

Biodiversity Planning Support Programme Integrating Biodiversity into the Forestry Sector

India Case Study

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I INTRODUCTION

This report forms part of the work programme of UNEP's Biodiversity Planning Support Programme (BPSP). The BPSP is aimed at providing assistance to countries as they prepare their NBSAPs. The current case study is an overview of how biodiversity concerns have been integrated into forestry operations in India.

The remainder of this report is divided into three sections. Section II deals with the history of forestry in India, and the National Forestry Action Plan. Section III looks at the status of biodiversity and its conservation in India, biodiversity and planning and biodiversity planning (the NBSAP). Section IV explores the links between forestry and biodiversity.

II OVERVIEW OF FORESTRY IN INDIA

The history of forestry in India is the subject of lively and intense discussion, in both academic and activist circles.

Forestry as a formal sector in India came into existence only during the colonial period. Prior to this, management of or extraction from forests in a systematic and regular manner was not known. Indeed, the concept that forestlands belonged to the state made its appearance in India under British rule. The revenue department carried out extensive surveys of cultivated and forestlands, with a view to assessing taxes. In 1865 the Indian Forest Service was created, from which time control over forests became more systematised. The 1878 Forest Act laid the legal bases for the demarcation of forests as state property. The most commercially valuable tracts were chosen, and often taken over from private ownership (Khare *et al.*, 2000)

At the same time, environmental interests such as regulating water supply were also presented as justification for the crown take over of forests. There is considerable historical debate as to whether these statements were merely a garb for base commercial interests of the colonial state, or a genuine concern for environmental functions.

The trend of 'annexation' of forests continued after independence in 1947. In the first four years of independence, 28.02 million hectares of forestland was added to the notified forest area (Khare *et al.* 2000), as all uncultivated land once under the ownership of the princely states came under the Government of India. Of this, the larger tracts were given over to the Forest Department. In addition, laws were passed during the early decades of independence that enabled the state to acquire forests previously privately owned.

What this meant was that the management and ownership of forestlands, hitherto to a large extent in the hands of the people living in and around them, was taken over by the state. To varying degrees, this meant a loss of livelihood resources, either fuel, fodder, or even direct sources of nutrition. In some cases the takeover led to deforestation, wherein owners of forestland threatened with the state takeover logged large parts of the standing biomass to minimise their own losses. Historical and other research has shown that people whose livelihoods are dependent on forests and their

diversity are more mindful of conserving forests than a simple view of their 'poverty' would seem to suggest. The loss of community stewardship of forests was thus a blow to the conservation of India's biodiversity in many ways.

Categories of forest areas:

The 1927 Forest Act, still in force, divided India's forest *lands*¹ into three categories:

1. Reserved Forests: no activities are allowed within these unless specifically permitted.
2. Protected Forests: these are subject to a limited degree of protection, and activities not specifically prohibited are allowed in these areas.
3. Unclassed Forests: no definite categorisation into protected or reserve forest; these are the most degraded forests (Kothari *et al.*, 2000)

The quality of forest cover is separately considered, and the data provided by the Forest Survey of India has three categories of forests:

- **Dense forests** with canopy cover of 40% and above,
- **Open forests** with a cover of between 10 and 40%, and
- **Mangroves** – which are a salt tolerant forest system found in tidal and inter-tidal zones.

These categorisations are not in any way tallied against the more administrative divisions of forestlands, and indeed data is not collected in this manner. *Forest cover* is considered almost independent of *forest area*, the latter being the area legally designated as forest, whether or not it contains tree cover. At the same time, calculations of *forest cover* (lands with tree cover, including plantations on non-forest government lands and private farms and common lands) do not make any distinctions on whether the area under tree cover is natural forest (as opposed to say plantations), and does not indicate distinctions within the categories. For example, a range of 40-100% forest cover under dense forest is quite large, and changes within this range could indicate significant developments in the health and status of the forests, but information is not disaggregated in this way (Khare *et al.*, 2000).

Institutional structures relating to forests:

An amendment to the Indian constitution in 1976 made forests into a concurrent subject. This means that both the state government and the central government now have the power to legislate in relation to forests, and in case of a conflict, the central legislation takes precedence. Prior to this, forests were subject to only the jurisdiction of the states.

