

Mainstreaming of REDD+ Activities in Forest Management Plan



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On behalf of:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

of the Federal Republic of Germany



NORWEGIAN MINISTRY
OF FOREIGN AFFAIRS

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2018

Indian Council of Forestry Research and Education
(An Autonomous Body of Ministry of Environment, Forest and Climate Change, Government of India)
P.O. New Forest, Dehradun-248006 (INDIA)



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महानिदेशक

भारतीय वानिकी अनुसंधान एवं शिक्षा परिषद्

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(आई-एस.ओ. 9001:2008 प्रमाणित संस्था)

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FOREWORD

Forests occupy a unique position in so far as climate change is concerned. They are closely linked to socio-economic systems, particularly those of the forest dependent communities in the developing countries. India is one of the few countries where forest and tree cover have increased in recent years transforming country's forests into a net sink of Carbon dioxide owing to national policies aimed at conservation and sustainable management of forests. As per the latest assessment, forests and tree cover has increased from 23.4% in 2005 to 24.4% of the geographical area in 2017. Government of India's long term goal is to bring 33% of its geographical area under forest and tree cover eventually.

India has always been in the forefront of REDD+ negotiations at the United Nations Framework Convention on Climate Change (UNFCCC) and now preparing for implementing REDD+ at national level in order to attract result based finance for REDD+. India has already submitted its National Forest Reference Level for REDD+ to UNFCCC and Government of India has also released India's National REDD+ Strategy in 2018. The National REDD+ Strategy when implemented in completely will be a step forward in achieving India's NDC target of capturing additional 2.5 to 3 billion tones of CO₂ through additional forest and tree cover by 2030. The National REDD+ Strategy indicates Government of India's commitment to implement REDD+ by optimally exploring the mitigation potential of forestry sector in the country. It also recognizes the active participation of local communities and tribal people in conservation and sustainable management of forests.

Scientific management of forests based on principles of sound silviculture has been in practice for more than 150 years in India. Various principles of forest management in India are of direct relevance to REDD+ activities. This report on 'Mainstreaming of REDD+ Activities in Forest Management Plan' is a sincere contribution by ICFRE towards India's preparedness for early and effective implementation of REDD+ down to the level of forest administrative units. I am hopeful that this knowledge product under the trans-boundary 'REDD+ Himalaya Project' in collaboration with ICIMOD will serve to accelerate the REDD+ activities in India and help in mobilizing result based finance. I congratulate the team of Biodiversity and Climate Change Divisions, Directorate of Research, ICFRE to bring this apt publication.

Date: 18/11/2018


(Dr. Suresh Gairola)

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Scientific management of forests in India started in 1864 and is more than 150 years old now. With the change in time and keeping pace with emerging national issues, societal and environmental needs, various aspects of forest management has also been adapted to these changing scenarios. This report on 'Mainstreaming of REDD+ Activities in Forest Management Plan' was conceived and realized during the implementation of trans-boundary REDD+ Himalaya Project in collaboration with ICIMOD. We are grateful to Dr. Suresh Gairola, Director General, ICFRE for providing invaluable guidance and consistent support during the entire course of implementation of REDD+ Himalaya Project. Our special gratitude to Shri S. D. Sharma, Dy. Director General (Research), ICFRE for his valuable inputs and continuous support in implementation of the project. This report has been possible with the strenuous efforts of the entire REDD+ Himalaya Project team at ICFRE, Dehradun. Authors would like to acknowledge suggestions and valuable inputs from the transboundary REDD+ Himalaya Project partners at ICIMOD especially Dr. Bhaskar Singh Karky, REDD+ Programme Coordinator and Mr. Nabin Bhattarai.

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(Authors)



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Abbreviation Used

CO ₂	Carbon dioxide
FRCBR	Forest Research Centre for Bamboo and Rattan
GIS	Geographical Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPS	Global Positioning System
HoFF	Head of Forest Force
ICFRE	Indian Council of Forestry Research and Education
ICIMOD	International Centre for Integrated Mountain Development
JFM	Joint Forest Management
JFMC	Joint Forest Management Committee
MoEF	Ministry of Environment and Forests
MoEF&CC	Ministry of Environment, Forest and Climate Change
MRV	Measurement, Reporting and Verification
NDCs	Nationally Determined Contributions
NDE	National Designated Entity
NGC	National Governing Council
NFP	National Forest Policy
NGO	Non-Governmental Organization
NTFPs	Non-Timber Forest Products
PCCF	Principal Chief Conservator of Forests
REDD+	Reducing emissions from deforestation and forest degradation, and role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
SMF	Sustainable Management of Forest
UNFCCC	United Nations Framework Convention on Climate Change
UT	Union Territory

