

# Is India ready to implement REDD Plus?

## A preliminary assessment



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### Introduction

Deforestation is the single largest source with 17% of global greenhouse gas (GHG) emissions (Nabuurs, Masera, Andrasko *et al.* 2007). In this context reducing emissions from deforestation and forest degradation (REDD) has assumed global significance in the climate change debate, as it is considered to be a cost-effective mitigation option (Sathaye, Makundi, Dale *et al.* 2007; Stern 2007). This could also generate additional conservation and livelihood benefits (UNEP-WCMC 2007). However, a number of civil society organizations and researchers have raised concerns regarding impacts of REDD on livelihoods and rights of indigenous groups and local communities (Griffiths 2007; Lovera 2008; Rawles 2008). It has been argued that these concerns could be addressed with the help of community participation and some tough regulatory standards.

A large number of REDD pilot projects have been initiated in developing countries like Indonesia, Brazil and Papua New Guinea with the support of private investors, conservation NGOs and state (Rawles 2008). Multilateral organizations have started supporting readiness activities, through readiness programmes like Forest Carbon Partnership (FCPF) of the World Bank and the UN-REDD programme of UN organizations, in priority countries where deforestation rates are relatively high.

India has made significant progress in addressing deforestation and stabilizing forest cover through a combination of policy measures and innovative forest management activities. But it is still grappling with the issue of forest degradation which adversely impacts livelihood of millions of people in the country. Tackling degradation and increasing forest cover is closely linked to the issue of recognition and settling of community rights over a large part of forest land in the country. All these issues will have to be simultaneously addressed to successfully implement REDD Plus approach.

This paper assesses India's readiness to implement REDD Plus approach based on important parameters of enabling policies and laws, tenure and community rights, cross sectoral linkages, institutional set up and technical capacities for monitoring and reporting. First, an overview of Indian forestry sector has been presented. Second, causes of deforestation and degradation have been analysed. Finally, India's readiness has been assessed on key parameters of REDD Plus readiness

## Overview of Indian forestry sector

The current forest and tree cover of the country is estimated to be 78.37 Mha (Million hectares) accounting for 23.84% of the geographic area of the country (FSI 2009). Out of this, the forest cover is about 69.09 Mha, which constitutes 21.02% of the geographic area of the country. These forests are important not only for meeting the demands of timber, fuelwood and fodder, but are also a major repository of biodiversity; supply a wide range of goods and ecosystem services; and provide livelihoods to millions of forest dependent people.

Though India has only 2% of the global forest area, it is faced with the demands of 16% of the world's human and 18% of world's cattle population. Despite these pressures, India has been able to maintain its forest cover (Table 1) and address the issues of deforestation. However, unsustainable exploitation of forest resources has resulted in the degradation of the forests which has been estimated at 40%<sup>1</sup> for the past two decades.

**Table 1** Forest cover (Mha) as estimated by the FSI from 1987 to 2007

Assessment	Year	Forest cover estimate	Percentage of total geographical area
First	1987	64.08	19.49
Second	1989	63.88	19.43
Third	1991	63.94	19.45
Fourth	1993	63.94	19.45
Fifth	1995	63.89	19.43
Sixth	1997	63.34	19.27
Seventh	1999	63.73	19.39
Eighth	2001	65.39	19.89
Ninth	2003	67.78	20.62
Tenth	2005	67.71	20.60
Eleventh	2007	69.09	21.02

**Source** FSI (2005, 2008, 2009)

Despite massive afforestation and assisted natural regeneration programme to regenerate degraded area the extent and proportion of the degraded forest area has remained almost the same, indicating that the pressures on the forests remain unabated. The degradation of India's forest has a serious impact on the livelihoods of forest dependent communities as it results in loss of products and services from the forests.

