

# **Let Our Rightful Forests Flourish**

**Anjanagandhim, surabhim, bahvannaam, akusheevaalam  
Pr aham mruganaam maataram, aranyaaneem ashamsisham**

***I praise the forest goddess, fragrant with incense, mother of  
wild life, who, even though uncultivated, produces an  
abundance of food!***

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**With respect and affection, I dedicate this work  
To my gurus and companions on the ecological journey  
Salim Ali and V.D.Vartak**

## Overview

In India today it is in the tribal lands that nature is most bountiful. Sadly, the human communities coexisting with this wealth of nature are afflicted by poverty and malnutrition. Clearly we must transform the system that has created this equation of riches of nature with deprived human communities. Of course, we must conserve, and, indeed, rejuvenate nature; but surely not by treating our own people as enemies. The many different components of our own society and our system of governance are undoubtedly inflicting wounds on the natural world today. So, all of us must learn to deal with natural resources in a disciplined and prudent manner. But this cannot be achieved merely through imposing restrictions on communities living close to nature. After all, such communities do have a greater stake in the health of the environment. However, it is only in exceptional cases that local people are today taking good care of the natural world. This is because, beginning with the British times, people have been deprived of all rights over natural resources, and these have been dedicated, initially to meeting colonial demands and lately to serving the industrial and urban interests. We have made available to plywood industry giant wild mango trees, which yielded fruit famous for pickles worth hundreds of rupees every year, for as little as sixty rupees. Such perverse incentives have destroyed people's motivation for guarding nature.

Fortunately the tide is turning. Joint Forest Management, Extension of Panchayat Raj to Scheduled Areas, Protection of Plant Variety and Farmers' Rights Act, Biological Diversity Act and the Scheduled Tribes and other Traditional Forest Dwellers (Rights over the Forest) Act have conferred substantial rights over natural resources to local communities. Along with the rights, of course, comes the duty, the responsibility of using this natural wealth prudently, in a sustainable fashion. At the same time the National Rural Employment Guarantee Scheme has opened up opportunities to earn a livelihood, while protecting nature, and rejuvenating natural resources. If we employ the provisions of all these various acts in an integrated fashion, it is surely possible to accomplish a great deal.

It must be admitted of course that many people have misgivings about the Tribal Forest Rights act. They fear that:

- The rights conferred on tribals and traditional forest dwellers would result in large scale tree felling.
- The implementation of this act will adversely affect wildlife and biodiversity.
- Tribals and forest dwellers would not be in position to prudently manage Community Forest Resources.
- Outsiders will capture the land of forest dwellers and encroach on lands rich in natural wealth.

But let us ask, what may we expect, if in place of local communities, we give more powers to the state machinery? Will this lead to better protection of the forest cover, of wildlife, and halt encroachment of outsiders? Consider our experience of last six decades of the independence, leaving aside the awful destruction of the continent, which the British described as an ocean of trees on their first arrival, during the colonial period.

- When nearly 11 % of the country's land surface under privately owned forests was made over to forest authorities, delays and corruption resulted in destruction of the bulk of this tree cover

- Whenever roads reached earlier inaccessible forest areas due to developmental projects, there were large scale fellings of state forests

- Forest based industries were made available bamboo, or huge trees for pulpwood, at throw away prices and promptly exhausted these resources

- Forest Development Corporations turned themselves into (in words of Dr. Salim Ali and Mrs. Indira Gandhi), Forest Destruction Corporations and clear felled huge tracts of rich natural forest without ensuring its replacement by productive forests.

- Forest departments played a major role in destroying the sacred groves under many guises

- With people viewing forest authorities as their enemies, the notorious criminal Veerappan remained at large for two decades, despite killing several government officials, and devastated the sandal wood trees and tuskers of Karnataka and Tamilnadu.

- All tigers were poached out of the very well funded Sariska Tiger Reserve. Yet the government machinery did nothing beyond disseminating false information on the number of tigers.

- The anti-people policies of forest authorities have landed rich wildlife habitats like the Keoladev Ghana National Park in serious trouble.

Consider, on the other hand, what our people have accomplished, despite the powers that be continually giving them false promises, trying their best to weaken people's organizations, and trying to co-opt people in the corrupt system.

- All over the country keystone ecological resources like pepal, banyan, gular trees survive in good numbers.
- Even today we are discovering new flowering plant species like *Kuntsleria keralensis* in sacred groves protected by people in the thickly populated coastal Kerala.
- Monkeys, peafowl still survive in many parts of our country.
- Numbers of chinkaras, blackbuck, nilgai are actually on increase.
- People play a leading role in arresting poachers of animals like blackbuck.
- In many parts of Rajasthan people are protecting community forest resources like "Orans".
- In Nagaland many community forests are under good management.
- Many Ban Panchayats of Uttaranchal are managing forest resources prudently.
- Many village communities of Central Indian belt are managing well forest resources over which they earlier enjoyed nistar rights.
- A village like Halakar in Karnataka is still preserving its village forest well in spite of many attacks by state machinery.
- Peasants of Ratnagiri district have ensured good regeneration of their private forests
- Thousands of self initiated forest protection committees of Orissa have regenerated forest brought under community protection.

One must also emphasize that the excellent present day forest cover of Switzerland has regenerated entirely on community forest lands. Our plea therefore is that since the TFRA is now a *fait accompli* let us set aside our misgivings and strive to see what may be accomplished through a positive, constructive approach. In this context we can visualize the following four programs:

1. Restore a diverse plant cover on Community Forest Resource lands employing a variety of species that would support livelihoods.
2. Set aside 5- 10% of Community Forest Resource lands for survival of natural biota on the pattern of sacred groves.
3. Sustain the cultivation of some of the traditional cultivars of crops on private lands made available under TFRA.

