

INDIA

Submission by India to SBSTA, UNFCCC

SBSTA Agenda item 4: Methodological guidance for activities relating to reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (UNFCCC Document FCCC/SBSTA/L.25 dated 3 Dec 2011)

In the conclusions proposed by the Chair on the above SBSTA Agenda item 4, the SBSTA 35 at Durban invited Parties and accredited observers to submit to the secretariat, their views on issues identified in decision 1/CP.16, paragraph 72 and appendix II, in particular on *“how to address drivers of deforestation and forest degradation”* (Identify associated methodological issues to estimate emissions and removals resulting from these activities). The submission from India on the subject follows:

Drivers of Deforestation and Forest Degradation

Drivers of deforestation and forest degradation in Indian perspective fall in two categories- one, those are planned and projected in accordance with policies, legal framework and management plans, etc, and second, that are spontaneous, beyond government and management control, and usually not accounted for.

Planned (controlled) and unplanned (uncontrolled) withdrawals from forests affect the forest carbon stocks, and, therefore, require proper understanding and management tools including transparent governance, effective enforcement and appropriate mitigation actions. Both categories of drivers relevant to India are listed below:

Planned Drivers – *Developmental works* and projected use such as

- Road and railway construction
- Coal, iron and other mining activities
- Hydro-electric power and irrigation projects
- Industrial requirements
- Expansion of cities and towns

Unplanned Drivers – *Unauthorized activities, routine local unsustainable practices not covered in official management plans*, and natural causes such as

- Encroachment of forest land for agriculture and housing

- Uncontrolled felling
- Fuelwood, small timber and NTFP extraction
- Unregulated livestock grazing
- Fodder collection
- Natural disturbances
 - Forest fires
 - Insect attack
 - Disease outbreak
 - Forest dieback
- Illegal mining operations

Minimizing the impacts of planned or controlled drivers is possible by introducing appropriate policy instruments and management options including effective legal framework and site specific mitigation measures. Challenge lies in addressing and managing the unplanned or uncontrolled drivers and activities which are mainly a direct outcome of local people's dependence on the adjoining forest areas to meet their livelihood needs of fuelwood, grazing, fodder, and food supplements, etc, and to a very small extent on the illegal mining activities within forest. Weaning the local communities away from such livelihood related practices will require sizable investment in providing alternatives for the forest products that the communities have been deriving from the forests traditionally, but not necessarily in a sustainable manner. The number of people dwelling in or near, and dependent on forests for various livelihood needs is estimated to be of the order of 300 millions. Many of these people are poor, with little land and limited options for sustaining livelihood.

Strategy has to be two pronged. Assess the withdrawals from forests due to uncontrolled and unrecorded activities, and thereafter embark on a coordinated, nation-wide approach to minimize such withdrawals from forests and bring these within the sustainable limits. An important input in the sustainable approach would be micro and macro level planning for providing alternatives of forest products routinely derived from forests, and used by the local communities.

In so far as planned forest land use change is concerned India has adequate and effective policy, legal and management framework for regulating such changes. The framework includes:

- National Forest Policy, 1988
- National Environment Policy, 2006
- Forest (Conservation) Act, 1980
- Wild Life Protection Act, 1972

However, with regard to unplanned and unrecorded withdrawals from forests by local communities to meet their livelihood needs, a nationwide planned and coordinated strategy comprising micro level community centered interventions aimed at sustainable management of forests, will be necessary. These interventions will also serve as confidence building measures for the local communities to become willing and driving partners in operationalization of REDD-plus mechanism by controlling deforestation and forest degradation, and will institutionalize equitable and transparent distribution of benefits from REDD-plus.

The implementation of REDD-plus in India will invite greater stakeholder involvement in the management of forests, specifically the local communities, civil society, and also research organizations, which will be a positive sign for achieving and maintaining forest sustainability through enhancement of forest ecosystem goods and services. Appropriate and well thought out interventions will lead to greater community support for government, and stronger community dislike for destructive practices. Possible policy and management interventions for the purpose are

- Transparency in governance both at micro and macro levels
- Preparation of community-centered micro plans for sustainable management of local forest resources through active people's participation
- Transparency in forest related information, land use change, and revenues including future REDD-plus incentives
- Public accountability for policies and management decisions
- Secure and equitable rights to forest utilization
- Fair, transparent, and corruption-free accounting and disbursement of benefits and REDD-plus incentives

Proper awareness amongst stakeholders is expected to play a key role in deciding the level of participation and commitment of different stakeholders including the local community. To achieve this, the stakeholders will need to be adequately and properly informed, motivated, and empowered to take appropriate action. Besides this, other relevant government support programmes will need to be lined in to minimize dependence of local community on local forest resource. These programmes could include

- Alternative cheap cooking fuel supply
- Promoting non-conventional energy sources
- Low cost permanent housing facilities
- Improving agricultural and livestock productivity
- Free education for children

- Better infrastructural facilities including health
- Effective use of modern communication audio video tools for creating awareness among community

Striking a balance between the need to increase food production for growing population and to halt deforestation, requires increase in agricultural production without further deforestation. This can be addressed through improved land planning and substantial investment in technology to increase yields of existing farmlands. Strengthening of agricultural research will be imperative to enhance agricultural productivity in a sustainable manner. Similar approach will be needed for livestock production management.

