Suggestions for submissions in response to Draft SBSTA 29 agenda item 5: Reducing emissions from deforestation in developing countries: approaches to stimulate action

(1) on capacity building for implementation of methodology relating to Degradation (para 10)
(2) on issues related to indigenous people and local communities (para 11)

Introduction and rationale.

Although these two paragraphs are presented as separate matters in the Draft, there is a relationship between them. This is because, in contrast to deforestation, which is mostly carried out by commercial concerns external to the forest area, a large amount of degradation is driven by the over-exploitation of forests by local communities for their subsistence needs[1]; the fact that much forest is *de facto* 'open access' exacerbates this. Such degradation can best be combated by involving the people concerned in a more sustainable approach to their use of forest. Programmes of 'community forest management' have been very successful in many countries in doing this by bringing forest formally under community governance. Not only does the degradation stop, but forest stock increases dramatically after only a few years. The link with indigenous people/local communities is thus both in the drivers of degradation and in the solution. Methodologies for accounting for degradation within REDD therefore need to be appropriate to this reality.

This document presents some suggestion for submission on the relevant paragraphs (the deadline for submissions is 15 February 2009). A background paper which explores the link between communities, degradation and methodological issues in more detail is appended.

[1] The exception to this is the case of selective logging in humid tropical forests, which causes episodic degradation in limited areas. Like deforestation, is generally carried out by commercial concerns.

Suggested material for submission on Para 10

Subject: Capacity building issues relating to reference levels for degradation, assessment of reduced degradation and monitoring

In the Draft Text on SBSTA 29 Agenda item no 5 (REDD), paragraph 6, specific mention is made of the need to consider methodology for reference emissions levels for deforestation (point 6a) and for degradation (point 6b) – i.e., to two different reference levels.

The question of capacity building for the development of reference levels for degradation needs to be considered in the light of the data limitations that prevail in most developing countries. Remotely sensed time series data is globally available on extent of forests (at least from 1995), which allows rates of deforestation to be ascertained provided technical capacity to interpret them is available. The same is however not true for most types of degradation. Much degradation occurs very gradually as a result of daily over-exploitation of the forest by local people for their subsistence needs (fodder, firewood) and for low intensity shifting cultivation. The areas affected may be detectible from satellite imagery, or estimated on the basis of knowledge of population distributions, but the quantities of biomass lost cannot be determined from above, and most countries have not had the capacity in the past to make systematic, regular, forest inventories at ground level. Gain-loss methodology based on secondary data is only possible in those limited areas for which data is available. Modelling on the basis of estimated off-takes, which vary from place to place and over time, and local forest growth rates, which also vary from place to place, is fraught with difficulty and uncertainty levels would be very high. In short, a national historically-based reference scenario for degradation is, in most cases, simply not an option, because the data is cannot be derived *ex post* from remote sensing and is not systematically available from records of national forest inventory.

No amount of capacity building today will make up for the fact that this data was not gathered in the past. It is necessary therefore instead to find a methodology which allows countries to include degradation within their REDD programmes, even if they have no time-series data on which to base a reference level for biomass/carbon stock loss, and to build the capacity that such a methodology requires.

The first step would be to determine which parts (i.e. areas) of the country's forest estate are in all probability subject to degradation. This may be done on the basis of remote sensing analysis and modelling using parameters such as accessibility and population density, which would bring with it some capacity building needs. For countries which do have a time series that enables the average level of degradation to be estimated, or for those parts of any country where such data is available, this level of off-take can be used as the reference level for these areas. For countries or parts of countries with no time series data on degradation, it is proposed that forest inventory of above-ground vegetation should be carried out at the start of the accounting period, and be used as the reference level (i.e base zero). Forest inventory would be repeated at the end of the accounting period and the net emissions reductions over the accounting period will be calculated on the basis of the difference in above-ground stock between the start and finish of the accounting period. This makes sense in that

typical strategies adopted under national REDD programmes to counter degradation will involve forest owners/users in more sustainable management approaches, which will in practice not only reverse degradation but result in steady stock increases. It would provide a conservative estimate of total carbon emissions reductions, which in reality would also include those related to the reduced degradation, soil conservation etc.

