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Forest Policy of India for Sustainability – A Review

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Abstract

For any country, the forest policy is an important guideline to maintain forest resources and their interaction with other land uses. India devised its first National Forest Policy (NFP) back in 1894. There has been a paradigm shift from timber production to forest conservation followed by community-based agroforestry and social forestry bringing a change in perspective towards forest resources. This change has been socio-economic, cultural, and ecological. Since the 1952 NFP, there has been advocacy and compulsory for 33% forest cover with a 60% forest cover in mountainous and hilly regions. This objective was reiterated in the NFP in 1988 and also confirmed in the National Forestry Commission report in 2006. Forest Right Act 2006 made tribals realize their contribution to safe nature is not going to be wasted but in return, they are going to take many benefits from this act as a dweller. Policies also analyze forest cover trends at the state level and assess the likelihood of meeting the prescribed policy targets under the present perspective of land use practices. Only five Indian states go ahead every year with an increase in % to meet the prescribed policy, while many more have the potential to do so if their state wasteland area is afforested. Among the rest, a few states may achieve the 33% goal provided land conversion to tree cover is not hindered, and adequate resources are available at the state level. The Planning Commission (XI Five-year Plan, 2007–12) has emphasized the inclusion of other natural ecosystems (including treeless areas and trees outside forests) to forest cover. The paper also examines the above-prescribed targets in light of the Planning Commission recommendations. It is argued that the NFP should be re-visited and revised to meet the targets, along with setting a more realistic and attainable target for Indian forest and tree cover. To support NFP, 1988 to increase forest cover under various programs like TOFs and the National Agroforestry Policy of India to improve livelihood status as well as mitigate and combat climate change.

***Key words :** Forest cover, forest policy, five-year plan joint management.*

Introduction

More than 14% of the population in India lives in the vicinity of forests (MoEF, 2002), which provide both tangible (directly quantifiable products) and intangible benefits (such as values of biodiversity conservation, control of environmental pollution, and aesthetic and cultural values) (Kumar 2002). The total forest cover in India (2023) is 7,13,789 square kilometres which is 21.71% of the total geographical area of the country (FSI 2023). Forestry represents the second major land use in the country after agriculture and it has been estimated that nearly 41% of the country's forest cover has been degraded to some degree (MoEF, 2002).

Forests form a dominant part in the physical, economic, and spiritual lives of the population (Byron and Arnold 1999). More than 14% of the population in India lives in the vicinity of forests (MoEF 2002), which provide both tangible (directly quantifiable products) and intangible benefits (such as values of biodiversity conservation, control of environmental pollution, and aesthetic and cultural values) (Kumar 2002). Forests form a dominant part in the physical, economic, and spiritual lives of the population (Byron and Arnold 1999). In terms of biodiversity, India displays considerable richness because it is located in one of the 12 identified mega-biodiversity regions of the world, with about 47,000 species of flowering and non-flowering plants representing about 12% of the world's recorded flora, and 90,000 animal species identified so far representing 7.28% of the world's recorded fauna (MoEF 2007).

Historically too, India's forest resources have been accorded due importance since 2500 BC, such that forests in India have been viewed as a source of limitless product (Marcot 1992).

Forests are important not only at the local level but also at the global level. Realization of the importance of forests at the global level has not only led to the emergence of organizations such as the International Union of Forestry Research Organization (IUFRO), United Nations Conference on Environment and Development (UNCED) and Intergovernmental Panel on Climate Change (IPCC), but also the signing of various multilateral environmental agreements, including the Convention on Biological Diversity (CBD), United Nations Framework Convention on Climate Change (UNFCCC) and Kyoto Protocol. Changes in forest cover have been made one of the 48 indicators of the Millennium

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Development Goals (MDGs) under Goal 7 (ensuring environmental sustainability) (Rawat *et al.* 2003).