## Direct and underlying causes of deforestation and degradation

As mentioned earlier, India has addressed the issue of net deforestation, though there is still diversion of forests for agriculture (under shifting cultivation) and for other developmental purposes. Though there is a provision for compensatory afforestation in the case of diversion of forests for developmental purposes, its implementation is lacking in rigour. Major drivers of deforestation and degradation and their underlying causes are discussed below.

<sup>1</sup> This estimate is based on the crown cover change, which does not take into account the degradation of ground vegetation and change in soil characteristics.

**Direct causes**  
***Demand and supply gap in fuel wood, timber, and fodder***

There is a substantial gap in the demand and supply of major forest products (Table 2). This leads to a vicious circle where the unsustainable exploitation of forests contributes to their degradation which, in turn, reduces the supply of products and services.

**Table 2** Demand and supply gap of various forest products

	Demand (MT)	Sustainable supply (MT)	Gap/ unsustainable harvest (MT)
Fuel wood	228	128	100
Fodder (green and dry)	1594	741	853
Timber	55	41	14

**Source** TERI estimates and compilations

***Encroachments***

As per government estimates, 1.34 Mha of forest area is encroached in the country (MoEF 2006). State governments have failed to act on the directives and guidelines issued by central government and Supreme Court. The State governments probably wanted to avoid any adverse political response but their non-compliance has led to further encroachments (MoEF 2006).

***Shifting cultivation***

Shifting cultivation affects 10 Mha of forest area across 16 states especially in the north eastern part of the country. The estimates of people involved in this practice ranges between 3 and 26 million (MoEF 2006). They undertake subsistence agriculture and harvest various other products from forests for meeting their livelihood needs. While originally this practice was in harmony with the regenerating capacity of forests, an increasing population and decreasing rotation cycle (from 20 to 4 years) over the years has contributed to its unsustainability. Further, as the productivity of these lands has gone down, people have resorted to clearing larger areas to meet their needs.

***Forest fires***

Fires affect a large area of forests in the country. It is estimated that 1.45 to 3.73 Mha of forest area is affected annually by fires (WWF 2003; Bahuguna and Upadhyay 2002). Most of these fires are man made, created to facilitate the extraction of NTFPs, ensure a good yield of grass, or to clear forests for shifting cultivation. In some parts of the country, fires are a result of socio cultural and religious practices. Very often fires spread to large areas; the traditional system of fire control using fire lines has serious limitations.

***Diversion of forests***

Diversion of forests for developmental activities has had a major impact on India's forests cover and its quality. Though diversion has drastically come down with the implementation of Forest (Conservation) Act of 1980, there is still a significant amount of area being diverted for non forestry purposes. It has been estimated that 0.2 Mha of forest area was diverted between 2005 and 2008 (IndiaStat, undated [a]).

## **Underlying causes**

### ***Population***

The population of the country has increased more than three fold, from 300 million in the late 1940s to over a billion at present. This has induced large scale land use changes including diversion of forest land for agricultural purpose and also led to degradation of the remaining forests due to over exploitation.

### ***Poverty***

It has been estimated that 27.5% of India's population lives below the national income poverty line (UNDP, undated); most of them depend directly or indirectly on forests for their livelihoods. It puts an immense pressure on the forests leading to forest degradation which in turn impact their livelihoods. Hence it is vicious circle of community impoverishment, fuelling degradation and vice versa.

### ***Skewed development***

India has registered an average economic growth of 7% over last one decade (IndiaStat, undated [b]). While large infrastructure projects like dams, roads, special economic zones have been implemented, the benefits of this development have not trickled down to large part of rural India. Further, this has affected forests and other natural resources in two ways. One, large areas of forest have been diverted for the above mentioned projects. Second, lot of people have been displaced from their village commons without much compensation (MoEF 2006). The loss of their earlier livelihood opportunities, in turn, has put pressure on forests, resulting in its degradation.