4. Sustain the cultivation of promising indigenous varieties of forest trees on private lands made available under TFRA.

After all it is the local people that benefit truly by sustaining the health of the local ecosystem. It is them that can guard and nurture these ecosystems most effectively. It is also they who possess locality specific knowledge of these ecosystems to manage them in a flexible fashion. Today we have a tremendous opportunity to work with the people and to protect and rejuvenate our natural resources, while, at the same time enhancing the quality of people's lives.

## **Part I: Background**

### **Introduction**

Today we are confronted with a tragic situation; where nature is rich, local people are afflicted by poverty and malnutrition, because they have been alienated from their natural resources. Clearly we must change a system that has lead to such an equation of wealth of nature with the poverty of people. Of course, we must conserve, and nurture nature, but this cannot be accomplished by treating people as foremost enemies of nature. Indeed, this is neither sensible nor is it just. It is no doubt true that local communities and outsiders, as well as our systems of administration, intentionally and unintentionally, abuse natural resources. But we cannot rectify this by imposing restrictions only on local communities. After all, local communities have a greater stake than others in the well being of natural resources in their own neighbourhood.

Even then, it is only exceptionally, that local communities take good care of local natural resources. This is because, beginning with the British rule, they were deprived of all rights over natural resources. These resources were then exhausted, first to meet the colonial demands, and more recently the demands of our industry and urban population. Giant wild mango trees that yielded fruit worth hundreds of rupees every year were given away to plywood industry for a mere sixty rupees. Such perverse management practices inevitably weakened people's motivation to conserve and sustainably use natural resources.

Fortunately the tide is turning. Joint Forest Management, Extension of Panchayat Raj to Scheduled Areas, Protection of Plant Variety and Farmers' Rights Act, Biological Diversity Act and the Scheduled Tribes and other Traditional Forest Dwellers (Rights over the Forest) Act have conferred substantial rights over natural resources to local communities. Along with the rights, of course, comes the responsibility of using this natural wealth prudently, in a sustainable fashion. At the same time, the National Rural Employment Guarantee Scheme has opened up opportunities to protect nature, and to rejuvenate the natural resources. If we employ the provisions of all these various acts synergistically, it is entirely feasible to accomplish a great deal.

After all it is the local people that benefit truly by sustaining the health of the local ecosystem. It is them that can guard and nurture these ecosystems most effectively. It is also they who possess locality specific knowledge of these ecosystems to manage them in a flexible fashion. Today we have a tremendous opportunity to work with the people and to protect and rejuvenate our natural resources, while, at the same time enhancing the quality of people's lives.

## **Birth Rights**

"Swaraj is my birth right," thundered Lokmanya Tilak "and I will have it". But there is another birth right of people that exists from even older times, and that is the right of access to water, land, forests and a healthy environment. As technology has progressed, those in power have been progressively taking away this most fundamental of human rights. The industrial revolution greatly accelerated this process. This revolution transformed more and more of resources that sustained livelihoods into industrial raw materials, and people were deprived of access to them. This process gathered strength in India after the establishment of British rule that drew its strength from the industrial revolution that they had pioneered.

Such conflicts were, of course, possible even in Pre-British India. But an edict of Shivaji Maharaj of around 1670 asks his officers not to unduly harass the populace: "Our Navy needs large timber as planks, beams and masts. This should be acquired by felling trees like teak from our kingdom as appropriate. Beyond this, the timber should be imported from outside. Trees like mango

and jackfruit are also of use to the navy. But these should not be touched within the boundary of our kingdom. After all, these cannot be grown in a year or two. Our people have nurtured them like their own children over long periods. They will be deeply hurt if they are cut. What is gained by hurting others can never last long. Rather, it constitutes a blemish on the ruler for exploiting the citizenry. Furthermore the land suffers in absence of these trees. Hence, this should never be permitted to happen. If there be an old, decaying tree, then it could be harvested after due payment to the owner”.

But this may be an exception. In 1730, Abhay Singh, the King of Jodhpur opened a lime kiln to build his palace. The fuel for this kiln was to be secured by felling Khejadi (*Prosopis cineraria*) trees from the nearby village of Khejadali. But these trees were sacred to the Bishnoi community of the village. When the felling began, women of the village hugged the trees. Many were killed in their attempts to protect their precious heritage. Finally the king had to give in and order that Khejadi trees will be protected throughout his kingdom. Half a century later, Tipu Sultan declared that a sandal tree growing anywhere in his kingdom to be royal property. He exercised this right over all trees, growing even on private farms and in house yards.

## **Community, private and state property**

Englishmen had great difficulty sustaining themselves on the meager natural resources of their own country, and by Middle Ages were exploring new avenues. It was these attempts that stimulated the development of modern science and technology. A major figure in these endeavours, Isaac Newton, was a contemporary of Maratha kings Shivaji, Sambhaji and Shahu. The resultant science and the science based technologies was their great strength. Employing these, they roamed the world oceans with their formidable navy. In building these ships, the British had destroyed their own oak forests. Along with such a depletion of natural resources, the property regime in Britain underwent a radical change. As with the rest of the world, the pastures and woodlands had been treated as community property in England as well. But beginning with 17<sup>th</sup> century, the feudal lords began to enclose these lands, claiming them as private property at the cost of village communities. This gradually became the law of the land and community ownership was rejected in Britain, with legal recognition only for private and

state property. It was this logic that the British later applied to the Indian context.