The technical glossary of Forest Research Institute (1953) defined forests in general, ecological and legal terms (a) 'General—An area set aside for the production of timber and other forest produce, or maintained under woody vegetation for certain indirect benefits which it provides e.g. climatic or protective;' (b) 'Ecologically—A plant community, predominantly of trees and other woody vegetation, usually with a closed canopy' and (c) 'Legally—An area of land proclaimed to be a forest under a forest law'. However, the Forest Survey of India (FSI) regards 'Forest Cover' as an area more than 1 ha in extent and having tree canopy density of 10% and above.

Considering the importance of forests and the fact that in India it is the second major land use, a question arises what proportion of the total geographical area of the country should be under forests or green cover? This paper attempts to find a valid and scientific explanation for the genesis of the national 33% target for forest cover in India. It reviews the probable reasons for these targets and also analyses the forest cover trends to check the possibility of meeting the prescribed policy targets, under the present land-use perspective. It also examines the prescribed targets in light of the Planning Commission recommendations.

Forest policies are tightly integrated with the management of natural resources, particularly when public or communal lands are being considered. In the United States, political controversy over the use and management of natural resources was instrumental in the development of public lands and has shaped the laws governing their administration and disposition since the mid-nineteenth century (Muhn and Stuart 1988). Policies arise from controversies, and because the array of controversies regarding the management of natural resources may change over time, real or perceived controversies will continue to shape the management of natural resources.

Characteristics of Forest Policies

At a global level, International Forest Planning (IFP) aims at sustainable and participatory management of forest resources and other woody vegetation. It takes analysis, policy formulation strategic planning, implementation, and monitoring and evaluation into account while considering the forest policy. The conceptual design of NFPs needs to be flexible and dynamic for NFPs to apply to vastly differing political, socio-economic, and ecological country contexts. The concept of NFP explicitly pertains to all countries and all forest types, including tropical, subtropical, and temperate areas. It reflects a global consensus on how forests ought to be managed and developed, but it is neither legally binding in itself nor embedded in any legally binding instrument.

An NFP helps an individual country approach the objective of sustainable use, conservation, and development of forests, by guiding and streamlining existing activities or programs towards a prescribed goal. An NFP is not a tangible document in the sense of a master plan, but a participatory process with defined outputs. The NFP goes far beyond a planning document. It is an iterative, long-term process, composed of various elements, including the country policy and legal framework related to forests, the participation mechanisms, and the capacity-building initiatives. In all its phases the NFP provides for learning cycles, which allow the experiences to be shared, and for lessons to be learned in order to fine-tune the planning process. The active call for feedback from stakeholders makes NFPs dynamic, adaptive and negotiable. A NFP not only provides for forest policy development and planning but also for their implementation on the ground. Participatory planning is a key to the process, hence links between normative planning (policy formulation), sector planning (elaboration of a strategy), and operational planning (action programs) are fostered. These aim to promote participatory implementation where the results of agreed objectives, policies, and strategies on sustainable forest management are translated into specific actions developed by the stakeholders.

Forest Policies in India

The first formal Forest policy on India was in 1894, or Circular F 22 of 1894, which was based on the Voelcker Report in 1893 on "Improvement of Indian Agriculture". The main stated objective of this policy was to manage the State Forests for public benefit. However, the policy also provided for the regulation of rights and restriction of privileges of users in the forest area. This regulation and restriction was justified only when the advantage to be gained by the public was great, the cardinal principle being that the rights and privileges of individuals must be limited, otherwise than for their benefit, only to the degree as was necessary to secure that advantage. The policy provided for four functional classes of forests, viz. Forests for Preservation, Forests for Commercial Purposes, Minor Forests and Pasturelands. Although the 1894 policy laid stress on the satisfaction of the needs of the local people overriding the considerations of revenue, beyond this realization of maximum revenue was the guiding factor. The general perception remains that the 1894 Forest Policy aimed at State monopoly over forest resources with revenue earning through timber harvesting as the prime motive, and with agriculture given precedence over forestry (Gadgil and Guha 1995).