### ***Impact of the past forest management policies***

The initial forest policies in India accorded priority to commercial exploitation and state custodianship and management. The situation changed only in the 1980s when conservation and meeting the subsistence needs of local communities were given priority over other objectives. However, by this time damage had already been done in terms of declaration of vast tracts of forest lands as state forests without adequate settlement of rights, alienation of local people from forests and forest management, large scale deforestation and diversion of forest land for non-forestry purposes.

### **India's approach to REDD**

India advocates a comprehensive approach to REDD which has been termed as a REDD Plus approach. This approach argues for compensating countries not only for 'reducing deforestation' but also for 'conservation, sustainable management of forest and increase in forest cover' (ICFRE 2007). The basic principle of this approach is that unit of carbon saved is equal to one unit of carbon added. In its submission to UNFCCC in August 2009, India has elaborated REDD as 'Reducing Emissions from Deforestation in Developing countries, Sustainable Forest Management (SFM) and Afforestation and Reforestation (A&R)' which further substantiates its comprehensive approach (MoEF 2009).

India advocates a mechanism outside the purview of CDM, with a national level accounting for REDD. Indian approach on financing REDD activities has changed from strict fund based approach to a mix of market and fund based approaches; a central funding should compensate for maintenance of forest carbon stocks whereas money for compensating change in carbon stocks (due to decrease in deforestation and degradation or increase in forest cover) could be generated by selling carbon credits in the international markets (MoEF 2009).

**Assessment of key parameters of REDD Plus readiness**

The key parameters of assessing REDD readiness are an effective legal and policy framework, robust institutional arrangement for implementation, capacities for MRV (monitoring, reporting and verification), and secure tenure and community rights. As the forest sector is influenced by activities and policies in other sectors (such as, agriculture, watershed, energy, rural development and so on,), an effective cross-sectoral linkage is also an important consideration. These parameters have been assessed for the efficacy and gaps for REDD Plus readiness.

***Policies and laws***

There are a number of laws and policies which impact forest management in the country. However, it would be useful to analyse only key policies and laws which have brought paradigm shift in forest management and are important from REDD Plus perspective. Key policies related to the forestry sector include National Forest Policy, 1988; Joint Forest Management Resolution, 1990; National Environment Policy, 2006; Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 along with the recently adopted National Action Plan on Climate Change (NAPCC). The different laws related to the forests and biodiversity in India include Indian Forest Act (IFA), 1927; Forest (Conservation) Act (FCA), 1980; Wildlife (Protection) Act, 1972; and Biological Diversity Act, 2002. A brief analysis of these is given below.

**Indian Forest Act, 1927**

The Indian Forest Act (IFA), 1927, was the first comprehensive act governing the forest sector, and it serves till date as the basis for forest administration in the country. Many of the provisions of the act do not address contemporary issues related to forestry management in the country, for example, people's participation is not supported. It does not reflect the progressive changes in the forest policy of country.

**Forest (Conservation) Act, 1980**

This legislation was enacted to control the diversion of forest land for non-forestry purpose and to slow down deforestation. Under this legislation, the approval of the central government is required for diversion of forest land above 1 ha for non-forestry purposes. The user agency has to pay for compensatory afforestation as well as an amount equal to the Net Present Value of the forests diverted. It has substantially brought down diversion of forests for non-forestry purposes.

**National Forest Policy, 1988**

National Forest Policy, 1988, marked a paradigm shift in forest management from regulatory to participatory. It implied a shift from the earlier revenue-oriented forest management to the current conservation-oriented management. It puts emphasis on meeting peoples' needs and involving them in management of forests. Meeting the subsistence needs of the local communities, maintenance of environmental stability and restoration of ecological balance have been identified as the major objectives of forest management under the NFP. This policy laid the foundation of involvement of local communities in management of forests in the country that is being now viewed internationally as one of the cornerstones for a successful implementation of REDD Plus.

