

Government of India Submission on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD) through Reduced Deforestation (RD), and Conservation (C), Sustainable Management of Forests (SMF), and Increase in Forest Cover (IFC), under the Bali Action Plan (BAP) –Submission by India:

1. **Introduction:** This paper sets forth a conceptual basis for treatment of the issue of Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD) comprising Reduced Deforestation (RD), Conservation (C), Sustainable Management of Forests (SMF), and Increase in Forest Cover (IFC), under the Bali Action Plan (BAP). It also outlines a possible approach towards provision of “positive incentives” for all four categories of actions related to forestry under BAP, based on this comprehensive conceptual treatment.

2. **Statement of the Problem:** GHG emissions from deforestation in some developing countries are estimated by the IPCC AR4 as contributing to c. 17% of current global emissions. However, several of these countries, have put in place policies and regulations to reduce, and progressively stabilize deforestation, incurring both direct and opportunity costs. At the same time, several developing countries, have both strong regulatory regimes to prevent diversion of forests to non-forest use (e.g. agriculture, industry, human settlements, infrastructure), as well as large, nationally funded programs for afforestation of degraded forest land as well as non-forest lands, reclaiming them from non-forest use. Once again, these measures involve significant direct and opportunity costs, arising from costs of monitoring, enforcement, and protection; and non-use in the best alternative economic use, from the country perspective, respectively. These costs must be met, at least in substantial part, by the global climate change arrangements, since the major benefits of these actions lie in global climate protection, and are not specific to the countries concerned.

Under the UNFCCC and Kyoto Protocol, REDD actions, while exhorted (e.g. Preamble, Art. 4.1, 4.2, 7.2, 12.1, 12.2, etc. of UNFCCC, and Art 2.1, 3.3, 3.4, etc. of KP), do not qualify for any kind of compensation or incentives. Similarly, under the UNFCCC and Kyoto Protocol, while SMF does not qualify for any compensation or incentives, A&R or IFC *projects* may qualify for CDM benefits. However, this incentive for CDM benefits in respect of A&R projects is extremely weak, since much of the A&R activity is actually implemented, not on the basis of clearly delineated projects, but on country (or subnational entity) wide programs by local communities, which typically involve small scale, dispersed activity which cannot afford to incur the large due diligence and transaction costs associated with the CDM. Further, the EU policy of not procuring carbon credits from A&R CDM projects for compliance with the EU-ETS has meant that such projects are not being significantly pursued (in fact as on date only one A&R project has been registered by the CDM EB). This

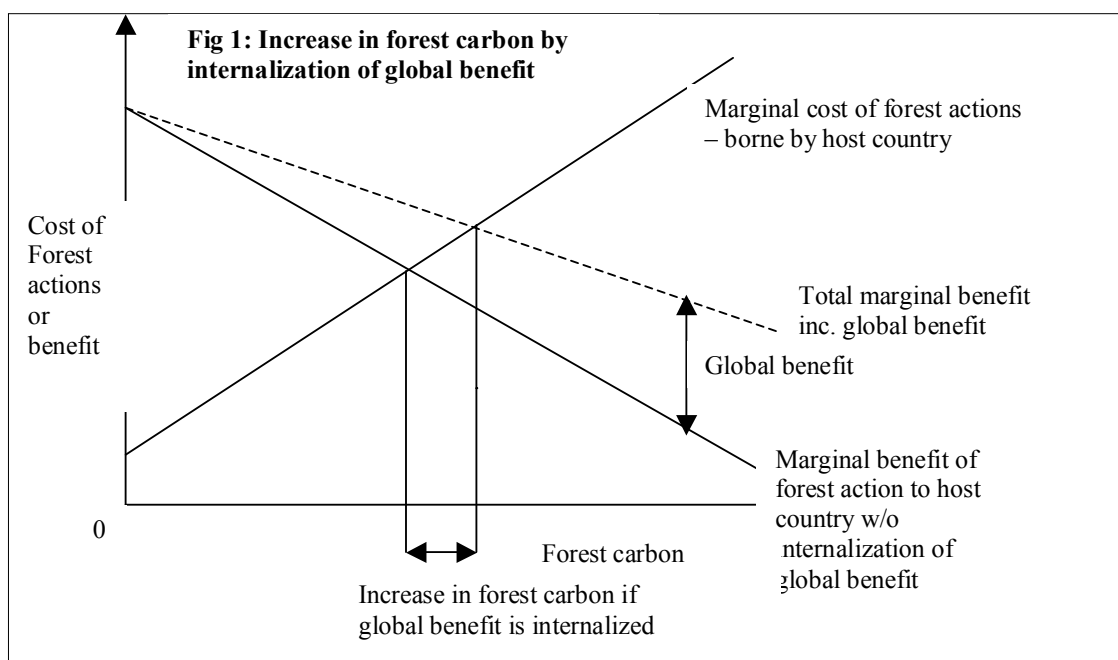
lacuna has been recognized in the Bali Action Plan, which, in para 1 b (iii) identifies the need to provide “*positive incentives*” to REDD, as well as recognize “*the role of C, SMF and enhancement of forest carbon stocks..*” (*IFC or A&R*). These terms underline the same climate change objectives, and accordingly must be treated similarly under the global climate change arrangements.,.