The National Forest Policy of India in 1952—laid stress for the first time on having at least 33% of the national land area under forest cover. The 1952 policy also identified vital national needs, which included a system of balanced and complementary land use, with control over denudation in mountainous regions, erosion of river banks, invasion of sea-sands on coastal tracts, and shifting of dunes in desert areas. There was also attention to ensuring a supply of fuelwood, fodder, and small timber. This policy also classified forests into four groups, namely protection forests, national forests, village forests, and tree lands. Regarding forestry and its relation with agriculture, the policy stated that 'The notion widely entertained that forestry, as such, has no intrinsic right to land but may be permitted on sufferance on residual land not required for any other purpose' (GoI (Government of India) 1952, Para 8). Regarding the proportion of forest area in the country, the policy stated that 'The proportion of land to be kept permanently under forests naturally varies in different regions. Practical consideration suggests, however, that India, as a whole, should aim at maintaining one-third of its total land area under forests. As insurance against denudation a much larger percentage of the land, about 60% should be kept under forests for their protective functions in the Himalayas' (GoI (Government of India) 1952, Para 19).

NFP 1988—the current National Forest Policy—reiterated that 'The national goal should be to have a minimum of one-third of the total land area of the country under forest cover. In the hills and mountainous regions, the aim should be to maintain two-thirds of the area under such cover to prevent erosion and land degradation and to ensure the stability of fragile ecosystems. The NFP 1988 also laid primary emphasis on the maintenance of environmental stability and restoration of ecological balance through the preservation and conservation of forests. The other main objectives of the policy are the conservation of the country's natural heritage and biological diversity, increasing the productivity of degraded forests, meeting the local needs of the people, and encouraging their participation in the protection and management of forests. The derivation of direct economic benefit is to be subordinated to these objectives (MoEF 2007). The NFP 1988 reiterates increasing the forest cover to 33% of the geographical area of the country through large-scale afforestation and social forestry programs, both in recorded forest areas and degraded unproductive land outside forest areas, without prescribing any time frame in which to achieve this target. The policy also encourages 'joint management' of forests involving villages and other rural population, together with farm forestry and agroforestry schemes on private land to increase forest and tree cover (FTC).

The National Agroforestry Policy of India, 2014 launched by The Government of India during the World Congress on Agroforestry, held in Delhi. A policy that deals with problems faced by the agroforestry sector, including adverse policies, weak markets, and a dearth of institutional finance was approved by the Cabinet in February 2014. India became the world's first country to adopt a comprehensive agroforestry policy. Encourage and expand tree plantation in complementarity and integrated manner with crops and livestock to improve productivity, employment, income, and livelihoods of rural households, especially the smallholder farmers. Protect and stabilize ecosystems, and promote resilient cropping and farming systems to minimize the risk during extreme climatic events. Meet the raw material requirements of wood-based industries and reduce the import of wood and wood products to save foreign exchange. Supplement the availability of agroforestry products (AFPs), such as fuel-wood, fodder, non-timber forest produce, and small timber of the rural and tribal populations, thereby reducing the pressure on existing forests. Complement achieving the target of increasing forest/tree cover to promote ecological stability, especially in the vulnerable regions. Develop capacity and strengthen agroforestry research and create a massive people's movement for achieving these objectives and to minimize pressure on existing forests.

The draft forest policy, 2018 will be an overarching policy for forest management. It aims to bring a minimum of one-third of India's total geographical area under forest or tree cover. It seems to address the concern of a decline in forest productivity. The key objectives include controlling soil erosion and denudation, addressing sand dune expansion, significantly increasing forest/tree cover, enhancing forest production, promoting the efficient use of forest products, raising awareness, and fostering people's participation in forest management.

Status of Forests in India

As per the India State of Forest Report-2021, forest and tree cover in the country increased by 2,261 square kilometers since the last assessment in 2019. India's total forest and tree cover was 80.9 million hectares, which accounted for 24.62% of the geographical area of the country. The report said 17 States and Union Territories had more than 33% of their area under forest cover. Madhya Pradesh had the largest forest cover, followed by Arunachal Pradesh, Chhattisgarh, Odisha, and Maharashtra. The top five States in terms of forest cover as a percentage of their total geographical area were Mizoram (84.53%), Arunachal Pradesh (79.33%), Meghalaya (76%), Manipur (74.34%) and Nagaland (73.90%).