## **Drain of India**

There were three major claims that the British wanted to make on India; an exorbitant tax on cultivated land, agricultural produce such as cotton and indigo for the mills of Manchester and other British industry, and teak, sal and deodar from community lands brought under state control. The British had seen the teak ships of Maratha navy and wanted this timber to substitute for the exhausted oak of their own land. They defeated Tipu Sultan in 1799 and brought large tracts of southern peninsula under their own control. They greatly appreciated Tipu's claim over all sandal within his domain. The British adopted a two fold policy to access India's forest resources; state take-over of community lands, and claim over all teak trees as the property of British East India Company. At that time, a network of sacred groves clothed the country. This was destroyed as were the teak plantations of Maratha navy. But when the East India Company began cutting teak trees from farmers' lands, there was such an outcry that it was forced to close down its forestry establishment around 1825. The next three decades were a time of reckless felling of forests all over the country.

Grant Duff wrote a history of Marathas soon after their defeat in 1818. He begins by describing the scenery of the Western Ghats: "When ascending, and on gaining the summit of any of these passes (in the Western Ghats), the scenery which everywhere presents itself is of the grandest kind. Some idea of it may be formed by imagining mountains succeeding mountains, three or four thousand feet high, covered with trees, except in places where the huge, black, barren rocks are so solid as to prevent the hardiest shrub from finding root in their clefts. The verdure about the Ghats to the southward of Poona is perpetual, but during the rainy season, especially towards the latter part of it, when the torrents are pouring from the sides of the mountains, the effect is greatly heightened by the extreme luxuriance of vegetation". But when the British commissioned gazetteers of this region half-a-century later, it was evident that this luxuriant vegetation had been devastated by the greed of East India Company.

## Conservation or Confiscation?

A major challenge before the British after the war of 1857 was to tackle the discontent stemming from the forest destruction wrought by such policies of East India Company. So they resolved to institute a systematic forest management regime. The question was: where will the understanding needed for this purpose come from? The British had deforested their own lands; there was no tradition of forest management in their own country. So they turned to Europe. Parts of Europe were still forested. There was another major difference. In many parts of Europe community ownership still prevailed. An excellent example of this is Switzerland. This hilly country's forest cover had been largely decimated by 1860's. But when landslides began to devastate the land, people awakened, and began a concerted effort to grow back forest. Today Switzerland has an excellent forest cover. But all of it is owned by local communities; none of it by a state forest department.

So the British invited Dietrich Brandis, a German botanist to head the newly set up forestry establishment. A major question confronting Brandis was the extent to which village communities should continue to manage forests, and how much should be taken over as state property. Brandis favoured a major role for village communities. Many other government officials also supported him. Thus the Madras Revenue Department dubbed state takeover of forests as a "confiscation, not conservation". Shifting cultivation was another matter of dispute. At that juncture, it was widely prevalent, especially in hilly tracts. People cultivated millets for 2-3 years after clearing tree growth and burning the brushwood. They then moved to another patch, leaving the land fallow for 15-20 years to grow back the tree cover. Many British officials opined that this provided good livelihood for poor peasants. Besides, the peasants never completely cleared the forest, leaving mango, mahua, myrobolan and other such valuable trees standing. But the British tea-coffee estate owners opposed continuation of shifting cultivation. They said that unless shifting cultivation is forcibly stopped, they will never get any labour for their estates. Overall the economic interests of the British lay in rendering people resourceless, and dedicating forest tracts to grow timber for their military and construction needs. So they emphasized that community ownership is legally indefensible, and, overruling Brandis, took over all community land as state property (Gadgil, M. and Guha, R. 1992). Of course, they did leave considerable tracts of forested land taken over from

communities in charge of landlords who agreed to pay substantial land taxes. They also did not ban shifting cultivation in southern parts of Sahyadris to avoid spreading more discontent amongst Marathas who had fought them to the end. But they did take over tribal lands in northern parts of Sahyadris.

Brandis, upset at being overruled, offered to resign. So, to placate him, the British agreed to provide for declaring Reserve Forests as Village Forests, and handing them over to local communities for management. This provision was subsequently incorporated in the Forest Act of 1927 under Chapter 3, section 28. But almost nothing has been done to implement it so far. The tragic consequence of this policy has been that people, cut off from any involvement, have no stake in the health of publicly owned forest lands. They have only one option if they are to gain anything: encroach on forest land for cultivation. Since land so brought under cultivation could be taxed, the British did not care. But we are today reaping the bitter harvest of this policy.

When the Forest Land Settlement process was taken up, it provided for proper enquiry and recording of all uses by people. But the illiterate forest dwellers could not participate in it effectively, and in many places it became just a window dressing. Moreover, this enquiry was restricted to uses like fuelwood and grazing, with no mention of minor forest produce. Overall, the process of forest settlement was quite unsatisfactory. For instance, the Sholapur district Gazetteer written around 1880 mentions that forest settlement was carried out in a drought year, when a large proportion of people had emigrated in search of a livelihood. So a great deal of abandoned farm land was taken over as forest, resulting in great discontent.

In 1883, Mahatma Jotiba Phule graphically described the straits to which this reduced the peasantry. "In the olden days small landholders who could not subsist on cultivation alone used to eat wild fruit like figs and jamun and sell the leaves and the flowers of the flame of forest and mahua trees. They could also depend on village grazing ground to maintain one or two cows, or two or four goats, thereby living happily in their own ancestral villages. However, the cunning European employees of our motherly government have used their foreign brains to erect a great superstructure called the forest department. With all the hills and undulating lands as also fallow lands and grazing grounds brought under the control of the forest department, the livestock of the poor farmers does not have place even to breathe, anywhere

on the surface of the earth". All these policies provoked revolts by tribal leaders like Tantya Bhil and Birasa Munda in late nineteenth century.