Executive Summary

India is a mega-biodiversity country where forests and tree cover account for about 24.39% (80.21 million ha) of its geographical area. The progressive conservation oriented forest policies, intensive sustainable management of forests and afforestation programmes in India are contributing towards reduction in CO₂ emissions and improvement of carbon stocks in forests. Scientific management of forests in India began in 1864 with creation of a organised forest service, and the promulgation of 1865 Forest Act, later on revised in 1878. In 1927, the new Indian Forest Act was passed which is still in force.

The National Forest Policy 1988 was a paradigm shift in the forestry sector. It differed from the previous policies of independent India where forests were being looked upon mainly as a source of revenue. The objective of the 1988 policy was to ensure that the rights of the forest dependent people are protected. India recognizes the conservation, expansion and improvement in the quality of our forests as a major national priority. India stands to gain a lot from a global REDD+ mechanism. It has specifically opened the possibilities for the country to expect compensation for its pro-conservation oriented approach and sustainable management of forests resulting in even further increase of forest cover and thereby its forest carbon stocks.

About 30% of the forest area of the country are being managed through more than 1,18,213 Joint Forest Management Committees (JFMCs). There is ample scope and opportunities for integrating REDD+ initiative with the community managed forest and Joint Forest Management (JFM). Promoting and integrating REDD+ actions in JFM activities to increase carbon sequestration will meet both national objectives of climate change mitigation and international obligations as a responsive member of international community. India's National REDD+ Strategy has been aligned with the precepts of the National Forest Policy 1988. The strategy focuses on creation of trained human resource capable of carrying out forest related measurements at all levels of REDD+ implementation. The strategy will support empowerment of youth cadres as community foresters and also ensure adherence to the gender centred sensitivity and transparency in forest governance. The strategy will also support green skill development programme for developing forestry related specialised skill.

Forest management of the country is already attuned to implement REDD+, however, certain components and aspects of forest management will need to be strengthened by appropriate infrastructure and capacity building to support good performance of REDD+. Development and implementation of REDD+ at national level will require close coordination and strong linkages between all stakeholders of forest sector. Adequate technical and institutional capabilities are needed for effective implementation of REDD+ across the country. Strengthening forest department and other partner agencies, strengthening and capacity building of local institutions and building a cadre of community youth for REDD+ are proposed to enhance technical and institutional capabilities for implementation of REDD+. A REDD+ curriculum at forestry universities and forestry training institutions, and creating a network of universities to share experiences on integrating climate change and REDD+ knowledge will contribute to fill the gap of trained human resource for REDD+ implementation in India.

Forest Working Plan has been the main instrument of forest planning for scientific management of forests. Forest Working Plan includes the area specific scientific prescriptions for proper management of forests of a particular forest division, while working schemes are prepared for smaller areas for a specific purpose or for forest areas under the control/ ownership of such bodies as private, village, municipal, cantonment, autonomous district council (especially in north eastern states), etc. All forests are to be sustainably managed under the prescriptions of a Forest Working Plan.

The new Forest Working Plan Code-2014 is more or less tuned with REDD+ activities. According to the revised code, the forest management planning must provide for sustainable management of forests and its biodiversity. Principles of National Forest Working Plan Code-2014 addressed various essential components of REDD+ in forest management. Implementation of REDD+ is one of the objectives of this Working Plan code. It considers REDD+ as a basic mechanism at the division level in forest departments for the sustainable management of forests and enhancement of forest carbon stocks.

The current forest policies, regulations and forestry practices in India are well tuned for mainstreaming of REDD+ in forest management plans. The new National Forest Working Plan Code 2014, National REDD+ Strategy for India 2018 and the draft National Forest Policy 2018 give an ample opportunity for facilitating REDD+ while developing forest management plan. Reshaping conventional forest management practices and aligning them with the concept of REDD+ specially within the framework of community forest management also poses a great challenge to forest managers.