A Forest Service (the Indian Forest Service at the national level) holds direct charge of India's forests. In the states, the higher rungs of the forest bureaucracy are staffed (e.g. at the decision-making levels) from within the state's forest service and by individuals from the Indian Forest Service. Field level officials derive from the state itself.

¹ 'Forest lands' are not necessarily forested. The term instead applies to a patch of land 'owned' by the forest department. Forest cover is measured as a separate entity from forest land, and the two are overlapping sets.

At the central government, responsibility for forests is in the main vested with the Ministry of Environment and Forests (MoEF). The MoEF is entrusted with the responsibility of ensuring that the central legislation such as the Forest Conservation Act, and the Wildlife Protection Act are adhered to.

Economic contribution

The contribution of forestry and logging to the GDP has declined from 2.7% in 1980-81 to 1% in 1996-97. However these figures reflect only the marketed goods whose prices already exist in the market. This means that a large chunk of the use of forest products, in the form of components of the survival strategies of the poor, are not accounted for.

Only about 10% of the total timber produced in India goes into large scale industry, the remainder is used for domestic needs (including firewood, agricultural implements and construction). Of this, the pulp and paper industry is the major consumer. (Khare *et al.*, 2000)

Stakeholders

The major stakeholders of India's forests can be divided according to the major uses of forests.

Communities living in and around forest areas can be dependent on forests for the fulfillment of direct needs such as fuel and firewood, building and construction materials, nutrition, and as an income generation sources from the small scale processing of forest products. The group of peoples for whom forests serve this kind of purpose can then be referred to as one group of stakeholders. Historically this group has gained vast amounts of informal subsistence resources from forests, for the most part in a sustainable way. The imposition of state ownership over forestlands deprived these communities of many rights of access to forestlands and of many subsistence resources as well. The trend of dispossessing those who most depend on forests and may thus have the largest contribution to conservation had continued in independent India till the most recent policy statement of 1988. Even so, the transition to conservation and peoples' livelihood imperatives has been slow and painful.

Dating back to the colonial period, and more visibly in recent times, these communities have often organised themselves to lay claim to their rights of use over forest areas, resist state ownership, and/or protect and regenerate the degraded forests they closely depend on.

Industry has two dimensions - as a consumer of forest materials (primarily for paper and pulpwood, also other uses of timber), and as a claimant of forestlands for activities such as mining. In its role as a consumer of forest materials as raw materials, industries have enjoyed great benefits from India's forests. For the larger part of the time since independence, industry has had disproportionate access to forest materials. The recent shift in policy against such differential access is being contested by industry in various fora (Khare *et al.*, 2000).

Government has a mixed role with reference to forests. Government serves as caretaker of forests for conservation, as well as the agency holding ownership of this resource and using it as an economically productive resource/for its contribution to the GDP. The Forest Departments, at the state and central level, are mostly oriented to production forestry model, though there is also a Wildlife Wing in the Forest Department. This Wildlife Wing is in the main charged with the management of the Protected Areas - the primary method of in-situ biodiversity conservation adopted by the State.

Activists of varying mindsets are also now active participants in the forests issue. While there are many hues of opinion within the broad categorisation, it might be easiest to explain the range of opinions in terms of the two poles: the conservation oriented activists and the people oriented activists. The conservation-oriented set favour the protection of forest areas as PAs, in the interests of wildlife and as a response to biodiversity loss. The other end of the spectrum is the social activist set who espouse the concerns, needs and autonomy of local forest dependent communities as paramount. Many shades of opinion on environmental and social questions, including biodiversity loss, fall between these two extremes.

Major shifts in policy

This section outlines with a brief analysis the main thrust of forest policy in India, which witnessed three significant changes in the period since independence. The implications of these policies for biodiversity are analysed in a subsequent section.

The first policy statement after independence was issued in 1952, wherein a ‘national interest’ was stated to be the main objective of the use/management of forests, and local communities’ use of forests seen as an impediment to the better utilisation of forests for the nation. This national interest was embodied in defense, communication and industry needs. Sustained production of timber, and revenue generation through forestry were the major thrusts of the 1952 policy.

