



Mitigation-Adaptation Synergies

Bruno Locatelli

► **To cite this version:**

Bruno Locatelli. Mitigation-Adaptation Synergies. Center for International Forestry Research (CIFOR). 2014. <cirad-01056389>

HAL Id: cirad-01056389

<http://hal.cirad.fr/cirad-01056389>

Submitted on 18 Aug 2014

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Mitigation–Adaptation Synergies

Mitigation–Adaptation Synergies looks for ways to exploit the synergies between REDD+ and climate change adaptation, to ensure that REDD+ has an impact beyond mitigation and is sustainable in a changing climate.

The primary purpose of REDD+ is to help mitigate climate change by avoiding the release of carbon emissions caused by deforestation and forest degradation. Mitigation is crucial for limiting the extent of climate change and thus the severity of its impacts on society.

Yet even with strong mitigation efforts, the climate will continue to change. Therefore, we must be prepared to adapt to these changes—to adjust human and natural systems so that communities are more resilient and can cope with the harmful effects of climate variability.

Forests are important for both mitigation and adaptation, so it makes sense to analyze the linkages between these strategies and identify opportunities to enhance the outcomes of both. In particular, it would be highly beneficial to use REDD+ to support measures that help reduce forest communities' vulnerability to the effects of climate change.

To guide the development of methods to achieve such synergies, our research analyzes national and international policies and standards to see how they can support integration, assesses the vulnerability of communities and forests, and explores the outcomes of ecosystem-based approaches to adaptation.

Global Comparative Study on REDD+
ForestsClimateChange.org

Mitigation–Adaptation Synergies

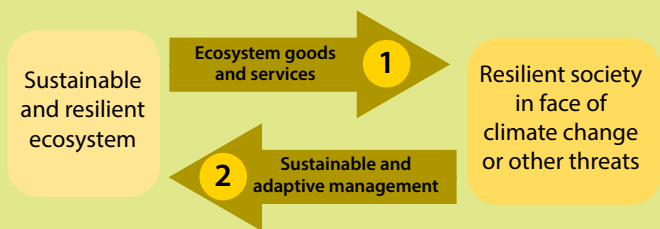
Key Points

Forests are important for both mitigation and adaptation

REDD+ was devised because the conservation of forests is critical for mitigating climate change caused by human activity: standing forests can remove carbon from the atmosphere and can store it, whereas deforestation and forest degradation account for around 10% of the world's total carbon emissions. At the same time, well-managed forest ecosystems can help societies to adapt to both current climate hazards and future climate change because of the wide range of ecosystem services that they provide.¹ For example, mangroves protect coastal areas against storms and waves, forest products provide local communities with a safety net when climate variations harm agriculture, and forests regulate water quality and river flows.^{2,3} However, the importance of forests for adaptation is not adequately reflected in policies.^{1,4}

Forests also need help adapting to climate change

Climate change will harm forests, so we also need measures to protect forests and their ecosystem functions.¹ If forests are to continue providing their valuable ecosystem services, sustainable management and/or conservation of forests are essential. Forest-related mitigation projects, such as REDD+ projects, have the potential to support the adaptation of forests to climate change by reducing the pressures on forests caused by human activity, by connecting forested areas and by conserving biodiversity hotspots.^{1,3} Efforts to help forests adapt ("adaptation for forests") should take place alongside efforts to use forests for adaptation.²



- 1 Forests for adaptation
- 2 Sustainable management for sustainable provision of services + Adaptation for forest if sustainable management is in place

Adaptation and mitigation need each other

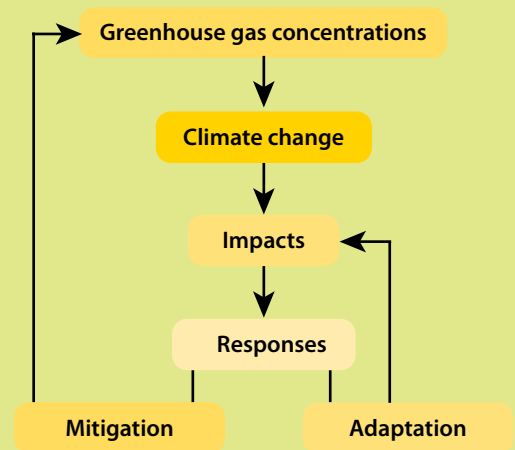
A REDD+ project is more likely to be sustainable and its carbon storage to be permanent if it incorporates adaptation measures for communities and forest ecosystems;^{2,5} if adaptation is not considered, the harmful effects of climate change could jeopardize project outcomes.³ Integrating adaptation measures can also increase local people's acceptance of and interest in the project, because with adaptation, the emphasis is on immediate local needs (whereas mitigation has longer-term global benefits).^{3,6} On the other hand, if an adaptation project includes activities that contribute to climate change mitigation, it may be able to benefit from the carbon funding and capacity building inherent in international instruments such as REDD+.^{3,4} Furthermore, donors may favor adaptation projects that also have global mitigation benefits.³



A REDD+ project is more likely to be sustainable and its carbon storage to be permanent if it incorporates adaptation measures.