There is significant potential in achieving REDD+ objectives in community controlled/ managed forested landscapes. Implementing REDD+ Himalaya Project in the state of Mizoram shows that by analysing the drivers and deforestation and forest degradation, suitable strategies were developed for addressing these drivers and also contribute to income generation activities of the forest dependent communities. REDD+ has the potential to further promote national forest governance structure, provide safeguards, both environmental and social by way of full and effective participation of relevant stakeholders. REDD+ activities need to be expanded to the area of forests managed by communities. REDD+ pilot projects and readiness activities for mainstreaming REDD+ in Forest Management Plan in these areas needed to test the benefit-sharing mechanisms, and mechanisms for monitoring, reporting, and verification (MRV) of carbon benefits.



1 Introduction

India is a mega-biodiversity country where forests and tree cover account for about 24.39% (80.21 million ha) of its geographical area. With nearly 200,000 villages as forest fringe villages, there is obviously large dependence of local communities on forest resources. Thus, it is very important to assess the likely impacts of projected climate change on forests, and develop and implement adaptation strategies for forest conservation and protection, safeguarding the livelihoods of forest-dependent communities, and

ensuring continued production function of forest resources.

The progressive conservation oriented forest policies, intensive management of forests and afforestation programmes in India are contributing to reduction in CO₂ emissions, stabilization and enhancement of carbon stocks in forests, and conservation of biodiversity. Thus, Indian forestry sector is making positive contribution in checking global climate change and in promoting sustainable development.

2 Brief History of Evolution of Forest Management in India

The era of scientific management of forests in India began in 1864 with the appointment of Sir Dietrich Brandis, a German forester, as the Inspector General of Forests. This was followed by the creation of a separate forest service, and the promulgation of legal measures, notably the 1865 Forest Act which was revised in 1878 to confer powers to the newly constituted forest departments. It provided for the creation of separate categories of forests: 'reserved' and 'protected' (MoEF, 1999).

2.1 Forestry from 1900 to 1947

The major task undertaken by the forest departments until about the end of the 19th century was the creation of reserved and protected forests and the settlement of rights therein. Most of the exploitable areas and important tree species were brought under working plans. Various silvicultural systems were developed including selection

and selection-cum-improvement fellings, conversion to uniform system, coppice with standard/reserves as well as the *taungya* system (agri-silviculture) involving clear felling and strip planting with short duration (3-5 years) of agriculture crops between the strips and finally the clear felling and planting of economically important species. All these systems were designed for harvesting and regeneration of important timber species for resource generation with little consideration for the ground flora or uneconomic tree species and their associates as well as the ecological consequences of such management practices. In 1927, the new Indian Forest Act was passed which is still in force.

2.2 Forestry after Independence

After independence, the princely states were constituted into States of India. Some of these States had organized forest departments whereas others had engaged trained foresters

from the neighbouring provinces of British India and had brought their forests under a reasonable state of management. In 1950-51 recorded forest area of the country was 40.48 million ha. It increased to 66.80 million ha in 1976-77 and 76.52 million ha in 1996, i.e. an increase of 36.04 million ha.

Moreover, immediately after independence, large scale developmental activities were initiated leading to rapid industrialization (including paper, plywood, saw milling), urbanisation, expansion of railways, network of highways and roads construction and other developmental activities, etc. causing heavy and unsustainable demand for timber and fuelwood, etc. The 'grow more food' campaign and river valley projects etc. also claimed large areas of forests (nearly 4.3 million ha.). The growing human population

(361.1 million in 1951 to 1210 million in 2011) and of domestic animal population (284.4 million in 1951 to 512.05 million in 2012) have put a very heavy demand on forests for fuel, fodder, food, medicine and small timber causing degradation of forests.

As a result the India State of Forest Report, 2017 estimates forest cover of the country as 70.83 million ha, which constitutes 21.54 per cent of country's geographic area. Most of the forests, in the "Open Forest" (30.18 million ha) category of 10-40 % canopy density are either patchy or degraded, and need intensive restoration and regeneration interventions. The forest and tree cover of India in 2017 assessment has been estimated to be 80.21 million ha, which is 24.39% of the total geographical area (FSI, 2017).



3 Paradigm Shift in Forest Governance in India

The first Forest Policy of independent India was formulated in 1952. This Forest Policy of 1952 declared that village communities should not be permitted to use forests at the expense of national interest. The enactment of the Forest (Conservation) Act, 1980 was the first transition in forest governance from commercialized use of forest to conservation. The pace of diversion of forest land for non-forest purposes was around 1,60,000 hectares per annum from 1951 to 1976. However, after the implementation of Forest (Conservation) Act, 1980, the rate of diversion of forests has come down drastically to 31,000 ha annually during 1980-2011 (MoEF&CC, 2017).