A second policy statement in 1976 emanated from the National Commission on Agriculture, which laid down that commercial production to meet industrial needs should be the main aim of the state forests, and ‘private’ needs such as firewood be grown on privately owned or common village lands. The modicum of importance given to conservation imperatives in the 1952 policy, was done away with the assertion that “production of industrial wood would have to be the *raison d’être* for the existence of forests.” The second component of the policy – social forestry- laid out that since forest lands were to be used only for industrial production, fuel and other domestic needs from forests would have to be met by plantations on private lands. This was then encouraged through extension programmes across the country. While peasants did take to growing trees on farm and other private land, their aim was to supply industries with this wood rather than use it for domestic consumption, as the former had a higher revenue earning potential. Also, the social forestry model left NTFP needs unfulfilled.

The most recent policy statement in 1988 represents a significant departure from the earlier two policy statements. It states that forests are meant to conserve soil and the environment, and to meet the subsistence needs of local people. Direct economic

benefit from forests has been subordinated to the maintenance of ecological balance and environmental stability. There are various aspects of this policy statement, including one which directs that fuelwood needs be met in part from what used to be production forests geared exclusively to timber, and another that appears to be looking to farm forestry for meeting industrial demand- plantations raised either by the industries themselves or from other private forestry. While commendable in itself, the implementation of this policy proves to yet be a complex and often tangled task (Khare *et al.*, 2000, Kothari *et al.*, 2000).

To some extent, implementation was helped by the issuance of a 1990 circular /resolution on the management regime now widely known as JFM- Joint Forest Management. The basic tenet of JFM is the protection of degraded forestlands by local villages, organised into village forest organisations, which allows regeneration of the forest. A portion of the benefits such as timber, poles, and some non-nationalised NTFPs that accrue after the regeneration will go to the villages that protected the forest.

The reasons for this shift in the policy are unclear. According to one respected bureaucrat and academic, the fact that the policy shift took place indicates that there was no political weight against such an orientation in forest policy (Saxena, 1999). He also feels that the intellectual movements criticising the workings of India's forest policy and the effects on forest dependent peoples has developed only in the past three decades while social movements against state control of forests began as early as the 18th century. While this indicates that intelligentsia and that shade of public opinion may not have been the operating factor for the policy shift, the reasons for the shift are still not clear. It is possible that this policy shift formed part of a trend towards greater decentralization and conservation oriented actions in the 1980s.

National Forestry Action Plan 1999

The Ministry of Environment and Forests, Government of India, released the National Forestry Action Plan (NFAP) in late 1999. This is a two volume document, with an additional executive summary. The NFAP process was funded by the UNDP FAO, and got under way in 1992-93. The planning process itself was implemented by the MoEF. In nutshell, the process of developing NFAP included:

1. Forestry Sector Review: taken up by individual consultants/consultancy firms for individual States/Union Territories.
2. The State Forestry Action Programmes: submitted by different State Governments / Union Territories and facilitated by teams of consultants.
3. Consultancy Reports and Contractual Studies: by international and national consultants fielded for a series of review reports and theme specific studies.
4. Regional Workshops: Regional Workshops were held to finalise state wise draft Action Plans.

The final NFAP document was compiled by the Forest Policy Division in the MOEF. The thematic studies contracted at a national level were the following:

- Forestry in Land Use.
- Extent, Composition, Density, Growing Stock and Annual Increment of India's Forests.
- Silviculture and Forest Management

- Conservation of Forest Eco-systems
- Report on Biomass
- Assessment of NTFP Resources of India
- Agro-forestry practices
- Pasture and Fodder Management
- Desertification Control
- Forest Seed Technology
- Forest Protection
- Rural Small Scale Forest-based Industries
- Marketing and Pricing of Forest Produce in India
- Wood Substitution
- Rural Sociology
- Women in Forestry
- Common Property Resource
- Forestry Extension
- Database Management
- Software Development and Forest Management

The prime objective of the NFAP is stated as “to achieve sustainable development and conservation of forest resources”, through the involvement of various stakeholders. In this it is in tune with the objectives laid out in the 1988 Forest Policy. There is also a significant recognition that problems in the forestry sector are not primarily technical but social, political and economic. However this recognition does not mean that the socially most beneficial or equitable path will be taken to deal with the problems assailing India’s forests. The NFAP also contains contradictions which might make its implementation, or at the very least the fulfillment of all its objectives difficult. While on the one hand the NFAP espouses causes like the need to involve tribals in forestry, changes in tenurial policy in favour of local communities, and the need for a focus on women and disadvantaged groups, on the other the commercial imperative and enhancing productivity are still stated as major aims (Kothari, 2000b).