Mitigation project design should consider adaptation

Mitigation projects in forest areas can help boost local livelihoods and people's resilience to the harmful effects of climate change.³ For example, a successful mitigation project could lead to greater provision of local ecosystem services, greater diversification of income sources and economic activities, more infrastructure or social services, and stronger local institutions.⁷ But such projects can also have negative consequences for adaptation, so these have to be taken into account.^{1,6} Negative consequences might occur if, for example, a REDD+ project seeks to restrict local people's rights and access to land and forest resources, as a means of preserving those resources, or increases local people's dependence on insecure external funding.



Adaptation projects can contribute to climate mitigation

Ecosystem-based adaptation projects aim to achieve better management of forest ecosystems, thus helping to increase or maintain carbon stocks—which directly benefits climate change mitigation efforts.^{3,4} The synergies between ecosystem services reflect the synergies between adaptation and mitigation;³ for example, mangroves simultaneously help protect coastal areas and store carbon. However, there may be trade-offs depending on local needs;^{3,6} for example, an adaptation project may prioritize the conservation of water services over carbon storage.² An adaptation project could also contribute to mitigation indirectly.³ For example, if an agricultural adaptation project boosts the productivity of crops, there will be less pressure on forests for agricultural expansion.

Communication, research and policies are needed to capture synergies

Adaptation and mitigation practitioners, decision makers and scientists tend to form separate communities.² However, those engaged in mitigation should be informed about adaptation, and vice versa, and participants in both groups should be trained in the other group's tools and methods.³ Additional tools, methods and evidence are needed, both to enhance the possible benefits and to reduce any adverse effects the two approaches might have on each other.³ For example, it would be valuable to assess the role of ecosystems in the adaptation of society or the impacts of REDD+ projects on local communities and their adaptive capacity. In addition, international and national policies and standards can support the integration of mitigation and adaptation, by actively encouraging synergies and by making adaptation a requirement of mitigation projects.³



Climate change will harm forests, so we also need measures to protect forests and their ecosystem functions.

References

- 1 Locatelli B, Brockhaus M, Buck A and Thompson I. 2010. Forests and adaptation to climate change: Challenges and opportunities. In Mery G et al., eds. *Forests and society: Responding to global drivers of change*. IUFRO World Series 25. Vienna: International Union of Forest Research Organizations. 21–42.
- 2 Locatelli B. 2011. *Synergies between adaptation and mitigation in a nutshell*. COBAM Brief. Bogor, Indonesia: CIFOR.
- 3 Locatelli B, Evans V, Wardell A, Andrade A and Vignola R. 2011. Forests and climate change in Latin America: Linking adaptation and mitigation. *Forests* 2(1):431–50.
- 4 Pramova E, Locatelli B, Brockhaus M and Fohlmeister S. 2012a. Ecosystem services in the national adaptation programmes of action. *Climate Policy* 12(4):1–17.
- 5 Guariguata MR, Cornelius JP, Locatelli B, Forner C and Sánchez-Azofeifa GA. 2008. Mitigation needs adaptation: Tropical forestry and climate change. *Mitigation and Adaptation Strategies for Global Change* 13:793–808.
- 6 Pramova E, Locatelli B, Djoudi H and Somorin O. 2012b. Forests and trees for social adaptation to climate variability and change. *WIREs Climate Change* 3:581–96.
- 7 Caplow S, Jagger P, Lawlor K. and Sills E. 2010. Evaluating land use and livelihood impacts of early forest carbon projects: Lessons for learning about REDD+. *Environmental Science & Policy* 14:152–67.

Photo credits

Neil Palmer (cover, inside), Marco Simola

Produced as part of



RESEARCH
PROGRAM ON
Forests, Trees and
Agroforestry

Australian
Aid



USAID
FROM THE AMERICAN PEOPLE



Fund



Federal Ministry for the
Environment, Nature Conservation
and Nuclear Safety

March 2014

cifor.org | blog.cifor.org



Center for International Forestry Research (CIFOR)

CIFOR advances human well-being, environmental conservation and equity by conducting research to help shape policies and practices that affect forests in developing countries. CIFOR is a member of the CGIAR Consortium. Our headquarters are in Bogor, Indonesia, with offices in Asia, Africa and Latin America.