The National Forest Policy 1988 was a paradigm

shift in the forestry sector. It differed from the previous policies of independent India where forests were being looked upon mainly as a source of revenue. The objective of the 1988 policy was to ensure that the rights of the forest dependent people are protected. The ecological security was the primary goal of this policy. The policy also emphasized on the close relationship between the tribal population and the forests. The draft National Forest Policy, 2018 in its goals and objectives lays emphasis on integrating climate change mitigation and adaptation measures in forest management through the mechanism of REDD+ so that the impact of climate change is minimised (MoEF&CC, 2018a)

4 India and REDD+

The Agenda of REDD was introduced under UNFCCC negotiations in order to give financial incentives to reduce or check the rate of deforestation/ forest degradation in developing country Parties. India presented the policy approach for inclusion of forest conservation and sustainable management of forests in this agenda and because of which REDD is now known as REDD+.

India recognizes that conserving, expanding and improving the quality of our forests is a major national priority. This has enormous domestic and transnational mitigating benefits. Not only as a cost-effective and efficient way to mitigate the impacts of climate change but it also improves India's water security, biodiversity and provides livelihood security for millions of Indians. (MoEF, nd).

India stands to gain a lot from a global REDD+ mechanism. It has specifically opened the possibilities for the country to expect compensation for its pro-conservation approach and sustainable management of forests resulting in even further increase of forest cover and thereby its forest carbon stocks.

REDD+ benefits for India: REDD+ implementation will benefit participating local communities as it explicitly safeguard their rights. India is committed that monetary benefits from REDD+ will flow to local, forest dependent, forest dwelling and tribal communities. This is ensured for three reasons:

- First, in the Indian context, the REDD+ is intended to be an additional co-benefit to

the goods and ecosystem services already accruing to and being enjoyed by the local community, and, therefore, it comes as a bonus without compromising on the existing benefits.

- Second, policies, legislations, rules at central and state level additionally ensure that REDD+ will not adversely impact on the traditional and legal rights of the local communities over forests, but on the other

hand will ensure more monetary benefits flowing to them.

- Third, all international REDD+ deliberations and negotiations recognize and respect national legislations relating to safeguards for the rights of indigenous peoples and local communities, and aim to promote their participation in implementation and monitoring of REDD+.

Scope of REDD+ Implementation in India

With nearly 2,00,000 villages classified as forest fringe villages inhabiting an estimated 350 million rural people, there is obviously large dependence of communities on forest resources. About 30% of India's forest areas are being managed through more than 1,18,213 Joint Forest Management Committees (JFMCs). There is ample scope and opportunities for integrating REDD+ initiative with the community managed forest and Joint Forest Management (JFM). Promoting and integrating REDD+ actions in JFM activities to increase the carbon sequestration by forests will meet both national objectives of climate change mitigation and international obligations as a responsive member of international community.



5

National REDD+ Strategy 2018 and Forest Management

India's National REDD+ Strategy, 2018 builds upon existing national circumstances which have been updated in line with India's National Action Plan on Climate Change, Green India Mission and India's Nationally Determined Contribution (NDC) to United Nations Framework Convention on Climate Change (UNFCCC). India's National REDD+ Strategy has been aligned with the precepts of the National Forest Policy 1988 (NFP). The overarching objective of National REDD+ Strategy, 2018 is to facilitate implementation of REDD+ programme in the country in conformity with relevant decisions of UNFCCC and the national legislative and policy framework for conservation and improvement of forests and the environment (MoEF&CC, 2018 b).

India's National REDD+ Strategy proposes to establish a National Governing Council for REDD+ (NGC-REDD+) to coordinate and guide REDD+ related actions at the national level. A National Designated Entity for REDD+ (NDE-REDD+) shall also be established at the Ministry of Environment, Forest and Climate Change, Government of India to liaise with UNFCCC and states. The strategy devolves major responsibility for execution of REDD+ activities on the State Forest Departments. Each State will create a REDD+ Cell in the State Forest Department. In line with

National REDD+ Strategy and States are also encouraged to develop their State Action Plan for REDD+.

The strategy focuses on creation of trained human resource capable of carrying out forest related measurements at all levels of REDD+ implementation. The strategy will support empowerment of youth cadres as community foresters to lead the charge at the local level. Green Skill Development programme for imparting forestry related specialised skill will be implemented. REDD+ programme will create additional jobs in forestry sector. In order to keep forest well adapted to climate change impacts, some of the activities where community foresters can be engaged effectively are: (i) assisted natural regeneration, (ii) soil and moisture conservation, (iii) harvesting, thinning, and hygienic removals, (iv) forest nurseries and raising of quality planting stocks, and (v) control of forest fires, pest and disease and invasive species.