Joint Forest Management Guidelines, 1990	Joint Forest Management <sup>2</sup> (JFM) guidelines were issued in 1990 to facilitate involvement of local communities in the management of forests. Since then 100 000 Forest Protection Committees (FPCs) have been constituted across the country which manages 28% of the total forest area (MoEF and WII 2005). JFM has positive impacts in terms of improvement in vegetation cover and income of communities in many areas across the country. REDD Plus activities could potentially be carried out with the help of these FPCs. However, issues related to tenurial security, gender equity, distribution of powers of FPCs vis-à-vis that of the forest department, ownership of NTFPs in scheduled areas and financial sustainability need to be addressed (TERI 2004 a and b; MoEF and WII 2005).
National Environment Policy, 2006	In the recent past, the National Environment Policy, 2006, recognized that forest laws and formal institutions have undermined traditional community rights and disempowered communities, and ‘such disempowerment has led to the forests becoming open access in nature, leading to their gradual degradation in a classic sense of “Tragedy of Commons” (MoEF 2006)’. The Policy advocates recognition of traditional rights of communities to ‘remedy a serious historical injustice’.
Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006	The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (henceforth referred to as Forest Rights Act [FRA]) seeks to rectify some of the anomalies that have resulted from the notification of tribal and other lands as state forests without the settling of rights. FRA was notified into force on 31 December 2007 and has provision of tenure and other rights to individuals and communities. There are however, several complex and unresolved issues in the content and implementation of the Act like complexities involved in differentiating between justified and unjustified claims. This is important from the REDD Plus perspective; should it be implemented in a timely and satisfactory manner, it would aid the implementation of REDD Plus and allow for a just distribution of finances received for REDD Plus.
National Action Plan on Climate Change, 2008	The Green India Mission under the National Action Plan on Climate Change (NAPCC), 2008, advocates bringing one-third of the geographic area of the country under forest cover, through afforestation of wastelands and degraded forest areas. A key programme to facilitate this is the Greening India Programme, under which 6 Mha of degraded forest area would be afforested with the participation of FPCs. The mission also recognizes the need for effective conservation of biodiversity both within and outside Protected Areas (PAs). While this is an important policy statement, the guidelines for its implementation are awaited. As of now, the money collected under NPV and compensatory afforestation (refer to Forest [Conservation] Act), has been reallocated for the afforestation activities under the NAPCC.

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<sup>2</sup> JFM is an incentive based model wherein the local communities are given a share of the revenue from forests (both timber and non-timber components), without conferring ownership rights, in lieu of their efforts in protecting and managing forests.

Laws regarding conservation of biodiversity

Concerns have been raised in the international fora about the potential impact of REDD Plus activities on biodiversity. India has legislative provisions to address many of these concerns: Wild Life (Protection) Act, 1972 (amended in 2001 and 2002) and Biological Diversity Act, 2002. The Wild Life (Protection) Act, provides for protection of wild animals, birds, plants and their habitats, and setting up of protected areas. Approximately 4.7% of the total geographical area of the country is under *in situ* conservation of habitats and ecosystems under the provisions of this act (MoEF 2008).

The Protected Areas (specially the national parks and sanctuaries) in the country are based on an exclusionary approach to conservation. The Biological Diversity Act, 2002 aims at conservation of biological resources and associated knowledge as well as facilitating access to them in a sustainable manner and through a just process. It is, however, limited in its functional scope and implementation.