In the rest of this paper, it will be assumed that measurement and verification of forest carbon stocks, flows, and their changes, can be carried out by agreed measurement protocols, and no significant ambiguity or error would arise on this account.

3. **The Conceptual Basis of Compensation and Positive Incentives for RD, C, SMF, and IFC:** In terms of elementary economic theory, an agent (assuming that s/he conforms to certain defined tenets of rationality) undertaking any activity involving costs to be borne by her/him, would in the face of diminishing marginal product, undertake the activity till the point at which the marginal cost of the activity *to her/him*, equals the marginal benefit (e.g. unit price) received *by her/him*.

3.1 Internalization of Global Benefits: However, in the event that part of the costs of the activity (negative externalities) are borne by others, the level of activity undertaken increases. Similarly, to the extent that part of the benefits are captured by others (positive externalities), the level of activity decreases. The *socially optimal* (“efficient”) level of the activity is when the agent responsible for undertaking the activity experiences the full costs as well as full benefits of the activity, (termed “internalizing the externalities”). Accordingly, the argument is that, in respect of RD, C, SMF, and A&R, assuming that countries responsible for undertaking these activities (or at least, through regulation and policy deciding on the level of these actions to be carried out in their territories) are rational in the economic sense, since a major part of benefits are global, and not captured by the country concerned to any significant extent, the overall level of these forest activities are below the optimal level, from the perspective of the global society.

From the above, it follows that the levels of RD, C, SMF, and A&R, would increase towards global optimality, if the global benefits could be internalized to the countries concerned, through “positive incentives”. This is illustrated in Fig. 1:



3.2 Positive Incentives for RD: In respect of RD, host countries clearly have legal rights to maintain, or clear fell their forests. In case of clearfelling, the forest carbon services of the felled area are lost, through emissions of forest carbon, while the host country realizes the incremental economic benefits from clearfelling. In the event of reduction in rate of deforestation, there is a *reduced flow* of carbon emissions from felled forest, while the host country loses the incremental economic benefits from clearfelling. In respect of the remaining forest area *at any time*, a *stock* of forest carbon is maintained and not emitted, but the host country encounters direct and opportunity costs of keeping the area under forest.

In this situation, an appropriate scheme of Positive Incentives for RD would be as follows:

- (i) In respect of remaining forest area at any time, annual payments to compensate the host country for the *avoided global annual damage* from maintaining the forest carbon.
- (ii) In respect of change in the annual rate of deforestation, annual payments to compensate the host country for *lost incremental economic benefits of not clearfelling the forest area corresponding to the reduced deforestation (RD)*.

These are illustrated in Fig. 2:

