

Adaptation, Forests and REDD+



"Adapt or perish, now as ever, is nature's inexorable imperative."

H. G. Wells

Natural disaster management and agriculture tend to dominate discussions on climate change adaptation. But forests matter too. In fact, they matter a lot. Recent research is beginning to uncover just how much forest-based products and services contribute to the livelihoods of rural communities globally – now believed to be approximately one-fifth to one-quarter of household income. We need to begin paying more attention to how forests can increase the resilience of communities to impending climate change impacts. And given the recent rise of our interest in REDD+, how exactly REDD+ can help or hinder this process.

Inside This Issue

- 3 Future impacts of climate change on forests
- 4 Adaptation basics
Forests for adaptation
- 7 Lessons from around the region
Local knowledge in adaptation and mitigation: Da Loc Commune, Vietnam
Gender, Forestry and Adaptation: Bishnapur, Nepal
- 8 Recommendations for incorporating adaptation within REDD+

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About REDD-Net

REDD-Net is the hub for knowledge sharing and resources on Reducing Emissions from Deforestation and Degradation (REDD+). Aimed at Southern civil society organizations and practitioners in REDD+, the network offers the latest information and resources to help build pro-poor REDD+ projects and policies. Led by the Overseas Development Institute (ODI), REDD-net's partners include RECOFTC – The Center for People and Forests, Tropical Agricultural Research and Higher Education Center (CATIE), and the Uganda Coalition for Sustainable Development (UCSD).

www.redd-net.org

From the editor

Dear Readers,



The relationship between adaptation and REDD+ is beginning to receive due notice. Over the past year, REDD-Net has been researching and documenting cases detailing synergies and trade-offs between adaptation and REDD+. We conclude that not only is incorporation of adaptation considerations important to REDD+, it is vital.

There are two different, but related, strands in the discussion of forests and adaptation. One addresses 'forests for adaptation' and the other 'adaptation for forests'. Given the focus of REDD-net on civil society, we primarily examine the former, which asks: how can forests, and in particular REDD+ activities in forests, lead to increased climate resilience? And conversely, what are the red flags where forest-based mitigation undermines the adaptive capacity of local communities?

Our findings in a recent regional REDD-Net publication, "*Linking Adaptation and Mitigation through Community Forestry: Case Studies from Asia*", illustrate the richness of the many ways that people use forests and how skillful forest management can support improved resilience to climate change. The case studies also reveal some unexpected implications for forest management strategies, with trade-offs revealed in: health and nutrition, household energy supply, gender empowerment, and diversity of income sources among others.

To local communities confronting climate change impacts, adaptation is often of critical importance. People might not understand fully the processes of climate change, but they certainly understand its threats to their assets (natural, physical, human, financial and social) and the need to reduce their vulnerability. Mitigation however, is less directly relevant and urgent for local communities, though it preoccupies international levels of discourse. A fundamental problem confronting REDD+ is that while its success depends on securing buy-in at local levels, REDD+ payments have yet to substantively reach grassroots communities. Supporting adaptation needs as a part of REDD+ can go some of the distance in doing so, particularly in the interim before payments materialize.

As we argue for integrated approaches to land management, so the discourse and practice of climate change equally needs to be integrated.

If you would like more information about REDD+ or the REDD-Net initiative and communities, please visit www.redd-net.org. I also welcome your comments, opinions, or questions about material in the following pages.

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Future impacts of climate change on forests

We don't know exactly what the impacts of climate change on forests will look like, but we do know that under all future scenarios, forests will be impacted.