## **Practices of prudent management**

It was necessary to justify this state takeover. So, the British contended right from the beginning, that there is little of value in Indian culture and tradition, that the natives are shortsighted and that it was the white man's burden to uplift them. They asserted that the prime responsibility of a Forest Officer was to save the people from their own improvidence. Of course, the British conveniently overlooked the devastation of forest in their own country. And, in reality, the white man's burden was his loot from the countries he had conquered.

There were many community based systems of natural resource management active in the pre-British times. Of these, the water management systems were permitted to function under the British regime, since irrigated land could be taxed at a higher rate. These collapsed after independence; hence, we have a good understanding of many such water management systems and it is acknowledged that a number of them were highly efficient. But there is little understanding of the community based forest management systems of the pre-British times. These were all declared illegitimate on the conquest of the British East India Company and there were systematic attempts to discredit and disband them. But there are some exceptions. For instance, Collins, an officer enquiring into forest grievances of Uttara Kannada district of Karnataka – then Karwar district of Bombay Presidency – in 1922, has special praise for three villages, Halakar, Chitrangi and Muroor-Kallabbe. He reports that these villages have been managing their village forests exceedingly well for decades, and have set an example that should be widely emulated. In the Central Provinces, too many villages earlier granted Nistar rights over local forests have been managing them well, even to this day. In Rajasthan the village forests in form of "Orans" were very well managed till the abolition of landlordism after independence. In Goa the local communities had maintained "cumindad" or community forests in good shape during the Portuguese regime. To this day, many communities of Nagaland are managing their own forest resources very efficiently and sustainably.

Thirteen Gond village communities of Chhapara block of Seoni district in M.P. decided in 2004 to work together in managing their forests. An important produce of these forests is Chironji (*Buchnanian laciniosa*). Earlier everyone used to begin harvesting the nuts before they were fully ripe, afraid that others will harvest them if they waited too long. But, on getting together, they decided to revive the old tradition of not touching chironji nuts, till all had agreed that the time was ripe, and a community worship called "pandum" was observed. As soon as this tradition was revived, the yield of chironji shot up by 30%.

Hunting of the wildlife too was often well regulated. The nomadic hunting tribe of Phapsedhis always released pregnant does of deer and antelopes caught in their snares. The fisherfolk had the tradition of refraining from fishing during the upstream spawning runs that take place with the first floods on the onset of the monsoon.

## **Traditions of nature conservation**

Indian culture has a proud heritage of manifold traditions of nature conservation. Much of our countryside is dotted with banyan, peepal, gular and other trees belonging to genus *Ficus*, protected because they are venerated as sacred trees. Today ecologists consider them as "keystone resources" because they bear fleshy fruits in seasons when no other trees are in fruit, and thereby sustain a diversity of insects, birds, bats, squirrels and monkeys. Science therefore rates them as of high conservation value. This wisdom has been a part of our age old traditions.

Francis Buchanan, a surgeon with East India Company entrusted to survey the newly conquered lands of Tipu Sultan in 1801, writes of a village near Karwar: "The forests are property of the gods of the villages in which they are situated, and the trees ought not to be cut without having obtained leave from the headman of the village, whose office is hereditary, and who here also is priest to the village god. The idol receives nothing for granting this permission; but the neglect of this ceremony of asking his leave brings his vengeance on the guilty person. This seems, therefore, merely a contrivance to prevent the government from claiming the property." Quite to the contrary, Dietrich Brandis laments, in 1882, the destruction of the once extensive network of

India's sacred groves under the British rule. He had particular praise in store for the sacred groves of Coorg (Gadgil, M. and Guha, R. 1992).

Villages of Alwar district in Rajasthan traditionally established groves in all four directions in their vicinity. The Kankadabani was dedicated to fulfillment of routine requirements of forest produce; the Rakhatbani was touched in years of famine, the Devabani only when there was great distress, while the Devoranya was never touched, even if the people had to abandon the village. These sacred groves survived till very recent times in the Sorab-Siddapur taluks of Karnataka, as well as in the hilly tracts of Manipur. Their studies suggest that at least 10% of India's landmass was once preserved under such sacred groves. This implies that this network was twice as extensive as today's wildlife sanctuaries and national parks. Furthermore, it encompassed the whole range of vegetation types, and the sacred groves were accessible to people everywhere, in their own neighbourhoods.

Although the system of sacred groves is linked to religious beliefs, people are often quite aware of their material benefits. A sacred grove of Shivandhan Taluk in Raigad district of Maharashtra had been preserved for its giant woody liana of *Entada phaseolides*. People came from long distances for its seeds, used in treating cattle. In Jharkhand bamboo groves have been preserved near village entrances. Often there are no harvests permitted from the sacred groves, but this may be relaxed depending on the circumstances. Thus villagers of Ghol in Velhe taluk of Pune district of Maharashtra reported that the only time tree fellings were permitted in their sacred grove was when the whole village had been burnt down. In other systems, regulated use is permitted. In Orans of Rajasthan grazing is allowed, as is collection of brushwood broken by hand. However, cutting with an iron axe or machete is prohibited. In 1972, villagers of Gani in Shrivardhan taluk of Raigad district of Maharashtra asked us to intervene to stop the felling of their Kalkai grove. They said that the only perennial stream of the locality originated in this grove, and feared that it would dry up if the grove were to be felled.