The National REDD+ Strategy draws a road map for addressing drivers of deforestation and forest degradation and issues like safeguards for rights of local community, first right of use with local community, gender equity, and creation of green jobs to the local youths etc. (MoEF&CC, 2018 b).





6

Status of Current Forest Management Regime: Strengthening it to Support REDD+ Implementation

6.1 Forest Management Structure in India

Management of forests in India is vested with State Forest Departments of respective State/ Union territory Governments, who are also responsible for the protection, conservation, administration and development of forests. The State Forest Department is headed by the Principal Chief Conservator of Forests who is also Head of the Forest Force (PCCF & HOFF) in the state. PCCF & HOFF is assisted by Principal Chief Conservator of Forests (PCCFs), Additional Principal Chief Conservator of Forests (APCCFs), Chief Conservators of Forests (CCFs) and Conservator of Forests (CFs) exercising jurisdiction on their respective territorial units. The Executive Unit is headed by the Divisional Forest Officer, who carries out various functions related to forests with the help of Assistant Conservator of Forests, and Forest Range Officers. A forest range is the minimum functional unit of forestry administration for execution of works in the field. There are functional divisions within the State Forest Department to look after specific activities and responsibilities. Territorial Circle and associated Divisions generally administer forest laws on the ground, and also carry out protection, development and afforestation related activities. Functional Divisions include working plan, silviculture, wildlife, research, and watershed management divisions etc. which carry out specific functions related to a particular aspect of forest (MoEF, 2013).

6.2 REDD+ and Forest Management

Forest management of the country is already attuned to implement REDD+ and as such it does not require any major change to support implementation of REDD+.

However, certain components and aspects of forest management will need to be strengthened by appropriate infrastructure and capacity building to support good performance of REDD+. These have been adequately described in the National REDD+ Strategy. Drivers of deforestation and forest degradation need to be thoroughly analyzed and all ongoing flagship forestry programmes need to be oriented towards addressing drivers of forest degradation by providing alternate sources of fuelwood, fodder and other forest products required by forest dependent communities. Owing to involvement of multiple stakeholders, working of forestry sector is complex. There are many agencies and departments whose programmes and policies have significant impact on forestry sector. Development and implementation of REDD+ at national level will require close coordination and strong linkages between all stakeholders of forest sector, which will need to be guided by the Ministry of Environment, Forest and Climate Change (MoEF&CC). Following mechanism is proposed for effective implementation of REDD+ in the country:

- **Need for a regulatory framework:** For implementation of REDD+, appropriate policy and regulatory framework coordinated by MoEF&CC is required at national, sub-national and lower levels, i.e., at Central, State or UT, and down up to the field level including village forests. Provisions of REDD+ Governance structure as stipulated in National REDD+ Strategy needs to be implemented for effective implementation of REDD+ and national forest governance for REDD+.

- **National level co-ordination:** Coordination at national level with relevant stakeholders for close cooperation between various departments like Rural Development, Tribal Welfare, Panchayats, Agriculture, Horticulture, Animal Husbandry, Public Works Department, Water, Health, Tourism, Power and Finance, etc. Forest Department will be necessary to ensure sustainable management of forests, to address drivers of forest degradation, and to improve the livelihoods of forest dependent communities including tribals. The institutional mechanism and processes need to be put in place for more effective cross sectoral co-operation for implementation of REDD+, which will require pooling of resources and efforts for addressing drivers of forest degradation. MoEF&CC will have the nodal role through its NGC-REDD+ and NDE-REDD+ and work with the other Ministries for effective coordination among various line Ministries and Departments for integrated action enhancing REDD+ performance.
- **Setting up of State level REDD+ Cell:** Institutional mechanism for strengthening of cross-sectoral cooperation among relevant stakeholders will be needed for successful planning and implementation of REDD+ in the States and Union Territories. Setting up of State REDD+ Cell with members drawn from relevant stakeholder departments/agencies/ NGOs/ local communities, etc. will further ensure proper REDD+ implementation. A model structure of State REDD+ Cell has been given in National REDD+ Strategy.
- **Stakeholder consultation and participation:** An effective mechanism for stakeholder consultation and for participation of all stakeholders including scientific institutions, civil society, communities, and NGOs, etc. will be required at all levels of implementation, i.e., central, State and local.
- **Addressing deforestation and forest degradation:** Local communities in many places are heavily dependent on withdrawals from forests for sustaining their livelihoods posing the challenge of addressing serious problem of unsustainable demand of forest goods and services, like fuelwood and grazing, which is adversely affecting the extent and quality of services from forests. This will not only cause reduced flow of goods and services from the forests, but, in due course of time, also adversely impact the REDD+ performance of the forests in such localities. This challenge will be addressed by providing alternate clean sources of energy, like subsidized LPG, and fodder being grown outside forests, e.g., as an agroforestry component, and thereby confining the withdrawals from forests within limit of sustainable harvests.
- **Effective communication strategy:** An effective communication strategy is needed for involving communities and other relevant stakeholders in protection, management, monitoring of forests, and for carrying out measurements to assess the REDD+ performance. Forest department needs to be more facilitative and flexible and oriented towards preparing and guiding communities in protecting and sustainably managing the forest resources, and to participate in the REDD+ measurements. The National REDD+ Strategy proposes to support empowerment of youth cadres as 'Community Foresters' to lead the charge at the local level. Green Skill Development programme for imparting forestry related specialised skill will further augment additional workforce for forest management related ground work.