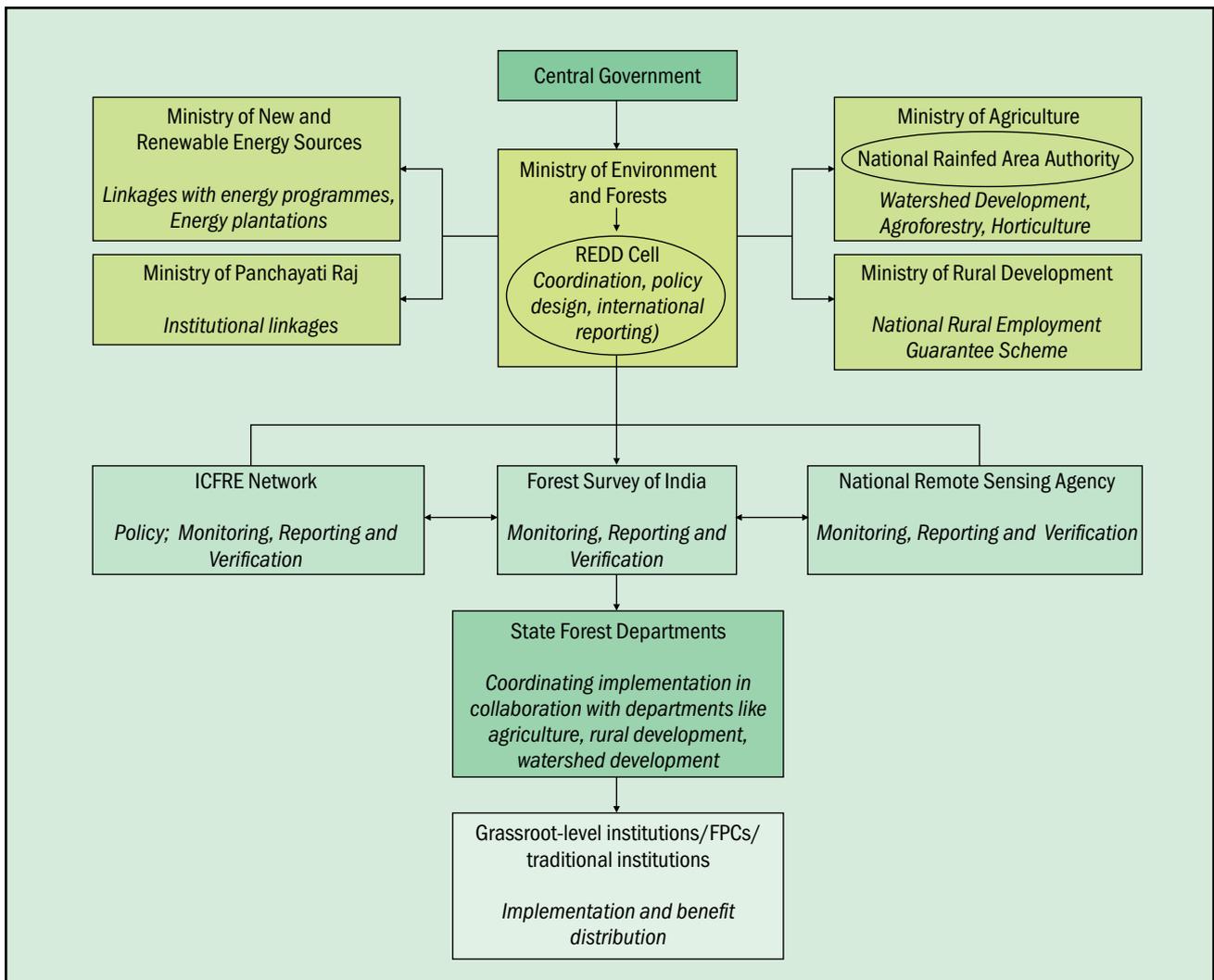
#### ***Institutional set-up***

The institutional set-up for implementation of forestry programmes in the country can, with certain enhancements, be used for implementation of REDD Plus in the country (Figure 1). The Ministry of Environment and Forests (MoEF) is the central institution which is responsible for framing policies and laws for the forestry and environment sectors in the country. It is proposed that a REDD Cell be established at MoEF for coordinating with the various other ministries (referred in the following section on cross-sectoral linkages) and help with the policy design and international reporting. This cell could be supported by network of Indian Council for Forestry Research and Education (ICFRE) institutions for research, Forest Survey of India (FSI), and National Remote Sensing Agency (NRSA) for forest assessments, and specialized institutions like Wildlife Institute of India (WII) and Indian Institute of Forest Management (IIFM) in areas of their expertise. Forest management at the state level is coordinated by respective State Forest Departments (SFD) under the guidance of national policy and legal framework. SFDs could coordinate implementation of REDD projects and facilitate distribution of revenues in their respective states. In addition to FPCs created under the JFM programme, there are many other grassroots-level institutions like Panchayats,<sup>3</sup> Van Panchayats<sup>4</sup> cooperatives, indigenous institutions (especially in the north east) which are involved in management of forest resources. Though FPCs, with the help of Panchayats, appear best suited to implement REDD Plus in large part of the country, traditional institutions will be much more effective in some regions like the north eastern states. A comprehensive state-wise assessments need to be undertaken to analyse the efficacy of various grassroots level institutions to implement REDD Plus.

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<sup>3</sup> Institution of local self governance under the Indian Constitution

<sup>4</sup> Institution for management of forests in specific areas of Indian state of Uttarakhand



**Figure 1** Institutional set-up for implementation of REDD Plus in India

As there is generally low awareness about REDD Plus in the country, it will be important to build awareness and capacities of various stakeholders on the mechanism, its potential impacts and benefits. Subsequently a comprehensive REDD Plus implementation strategy should be evolved in consultation with relevant stakeholders.

**Cross-sectoral linkages**

As mentioned earlier, cross-sectoral linkages between forestry and other sectors are important from the REDD Plus perspective. Furthermore, in the absence of an integrated land-use policy and development planning in the country, the policies and programmes of various sectors/government, ministries have inadvertent impacts on the forestry sector. The linkages between some of the important programmes such as watershed development, National Rural Employment Guarantee Scheme, agriculture and energy programmes is analysed below.