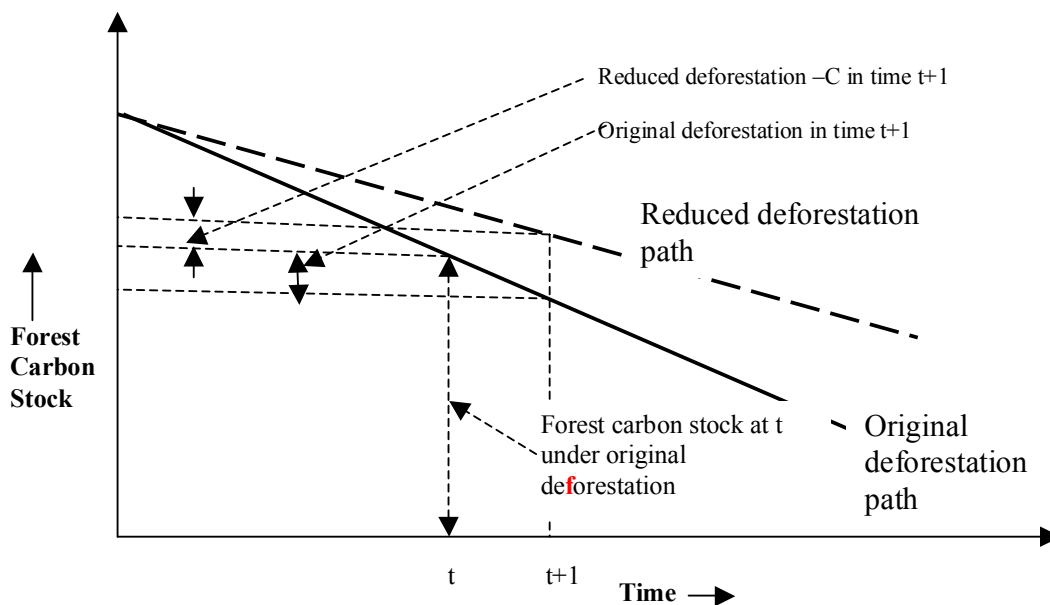


Fig. 2: Reduced Deforestation (RD) –C and forest carbon stock Under REDD

3.3. Positive Incentives for C, SMF¹ and A&R/IFC: Under C/SMF, the host country incurs direct costs on forest protection, improvement, monitoring, and enforcement, and opportunity costs in not clearfelling the forest to the best alternative economic use. Under C/SMF accordingly, the host country refrains from forest carbon emissions through clearfelling and conversion, which legally it may do, by maintaining the stock of forest carbon.

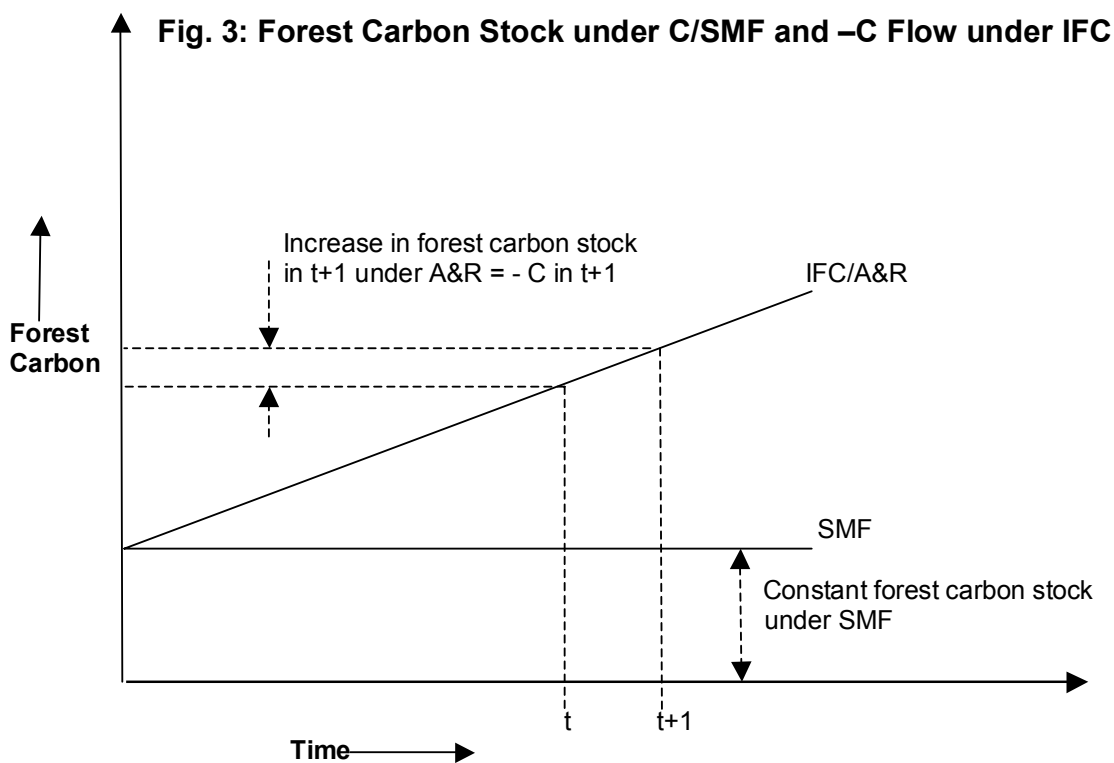
On the other hand, under A&R or IFC, resulting in increased carbon sequestration, the host country incurs additional direct costs in forest plantation, besides opportunity costs in not using the additional forest area in the best alternative economic use. There is thus an increased flow of carbon sequestration from A&R.

In this situation, an appropriate scheme of Positive Incentives for SMF and A&R would be as follows:

- (i) In respect of remaining forest area at any time under C/SMF, annual payments to compensate the host country for the *avoided global annual damage* from maintaining the *stock* of forest carbon.
- (ii) In respect of increased *flow* of carbon sequestration due to A&R or IFC and/or SMF, annual payments to the host country corresponding to the direct costs of afforestation, and opportunity costs of refraining from the alternative best economic use of the land under A&R.