Effective deployment of the proposed interventions will be incumbent upon commissioning of, and inferences from appropriate research in tune with the local requirements. Some of the research priorities are:

- Effective and improved silvicultural operations for improving site specific productivity with focus on local livelihoods
- Assessment of site specific performance of species for better productivity of basket of forest products including small timber, fuelwood and NTFPs
- Assessment of fast growing tree species with higher productivity and their site evaluation for inclusion in local agroforestry practices
- Development of quick and effective insect and disease control mechanism including prediction of such outbreaks and remedial measures thereof
- Forest fire prediction and control mechanism
- Production of fuelwood, fodder, and NTFPs to suit local requirements
- Increased soil and water conservation measures

Drivers of deforestation and forest degradation and forest carbon stock accounting

Overarching objective of REDD-plus is to effect i) emissions reductions from activities resulting in deforestation and forest degradation, and ii) increase in removals through conservation, sustainable management of forests and enhancement of forest carbon stocks. To ascertain the efficacy of management aimed at reducing emissions, and increasing removals, it will be imperative to assess the status of forest carbon stocks and changes therein at national level with reasonable accuracy. It is clear that measurement of deforestation, and resultant loss of carbon stocks is easier to determine than the forest degradation and associated carbon loss. Measurement of degradation which is basically caused by uncontrolled and

unrecorded withdrawals from forests usually by local communities, is more complex and will require proper sample design and extensive ground verification for precise estimation. In other words, cost and time effective methodologies will need to be developed to estimate so far unrecorded withdrawals from forests. These withdrawals will need to be accounted for even if nobody pays for these. Intensity and prevalence of drivers can help in identifying strata of forest subject to different degrees of degradation, which will be useful while developing methodology for precise estimation of withdrawals. Existing remote sensing technologies are not capable of estimating forest degradation as compared to deforestation, which is clearly captured in satellite imageries.

In any case, the procedure and methodologies used for ascertaining deforestation and forest degradation are independent of causative drivers as these are designed to measure the end result of influence of such drivers in terms of net forest carbon stocks that exist at a given point of time in the forest area under measurement. The net forest carbon stocks at the time of measurement are the end result of negative impacts of drivers and positive impacts of management activities resulting in enhancing removals like conservation, sustainable management of forests and enhancement of forest carbon stocks.

Controlling and managing drivers of deforestation and forest degradation will improve status of forest carbon stocks. However, measurement of forest carbon stocks at regular intervals will be necessary to incorporate the contribution of management of deforestation and forest degradation in the national level accounting of forest carbon stocks.

Continuous unnoticed processes of forest degradation become apparent only when substantial number of trees or quantum of biomass has been removed. Degradation results in slow and gradual loss of forest carbon stocks, which may not be captured immediately. Unchecked forest degradation may finally culminate in deforestation. Deforestation is complete removal of forest vegetation resulting in immediate loss of biomass carbon stocks.

Deforestation and forest degradation can be assessed based on the following two data, which may be available either from the Forest Survey of India (FSI) report or from the state forest departments as well as from published research papers. These will also facilitate successive assessments. To assess the total loss of forest carbon stocks in a given period and area, two components have to be considered:

- (1) The carbon stock loss in areas that changed from forest land to other land uses in the respective period, and
- (2) The reduction of average carbon stock in areas that remain forest land.

Following table summarizes the methodological issues for estimation of emissions and removals caused by various LULUCF activities associated with different drivers of deforestation and forest degradation.

Table: LULUCF activities, drivers of deforestation and forest degradation, and associated methodological issues for estimation of emissions and removals

Identified LULUCF Activity	Drivers of Deforestation and Forest Degradation	Identified Methodological Issues
<p>Planned</p> <ul style="list-style-type: none"> • Developmental works • Projected management interventions • Iron and coal mining 	<ul style="list-style-type: none"> • Requirement of forest land for developmental purposes • Infrastructure development • Increasing energy requirement of growing population • Housing needs of increasing urban population • Industrial requirement of land, and wood-based raw material 	<ul style="list-style-type: none"> • Precise assessment at shorter time intervals of estimation of forest carbon stocks lost in small areas of different forest types due to degradation • Precise assessment at shorter time intervals of degradation in a cost effective manner specifically when the crown density does not undergo any change
<p>Unplanned</p> <ul style="list-style-type: none"> • Livelihood needs of forest products of local communities • Encroachment and uncontrolled felling 	<ul style="list-style-type: none"> • Livelihood imperatives • Growing population 	<ul style="list-style-type: none"> • Precise assessment of so far unrecorded withdrawals by local communities in a cost and time effective manner
<ul style="list-style-type: none"> • Natural disturbances 	<ul style="list-style-type: none"> • Lack of human and technical infrastructure and capability to contain damage after occurrence of an event of natural disturbance 	<ul style="list-style-type: none"> • Precise assessment as and when the natural disturbances occur