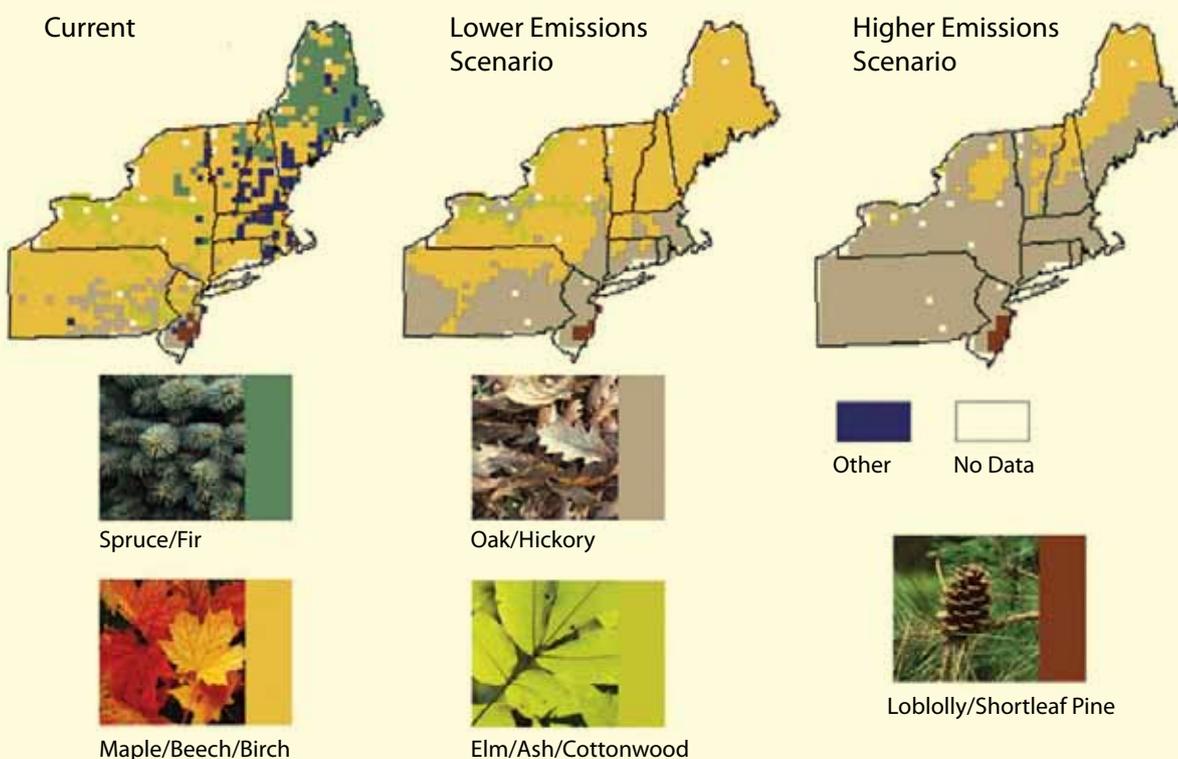
Climate change will affect forest distribution and species composition, as well as intensity and frequency of forest fires, insects and other pests. Forests will be at risk of damage due to increasing extreme weather events including droughts, torrential rains and extreme winds. Forest ecosystem services will likely be significantly affected, particularly in semi-arid and arid climates, where forests may no longer be viable and carbon regulating services lost. Under such conditions, forests will possibly change from being net carbon sinks to net carbon emitters³.

"In forestry, the divisions between mitigation and adaptation are artificially created."

Resham Dangi,
Ministry of Forests
and Soil Conservation
Government of Nepal

Figure 1 shows projected changes in northeastern United States under different scenarios.

Figure 1.



US Environmental Protection Agency, 2012⁴

"The promotion of community forestry in many developing countries may increase local adaptive capacity by putting decisions in the hands of the people who feel the effects of climate change first, and by enhancing the role of traditional knowledge in forest management."

Unasylva 231/232,
Vol. 60, 2009

¹ Angelsen, A. 2011. 'The economic contributions of forests to rural livelihoods: a global analysis. Oral presentation at the PEN Science Workshop: Exploring the Forest-Poverty Link: New Research Findings. University of East Anglia, Norwich, UK, 13–14 June 2011.

² <http://www.recoftc.org/site/resources/Linking-Adaptation-and-Mitigation-through-Community-Forestry-Case-Studies-from-Asia.php>

³ FAO, 2011. *Forests and Climate Change: a literature review. Working Paper 10. FAO, Rome.*

⁴ <http://epa.gov/climatechange/impacts-adaptation/northeast.html>

Adaptation basics

Climate change adaptation is defined by the IPCC (Intergovernmental Panel on Climate Change) as “*initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change effects*”⁵.

What does a successful adaptation project entail?

According to the Adaptation Fund, an adaptation project has “activities aimed at addressing the adverse impacts of and risks posed by climate change.” Results should be visible and tangible by reducing vulnerability and increasing the adaptive capacity of human and natural systems to respond to climate change. Adaptation projects can be evaluated against:

1. Climate change scenarios
2. Reviewing the effectiveness of the intervention against climate impacts
3. Comparing performance of the project area and similar comparison areas
4. Assessment of outcomes against known best practices or recommended standards
5. Comparing indicators of vulnerability and adaptive capacity before and after the intervention

How is this different from ‘good development’?

There is much overlap between adaptation and good development practice. In fact, mainstreaming adaptation considerations may be seen as fundamental to ‘good development’. Addressing poverty, supporting livelihoods development and investing in infrastructure are all measures that will help people and communities respond to shocks and trends not only in climate change but to stresses more broadly.