¹ SMF in general would mean maintenance as well as improvement/expansion of forest cover. It would, therefore, comprise baseline stocks as well as incremental stocks (as part of IFC).

This is illustrated in Fig. 3:



4. **Modalities for Provision of “Positive Incentives”:** Various modalities for providing “Positive Incentives” in respect of all activities, i.e., RD, C/SMF & A&R/IFC could, in principle, be considered under a comprehensive umbrella of REDD. These may include:

- (i) Trade benefits: such as reduced tariffs for forest product exports, or even exports more generally, from host countries undertaking RD, C/SMF & A&R/IFC action in line with the forest carbon stock maintained and change in flow of forest carbon (emissions under RD and sequestration under A&R/IFC/SMF).
- (ii) Increased level of ODA and/or MFI funding for development generally.
- (iii) Financial Compensation: to host countries undertaking RD, C/SMF & A&R/IFC actions in line with the forest carbon stock maintained and change in flow of forest carbon (emissions under RD and sequestration under A&R/IFC/SMF).

These are discussed below:

- (i) Trade benefits: This approach would require coordination with the WTO negotiations, which are complex enough, without loading on them this additional dimension. There are likely to be implications in terms of deviation from MFN treatment, permissible subsidies, as well as possible infringement of approaches set forth in WTO Council Decisions. It would also be very difficult to scale the level of trade benefits from year-to-year which would be necessary for scaling to the varying levels of forest carbon stock and flows.
- (ii) Increased level of ODA and/or MFI Funding: The principal implication of this modality would be to place decision-making, both in level of enhanced benefits provided, as well as what the additional resources may be used for, besides possible policy and political conditionalities, in the hands of developed country donors and the MFI Boards. This would reduce the autonomy of decision-making by the host developing countries and the funding provided may be inappropriate (e.g. loans rather than non-repayable payments, see below), and too low to substantially cover the direct and opportunity costs incurred by the developing country (see below).
- (iii) Financial Flows: There are two, not mutually exclusive, possibilities:
 - (a) Loan funding
 - (b) Non-repayable Financial Flows

Since the provision of “Positive Incentives” is in the nature of payments for environmental services provided to the global community, it is difficult to argue for the loan modality. On the other hand, non-repayable financial flows may be easily scaled to the level of actions to be compensated (constant forest carbon stock and/or changes in forest carbon flows), does not infringe on WTO mandates, and retains autonomy of decision-making with respect to what the resources may be used for, with the host country.

5. **Raising Resources for “Positive Incentives”**: Two possible ways of raising resources for these “Positive Incentives” are:

- (i) “Assessed” Contributions by Developed Countries; and
- (ii) Supply Side Linkage to the Global Carbon Compliance Market.

With respect to constant forest carbon *stocks*, it is not possible to link actions to the Global Carbon Compliance Market through supply of carbon credits, because GHG emissions are carbon *flows* to the atmosphere, and reductions in net GHG emissions can, similarly, be effected only by negative carbon *flows*. Accordingly, this means of compensation for maintained carbon stocks under C/SMF (and remaining forest carbon stock at a given time under RD) is not feasible.

Compensation for maintaining forest carbon stocks, in terms of rates of compensation, say, per million tons of forest carbon stock, or quantum of total payments, cannot be a voluntary matter for individual developed countries. This would place this payment in the realm of “donor” funding, rather than compensation, and sever linkages with level of responsibility for climate change, and possibly respective capabilities, of each developed country. It would, judging by the history of climate change actions since the coming into force of the UNFCCC, also lead to serious under compensation, leading to reduced levels of maintenance of forest carbon stocks. Accordingly, the compensation payments should be on some norms for assessment, agreed under the BAP, related to both responsibility and capabilities of each developed country.

On the other hand, given sound monitoring and assessment of changes in forest carbon flows, it would seem feasible to provide “Positive Incentives” for RD and A&R/IFC/SMF by including them among the sources of supply of carbon credits for the global carbon compliance market. To the extent that GHG mitigation actions or commitments by developed countries are scaled in terms of responsibility and capabilities, this means of compensation for changes in forest carbon flows would also relate to respective responsibility and capability.

As a practical matter, however, it needs to be kept in mind that potential changes in forest carbon flows from RD and A&R/IFC/SMF actions could be very large, with lower incremental costs (as defined above), than in other GHG mitigation actions involving new technologies, such as in the energy supply and demand sides. The promotion of such technologies should also be a global policy imperative, and in order that sufficient carbon credit supply side space is available for such technologies, there may be need to place limits on the extent to which a developed country may source RD and A&R/IFC/SMF credits in order to meet its GHG mitigation commitments. Possible numerical limits in this respect would have to be considered only after review of the available empirical literature, and modeling results.