Government Initiatives for Forest Conservation : Different major initiatives for forest conservation by GOI are National Afforestation Programme, Environment Protection Act of 1986**,** Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

Temporal Forest Cover Assessment

When considering the feasibility of achieving the forest cover targets it is important to analyze the potential of the states and union territories which presently do not meet the targets. With this aim, and with the present land-use practices, a detailed analysis of temporal forest cover assessment and other land use and land cover were carried out for all the states and union territories. The forest cover estimate data from 1987 to date (2007 data from ISFR, 2009) were collected from the various SFRs. The data on forest cover were then arranged in the temporal domain for the classes dense and open (and very dense in case of 2005 and 2009). At first level all the States and Union Territories were classified were grouped according to whether they are meeting the prescribed forest cover figures. Temporal increases and decreases in the forest cover and changes between dense and open forests were analyzed. Only nine of the states showed a continuous decrease in forest cover, 13 had a slight increase and the remaining 13 had static forest cover area. Notably, the 13 states with increased forest cover are very small, and the increase in forest cover is due to the inclusion of TOF in the estimate of forest cover. The land use and land cover statistics developed under the National Resource Repository Assessment (NRSA 2007) were used to evaluate the availability of wasteland and non-forested land which could be converted into forest cover.

The 124 hill districts in India have an aggregate area of 28.2 M ha or 39.8% of the total geographic area of these districts. Out of these 124 hill districts, 55 have over two-thirds of their area under forest cover, 37 have between one-third and two-thirds, and 32 have less than one-third. Eight hill districts have forest cover less than 10% of the geographical area. All the districts of the states of Arunachal Pradesh, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, and Uttarakhand are hill districts and the average percentage of forest cover in these nine states is 66.1%. The geographic area under the hill districts includes high-altitude mountainous wastelands (barren and rocky, with steep slopes and snow and glacial areas) which are not suitable for tree planting. The area under this category accounts for 18.3 M ha; if this area is excluded from the total area of the above hill districts, the forest cover in the hill districts comes to 52.4% (Fig.-1).

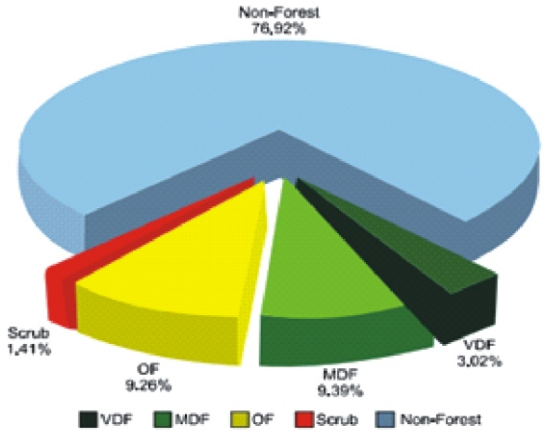

Fig.-1 : Forest cover of India (FSI).

Achieving 33% Forest and Tree cover

In the fifth five-year plan (1974–79), the Planning Commission set a monitorable target of achieving 25% forest and tree cover by the end of 2007 and 33% cover by the end of 2012. The present forest and tree cover of the country is 21.0% (FSI 2009). It is estimated that to achieve the set target by 2012, a total of 33.6 M ha of additional land must be brought under forest and tree cover. The current rate of tree planting in the country is about 1.16 M ha per year, so achieving the NFP goals would require substantial effort.

