farmer for livelihood strategy.
- Social carbon: designed to demonstrate social and environmental co-benefits of carbon offset.
- Forest peoples program: for oil palm industry for REDD+ project.
- UN-REDD program
Examples/lessons learned

Van Eck Forest carbon project

- 500,000 more tons of CO2 from 2,200 acres will be sequestered over the next 100 years.
- Under Climate Action Reserve standards
- Located in Humboldt county, CA
- Conservation easement by Pacific Forest Trust (prevent the forest from ever being developed)

Woodland carbon company (pilot project)

- Aggregator (bundling of small woodland owners together)

Faulk family forest

- Currently generating credits to be sold in future
Thank you for your attention