LES ACTIONS DE LA DGD DE ACTIVITEITEN VAN DE DGD

DGD'S ACTIVITIES LAS ACTIVIDADES DEL DGD

& BE-REDD-I

KLIMOS Policy brief 2

Dryland Areas, Forgotten by REDD?

Dryland management in Ethiopia. *Photo's by A. Mekuria*

- Current REDD focus on countries with high forest cover and/or high deforestation rates overlooks important carbon pools like dryland forests, rangelands and agro-forestry systems, likely leading to leakage.
- Current UNFCCC forest definition excludes vast areas of open forest, generally in the dry tropics, likely leading to leakage.
- Complicated and lengthy procedures exemplified by the current afforestation/reforestation rules of the Clean Development Mechanism (CDM A/R) make poor communities or countries unable to participate in land based carbon emission reduction initiatives.

What can be done?

- Change the focus from *forest carbon* alone to *ecosystem carbon* instead through REALU (Reducing Emissions from All Land Uses), in order to avoid (or reduce) leakage.
- Foster a premium system for benefits beyond emission reduction (e.g. biodiversity, pro-poor oriented).
- Envisage easier procedures for least developing countries (LDC's).

Introduction

The growing levels of carbon dioxide (CO_2) and other greenhouse gases (GHG) in the atmosphere are now directly and unequivocally linked with changes to the global climate (IPCC 2007). Among the anthropogenic sources of GHG the conversion of natural forests and woodlands, particularly in the tropics, is estimated to account for 12-18% (5, 13). Recent literature reviews indicate that it will not be possible to keep temperature increases below 2 °C without addressing GHG produced from land-use change (3, 12).

The Coalition of Rainforest Nations has been successful in highlighting the importance of tropical forest since the international climate change negotiations in Montreal in December 2005 (COP-11). At the COP-15 negotiations in Copenhagen in December 2009, most observers agreed that REDD was one of the topics where most progress has been made. A remaining problem is that negotiators mainly focus on (rain)forests, although no REDD working definition for forest has been formulated.
The current UNFCCC definition formulated for CDM A/R excludes vast areas with limited forest cover, often situated in the dry tropics.

Forest definition and leakage

Up to now, a forest definition has not been agreed upon for REDD within the UNFCCC. What does exist since COP-7, the Marrakesh negotiations in 2001, is a definition for the Afforestation and Reforestation under the Clean Development Mechanism (CDM – A/R) where forest is defined as "a minimum area of land of 0.05-1.0 hectares with tree crown cover (or equivalent stocking level) of more than 10-30% with trees with the potential to reach a minimum height of 2-5 metres at maturity *in situ*." In addition "a clearcut area that is temporarily unstocked, but that is expected to revert to forest" is also considered forest.

Sasaki and Putz (9) have criticised this definition because large quantities of carbon and other environmental benefits will be lost when natural forests are severely degraded or replaced by plantations but technically remain "forests". Verchot *et al.* (16) calculated the effect of different tresholds for 4 countries and showed that under the CDM a higher lower limit of tree cover would allow countries to maximize their participation and flexibility. In a REDD framework the effect would be the opposite, while anyway forests (generally dry forests) of less than 10-30% cover would remain excluded (Figure 1). In addition, an important drawback of almost any forest definition is that it would exclude trees outside the forest (e.g. on farms).

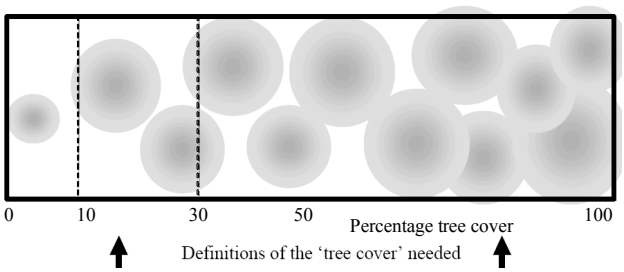

Figure 1: Continuum of tree cover from 0-100 % and the range of thresholds that is used across the globe in defining forest on the basis of tree cover (adapted from Van Noordwijk, (2001). Using tree cover as a major threshold means picking an arbitrary cut-off point.

The ICRAF-led ALLREDDI project (Accountability and Local Level Initiative to Reduce Emission from Deforestation and Degradation) revealed that in Indonesia, about a third of the emissions from land use change take place outside state forest land, without even including the large emissions from peat lands. The current Indonesian REDD plans only consider state forest land. Even if the current REDD approach for Indonesia is 100% successful, net emission reductions would be obtained earliest after 6 years because of a shift of emissions to areas currently not recognised as forest (2).

Biodiversity

Dry forest degradation is not only relatively neglected in the current international REDD policy debates, but is poorly represented in pilot programs as e.g. led by UN-REDD.