The eleventh five-year plan (2007–12) document has set a monitorable target of increasing the forest and tree cover by 5% of the total geographical area. This would require an additional cover of about 16 M ha. Out of this, 5 M ha could be brought under the tree cover within the recorded forest area, while the rest is to be supplemented through agroforestry, farm forestry, and social forestry programs

Classification of Forest

The forest cover is broadly classified into 4 classes (Table-1), namely very dense forest, moderately dense forest, open forest, and mangrove (Fig.-2). The classification of the cover into dense and open forests is based on internationally adopted norms of classification. It has not been possible to further segregate the dense forest into more classes owing to the enormity of the work of ground validation and the limitations of methodology. Mangroves have been separately classified because of their characteristic tone and texture and unique ecological functions. The other classes include scrub and non-forest. These classes are defined below.

Challenges to Achieve 33% Forest and Tree cover

The Government of India has drafted a 20-year National Forestry Action Programme (NFAP) for achieving the

Table-1: Broad classification of forest cover.

Classification Scheme

Very dense Forest	All Lands with tree cover (Including mangrove cover) of canopy density of 70% and above	
Moderate Dense Forest	All lands with tree cover (Including mangrove cover) of canopy density between 40% and 70% above	
Open forest	All lands with tree cover (Including mangrove cover) of canopy density between 10% and 40%	
Scrub	All forest lands with poor tree growth mainly of small or stunted trees having canopy density of less than 10 percent	
Non-Forest	Any area not included in the above classes	

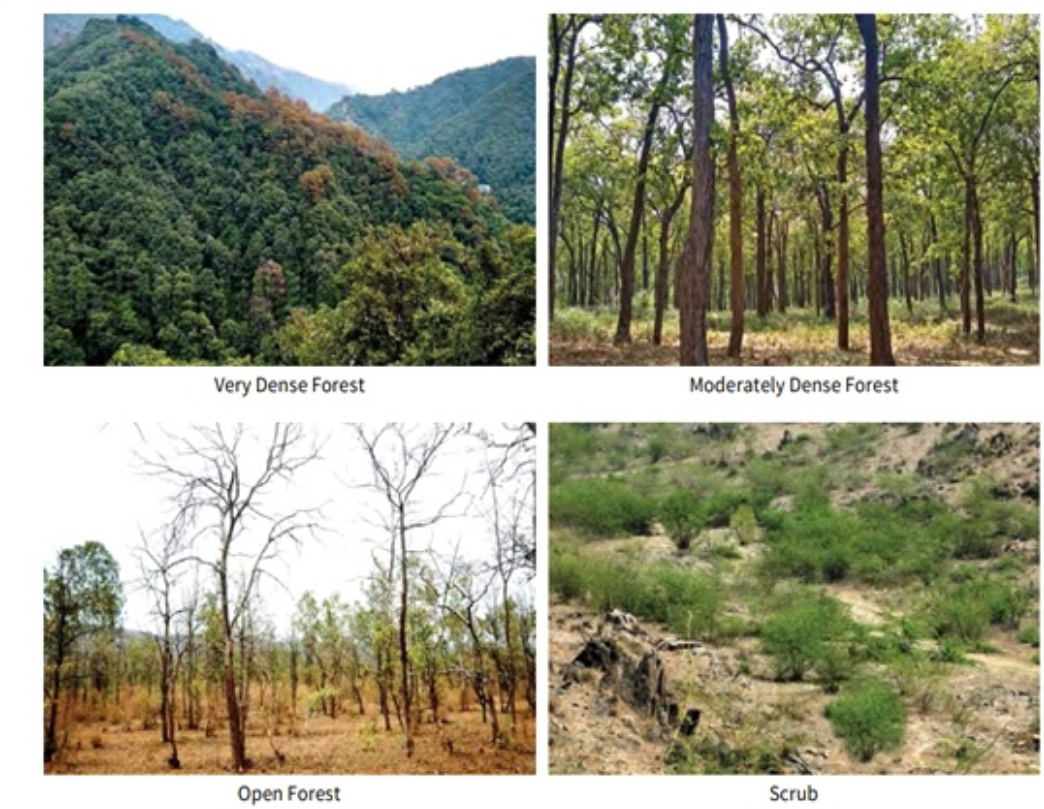

Fig.-2 : Different forest cover classes.