Watershed development	<p>Watershed development is one of the major development programmes of the country with significant financial investments. It has been reported that 6.2 Mha of rainfed land was under watershed treatment with an estimated cost of USD 175 million in the financial year 2001–02 (Sharma undated). It has been proposed to increase this amount to USD 2000 million<sup>5</sup> per annum to complete the watershed treatment by 2020 (DoLR 2006).</p> <p>While afforestation activities have been part of watershed development in the country since the beginning of the programme, its implementation has been poor due to the weak coordination between the watershed development agencies and the state forest department. This coordination needs to be strengthened for optimal utilization of resources and for increasing the forest cover.</p>
National Rural Employment Guarantee Scheme (NREGS)	<p>NREGS is one of the biggest development schemes of the country with an allocated budget of USD 7820 for the year 2009–10. (Roy Choudhry 2009). This scheme was operationalised in 2006 and covers the entire country with the objectives to enhance ‘livelihood security in rural areas by providing at least 100 days of guaranteed wage employment in a financial year to every household’ (MoRD 2008). Permissible works under the scheme include land development, afforestation and horticulture activities. At present 8% of total NREGS funds are being utilized for drought proofing, which include the plantation activities. It has been proposed to utilize 20% of NREGS fund for plantation activities (Matta, undated). If this money is utilized for plantation, it could afforest and manage 3.91 Mha<sup>6</sup> of degraded land every year in the country; it could afforest large areas of degraded forest land and wastelands of the country in a decade.</p>
Agriculture	<p>Under central agriculture programme, some of the national level activities like National Horticulture Mission and National Bamboo Mission are being undertaken to improve the livelihoods of the farmers and simultaneously trying to increase the vegetative cover of the country.</p>
Energy programme	<p>The energy programme has direct impact on the forest management in the country. It is estimated that 65% of rural and 22% of urban population, constituting 40% of total population of the country depends upon fuel wood for cooking purposes (NSSO 2001). It puts an immense pressure on forests and is one of the major reasons for degradation of forests. The Ministry of New and Renewable Energy (MNRE), Government of India, has been promoting improved cook stoves (IC) which could significantly save fuel wood and thus could reduce pressure on the forests. There is a huge potential of 85 million ICs in the country which could save 17 MT of fuel wood every year. But this programme needs to be technically and financially strengthened. Also, expansion of services of cleaner cooking fuels like LPG in rural areas could not only help in reducing pressure on forests but would also have health benefits (Aggarwal, Paul, and Das 2009).</p>