That is why this tradition has not only persisted in today's context of changing religious perceptions, but is even being revived in some places. The rich network of sacred groves of Mizoram-Manipur degraded in 1950's as roads and trucks reached remote localities and as people converted to Christianity. But then people witnessed ill-effects of this destruction. For

instance, in some Gangte villages of Churhandpur district of Manipur people suffered from devastating fires consuming their huts during the slash-and-burn operations of the shifting cultivation cycle. They then reinstated a circular grove surrounding their habitation to serve as a fire break. Having embraced Christianity, they call this grove a "safety forest", but its social system of protection has remained unchanged. Even today, the sacred groves play a vital role in conservation of biodiversity. The only patches of natural vegetation surviving today on the thickly settled plains of Kerala are sacred groves dedicated to cobra deities. In one such, the Botanical Survey of India discovered a few years ago, a new species of a climber, *Kunstleria keralensis*. Or consider the giant rainforest tree *Dipterocarpus indicus*, favoured by the plywood industry. When the demand for softwood for this industry escalated, the Karnataka Forest Department made available one species after another at throw-away prices, and despite the claims of sustainable use, these were totally depleted. The result is that today well grown trees of *Dipterocarpus indicus* survive in Karnataka only in Kari Kannamanamane – a sacred grove of the "goddess of dark forest"- in Honnavar taluk of Uttara Kannada district.

## **Practical Ecological Knowledge**

People living close to nature possess a substantial understanding of the working of the natural world acquired over generations, and in the course of their day-to-day pursuit of livelihoods. The experience of a group of Bangalore based ecologists investigating the fate of wild *amla* (*Phyllanthus emblica*) populations on the nearby B R T Hills provides an interesting case history. Their hypothesis was that the regeneration of *amla* is governed by the amount of fruit collected for commercial use, and that the low levels of regeneration in recent years were related to excessive harvests of fruit. So they laid out statistically well-designed experiments to test the influence of different levels of harvests of fruit. The local Soliga tribal people told them that these experiments would yield no results of interest, because, according to their understanding of the ecosystem based on many years of first hand observations, the levels of regeneration were primarily influenced by forest fires. *Amla* seeds require fire to germinate well, and the Soligas felt that low levels of regeneration were related to suppression of forest fires in recent years. The scientists did not initially give credence to this suggestion and

continued their experiments. Only later did they come to the conclusion that the Soligas were indeed right.

## **Devastating biodiversity**

Dietrich Brandis was familiar with German forests that are monocultures of a single species of pine. So the forest management that he introduced to India focused on replacing country's diverse vegetation that supported people's livelihoods in manifold ways with single species commercial plantations of teak, sal or pine. The intimate relationship India's forest dwellers have with their diverse biological communities may be illustrated by a study from Umbarkhind in Raigad district of Maharashtra in which the local community members worked with the NGO Rural Communes to prepare a "People's Biodiversity Register". The people are familiar with as many as 240 wild plant species and use 183 in one way or other. Out of these 57 are used as food: 30 like *Ficus racemosa* and *Syzygium cumini* as ripe fruit, 12 like *Holostemma adakodien* and *Radermachera xylocarpa* as raw fruit, 7 like *Gnetum ula* and *Sterculia guttata* in form of seeds, 6 like *Madhuca indica* and *Salmaalina malabarica* as flowers, 6 like *Colocasia esculenta* and *Costus speciosus* as leaves and 8 like *Ceropegia attenuata* and *Dioscorea bulbifera* as corms and tubers.

That is why the Aranyasukta of Rigveda praises the forest goddess as: "*fragrant with incense, mother of wild life and provider of abundant food, albeit untouched by the plough*". India's forests, blessed with diversity, are indeed a great storehouse of nutritious foods. In particular, the Sahyadris of Maharashtra-Karnataka have the world's greatest variety of wild relatives of cultivated plants. Here we have wild tubers related to turmeric and yams, wild rices and wild relatives of grams, many relatives of green leafy vegetables, relatives of vegetables like bitter gourd. These forests harbour wild bananas, ber, myrobalans, jamuns, mangoes, jackfruit, kokum and karonda. The Mahua tree is a veritable kalpavriksha – the tree that fulfills all wishes -- of the tribals. Our forests support spice plants like curry leaves, pepper and cinnamon. It is a treasure trove of edible mushrooms. After all, Ramayana narrates that Ram-Lakshman-Sita subsisted on this edible forest produce for years together.

But the British had only contempt for these treasures of forest. People's dependence on these forest produce was for them a nuisance standing in the way of their design to devote these forest lands to grow timber for their navy, their gun carriages, their railways, their urban buildings. So their new laws turned people's age old dependence on forests into legal offences. The Englishmen slaughtered the wild animals and turned the forest goddess into a slave serving imperial needs.

## **A parody of science**

The colonial claims that this system of forest management, attempting to convert the country's diverse vegetation of manifold values to people, into single species timber stands utterly valueless to the local communities, was "scientific" were completely fraudulent. For science is best defined as an organized enterprise of skepticism. The Indian tradition proclaims: "*a doubter perishes*". But science declares that one must continually raise doubts if one is to progress. Science is firmly anchored on the bedrock of hard facts, and brooks no other authority. It progresses by accumulating such facts, organizing them on the basis of models of how the world works, generating predictions on the basis of these models, testing the predictions, and on the basis of resultant observations revising the models of functioning of the world.