This approach has the further advantage of incorporating the impacts of sustainable forest management and forest enhancement directly in the REDD accounting, since these activities will typically take place within the degraded forest area. Leakage could be dealt with by including a margin of intact forest around the degrading forest areas, since these areas would not be expected to increase their stock during the accounting period but would be the most likely location for leakage.

The capacity building requirements associated with this accounting approach for degradation would include: determination of areas subject to degradation, including modelling; and rapid but complete forest inventory in all areas subject to degradation. At first sight, the need for complete forest inventory would appear to be very demanding of capacity, not in the sense of technical know-how, but simply in terms of manpower required.

One way to streamline the forest inventory requirements would be to provide assistance to and empower the forest owners/users to carry out the inventory work themselves, in return for a share of the financial benefits of any carbon credits generated. It has been demonstrated that local communities who are already engaged in forest management can easily be trained to make standard forest inventories using IPCC approved methodology, and that they can do this for a fraction of the price of professional surveyors, and with equal reliability (www.communitycarbon.forestry).

Capacity building for such 'grass-root forest inventory' would require the capacitation of intermediary organisations to train and supervise local forest owners/users, on the basis of perhaps one such organisation to 50 forest management groups. The intermediary organisations would themselves need to be instructed in a standard forest inventory method and possibly also in how to work in a participatory way with local forest users.

Monitoring could be done centrally using standard statistical methods to detect data inconsistencies and spot checking (among others for leakage) using sampled data from very high resolution imagery such as QuickBird or IKONOS. Capacity building to design and operate robust monitoring systems would be required.

Suggested material for submission on Para 11

Subject: issues relating to indigenous people and local communities for the development and application of methodologies

Concerns have been expressed in the debate on REDD as regards the rights of indigenous people and communities dependent on forests and the impact of REDD programmes on such groups. The overwhelming need as regards communities and people in the forest is to ensure that they are involved in a positive and mutually beneficial way in management, since this is one of the very few effective means of controlling degradation over very large areas.

Community forest management, in which rights and responsibilities for forest management are devolved to recognized communities, is carried out on a small scale in a large number of tropical countries. Nepal is the front runner with 25% of its forests successfully and sustainably managed by approximately 13,000 Forest User Groups. CFM was developed in response to the failure of earlier government approaches to halting degradation. It recognizes that communities are dependent on forest products and that this demand cannot be eliminated. By giving rights to communities to extract *sustainable* levels of forest products, provided they carry out basic forest management activities, CFM moves forest from being in an open access situation to being a true common property resource with community enforced rules to ensure that it is not overexploited. Degrading and degraded forests regenerate naturally and their output increases as they move to a more productive point on the natural growth curve, which benefits communities while also creating a larger carbon stock. Hence CFM is strongly to be supported in national REDD programmes.

Setting up CFM requires a raft of enabling national policy relating to community rights over forest and the roles and responsibilities of the Forest Department etc in this regard. There can be no one blueprint for organizing CFM at national level, as ecological conditions, legal systems and customary law vary, but a formal system of some sort is in any case required. Lessons can certainly be learned from those countries which are advanced in this respect.

If carbon payments under REDD are in part to be used to stimulate and encourage more and better CFM, a number of issues arise, which are listed here and need to be dealt with explicitly in REDD policy.

- Countries receiving payments for carbon credits derived from CFM must be able to present to the international community a transparent benefits sharing mechanism which indicates not just in general, but very precisely in which way communities will benefit and how much. This does not mean that the funds from the sale of credits must necessarily be handed over, in whole or part, to the communities in proportion to the carbon savings they have generated. Various other models are possible. For example, for reasons of equity, countries may decide to distribute benefits internally on the basis of effort or input, rather than output (of carbon savings). Communities might be paid for their work in measuring the carbon stock, rather than for the increases of stock as such. Benefits might also be distributed in kind rather than in

financial forms. However what is important is that each country describes in a clear and accountable way what the plans for distribution of benefits resulting from CFM are. It must be made possible for the transactions in this system to be counterchecked by stakeholders or their representatives.

- A corollary of this is that the benefits sharing mechanism should be designed in a consultative way with representatives of stakeholders such that wide agreement on it is reached before any crediting takes place.
- Since CFM involves a very large number of small stakeholder groups it is probable that non-state umbrella organizations will be needed to bundle their interests, for example, in providing support and training in forest inventories and in registering carbon stock changes in the national database. Support may be needed to get such organizations up and running.