There are however, some internal contradictions in the NFAP, which might make its implementation difficult. Some of the recommendations of the NFAP would need considerable changes in the existing forest laws of the country. This is a point the NFAP itself makes, but does not go into great detail. For instance its recommendations on wildlife farming (Vol. II Box 2.3) would require changes to the Wildlife Protection Act. In addition, some of these recommendations (especially on biodiversity conservation and local community tenurial security) would require changes in the institutional structures handling forests, a widespread re-orientation of the existing forest bureaucracy, and changes in policies and laws that govern the extraction and use of resources in forest lands. (Kothari 2000b; Rathore, 2000).

As far as biodiversity is concerned, the NFAP stresses the importance of conservation of wild biodiversity. The means for such conservation is however mainly through improving the implementation of the conventional management model of protected areas (PAs). The structure of the PA model and its relationship to Forests is explained in the following section.

The NFAP document does not contain detailed actions on how to achieve the goals that have been set out. It is possible that these were instead contained in the State Forest Action Plan documents that it was not possible to obtain.

III BIODIVERSITY CONSERVATION AND PLANNING

Current state of biodiversity in the country and mapping of biodiversity in forest ecosystems

India is a mega diversity country, containing two biodiversity ‘hot-spots’. Formal assessments of diversity in the country have been restricted to the regular surveys carried out by the Botanical and Zoological Surveys of India. These surveys have been carried out according to administrative divisions such as district boundaries. It is thus difficult to ascertain the precise levels of diversity in defined forest areas except by extrapolation from the data for the larger administrative boundary in which they fall. That said, managers of PAs do carry out censuses for certain species from time to time (Kothari et al. 1989), though not comprehensive and directed *biodiversity* assessments. It is unclear whether the censuses are a regular or sporadic exercise across all PAs.

An approximation of the levels of biodiversity loss in India, is presented below.

Biodiversity Element (indicative examples)	Range Native to India	Destroyed/Under Threat
Ecosystems		
Forests	200 types, scrub to rainforest	Approx. 50% wiped out over last century
Wetlands	8 types, seasonal floodplains to lakes	One-third drained out, 70% polluted
Agro-ecosystems	20 agro-ecological zones	Mass homogenisation across the plains
Coasts	Several types of beach, mangrove, coral reef systems	40% of mangroves wiped out; major portion of coral reefs bleached or silted
Wild species		
	47,000 plant and 89,000 animal species	
Flowering plants	17,500 species	At least 20 extinct; 10% threatened
Mammals	390 species	2 or 3 extinct; 20% threatened
Birds	1232 species	2 extinct; 5-10% threatened
Insects	57,000 species	No estimate
Domesticated taxa		
	167 crop and 10 livestock species; tens of thousands of varieties	
Goats	20 breeds	50% threatened
Sheep	40 breeds	30% threatened
Poultry	18 breeds	100% threatened
Crops	Thousands of varieties of several hundred species	No estimate, but probably in thousands
Ravi Chellam 2000. <i>Table contributed by Ashish Kothari based on information from Zoological Survey of India, Botanical Survey of India, National Bureau of Plant Genetic Resources, and other sources</i>		

Biodiversity Planning

Biodiversity has not yet had a place in the national planning framework as an independent subject. Environment, Forests, Water and Agriculture have been the categories under which the subject of biodiversity has received attention from the Planning Commission, in charge of preparing the Five- Year Plans that are an integral part of the Indian economy. For the 10th Fiver Year Plan, it was suggested that a dedicated working group be set up for the subject of biodiversity. This suggestion did not however come to fruition in the form of a working group.