None of these elements find a place in the so-called scientific forest management. There is little sound empirical information available. Quite deliberately, when the 1865 Forest Act was formulated, a policy decision was made not to define forest. As a result, there is a continuing confusion as to what constitutes forest. In common parlance, forests are tree covered lands. But to the Forest Authorities, forest is any land under state control, even if bereft of any tree growth, or even of a blade of grass. But there is no clear understanding of how much land is under the control of forest authorities. There was a dispute around 1965 - do the forest departments control 69 or 75 million hectares? Even this was unclear. The vital issue, of course, is how much of this land has tree cover. When the satellite imageries became available, the Space Department attempted an independent assessment of country's tree cover in 1982. Their conclusion was that the foresters' claim that forests covered 23% of the country's land surface was incorrect, and that a mere 14% of the country had tree cover.

Scientific forest management calls for a proper understanding of growth rates of the various tree species. A series of so-called "Linear Increment Plots" had been set up throughout the various forest types at the initiation of modern forestry research in the country and careful record of periodic measurements of marked trees in such plots was expected to be maintained. However, the Forest Research Institute at Dehra Dun reports that most of these have been destroyed and that no proper records are available. In a similar fashion, a major project was proposed to be launched in Bastar of replacing the natural sal dominated forest by single species plantations of tropical pines. When people objected, an enquiry committee was set up. This committee discovered that the experimental plantation of tropical pines that was claimed to have demonstrated superior productivity by this species, in fact, was largely destroyed and no records of tree growth had ever been maintained.

More recently, there was a dispute on the number of tigers in Sariska Tiger Reserve, when the officials kept claiming that sizeable number of tigers were present, while the tourists failed to sight any. The Prime Minister then appointed a Task Force to look into the matter. This task force had access to the diaries of forest guards which showed that they were well aware that the tigers were being poached out. But the higher authorities did nothing beyond propagating false information on tiger numbers to the public.

Table 1: Tiger population estimates in Sariska Tiger Reserve

<b>Year</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>Tiger population (official census)</b>	<b>24</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>27</b>	<b>26</b>	<b>17</b>
<b>Tiger sightings by staff*</b>	<b>17</b>	<b>6</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>
<b>* Number of distinct animals present as judged by field staff</b>							

People are similarly misled about the forest cover of Ratnagiri district of Maharashtra. At the time of the initial forest settlement only 1% or 2% of the district's forest was taken over by the state, the rest was left in private hands. While this was heavily exploited initially to meet Mumbai's demands in 19<sup>th</sup> century, and later to support the mill labour strike in 1980's, the forest has regenerated very well after these assaults. Today some 48% of the district has such a secondary forest cover, although the Government statistics claims

that it has practically none. In reality the forest cover is in particularly poor condition only to the north of the Ratnagiri district, where much of the hilly land is under the control of the forest authorities. Occasionally, some of this has some tree cover, but it is monotonous. The whole of Maharashtra is today dominated by scanty growth of just five species: *Glyrecedia*, *Acacia auriculiformis*, *Eucalyptus*, Subabul and Teak. On the contrary, the private forests of Ratnagiri can still boast of a diversity of species. The finest examples of these are the sacred groves. Unfortunately, many of these have been destroyed by Forest Department as a part of their Social Forestry programmes, to grow monocultures of Eucalyptus.

The only reason why such a system of forest management, in utter violation of the spirit of science, has continued unabated is that the official machinery has always rejected the scientific practice of making all information transparently available for public scrutiny. This is, of course, nothing new. The ancient Chinese manual of statecraft, Tao-te-Ching, declares:

The ancients who practiced the way  
Did not enlighten people with it,  
They used it, rather to stupefy them;  
The people are hard to rule  
When they have too much knowledge,  
Therefore ruling a state through knowledge  
Is to rock the state;  
Ruling a state through ignorance brings  
Stability to the state.

## **Resource exhaustion**

The British thus instituted a system of forest management, not grounded in science, but in keeping people in the dark. Of course, they pretended that they were pursuing sustainable, scientific management, and that the Indians were earlier destroying forest through profligate use. But their claims of keeping the capital of forest resources intact were totally unfounded in reality. A series of Working Plans have documented the status of forest in various parts of the country. Even a casual perusal of these Working Plans brings out the fact that the capital of forest resources has been on continual decline. It was, of course, the responsibility of the Forest Research Institute at Dehra Dun to review the information so generated and build up a consolidated

picture. That would have brought out the utter lack of sustainability. But no such exercise has ever been undertaken. An exception is an FAO sponsored study of the history of Quilon division in Kerala by Dr. C.T.S. Nair. The area under investigation was initially divided into a "selection circle", from which harvests were meant to be organized so as not to eat into the forest capital, and a "protection circle" encompassing steeper hill slopes, where the forest was expected to be kept intact in perpetuity to serve its watershed functions. The study revealed that the capital of tree growth in the selection circle had been declining progressively. The response had been to convert it into "Clearfelling Circle" and completely liquidate all tree growth, replacing it by monoculture plantations. At the same time, part of hill slope "protection circle" that was supposed to be perpetually left untouched, was brought under selection circle. As this addition to the selection circle was also overexploited, these steep hill slope areas were also clear felled, and the selection circle was extended to yet steeper slopes.

## **Tribal protests**

There was totally unregulated devastation of India's forest during the East India Company's regime. This was brought under some check when the country came under the rule of the British crown. But it is difficult to be certain of the extent to which this led to a deceleration of the pace of deforestation. For the Indian forests were now exploited to lay down the extensive network of railway lines, and to power the railway engines, as well as the British ships roaming the world oceans. Whatever discipline there may have been in the pattern of forest exploitation in this period was all thrown to winds with the onset of the First World War. As soon as the war commenced, all Forest Working Plans were consigned to the dust bin and felling speeded up to meet war demands.