This document has been prepared under the Kyoto:Think Global, Act Local project: www.communitycarbonforestry.org

Degradation, communities and the potential of REDD

A background paper to suggestions for submissions in response to SBSTA29 agenda item 5

Introduction: the nature of degradation

Degradation is not generally a forerunner of deforestation. Degraded forest usually remains degraded and is rarely fully deforested. Degradation is caused by quite different processes and actors from deforestation, and these processes and actors need to be targeted and addressed if degradation is to be combated. Moreover, data on degradation is of a quite different quality and type than data on deforestation. For these reasons, it is recognized that degradation needs to be treated independently from deforestation under REDD. Moreover, in different situations the nature of forest degradation is different, depending on the ecological type of the forest and on the local drivers of degradation. Hence different approaches to intervention and monitoring need to be applied depending on those local or regional conditions.

In the humid tropical forest, degradation is of two types. Firstly, in the industrial forestry sector, degradation is caused primarily by selective logging (legal and illegal). Its location is controlled primarily by accessibility and conditions of the terrain (e.g. steep hillsides, waterlogged soils). Secondly, degradation may be caused by overexploitation of a range of forest products including locally used timber, secondary or minor woody products (e.g. bamboo and rattan) and non-timber products such as animal fodder, by local communities. This tends to take place on the fringes of the forest as very few people are living inside intact humid tropical forest areas. While the effects can be substantial on a local scale, large parts of the tropical forest domain are relatively unaffected.

Forest degradation occurs very widely also in dry forests and savanna woodlands[2], mostly as a result of informal or non-commercial activities carried out by local communities (small scale shifting cultivation, fuelwood sourcing, grazing[3]), etc Most rural communities in dry tropical areas are partially dependent on forest products for their livelihoods and population densities in dry forests are often on the order of 6 to 10 times higher than in humid forests. Even though the carbon content of dry forests is by nature much lower than that of humid forests, and emissions per hectare correspondingly lower, the higher population pressure means that they are much more widely affected by degradation than the humid forests of the Amazon, Congo etc.

It is important to recognize that emissions from degradation have almost certainly been greatly underestimated, among others in IPCC documentation, because of the invisibility of degradation. The area of forest affected by selective logging can to

[2] Under current UNFCCC/Kyoto definitions, most savanna woodland maybe defined as forest (>10% canopy cover, height at maturity minimum 2-5 meters).

[3] For example there is evidence from Mexico that cattle are selectively grazed in woodlands that are a little degraded, and that this results in suppression of regeneration and increased degradation.

some extent be estimated from remote sensing, since selective logging tends to be episodic and occurs in discrete areas, but this is not the case with degradation in dry forests, which is much more gradual and widespread. Moreover, remote sensing is not capable of assessing the quantity of biomass and carbon stock lost, even in humid forest, and certainly not in dry forest. For this, repeated ground level forest inventory is required, but very few developing countries have had the institutional capacity to carry out such surveys in the past. As a result, in the FAO Forest Resources Assessment of 2005, all but two developing countries reported no changes in the density of their forests between 1990 and 2005, although it is well known that in East Africa for example there is almost no intact forest left at all and that activities causing disturbance and degradation are very widespread and on-going. Statistics on extraction are limited to logging by the formal sector.

These realities have important implications for

1. how degradation can be combated in practice,
2. how accounting for reduced emissions from degradation can be operationalised, and an reference emission level for degradation be established and
3. what institutional structures and capacities would be needed in this regard.

1. How degradation can be combated in practice

Commercial and non-commercial demand for forest products – logs, fuel, fodder, etc – is what primarily drives degradation[4] and this demand cannot easily been reduced. The solution to degradation therefore lies in making the extractive activities more productive and sustainable. Many Parties are in agreement that unplanned or badly planned logging may be substituted by Sustainable Forest Management (SFM), through development of appropriate forest policy and laws and stricter enforcement of these (implementation of reduced impact logging rules, increased patrols and higher punishments for offenders etc). Although forests under SFM may have slightly lower carbon stocks than intact forest, overall the loss in carbon stock may be brought to a halt through such management. Hence it is widely accepted that organized and registered SFM should be subject to carbon crediting in principle, against a reference level which represents the BAU scenario.