6.3 Developing technical and institutional capabilities

Adequate technical and institutional capabilities will be required for effective implementation of REDD+ across the country. National REDD+ Strategy has prominently flagged this issue of capacity building at all levels. Few important aspects of enhancing technical and institutional capabilities are discussed below:

- (i) **Strengthening and capacity building of local institutions:** Building capacity of local institutions is needed under REDD+ mechanism to help them effectively protect, regenerate and manage forests. Strengthening decentralized governance through *Gram Sabhas* (Village level/ Panchayat Raj Institutions) and other local institutions could play a significant role. Creating community stake in regeneration of forests/restoration of ecosystems requires that communities have sufficient stake in terms of enhanced biomass, NTFPs and environmental services (including REDD+ benefits) from such areas. Community driven innovative/adaptive forest management with technical guidance and support from forest department officials is of critical importance to successfully implement REDD+ programmes.
- (ii) **Building a cadre of community youth for REDD+:** Given the fast changing rural scenario with increase in the number of educated unemployed/ underemployed youth, REDD+ could support development of youth cadres at the local level. Support of forestry research institutions, universities, forest departments and NGOs would help to develop the cadre of community youth for REDD+ implementation.
- (iii) **Strengthening state forest department and other partner agencies:** In order to

ensure an integrated approach for REDD+ at different levels, forest department will need new capacities. REDD+ experts could bring in new knowledge and skills. Capacity building activities in REDD+ should support up-gradation of the Division/ Range level Forest Offices into well equipped REDD+ interpretation centre.

- (iv) **REDD+ curriculum at forestry universities and training institutions:** With inclusion of REDD+ in National Working Plan Code, different aspects of REDD+ (policy, scales of implementation, forest management, monitoring, MRV, safeguards, socio economic, capacity building and community participation, etc.) need to be included as an elective course in master programs at forestry universities. A specialized study centre on climate change and REDD+, at forestry training academies (Indira Gandhi National Forest Academy, Central Academy of State Forest Service, State level forestry training academy/training school) as well as creating a network of universities to share experiences on integrating climate change and REDD+ knowledge into universities curricula need to develop.
- (v) **Training and extension manual in vernacular language:** The language of most of the REDD+ decisions, manuals is very complex, full of technical terminology, jargons and acronyms. REDD+ concepts and terms in UNFCCC decisions remain highly technical. There is need to transform these information in the native languages of local people and other local communities, enabling their full and effective participation in national REDD+ programs. Building on these experiences will help in raising awareness and build capacities at national and sub-national levels to implement REDD+ in India.