<sup>5</sup> Based on a conversion rate of 1 USD = INR 50

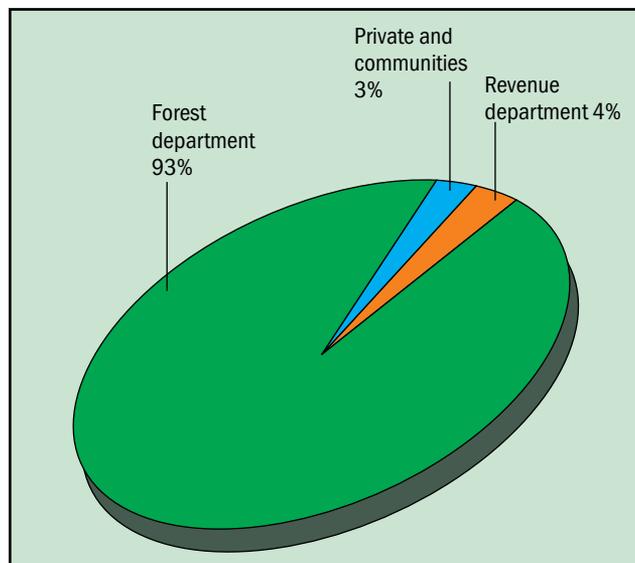
<sup>6</sup> This estimate is based on 20% of the current budget of USD 7820 and based on the cost of INR 20 000/ha for plantation

Similarly, cultivation of *Jatropha* on wastelands for biofuel production has an impact on forest management. India aims to replace 5% of petrodiesel with biofuels by 2012. It will require plantation of 2.29 Mha of area with *Jatropha curcas* (Planning Commission 2003). These lands are used as pastures and for collection of fuel wood. Their diversion will put an additional pressure on the forests. Hence, there has to be better linkages among various programmes to fulfil various needs.

**Tenure and Community rights**

Indian Forest Act, 1927, recognizes three types of forests: reserve forests (RF), village forests (VF) and protected forests (PF). Since village forests are a special type of reserve forests given to communities for management, legally, there are only two categories: reserve and protected forests. However, there is another category in the forest records known as ‘unclassified forests’ which is yet to be classified in reserve or protected forests. Reserve, protected and unclassified forests cover 51%, 31% and 18% of forest area respectively (FSI 2005). These categories have decreasing access and rights and increasing protection from reserve to unclassified forests.

Most of the forest land is owned by the state. It is estimated that around 97% of the total forest land is owned by the government and 3% is owned by private entities and communities (MoEF 2006). But there is increasing role of communities in the management of forests. Around 28% of the forest area is managed by communities in collaboration with forest department under JFM programme.



**Figure 2** Ownership of forest land

JFM has been instrumental in involving communities in management of forests and bridging the gap between forest department and communities. However, there are issues related to security of tenure, institutional and financial sustainability which need to be addressed to make it more participatory and, therefore, sustainable.

Similarly, there are issues related to recognition of individual and community rights over forest lands especially in the 18% unclassed forest land in the north eastern states. It is estimated that area owned by private entities and community actually could be up to 10% (Khare, Sarin, Saxena *et al.* 2000).

Efforts have been initiated to undo ‘historical injustice’ and recognize rights of individuals and communities through Forest Rights Act of 2006. It has been reported that till October 2009, 2.49 million claims have been filed under the Act out of which 0.56 million titles have already been distributed (MoTA 2009). But the process of recognizing forest rights need to be expedited and made more participatory and transparent.