Forests for adaptation

Adaptation in agriculture is not too difficult for most of us to envision. Generally we expect that changes will be made in crops or agricultural practices in accordance with changes in the climate. The relationship between climate change adaptation and forestry can seem less obvious but in reality, takes many forms. Examples of forest-based adaptation in action that contribute directly to increased climate resilience of local communities include:

<p>Reforestation/ Rehabilitation</p> <ul style="list-style-type: none"> ▪ Restoring watersheds on micro-catchment basis; ▪ Improving soil management through sustainable and integrated land management; ▪ Reducing forest degradation by managing livestock grazing; 	<p>Innovation</p> <ul style="list-style-type: none"> ▪ Using local/ indigenous knowledge in shaping microclimates and ecological niches; ▪ Incorporating stress and water-tolerant tree species and varieties; ▪ Using indigenous knowledge as well as new knowledge for innovative responses; ▪ Making microcredit available for forest-based enterprises;
<p>Multiple Uses</p> <ul style="list-style-type: none"> ▪ Agroforestry as a means of incorporating food security needs; ▪ Managing forests (collectively) for leaf litter, fuelwood and forest-based food availability; ▪ Maintaining high levels of inter- and intra- species diversity in forests; ▪ Reducing pressure on forests through improved agricultural practices such as terracing; ▪ Maintaining key pollinators (bees, butterflies and moths) for forest and agriculture productivity; 	<p>Managing Risk</p> <ul style="list-style-type: none"> ▪ Developing forest management plans that include adaptation activities; ▪ Reintroducing traditional varieties and adaption of new species; ▪ Planting trees along rivers to reduce sudden water onrushes (ie. glacial outbursts); ▪ Planting mangroves as buffers against typhoons and other extreme events; ▪ Organizing community patrols for fire outbreak management.

⁵ Intergovernmental Panel on Climate Change. 2007. *Fourth assessment report*.

⁶ Locatelli, B. and Pramova, E. ‘Beyond Mitigation: Forest-Based Adaptation to Climate Change’. Presentation delivered at Meeting on Forests and Climate Change Adaptation in Asia, 26 October 2011, Bangkok

CARBON STANDARDS AND ADAPTATION

The inclusion of adaptation within carbon standards is seen as one means of strengthening the link between adaptation and mitigation. Of the main voluntary carbon standards, only the Climate Community Biodiversity Standards⁷, explicitly recognizes contributions to adaptation. The CCB Standard requires 14 basic criteria to be met, along with three optional 'gold' ones. These are: demonstration of exceptional community, biodiversity or *climate change adaptation* benefits.

There have, however, been several additional initiatives aimed at establishing carbon standards with adaptation benefits – AdMit⁸ standard developed by IIED is one example of this.

There remains, however, an ongoing debate on the usefulness of building adaptation into carbon offset schemes. Opponents argue that carbon markets should not be expected to carry too many 'additional' benefits and that doing so could dilute the effectiveness and viability of carbon credits.

VULNERABILITY, FORESTS AND GENDER

We know that when typhoons hit or flooding occurs, women are disproportionately affected. But when climate change impacts forests, what does it mean for women?

First, we need to understand the role of vulnerabilities in adaptation. Adaptation decision-making requires having baseline vulnerability data for comparison. For a number of reasons women are a group whose vulnerabilities are essential to adaptation planning.

So, what makes women vulnerable? Approximately 70% of people living on less than a dollar a day are women. They work two-thirds of the world's working hours, yet receive only 10% of the world income. 1% of the world's property belongs to women, while they predominate in world food production (50-80%). When it comes to policy influence and representation, only 8% of cabinet members globally are women.

According to the Food and Agriculture Organization (FAO), trees and forests are often more critical to the livelihoods of rural women than men.⁹ They have the primary responsibility for meeting household food and fuel needs, are thus disproportionately affected by the depletion of forest resources. Restrictions on access affect women differently from men, particularly in the survival strategies of women. During conflicts and natural disasters, they become especially reliant on forest products and services.

However, it is important not to have a static view of women as vulnerable and passive victims. Women have skills, knowledge and experiences that make them key agents of change in adapting to climate change.

⁷ CCBA, 2008. The Climate, Community and Biodiversity Project Design Standards (CCB Standards), 2nd version. Conservation International. <http://www.climate-standards.org/>

⁸ <http://www.iied.org/admit>

⁹ <http://www.fao.org/gender/gender-home/gender-programme/gender-forests/en/>

Regional Partner Organization - Adaptation Knowledge Platform (AKP)



Can you describe AKP?

The Regional Climate Change Adaptation Knowledge Platform for Asia (AKP) was established to respond to a need for effective mechanisms for sharing information on climate change adaptation and for developing adaptive capacities in Asian countries. The AKP was initiated in 2009 as a partnership between the Swedish Environmental Secretariat for Asia (SENSA), the Regional Resource Centre for Asia and the Pacific (RRC.AP), the Stockholm Environment Institute (SEI), and the United Nations Environment Programme (UNEP).