7

Integrating REDD+ in Forest Management Plan in India

7.1 Forest Working Plan as an instrument for Sustainable Management of Forests

At the country level Forest Working Plan has been the main instrument of forest planning for scientific management of forests. Earlier, state/provincial governments adopted their own provincial working plan codes. As per regional requirements, provincial working plan codes were adopted in different states of the country. However with the intervention of Hon'ble Supreme Court of India in 1996, all working plans were to be approved by the Central Government on account of forests being brought in the concurrent list. The Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India then adopted a uniform code, the National Working Plan Code - 2004 for preparation of working plans for the management of forests under the prescriptions of a working plan/scheme to standardize the procedure. The working plan facilitates monitoring,

evaluation and impact assessment of forest management practices being followed in the country. The preparation of the working plan is based on stock and vegetation maps which is prepared through ground surveys. Recently, the use of modern tools like remote sensing, GIS and GPS is being utilized for preparing the forest cover maps of forest divisions. Every working plan includes the area specific scientific prescriptions for proper management of forests of a particular forest division, while working schemes are prepared for smaller areas for a specific purpose or for forest areas under the control/ ownership of such bodies as private, village, municipal, cantonment, autonomous district council (especially in north eastern states), etc. These prescriptions enable necessary co-existence of development with nature for simultaneous implementation of all relevant policies laws, rules and regulations and meeting the requirements of the objectives of the National Forest Policy and other international conventions/agreements.

History of Forest Working Plans in India

Sir Dietrich Brandis in 1856 propounded the fundamental principle that the first class trees (trees over a prescribed diameter) to be felled in a year should be restricted to the growing stock of the second class trees that will eventually replace them in that year. Based on this principle of yield control, he prepared the first forest management plan using strip sampling for the Pegu Yoma Forests of Myanmar in the year 1860.

In 1884, the diligent efforts of Sir Wilhelm Schlich, Inspector General of Forests, resulted in a country wide unified approach towards the preparation of working plans and scientific management of forests as per prescription of working plans. The experience so gained in the past led W.E. D'arcy to bring out his treatise "Preparation of Forest Working-Plans in India" (1891), providing guidelines for systematic working plan preparations of India's forests.

All forests are to be sustainably managed under the prescriptions of a working plan/ scheme. The National Forest Policy, 1988 clearly states "no forest should be permitted

to be worked without an approved working plan by the competent authority". It is the duty of the manager or owner of the forest area to ensure the preparation of the working plan/ scheme. The authority as designated by the MoEF&CC, will approve the working plan and ensure its implementation. Even working schemes have all major elements of a working plan and these schemes also need

the sanction of the competent authority. The working plans prepared as per the existing National Working Plan Code are usually valid for a 10 year period. The Working Plan Officer prepares the draft working plan which after approval of the State Government is sent to the Regional Office of the MoEF&CC for obtaining approval of the Central Government.

Sustainable Management of Forests in India

Sustainable management of natural tropical forest is a holistic art based on science which originated in the mid-19th century in the deciduous teak forests of Myanmar. Sustainable Management of Forests (SMF) may be defined as 'the best available practices, based on current scientific and traditional knowledge, which allow multiple objectives and needs to be met without degrading the forest resources'. Sustainable Management of Forests aims to ensure that the goods and ecosystem services derived from the forest meet present-day needs while at the same time securing their continued availability and contribution to long-term development. The main elements of classical forest regulation are the rotation, principle of sustained yields and the method of calculating the allowable cut. A proper understanding of classical forest regulation is essential for effective forest management. Forest management is concerned with the future effects of current decisions. In short, SMF may be termed as the practice, which meets our demand by providing continuous supply of the products (timber and others) in perpetuity without depleting the forest resources and its future productivity and without undesirable effects on the environment. For applying SMF, information about the current growing stock, and increment/growth in the forests/stands are needed to estimate allowable cut. Allowable cut should not exceed the growth during the period. Thus SMF contributes towards enhancement of forest carbon stock.

7.2 National Working Plan Code-2014

Government of India revised its Forest Working Plan Code 2004 with new Working Plan Code 2014. The tenets of New Working Plan Code 2014 are more or less tuned with REDD+ Activities. According to the revised code. National Working Plans-2014 "forest management planning must provide for sustainable management of forests and its biodiversity as enshrined in the National Forest Policy, encompassing the ecological (environmental), economic (production) and social (including cultural) dimensions. The objectives for attaining this goal include conservation of forests and reducing forest

degradation, maintenance and enhancement of ecosystem services including ecotourism, enhancement of forest productivity together with establishment of regeneration to improve forest health and vitality as per ecological and silvicultural requirements of the species, progressively increasing the growing stock and carbon sequestration potential, maintenance of biological diversity, sustainable yield of forest produce, prevention of soil erosion and stabilization of the terrain; improvement and regulation of hydrological regime; people's involvement in planning and management of forests fulfilling socio-economic and livelihood needs of the people, albeit with simultaneous implementation of

all prevailing relevant policies, laws, rules, acts and regulations. All these entail that the specific composition and the structure of forests must harmonies with the environment of the locality". Hence along with the various objectives and other management practices like the joint forest management, community forest management, fringe forest management, water resources management, soil and water conservation, forest health and diseases, forest fires and protection, carbon sequestration and mitigation, application of modern technologies, forest inventory, survey and mapping, grid based sampling design, growth data and carbon sequestration are other essential for forest management planning (MoEF&CC, 2014).