### **Monitoring, Reporting and Verification (MRV)**

Forest cover in the country is assessed on a biennial cycle based on digital interpretation of satellite imagery and intensive ground truthing and accuracy assessment. Also, about 69.2 million ha of forest area has been inventoried for growing stock by FSI during 1965–2000. This represents over 80% forest area of the country. Since 2002, FSI had adopted a new National Forestry Inventory that it designed. At present the country has been divided into 14 physiographic zones and 60 districts randomly selected from these zones on probability proportional to size are inventoried every two years. In each cycle for field inventory, 8000 sample plots are laid; a national estimate of growing stock can be generated on a two-year cycle. This National Forestry Inventory can possibly be utilized and/or modified for specifics related to REDD-related MRV.

India is already working towards the Second National Communication to the UNFCCC which provides an assessment of forest carbon stock (in biomass and soil). FSI has been involved in calculating the above and below ground biomass, while ICFRE and IIRS jointly are calculating the soil organic carbon. While these can be potentially useful for developing a present baseline (as opposed to a historic base year), there would be a need for consolidation and modifications of efforts to address REDD-related specificities.

Assuming an agreed-upon criterion for degradation, monitoring degradation using high-resolution satellite imagery increases the cost of monitoring. It could be carried out with more extensive ground truthing which can be comparatively less expensive and also could provide employment to local forest dependant people who can be trained to participate in field surveys and forest inventories (with the forest department). Engaging forest-dependant communities for monitoring activities would have the added benefit of mobilizing their support for forest protection.

## Summary and conclusion

Based on the parameters discussed in the paper it can be inferred that India is ready to embark on REDD Plus path based on its efforts and technical capabilities. However, India needs to address a few issues and gaps to be considered REDD Plus ready.

- India has progressive policies and laws in place to address the issues of deforestation and degradation and to improve forest management. But the Forest Act, 1927, which is the main supporting legal instrument, needs to be replaced to effectively support changes in forest policy. Implementation of JFM programme and Forest Rights Act need to be strengthened to increase role of communities in forest management by providing them a secure tenure. Issue of forest carbon rights need to be clearly defined and incorporated in policy.
- India has robust institutional set-up to manage forestry programmes in the country. With some additional set-up and responsibilities, it could well be used for implementation and management of REDD Plus in the country. A REDD Cell could be established in Ministry of Environment and Forests for coordination of REDD Plus activities in the country. State Forest Departments could coordinate implementation of REDD Plus activities in the respective states. Though FPCs, with the help of Panchayats, appear best suited to implement REDD Plus in large part of the country, traditional institutions will be much more effective in some regions like the north eastern states. A comprehensive state-wise assessments need to be undertaken to analyse the efficacy of various grassroots level institutions to implement REDD Plus. Also, a robust benefit-sharing mechanism needs to be clearly worked out.
- India has made efforts to link afforestation and forest management activities with other developmental programmes such as watershed development, NREGS and agriculture but the linkages and implementation at the grassroots level need to be strengthened. Watershed and NREGS have huge potential for afforestation. Extraction of fuel wood for cooking purposes and growing *Jatropha* on wasteland as biofuel has implications for forest management in the country. Linkages need to be established with energy programme.
- Individual and community rights on forest resources need to be recognized. Efforts are already on through FRA but process need to be strengthened and expedited. Communities need to be given secure tenure in JFM areas so that they have enough incentive to invest in sustainable management of forests.
- India has been regularly undertaking forest assessments on biennial basis. India has requisite technical set up and capabilities to undertake monitoring, reporting and verification of biomass and soil carbon periodically. Efforts of research organizations like FSI, NRSA and ICFRE need to be synergized for monitoring and reporting on REDD Plus. Capacity of grassroots level institutions could be built for participatory monitoring.
- The low awareness of REDD Plus process warrants a broad sensitization and capacity building exercise for all stakeholders. Subsequently, a comprehensive REDD Plus implementation strategy at the country level should be developed with participation of various stakeholders.

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