

The Social Dimensions of Markets and Governance for Carbon Forestry and REDD



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Forests and Climate Change

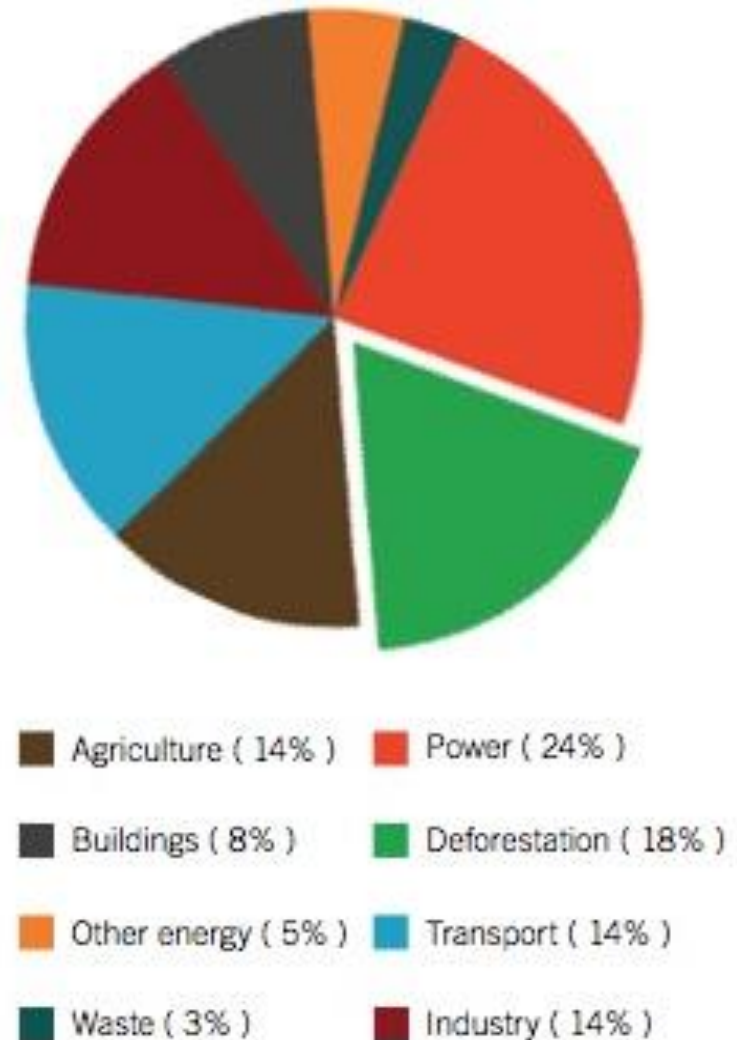
Tropical forests cover 15% of land surface and contain 25% of terrestrial carbon.

Approximately 13 million hectares are destroyed per year.

Causes of deforestation include timber extraction, agricultural expansion – particularly the production of beef, soy, palm oil and coffee, and peasant subsistence production for food and fuelwood.

18% of GHG emissions is the result of deforestation.

Forests store and sequester carbon.



Forests and Local Communities

90% or 1.2 billion of the people living in extreme poverty depend on forest ecosystems for their lives and livelihoods.



The Carbon Market

Allowance Transactions



- Trade of pollution rights between high-emitting factories and plants
- 85% value of the market (\$144 B)

Project-based offsets



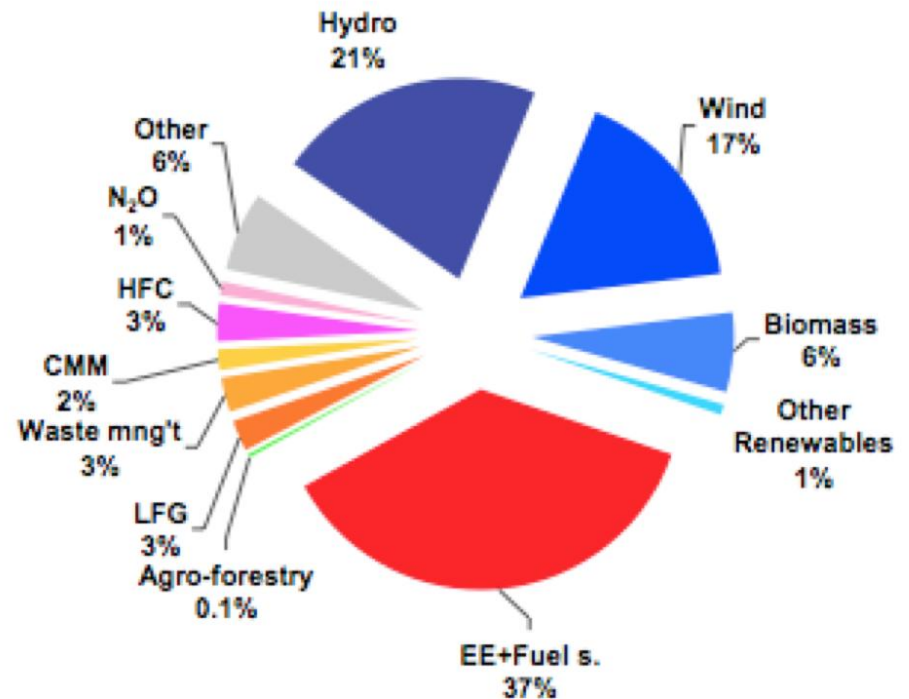
- Projects include renewable energy, fuel switching, industrial gases, tree plantations
- CDM and voluntary market
 - 15% value of the market

