

Executive Summary

This is the 10th State of Forest Report of the country and with this India completes two decades of systematic and regular wall-to-wall forest cover mapping on a two-year cycle. The remote sensing technology has emerged as an important tool for assessing the forest resources rapidly as the satellite data provides the best synoptic view of the forest landscape.

Over the years there has been advancement both in the field of remote sensing technology and in the interpretational techniques. In 1987 when the FSI brought out the first SFR, satellite data of Landsat of USA having 80 m resolution was visually interpreted on 1:1 million scale; whereas in the present cycle the data of Indian remote sensing satellite Resourcesat-I having resolution of 23.5 m has been digitally interpreted on 1:50,000 scale; thus, making assessment more objective and the analysis of the changes more accurate.

Advancement in technology helps in improving the baseline data. During 8th cycle (SFR- 2001) there was a complete switch over to digital interpretation and its scale from 1:250,000 to 1:50,000. This resulted in picking up even smaller patches of forests up to 1 ha from 25 ha earlier. The improvement in the interpretation technique led to updating the figures in subsequent cycle (9th) as has been pointed out on page 120 of the 'SFR 2003'. There has also been improvement in the quality of the satellite data used in the current 'SFR'. Due to advanced features of the satellite Resourcesat-I (LISS-III), slight improvement has been done in the forest cover data of 'SFR 2003'. The original and revised figures of 2001 and 2003 have been presented in Chapter 1 of this Report.

Before finalizing the changes in the areas of forest cover found during the current assessment, the concerned State Forest Departments (SFD) were provided the change maps along with lat/longs of the respective change locations to physically verify and comment. The comments of the responding SFDs were taken into account.

The forest cover of the country as per the present assessment is 67.71 million ha, which is 20.60 % of its total geographic area. Of this, 5.46 million ha (1.66 %) is very dense forest, 33.26 million ha (10.12 %) is moderately dense and the rest 28.99 million ha (8.82%) is open including 0.44 million ha mangroves. However, excluding the areas (18.16 million ha) not available for tree planting/afforestation due to climate, edaphic and physical reasons falling in mountainous region under permanent snow, glaciers/ rocks, the forest cover of the country comes to 21.81 %. The percentage of forest cover in the hilly region of the country is 38.85 % and by excluding area unavailable for planting the percentage comes to 52.4%.

Madhya Pradesh has the largest area of 7.6 million ha under forest cover constituting 11.22% of the total forest cover followed by Arunachal Pradesh (10.01%), Chhattisgarh (8.25%), Orissa (7.15%) and Maharashtra (7.01%). The seven North-East States together account for 25.11 % of the total forest cover of the country whereas all the tribal districts (188) comprise 60.11% of the total forest cover of the country.

The total mangrove cover in the country is 0.44 million ha, major area of which occurs in Sunderbans of West Bengal (47.6%), in Gujarat (21%) and in Andaman & Nicobar Islands (14%).

The tree cover in the country has been estimated by a separate exercise following a sampling based approach under which high resolution satellite data (5.8 m) has been used for identification of tree patches for field inventory. On the basis of mapping of tree patches and field inventory in 120 districts of the country, the estimated tree cover is 9.17 million ha which constitutes about 2.8 % of the geographic area of the country. The States like Maharashtra, Rajasthan, Uttar Pradesh, Andhra Pradesh and Gujarat dominate the list of tree cover in the country. The forest rich States, particularly of North-East, have limited tree cover. The tree cover figure presented in this Report is an improved estimate compared to the figure given in 'SFR 2003', wherein it was

estimated on the basis of tree cover mapping and inventory in 60 districts only. The precision level of tree cover estimate is high because the standard error is only 3.72%.

The total forest and tree cover of the country as per this report ('SFR 2005') has been assessed as 23.4% of the total geographic area. The percentage comes to 24.76% when the area unavailable for tree planting is excluded.

FSI has been carrying out growing stock (volume of wood) estimation, which constitutes the most important parameter of forest resources as it indicates the forest productivity and has a role in climate change and carbon cycle. The assessment is based on the field inventory carried out in the forests and trees outside forests during 2002-2006. The growing stock estimates at national and physiographic zone level published in 2003 have been improved in current assessment as the results of the present estimates are based on enumeration in 14,729 sample plots compared to 7,262 sample plots used in SFR 2003. The total growing stock of the forest has been estimated to be 4.6 billion m³. Similarly, the estimate of the growing stock of trees outside forests has been also improved in the current assessment as the results are based on enumeration in 20,228 sample plots as compared to 10,145 sample plots of 2003. The growing stock of TOF has been estimated to be 1.61 billion m³. Thus the total growing stock of wood in the country is 6.22 billion m³ which gives an average growing stock of 80.9 m³ per ha in 76.88 million ha of forest & tree cover.

A comparison of the forest covers of the country between the present and preceding assessment (2003) shows that there is a marginal loss of 728 km² during the period 2002-2004. This constitutes 0.11 % of the forest cover of the country. The loss is only in the category of moderately dense forest. The losses have occurred mainly due to destruction caused by tsunami in Andaman & Nicobar Islands in December 2004, submergence of forest land due to construction of dams in Madhya Pradesh and Chattisgarh and shifting cultivation as well as bamboo flowering in the North East (Nagaland and Manipur). On the other hand, many states have improved their forest cover by raising plantations and through better protection. It may be noted that young forest plantations have not been accounted in the forest cover due to technological limitations.

The forest cover mapping by FSI does not make any distinction between origin of tree crop, tree species as well as land ownership or its legal status. Such distinction can be made only when SFDs provide data and the ground information. For knowing the extent of forest cover within the recorded forest area, geocoded maps and boundaries of the recorded forests have to be made available by the SFDs. Only four States/ UTs, namely, Andhra Pradesh, Kerala, Meghalaya and Dadra & Nagar Haveli could provide geo-coded boundaries of recorded forests. For the first time, an analysis of the forest cover and change within recorded forests has been done in these 4 States/UTs (Ch.3).

The practice of JFM, started in India in 1990, is mainly to help improve forest resources. A brief overview of progress of JFM in each State/UT, based on a compilation of MoEF, and in some cases from respective state forest departments, has been presented in this Report. Overall, 99,868 JFM committees are managing 21.44 million ha of forests, which constitutes nearly 28% of the total forest area, as on March 2005. More than 13.8 million families are involved in JFM, of which 4.8 million families belong to the Scheduled Tribes.

The National Parks, Wildlife Sanctuaries and Conservation Reserves are created to provide a higher degree of protection to forests, wildlife and biodiversity. The information maintained by WII on these protected areas has been used in giving a brief overview concerning respective States/UTs. As on August 2006, there are 95 National Parks (area 3.80 million ha), 500 Wildlife Sanctuaries (area 11.79 million ha), and 2 Conservation Reserves (area 4,228 ha) covering 15.60 million ha, which is 4.74% of country's geographical area.