Two decades elapsed between the two World Wars. But there was little chance of bringing exploitation of India's forests under any kind of discipline. The Britishers had now begun to lose their grip over the country. At the same time, they were attempting to bring more and more forest areas under reservation to compensate for the ongoing overexploitation. But this was being resisted. There was a major struggle, for instance, in Kumaon where the incendiary pine forests were set on fire. The Government then agreed to

some of people's demands and set up a network of Ban Panchayats. It also established nine village forests in Uttara Kannada district of Karnataka. But the Government continued to impede the functioning of the community institutions, and people were given no rights over timber. In spite of these adversities many village institutions have to this day managed to function effectively.

The focus of colonial use of forest resources was on urban construction, on building ships, gun carriages, and railway lines, and on fuelling trains and ships. Till World War I, the British assiduously discouraged establishment of any forest based industry in the country. But the disruption of sea traffic by German submarines during that war forced them to reconsider their policies. So in 1920's a bamboo based paper mill was established in Bengal, and what was till then considered a weed of teak plantations now became an industrial raw material, to be made available to the industry at throw-away prices. The interval of two decades between the two World Wars did not give much respite to India's forests. The conflagration of World War II meant a further stepping up of exploitation all the way till independence.

## **Village republics**

Bamboos are amongst the most significant of forest resources for the people of India, carrying us, as they say, from the cradle to the grave. Bamboos are used to construct huts and cattlesheds, agricultural implements and baskets, flutes and decorative objects. Many artisanal and dalit castes depend on bamboos for their livelihood. It was, of course, freely available in pre-British times. In 1860, when British took over forests, they started charging local basket weavers Rs. 5/- per ton, a heavy burden for the times. And then they commenced converting India's diverse, life supporting forests, full of bamboo, amla, ber, Mahua, myrobolans, kokum into monocultures of teak, sal, pine. Special attempts were made to eliminate bamboo as a weed of teak plantations. In many tracts, such as heavy rainfall tracts of Uttara Kannada, teak had come up during shifting cultivation cycles. Not understanding this, the British planted it on extensive scale, and these plantations were a total failure. Throughout, the Forest Department documents emphasized that people were the foremost enemies of forests. This was dinned into heads of all departmental employees.

Mahatma Gandhi, like Mahatma Phule, thoroughly disapproved of these anti-people policies. His conception of village republics called for returning control over forests in hands of people, to serve as support systems for their agriculture, animal husbandry, and livelihoods. This was accepted by the Congress Party during the time of the freedom struggle. But the people were betrayed following independence. The official machinery continued to cling to the view that people were the enemies of forest.

## **Post-independence development strategies**

Sixty years ago we attained independence. There was a vigorous debate on the directions that the development effort should take. Gandhi's indigenous model of building a nation of village republics, making moderate demands on earth's resources, of self reliant agriculture, was set aside. India decided instead to catch up with the west, imitating their model of industrialization. Ours was to be a socialist republic. But just as the so-called sustainable management of forests was in reality exhaustive, this socialism had nothing to do with pursuit of social, economic equality. Instead, this fraud on socialism merely meant alienating people further from access to natural resources, taking away their lands, using public funds to supply all resources to the elite at huge subsidies. The political scientists call this system, an "iron triangle", its three vertices being, firstly, the beneficiaries of the state subsidies: the industry, the large landholders, the organized services; secondly, the bureaucracy administering these subsidies, and thirdly the politicians deciding on the subsidies.

Consider, as an example of the functioning of this iron triangle, the story of Panshet dam near the city of Pune. This was one of the many, many dams that began to be constructed in hilly, forest-clad tracts for power generation, irrigation, and urban and industrial water supply. To Pandit Jawaharlal Nehru these were places of pilgrimage for modern India. The Panshet dam stores water from the copious rainfall on the crest-line of the Western Ghats and supplies it to the Pune city and to the sugarcane growers and sugar mills of the rain shadow tracts to the east of the city. The dam for the first time brought roads to the till then remote, narrow Ambi valley. The peasants of the valley cultivated paddy in the valley and practiced shifting cultivation for minor millets on the hill slopes. While carrying on the slash and burn operations for the shifting cultivation, they left intact extensive tree growth of

mango and myrobolan (*Terminalia chebula*) that brought them small, but regular income. The upper hill slopes were covered by reserve forest. As the dam construction began, motor vehicles began to ply to the valley, confronting the peasants, who had till then seen little cash, with the market economy. There was a tremendous demand for wood charcoal from the Pune city at that time. So the coal merchants, the dam engineers and the forest officials single-mindedly assaulted the tree growth of the valley.

I camped in many villages of the Ambi valley, investigating the few sacred groves that were all that was by then left of the once extensive tree cover, soon after the dam was commissioned. The villagers narrated that the engineers visited them in company with the coal merchants and told them that since they would be relocated soon, they might as well sell the tree growth on their hill slope lands. Huge mango and myrobolan trees were sold for as little as eight annas. The reserve forests too were wiped out by the coal merchants in collaboration with corrupt officials. In the end, the peasants were never adequately rehabilitated. A majority of them just resettled up the now thoroughly denuded hill slopes, making a living as best as they could. The plentiful water storage of this dam serves the organized industry – services sector of the Pune city and the holders of irrigated lands to the east. The political decision makers and the bureaucracy come from amongst these same social strata. They also enjoyed the supply of cheap wood charcoal and profit from its trade, till this was exhausted and was replaced by cooking gas. The costs of all this degradation were, in the short run, thrust upon the peasants of Ambi valley. In the longer run, of course the whole society is the loser as the life of the reservoir is significantly reduced by the increased rate of siltation.