Carbon Forestry

Carbon forestry refers to the planting of trees in afforestation and reforestation systems.

It currently accounts for 0.1% of CDM market.

Carbon forestry is likely to increase with REDD and greater involvement of U.S.



CDM projects 2008
(as share of volumes supplied)

REDD

Reducing Emissions from Deforestation and Degradation

Strategy to compensate land owners and country governments for keeping forests intact.

REDD+ focuses on conservation, sustainable management and enhancement of carbon stocks.

3 Pillars: GHG reduction, forest & biodiversity conservation, livelihood benefits

Organizations involved: World Bank, UN agencies, country governments, indigenous and forest communities, NGOs



Social Issues of Carbon Forestry & REDD

Sustainable development in local communities

Participation of local communities

Equitable distribution of benefits

Impacts of carbon market on land rights and access to land and resources for local communities



Clean Development Mechanism

GHG reduction and sustainable development

*Article 12: The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving **sustainable development** and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified **emission limitation and reduction** commitments under Article 3.*

Current market form of CDM is fundamentally different than original design - The Clean Development Fund

Academic research on development carbon forestry

“A general finding from applying the sustainability assessment tools to case studies of CDM projects is that **trade-offs** exist between the two objectives of the CDM in favour of cost-effectiveness.... [And] that, left to market forces, the CDM does not significantly contribute to sustainable development” (K.H. Olsen 2007)

“Our analysis of six potential types of carbon projects illustrates that **tradeoffs** often exist between the social benefits of projects and their attractiveness to investors. *Community- based projects, such as agroforestry, small-scale plantations, agroforests, secondary forest fallows, community forest rehabilitation and multiple-use forest management, have the highest potential for local livelihood benefits* and pose the fewest risks to communities, because production of carbon benefits are contingent on the collaboration of communities.” (Smith and Scherr 2003).

Based on a large N sample of global forest commons, Chhatre and Agrawal (2009) suggest that **trade-offs** and synergies between carbon storage and livelihood benefits are both possible outcomes, however synergies are more likely under *communal forest ownership*, large forest size, and greater local autonomy.

Empirical research on community-based carbon forestry

On small-holder forestry projects in Chiapas, Mexico

“left solely to the market, existing institutions for managing and supporting CDM projects are unlikely to achieve the objectives of local equity and sustainable development” (Brown and Corbera 2003).

“At one level it is simply amazing that this carbon mitigation project has survived, much less grown...A betting person would not have given it very good odds for success” (Nelson and de Jong 2003).

“Although the involvement of campesinos in the project has caused it to be highly regarded as an example of sustainable development, in Frontera Corozal, the project has failed to deliver on economic, social, and ecological dimensions of sustainable development” (Osborne 2010).

Governance and rules matter

*Based on research of carbon forestry in Chiapas, Mexico, I have found that carbon commodification shapes community **rules and land uses** that have previously protected forests, in ways that in some cases lead to environmental degradation and loss of culturally important livelihood benefits associated with traditional land uses.*