For the case of degradation resulting from informal community uses of forest, there has been little discussion on how it could be combated or on how accounting could be arranged. What is clear is that any interventions to reduce degradation rates must involve the communities concerned, not just from the point of view of rights, but more importantly from a practical point of view. Community Forest Management (CFM) was in fact a concept developed and formalized to involve communities in forest management, precisely because other methods (particularly state-centred approaches), were found to be ineffective in forests used by local people by tradition. CFM (known under different names and models such as community based forest

[4] As opposed to deforestation, which in contrast is primarily driven by the demand for land for other productive uses, such as cultivation and grazing. In most cases, the processes that lead to degradation never cause full deforestation.

management, collaborative forest management, joint forest management etc) involves partial devolvement of responsibility for forest management to lower levels of authority (municipalities, villages etc) and has been demonstrated in many countries (Nepal, India, Tanzania, Philippines) to be a cheap and rather effective means of combating degradation. It usually involves a contract between the communities which use the forest and the ministry which is formally responsible for forest (usually Forest Department). In most schemes, a maximum rate of off-take (timber, firewood, fodder, NTFPs) is set, based on an assessment of the regeneration potential of the forest, and the communities' right to this off-take is formalized. In return, the community provides basic forest management services such as fire-watching. The outcome of most CFM is not just that degradation is reduced, but that forest stock and productivity are steadily enhanced or restored through natural regeneration. Heavily degraded forest is restored not to its pristine state but to a level on the asymptotic growth curve at which its productivity is greatly increased. The community benefits from the increased supplies of subsistence products and the health of the forest (and the carbon stock) steadily improves. However it does not usually reach the climax state or its theoretical maximum carbon level because of the constant, but sustainable, harvesting that takes place. From a GHG emissions point of view, such a situation is actually preferable to a climax forest as the forest is now providing for a steady supply of renewable resources that would otherwise have to be sourced from elsewhere (e.g. kerosene stove instead of wood-burning stove, corrugated iron roofing instead of thatch) and it can thus support a sustainable local economy.

There may also be opportunities for interventions outside the forest, for example in the dissemination of more efficient woodstoves, or by providing more employment opportunities locally which either do not depend on forest resources or which are more sustainable in this regard.

Conclusion: community forest management is the primary instrument that can be used to combat the kinds of degradation that result from over-exploitation of forest by communities and indigenous people. This kind of degradation is very widespread and emissions have been underestimated. A major result of such community forest management is forest enhancement (increased carbon stock) in addition to the reduction of emissions due to degradation.

2. How accounting for reduced emissions from degradation can be operationalised

The first step is to designate which parts of the national forest estate have been degraded or are in the process of being degraded. This can be done by interpretation of remotely sensed images combined with probability modeling based on population densities and accessibility. Assessment of REDD degradation reductions would be limited to these areas.

As noted already, it is not possible to quantify changes in biomass content of forests from remote sensing at present. Since there is very little data on change in forest

stocks within forests over the last 15 years in most countries, a historical trend as regards degradation using gain-loss methods can only be established in limited areas (in contrast with the case of deforestation). Modeling the variables relating to off-take versus natural growth rates is also very complicated since it would require combining different intensities of off-take rates in different places in a given time frame with different speeds of forest growth in these areas over the same period, which is hardly practicable and probably impossible. This implies that a national reference emission level for degradation based on historical data is virtually impossible, and that a rather different system for carbon accounting therefore needs to be applied. Given the focus on SBSTA29 Agenda point 5 on reference levels, this is a major concern.

For the case of community forest management the simplest approach is to credit not the degradation avoided, since this is an unknown quantity, but instead the increased stock levels over a given accounting period. In the few cases where stock impacts of CFM have been measured and documented (for example, under the Kyoto: Think Global, Act Local projects, www.communitycarbonforestry.org), results indicated that rates of forest carbon stock enhancement in dry and temperate forests were between 1.5 and 11 tons CO_2 per hectare per year, depending mainly on the rainfall levels, while estimated rates of degradation in unmanaged forest (in control sites) were on the order of 1.5 to 3.5 tons CO_2 per ha/yr, depending upon population density and types of extraction. On average therefore forest enhancement provides more carbon saving than the degradation avoided. If credits were to be issued just for forest enhancement, this could provide a considerable incentive for participation by communities (more than for reducing degradation) and accounting would be much easier than for reducing degradation . Instead of trying to establish a reference emission level based on speculations about what level of degradation would have occurred in the absence of management, crediting would be simply based on the actual stock level changes over the accounting period, measured in situ. Moreover, crediting forest enhancement rather than avoided degradation would provide a conservative approach, since the uncredited avoided degradation would form a 'buffer' on any credits issued.