policy target in 1999 (MoEF 1999). The program, with a financial projection of about 26,463 M US dollars, addresses the issue of financial resources as well as capacity building and technology transfer for achieving the policy objectives, including forest cover targets (MoEF 2007). The National Forest Commission (NFC), set up in 2003, recommended that states with a forest cover more than the NFP target should be provided with special incentives to maintain the area under forest cover (MoEF 2007). The twelfth Finance Commission has also recommended an additional grant of 197 million US$ spread over the period 2005–2010 to the State and UTs for the maintenance of forests. However, whether these initiatives succeed and to what extent, are yet to be seen. Earlier also some initiatives were taken up but with mixed results. For example, during 1980, various social forestry programs were started to increase the area under forest cover, but their overall impact was not encouraging. Setting up of the National Afforestation and Eco-Development Board (NAEB) in 1992 was another step towards achieving the goal. The National Wasteland Development Board (NWDB) was created in 1986 to afforest wasteland outside forest areas through various schemes (MoEF 2007) and many changes with increase in forest cover in various states happen over a period of time (Fig.-3).

The target of 33% of forest cover should not be an absolute figure but should be flexible depending on the situational and contextual aspects of the forest resources. A more meaningful parameter would be able to assess the quality of the forest state, its density, its regeneration potential, and trends in the resource quantities and values. Similarly, for forestry schemes meant for poverty alleviation and or improving the livelihood of the rural

Fig.-3 : Different forest cover classes.

population, it is not the extent of forest area that matters to the village communities, but rather a sustainable yield of a variety of forest products with different values, including non-timber forest produce is what is desirable.

Conclusion

A valid and scientific reason was sought for the genesis of the national 33% target for forest cover in India. The figure has emerged from the background of the NFP of India, 1952, when the then forest policy-makers, after analyzing the existing forest cover in various countries and regions of the world at the time, arrived at this target. However, even if this target were achievable, it would be an extremely difficult task considering constraints on availability of land and other resources for this purpose. The question arises whether it would be a better alternative to adopt a more realistic and therefore attainable target of say 25 or 30%, and to focus on improving quality of growing stock of the remaining forest. As the Planning Commission has indicated, increasing the FTC by another 5% would require plantations over 16% of land, out of which 5% of land is available inside the reserve forest area, and a further 11% would have to be found outside the forest area, as agroforestry or farm forestry plantations. Therefore, perhaps the NFP could prescribe raising the FTC by5% over the existing figure taking the cover of the year 2005 as the baseline. The environmental and ecological services obtained from a degraded and patchy 33% of FTC could be attainable from 25 or 30% of relatively good condition forests. This would require a rethink at the policy level. The figure would be decided after a great deal of consultations and brainstorming among all the stakeholders, to ensure it is realistic, attainable and meets the approval of most stakeholders and the general interest of the country.

The review of the NFP by Indian Institute of Forest Management (IIFM 2001) has suggested to resolve, protect and improve the environment and forests of the country by initiating key programs including forest protection and afforestation, JFM, forest fire control measures, treatment of drought prone areas, strengthening of infrastructure, wildlife conservation, pollution control measures and implementation of environment law. But much of these activities are not justified or well-integrated within the forest policy cycle. A new or revised NFP proposal is required to combine the top–down and bottom–up approaches for NFP implementation for a 20–25 years strategy on the Concept of Forestry Development but NFP draft, 2018 will be going to sort out many issues. The National Forestry Programme at every 10 years can oversee the development and transformation of the suggested activities at various management levels; this will ensure a systematic strategy relationship among various

management levels and also coordinate mechanisms and procedures for conflict resolution. The National Action Plan (NAP) every 5 years should be integrated with other national strategy partners and collect information, and evaluate rapidly changing areas. Monitoring the critical forest area loss with the use of satellite remote sensing and GIS would assist in this regard. (Joshi *et al.,* 2010).

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