It is undeniable that many of the worlds' biodiversity hot spots are in what can be considered rainforest. However, the current focus on areas that are rich in both carbon and biodiversity, risks to go at the detriment of dry forest and other vegetation types. This has e.g. been reported from Brazil, where deforestation in the Cerrado is now higher as in Amazonas, and only 2.2% of its area is under legal protection (6). On the voluntary carbon market certified emission reductions (CER's) that also preserve biodiversity usually get higher prices than emission reductions without co-benefits. To include this in a post-Kyoto arrangement, steps should be made to better integrate the Convention of Biological Diversity (CBD) into current and future REDD approaches.

Ecosystem Carbon & REALU: an alternative approach

REALU (Reducing Emissions from All Land Uses) makes the unfruitful discussion about forest definitions redundant. There is probably no single definition of forest that can apply in the continuum of landscapes with trees (14). A better option would be to consider 'ecosystem carbon', rather than forest carbon alone (4). The emphasis should be on monitoring persistent declines and increases of carbon stocks over time, based on the Intergovernmental Panel on Climate Change (IPCC) methodologies. Zomer *et al*. (17) have shown the large amount of biomass and carbon stored in trees in both dry land areas and in agricultural domain.

Mitigation …

What many developing countries (and especially the least developed ones) can offer on the global carbon market is largely land use based carbon. A large part of the developing countries have up to now been reluctant, or even

opposed, to a full carbon accounting. Lack of capacity is often cited as the major reason, which is likely also why up to now so little CDM projects have been realised in these countries. The needed capacity is not only for monitoring, reporting and verification (MRV), but also for effective linking to the global market.
Recent research in Ethiopia (7) has quantified the potential of converting degraded grazing lands into tree covered exclosures to restore soil fertility and to sequester carbon from the atmosphere. Over a period of 30 years, sequestered carbon dioxide was 246 $Mg.ha^{-1}$, total soil nitrogen increased by 7-9 $Mg.ha^{-1}$ and additional available phosphorous stocks amounted to 40 $kg.ha^{-1}$. For a period of 30 years, a real interest rate of 8.1% and assuming a price of 18 € per ton CO_2, the Net Present Value of the exclosure's ecosystem services was about 28% higher than for wheat, the best alternative production (3188 vs. 1600 €/ha. Carbon revenues alone added up to only about 44% of the net revenues of wheat production. This indicates that (i) carbon market revenues alone would not generate sufficient incentives to establish additional exclosures, and (ii) if all benefits are taken into account and financially rewarded, exclosures are competitive to alternative land uses. Mekuria *et al*. (7) identified substantial opportunities to mobilize the local communities. It is important to note that over those 30 years 90-95% of the sequestered carbon is soil carbon!

… and poverty reduction by adaptation
Dry land forests are often more degraded and void because they are more densely populated, generally by rural poor.
Climate change adaptation is a priority for most developing countries. In dry areas like the Sahel, trees do not only sequester carbon, but also redistribute water over different soil layers improving the growth of grasslands and crops.

As a matter of fact, saving carbon is not the top priority for smallholder farmers, but increased tree cover and agroforestry practices (using e.g. nitrogen fixing trees or exclosures) have the potential to increase and stabilise harvests, and deliver the ecosystem services farmers really need, while offering also opportunities to store carbon for the global community (1).
Development programs aimed at improved food security should explore ways to increase tree cover adapted to local conditions and achieve both mitigation and adaptation as part of the same integrated strategy.

Monitoring-Reporting-Verification
Most developing countries do not have comprehensive forest inventory data, raising the question on how reference scenarios can be created. Remote sensing based methodologies have improved significantly, albeit that in cases of low intensity forest timber harvesting, fuelwood collection, forest degradation, etc. direct monitoring will remain needed. Community based monitoring in the Sahel, India, Nepal and Tanzania have shown very promising results, also realising the above mentioned adaptation co-benefits (10, 11).
In dry areas sequestered carbon is dominantly soil carbon. It is definitely more difficult to measure than aboveground biomass, so there is an urgent need to invest more into research for this carbon pool (8).

Conclusions

1. The inherent problem of defining a forest (biophysical vs. legal) seriously undermines any REDD approach.
2. The current focus of the international REDD negotiations on forest carbon alone and especially on countries with high forest cover or high deforestation induces risks of large-scale leakage, especially in dry land forests and trees outside the 'forest'.
3. An ecosystem carbon approach through REALU (Reducing Emissions from All Land Uses) overcomes this leakage problem and also has a large potential for integrated adaptive development, where mitigation goes hand in hand with food security, biodiversity and poverty reduction.

Implications for ODA
ODA could help to acquire the needed capacity for REALU with ***integrated programs*** that focus on increased food security, better land use management, climate change mitigation and adaptation. In dry areas forest protection and/or increased tree planting will not only improve local development and climate adaptation. Proven mitigation could help fund this tree planting and forest protection.

A ***simplified carbon accounting system*** for developing countries, even temporary, until these countries have developed sufficient institutional capacity, will lower the entry point of LDC's to engage in REALU. This could be developed in accordance with the currently developed tiers 1, 2 and 3 for REDD.

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