The Ministry of Environment and Forests published a **National Policy and Macro-level Action Strategy** for biodiversity in 1999. This Macro-Strategy has served as the first dedicated policy statement to biodiversity was prepared by the team dealing with Biodiversity from within the Conservation and Survey department of the Ministry of Environment and Forests, following consultation with numerous other departments such as Agriculture, Water, Rural Development, Science and Technology, Power, Non-Conventional Energy Sources, and Commerce (for the trade related aspects of biodiversity conservation).

In early 2000, India began an extensive process of preparing a National Biodiversity Strategy and Action Plan (NBSAP), based on the Macro-Strategy mentioned above.

The NBSAP project entails formulation of state level, sub-state level, thematic, and inter-state eco-regional action plans, to be prepared by different working groups and nodal agencies. These various levels of action plans (or Strategy and Action Plans, SAPs) will come together in the national SAP. Thus, the NBSAP as it stands today will produce not just a national action plan, but a series of action plans at different conceptual and geographic levels, which will include considerable detail. These plans will also contain project proposals for further action.

The scope of the NBSAP includes wild and domesticated biodiversity, at both species and systems levels. The genetic level is not explicitly mentioned, though it is understood that this dimension is covered under the species level.

Subjects under discussion in the preparation of the action plan include, *inter alia*, widening participation and discussion, reviewing development strategies and budgets, and the socio-economic and fiscal dimensions of biodiversity conservation. International issues, including India's being a signatory to various environmental conventions, is a cross cutting theme all executing agencies are meant to consider².

The NBSAP gives equal importance to the process as to the final product. The method employed to do this is two-fold, the first being the decentralisation of the planning process to different levels. The other aspect of the process is that plan preparation is geared to be as broad based and participatory as possible. Agencies are instructed to hold public hearings, invite participation through public announcements, invite submissions/contributions to the process, and make use of local languages as far as

² Other cross cutting themes are: People's participation; Empowerment and equity issues; including the use of indigenous knowledge and practices; Gender; Participation of the corporate sector

possible. A Call for Participation in the NBSAP has been issued by the central coordinating team, and has received over 400 responses so far.

The NBSAP process has made an explicit effort build on rather than duplicate the existing action planning/policy statements pertaining to biodiversity. Thus, the NFAP was examined in detail by two senior members of the NBSAP team, and a detailed analysis drawn up of the points of convergence and gaps. Similarly other policy statements such as the National Conservation Strategy of 1992 was analysed by members of the central team. These analyses have been passed on to the plan preparation agencies, and will also be taken into account in the formulation of the national plan.

As the NBSAP is being formulated at various different levels and by different agencies, its monitoring and accountability systems for the National BSAP are not yet established. Along with the plan preparation guidelines suggested to the executing agencies preparing the various levels of plans, a detailed concept note on the importance of monitoring and assessment and various methods for the same have also been supplied. Building from the elements of monitoring that will emerge in various plans, and also based on the synthesis national BSAP, monitoring systems will be outlined. The broad participatory process of the NBSAP, wherein the process is as important as the product, will in all probability constitute an accountability system in itself. The participation in and ownership of the plan generated by such a process will hopefully build a groundswell of public opinion that will push for proper implementation.

The existence of site specific-plans, prepared by local agencies relatively familiar to the local populace, will also hopefully make the implementation, and monitoring thereof, easier to keep track of.

The Convention on Biological Diversity

India became a signatory to the CBD in December 1993 and ratified the Convention in February 1994. The MoEF was nominated the focal point for the CBD.

Much different environmental legislation exist in India to aid in the conservation of biological diversity. These are:

- a) The Wildlife (Protection) Act (1972), Amended 1992
- b) Forest (Conservation) Act (1980)
- c) Environment (Protection) Act 1986
- d) Environment Impact Assessment Notification (1994)
- e) National Environment Tribunal Act (1995)
- f) National Environment Appellate Authority Act (1997)

To deal specifically with CBD principles relating to access to genetic resources, a proposed Biodiversity Bill has been under preparation and discussion. Discussions on the need for such an act, and a proposed format and provisions had been under way since early 1994. Two national consultations were also held where the nature of this Bill was discussed, and after many revisions and iterations, the Bill was presented in Parliament in 2000. A Joint Parliamentary Committee is currently accepting depositions on the bill, and is expected to amend its provisions based on depositions received.