Scolec Té Carbon Forestry Project



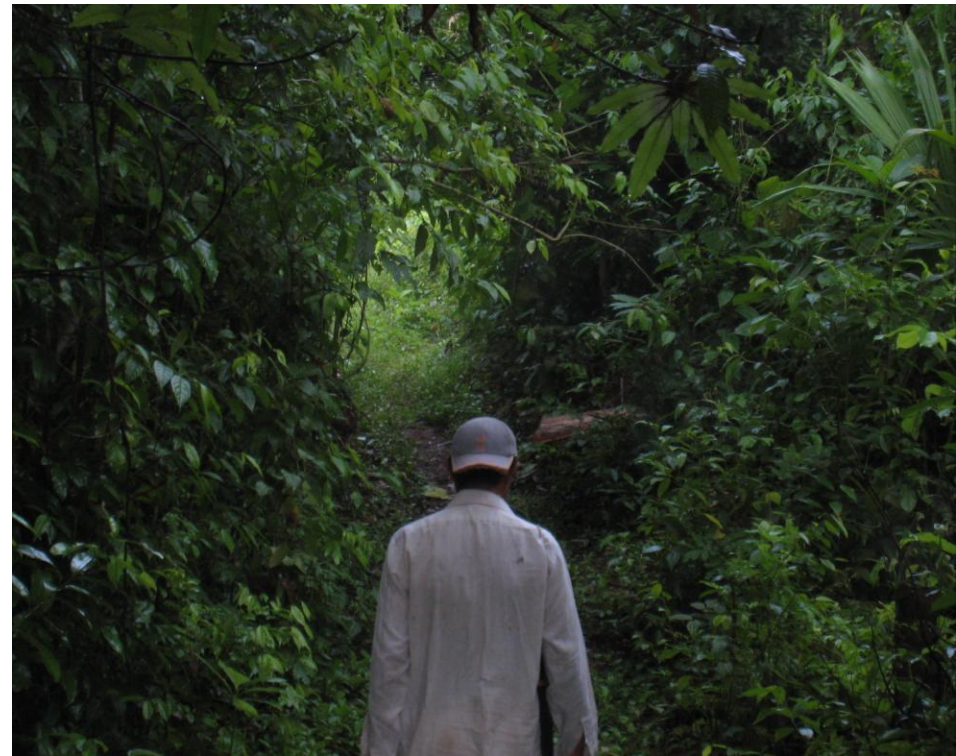
- Initial goal of Scolec Té – development in local communities
- Began in 1995 in Chiapas Highlands, now 700+ producers in over 50 communities
- Priorities shift in commercial mode
- Financial benefits mainly from timber harvesting



Frontera Corozal

Frontera Corozal: Chol community in the Lacandon Jungle

- Descendants of Classic Maya (250 AD - 900 AD)
- Part of Lacandon Community, have access to land, engaged in swidden agriculture (milpa).
- Entered Scolel Te in 2002



Changing rules of forest governance

Successful commons management principles (Ostrom) are changed with engagement in carbon project

1. Boundaries

Carbon project required a level of boundary definition that facilitated new interest in PROCEDE.

2. Proportionality

Project risks mean that costs may outweigh the benefits.

3. Collective Choice

Inability to set rules for land in project and long time horizon of trees limit freedom of land users.

Changing rules of forest governance

Successful commons management principles continued:

4. Monitoring

Land monitored no longer by community guards but NGO and state agencies at a distance.

5. Sanctions

6. Conflict Resolution

Sanctions and systems of conflict resolution become strained with involvement of external agencies.

7. Autonomy

As timber is the main financial benefit, state rules trump community rules around tree cutting.

Shifting Cultivations from Corn to Carbon

- Corn plays an important role in Chol lives and livelihood
- Milpa - system of shifting cultivation
- Participants prefer *taungya* system or improved fallow
- Corn production is incompatible with that of timber trees

“Areas supporting mahogany and tropical cedar are considered too wet for milpa crops” (Nelson and Nigh 1980).



Risks and Limits to Timber Benefits

Pests



Insecure participation in timber market

On receiving state permission to cut trees:

“No, it is not possible. It the same as if they asked us to reach a star. No, it is not easy to do” (former carbon producer).

Fire

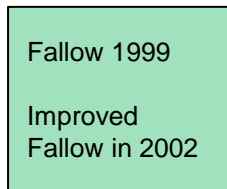


Environmental benefits/costs of carbon forestry

Carbon Analysis

System	Living Biomass			Dead Biomass			Total Biomass (T/HA)	Total Carbon (T/HA)
	Trees	Juveniles	Herbaceas	Roots	Humus	Fallen branches		
Improved Fallow	3.71	5.99	3.73	3.44	14.40	1.41	32.69	16.34
Natural Fallow	56.12	6.34	1.72	13.68	8.00	4.79	90.66	45.33
Montaña	126.79	2.36	4.37	26.13	22.40	3.37	185.41	92.70

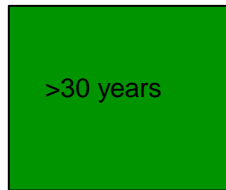
Improved Fallow



Natural Fallow



Montaña





Broader Impacts

This research is important because the governance and financial mechanisms of REDD have yet to be decided. The results of this research demonstrate while communally managed forests can provide social and ecological benefits for communities and beyond, there is need for concern about pursuing market-based financial mechanisms for REDD.

Thank You



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