What has been the unique role of AKP in the region?

A number of international initiatives have been launched to help countries build their national capacity to respond to the changing climate, but many of these initiatives are being undertaken independently of one another, leaving an unsolved need for enhanced sharing of information, knowledge and lessons learned within and across borders. A key function of AKP is to meet this need.

How has AKP collaborated with REDD-net?

AKP's collaboration with REDD-Net promotes generation and sharing of new knowledge related to adaptation and mitigation linkages. We have supported REDD-Net in improving research capacity of five national partners in the region to analyse and demonstrate linkages between adaptation and mitigation discourses in the forestry sector. AKP supported REDD-Net in organizing an inception workshop that resulted in the Linking Climate Change Adaptation and Mitigation case studies. AKP and REDD-Net have also collaborated in the Adaptation Forum 2012 in Bangkok aimed at sharing frontline findings, opportunities and challenges in mainstreaming climate change adaptation into development.¹⁰

For more information on the Adaptation Forum 2013, please visit:
www.asiapacificadapt.net/adaptationforum2013

¹⁰ <http://www.asiapacificadapt.net/adaptationforum2012/home>



Lessons from the region

Local knowledge in adaptation and mitigation: Da Loc Commune, Vietnam

Da Loc commune is vulnerable to an increase in extreme weather events. The damage caused by Typhoon Damrey in 2005 was a pivotal moment for the commune, leading to mangrove reforestation initiatives for disaster risk management. Involving local communities as direct partners was recognized as contributing to this CARE project's success when compared to earlier, less participatory initiatives. In addition to disaster risk reduction, the mangroves have provided income benefits from enhanced aquaculture as well as being powerful carbon sinks. One outcome that was unanticipated was the role of local knowledge in the success of the project. Previous efforts had largely failed due to the high mortality rates of the immature mangrove seedlings. The high mortality stemmed from the incidence of barnacles strangling the young mangroves. Chemical treatment had been unsuccessful. When the communities were brought in to the CARE project as full partners, they began to incorporate local knowledge and strategies. They were aware that during some seasons the shells of the barnacles were at their softest. Stripping the soft barnacles away with knives during this period was relatively easy and proved highly effective, leading to the high survival rates of the young mangroves.

Gender, Forestry and Adaptation: Bishnapur, Nepal

The women of Bishnapur in the Terai of Nepal are exposed to changing environmental conditions. Water scarcity, increasing temperatures and extreme weather events are creating powerful stresses in the area. But, while their vulnerability has increased, so too have opportunities. In one year of particularly devastating flooding from the Chapini River, the women led initiatives reforesting areas surrounding the river. Over time their efforts were recognized and community forestry status was issued. While the women were initially allowed access to the land due to its marginal value, all have come to recognize not only the carbon sequestration value of the forests, but also multiple other benefits including disaster risk reduction, increased water retention in soils and vegetation and increased agricultural productivity around the forests. Most important, perhaps, have been the significant gains in capacity and confidence of the Community Forestry User Group (CFUG)'s women – increasing literacy, accounting and management skills, social connections and status. In short, while climate change impacts have become more severe in the area, the Bishnapur CF and its women have fared well.



Recommendations for incorporating adaptation within REDD+



"We should credit REDD+ for bringing adaptation issues into the forestry agenda."

Vicky Tauli-Corpuz,
Tebtebba
Philippines

- **Incorporate an adaptation lens** in national development and forestry plans.
- **Accelerate and expand land tenure reform** processes with a particular emphasis on indigenous and communal land-titling.
- **Ensure collaboration and coordination** among government agencies horizontally and vertically in forest-based landuse planning.
- **Identify and scale-up models of successful mitigation–adaptation initiatives** prioritizing documentation and dissemination of lessons learned.
- **Ensure REDD+ does not restrict access rights** to non-timber forest products key to food security and climate adaptation
- **Conduct participatory research and trials** with low water-consuming and indigenous tree species.
- **Document and track environmental changes** to support lack of quantifiable climate change data in the region.
- **Support development of knowledge sharing and network exchanges** within and between communities and countries.
- **Develop adaptive capacities through capacity building** targeted at local-level government and the communities, with special emphasis on women and vulnerable groups.
- **Incorporate local knowledge** in order to increase effectiveness of adaptation and mitigation practices and promote sustainable local adoption.
- **Facilitate market access and capacity building** for product processing and value addition to combat poverty and support livelihood development.
- **Plan for and incorporate synergies** into both adaptation and mitigation project design.
- **Based on recommendations from RECOFTC publication:** Linking Adaptation and Mitigation through Community Forestry Case Studies from Asia: <http://www.recoftc.org/site/resources/Linking-Adaptation-and-Mitigation-through-Community-Forestry-Case-Studies-from-Asia.php>

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