7.3 REDD+ and National Working Plan Code-2014

The forest management planning must provide for sustainable management of forests and its biodiversity as enshrined in the National Forest Policy, encompassing the ecological (environmental), economic (production) and social (including cultural) dimensions. The objectives for attaining the goal of forest management planning includes conservation of forests and reducing forest degradation; maintenance and enhancement of ecosystem services including ecotourism; enhancement of forest productivity together with establishment of regeneration to improve forest health and vitality as per ecological and silvicultural requirements of the species, progressively increasing the growing stock and carbon sequestration potential, maintenance of biological diversity, sustainable yield of forest produce, prevention of soil erosion and stabilization of the terrain; improvement and regulation of

hydrological regime; people's involvement in planning and management of forests fulfilling socio-economic and livelihood needs of the people.

Principles of National Forest Working Plan Code-2014 addresses various essential components of REDD+ in forest management. Implementation of REDD+ is one of the objectives National Working Plan-2014. It states, *".....Implementation of REDD+, therefore requires efforts/mechanisms to measure forest carbon, interventions and payments to local people in addition to alternative activities such as fodder development to avoid lopping of tree branches and efficient cooking energy devices, etc".* In preparation of a Forest Working Plan, forest measurement prescriptions will facilitate REDD+, which, *inter alia*, reads, *".....A robust and dynamic national carbon MRV based on forest resource assessment of working plan can also be realized for REDD+ provided sufficient resources are made available to the States for estimating carbon from different pools of forest carbon".*

National Working Plan Code-2014, considers REDD+ as a basic mechanism at the division level in forest departments for the sustainable management of forests and enhancement of carbon stocks and considered as a tool for the climate change mitigation. The linkage of REDD+ with national forest inventory with the help of robust and dynamic national carbon MRV (measuring, reporting and verification of carbon stocks) based on forest resource assessment of working plan under the REDD+ mechanism need to be considered while preparing Forest Working Plan so that the REDD+ implementation can be accomplished at the forest division level.



8

Conclusion

The current forest policies, regulations and forestry practices in India are well tuned for mainstreaming of REDD+ into forest management plans. The new National Forest Working Plan Code-2014, National REDD+ Strategy for India 2018 and the draft National Forest Policy, 2018 underscores ample opportunities for facilitating REDD+ while developing forest management plan i.e., Forest Working Plan in India. An effective REDD+ needs close coordination and working together with various other inter ministerial/ departmental actors, research institutions and stakeholders.

The development and implementation of REDD+ in forest management plan can bring both opportunities and challenges to forest managers, especially while implementing within participatory forestry management programmes i.e., Joint Forest Management, *Van Panchayats* and areas within the realm of The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. Reshaping conventional forest management practices and aligning them with the concept of REDD+ specially within the framework of community forest management also poses a great challenge to forest managers. REDD+ implementation has a potential to enhance the financial resources of the communities through effective management of forests by way of improving administrative, and technical capabilities of the participating communities in conservation and sustainable management of forests.

There is significant potential in achieving REDD+ objectives in community controlled/ managed forested landscapes (Rawat, 2011). Experience of implementing REDD+ project in the state of Mizoram shows that by analysing the drivers and deforestation and forest degradation suitable strategies can be developed for addressing these drivers and also contribute to income generation activities of the forest dependent communities. (Rawat *et al.*, 2017 and 2018). The success of JFM Programmes in India, strong visibility of communities in *Van Panchayats*, community control/ management of forests (wherever it exists) provides opportunity for harnessing REDD+ benefit in many ways. REDD+ has the potential to further promote national forest governance structure, provide safeguards both environmental and social by way of full and effective participation of relevant stakeholders. Further, available human and natural resources, social, and institutional tenets of the participating communities can also be roped in to achieve REDD+ goals.

REDD+ funding can also overcome the financial barrier to effective community forest management. REDD+ needs to be expanded to the area of forests managed by communities. Pilot projects and readiness activities for mainstreaming REDD+ in forest management in these areas needed to test the benefit-sharing mechanisms, and mechanisms for monitoring, reporting, and verification (MRV) of carbon benefits.

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