This type of crediting would require forest inventory in all CFM managed forests at least at the beginning and the end of the accounting period and preferably also in between so that a reliable trend line can be demonstrated. While this may seem a daunting task, it is in fact one that can be carried out by communities themselves, using standard IPCC methodology, with some technical support e.g. from local NGOs. This has been demonstrated by among other the Kyoto: Think Global Act Local project and the Scolel Te project, and procedures for this are described in the GOFC-GOLD Source Book on REDD (chapter 3.5) and given in detail in a K:TGAL Manual, a draft version of which may be downloaded from www.communitycarbonforestry.org. from 15 January 2009.

It would also require forest inventory in any areas which are likely to be subject to leakage from the managed areas, since stock losses in such areas would have to be deducted from gains in the managed areas. However, for the case of community uses, these areas would be found on the margins of the managed forest and it would be relatively easy for communities to carry out forest inventory in these areas.

Areas for which there is local historical data which permits a verifiable reference level for degradation to be constructed, could be accounting using this reference level instead of the stock at time zero approach.

Conclusion: rates of degradation have not in general been measured; historical records of changing carbon stocks are absent. Hence no historical baseline can be established. Forest management interventions carried out by communities should be rewarded instead with credits reflecting stock enhancement (stock change) over the accounting period. IPPC recommended methodology for accounting emissions from forest management activities, as currently used by Annex 1 countries which have elected to report on Forest Management under Kyoto article 3.4 would be suitable for this in community managed areas and in adjacent unmanaged areas where leakage is suspected.

3. Institutional structures and capacities required for crediting forest management as a means of crediting avoided degradation

If forest management is to be rewarded on the basis of stock change over the accounting period then measurements of stock are required at least at the beginning and the end of the period and preferably also in between.

This requires the following elements to be in place:

- The entire forest estate subject to degradation would have to be divided up, allocated and registered to identified stakeholders for the purposes of management and crediting (possibly using temporary 'carbon management contracts'). Stakeholders would be responsible for reporting on management activities and on carbon stock at given intervals, if they choose to participate (unlikely to be compulsory). Stakeholders would include private owners, communities, government bodies (municipalities, forest department etc) depending on type and function of forest. Each forest area would be outlined with GPS and mapped in a digital database. Unmanaged areas and managed areas in which the stakeholders do not wish to participate form potential areas for leakage and depending on their geographical proximity to areas claiming carbon credits, would need to be monitored by participating stakeholders or an independent body.
- This also implies that tenure issues as regards rights and responsibilities for management of forest have been resolved at national level and allocated among competing stakeholders, which would require considerable political effort in many countries. Community tenure is not formally recognized in every country, with customary law operating in the shadow of modern law in some places.
- In many countries creation of carbon management contracts would require legal frameworks not currently in place. There would be an associated need for dispute resolution mechanism.

- Stakeholders would need to be provided with means for making forest inventories (guidelines, manuals, training, or the option to hire in a consultant at own cost). Evidence shows that communities can be trained at low cost to make reliable forest surveys themselves, although a technical support service is required (see GOFC-GOLD Sourcebook chapter 3.5).
- An on-line database for uploading data: safeguards to prevent tampering with data.
- A system for verification e.g. statistical analysis of submitted data and random spot checks, probably based on use of high resolution imagery to identify areas in which forest conditions appear to be different from that indicated by the uploaded data, followed by ground checks

It is evident that many countries will require support in developing these capacities. International NGOs interested in supporting communities under REDD could play a major role in promoting this approach and in monitoring its progress globally.

Note: the institutional capacity outlined above in bullets refers only to the monitoring of carbon stock changes. If a payment for carbon services system is to be coupled with this, then further institutional mechanisms will be required.

This paper has been prepared under the Kyoto: Think Global, Act Local project, www.communitycarbonforestry.org.

It has benefited greatly from comments of a large number of people on an earlier draft, which are gratefully acknowledged.