A Joint Parliamentary Committee on the proposed Plant Varieties (Protection) Act is also receiving depositions. This proposed legislation deals with benefit sharing in the context of development of new agricultural seed varieties.

A cell within the MoEF is dedicated to looking after biodiversity issues, and works in collaboration with other divisions of the MoEF.

Protected Areas

The main official method of conserving biodiversity in India has been very much in line with the exclusionary tack taken the world over. Protected Areas (PAs) are notified by governments, and by keeping human pressures off patches of habitat are meant to conserve biodiversity.

In India these PAs are drawn mostly from within notified forest areas. About 90% of the PAs consist of nationalised forests. PAs are established under the 1972 national Wildlife (Protection) Act, though prior to the enactment of the Wildlife Protection Act some states did have legislation enabling PAs to be set up. Once declared a PA, the rules of the WLPA take precedence in the area over the Forest Act. There are three categories of PAs:

- National Parks where no utilisation of forest resources is permitted,
- Wildlife Sanctuaries where the protection is of a lower level and some utilisation activities are allowed, and
- Closed Areas, which may be declared closed to activities such as hunting for a specified time.

The latter category has not been much used, and the PA system is widely understood to consist of National Parks and Wildlife Sanctuaries. The management authorities in charge of PAs comprise the Wildlife wing of the Forest Department. Most PAs are terrestrial forest ecosystems; legislation to accommodate other ecosystems under the rubric of biodiversity conservation came about in the 1980s (e.g. the Environment Protection Act (1986)). The institution of the PA has had a role to play in safeguarding habitats from industrial and commercial interests, but are still beset with problems such as continuing conflicts with communities living in or around the PAs (Kothari *et al.*, 2000), and shortages of staff and resources that are endemic to many PA systems in the developing world.

IV INTEGRATION OF BIODIVERSITY IN FORESTRY

Import of forestry activities so far on biodiversity

The focus of forestry in India historically has been on production, mainly of timber. As the function of forests in the main was to provide raw material for various uses, mixed-species forests were replaced with a small number of more valuable species. These could be species meant for use in the manufacturing or other needs of the empire, such as railway sleepers, or meant simply for re-export. In the post independence period, this trend has continued, and teak and eucalyptus in particular were much favoured species. The 1976 policy actually even advocated a “change over

from the conservation oriented forestry to a more dynamic programme of production forestry. The future production programme should concentrate on clear felling of valuable mixed forests, mixed quality forest and inaccessible hardwood forests and planting these areas with suitable fast growing species yielding higher returns per unit area.” (GoI, 1976 in Khare *et al.*, 2000). It is thus possible to see that the integration of biodiversity concerns in forestry operations left much to be desired till very recently. The emphasis on monocultures might in fact be stated to be inimical to biological diversity. At the same time, the institutional cadres meant primarily for forest management and notified forest areas as PAs, have made significant contributions to wildlife and biodiversity conservation.

Thinking on strategies and solutions in the country at present

India is home to a rich and varied environmental tradition. It is thus an extremely difficult task to encapsulate thinking on strategies for conservation. The range of thought can perhaps be reflected in the defining opinions that underlie the thought on solutions for biodiversity conservation – within and outside forests.

One set of opinions on the conservation of biodiversity in the country holds that it must proceed through better management, especially in the case of forests. Better management in this case can easily mean exclusion of human activity. At the same time, there exists a spectrum of viewpoints on conservation which envisage the participation of local people in conservation strategising and activities as instrumental for biodiversity conservation. Participation of local people is viewed variously as a necessary tool for conservation, and as a democratic imperative, the wisdom of decentralized decision making and sense of ownership having pride of place in the latter argument.

On the central issue of biodiversity in forests, it is suggested that better coordination between the divisions of the MoEF responsible for forests and those responsible for other environmental aspects be better coordinated. The current NBSAP is making some attempts in this direction. The Inspector General of Forests is part of the Steering Committee of the NBSAP and in addition the Forest Department is the main executing agency for drawing up the BSAP in many states. In all cases, Forest Department personnel are part of the committees overseeing BSAP preparation. In addition to there being a strong forest focus in the plans that are drawn up, it will hopefully also lead to a greater awareness about the different issues affecting biodiversity, especially that outside forests.

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