## **Forest Policy of 1952**

It was in this climate of pushing for development at all costs, in other words, imposing the costs on the weaker segments of the society, and on the capital of natural resources, that the forest policy of independent India was put together in 1952. Nearly six decades had elapsed since the forest policy of 1894, and it would have been fitting had this policy helped create a stake for the people of the now free country in the health of the forest cover. In

particular, it would have been timely to begin to put into practice the provision in the 1927 Forest Act of declaring Reserve Forests as Village Forests and handing them over to local communities for management. But there was no progress in this direction. So it is worthwhile looking into what was it that changed between 1894 and 1952.

There was still substantial cover of forest in 1894, and all that interested the British was to transform it into monocultures of teak, sal and pine. Conversion of some of this forest land into farm land that could bring additional tax revenue was welcome. That is why the Forest Policy of 1894 assigned the first priority to agriculture. But by 1952, cultivation had extended and forest cover shrunk. Furthermore, the Congress politicians had promised people greater access to forest resources. Hence the powers that be now wanted to emphasize that forests were to be dedicated to the industry, to the dams that would supply water, power for cities and irrigated agriculture; that rural and tribal communities were in fact to be further alienated from access to forests. So the new forest policy asserted the primacy of "national" interests and stated that people were to have no special rights just because of the accident that they happened to be born and live in the vicinity of the forests.

The forest policy of course paid lip service to the need to ensure people's co-operation, and asserted that people must be convinced of the importance of the forests. But it further stated that it would be improper to concede any rights on the forest lands or forest produce to the people for this purpose. In effect, it ensured that people will have to continually break laws to fulfill their age old needs for forest produce. That had been used all along to exploit the people, to force them into bribing the officials. The policy of 1952 ensured that these corrupt practices would continue unabated.

In folk lore this is termed as the "*aankh-bandhi*", or shut-eye allowance, or bribes extracted to ignore violation of the law. While all are aware that this has been going on all over the country, there is no proper documentation of the process. So, I interviewed a number of forest fringe villagers from Nandurbar and Gadchiroli districts of Maharashtra. They report that every such family ends up losing between 1500 to 3000 rupees per year in the form of cash, grain, chicken, liquor or forced labour such as supply of fuelwood. Some 2 crore families in India thus live in forest vicinity. If they pay an

average of even Rs. 1000 per year, this amounts to an underground economy of 2 billion rupees, rooted firmly for at least 150 years.

The 1952 Forest Policy began to emphasize environmental services. For instance, it stressed the need to prevent fellings from steep hill slopes or stream and river banks. But as Dr. CTS Nair's study of Quilon Division documented, this was observed only in breach, with clear felling creeping up steeper and steeper hill slopes with time. The 1952 Forest Policy also asked that Wild Life Sanctuaries and National parks be set up, and that proper laws be enacted for the purpose. At the same time, the Policy stressed the need to continually enhance annual revenue from forests.

## **Private Forests**

Agricultural land tax was a major source of revenue for the colonial regime. Their policy focused on maximizing revenue collection at minimal expense. To this end, they had created a class of landlords, or granted nominal authority to native rajas and maharajas in many parts of India. The landlords were responsible for paying certain assessed land revenue, the real cultivators served as their tenants. An estimated 11% of the country's surface, controlled by these landlords and maharajas, was under forest cover at the time of independence. Many of these large landholders were fond of shikar, some were truly knowledgeable about wild life. The maharaja of Mysore was therefore a natural choice for the President of the first Indian Board for Wild Life established in 1952. People drawn from this background are still a very influential section of India's environmentalists.

A Government that claimed to be socialist needed to abolish landlordism and confer land to the tiller. The state also needed to add the private forest land to its own forest estates. But the owners of private forests were an influential component of the ruling elite, so a takeover of private forests with a firm hand was out of question. Rather, it was allowed to drag on, permitting landholders to benefit as much as possible, and share in these gains with those in power. The process of adding half as much additional forest land as was already under state control to state forest began in 1950's. Much of the private forest was in excellent condition, its protection was vital for environmental conservation. But a very large fraction of this was liquidated

and the process dragged on for decades. Large tracts of India's forest lands were thus devastated soon after independence, thanks to the inefficiency and corruption of the political-bureaucratic combine.

## **Forest based industry**

The policy of industrializing at all costs held firmly for the first generation after independence till early 1970's. The forest based industries were also vigorously promoted during this period. These included paper, plywood, polyfibre, matchstick industry. One such paper mill was set up in Dandeli in Uttara Kannada district of Karnataka in 1958. When the basket weavers of the State complained that the mill had devastated bamboo – the very basis of their survival- I was asked to look into the matter. What emerged is typical of the history of forest based industry in India. At the time it was established in 1958, the Forest Department had assessed that the bamboo resources of Uttara Kannada district would provide the raw material for the Paper Mill in perpetuity. However, the raw material was, in fact, exhausted within a decade. Our studies showed that this was partly due to the fact that the figures for the availability of the bamboo stocks had been grossly exaggerated, by as much as a factor of ten times. On top of it, the bamboo supply contractors of the Mill exploited the stocks ruthlessly, with the Mill taking law into its own hands and fencing off large bamboo concession areas. From these areas, bamboo was being supplied to the mill at throw away prices of as low as Rs. 1.50 per ton, while on open market the basket weavers were being forced to buy it at Rs. 1500 per ton. People also bore the cost of pollution of Kali River by the mill. Forest based industries throughout the country thus wiped out their raw material base in the fashion of the farmer killing the goose that laid the golden eggs. In the course of my studies, many paper mill managers had become my friends. When I asked them if they are not worried that the bamboo stocks were getting exhausted, they explained to me that I was under a misapprehension. They were in the business of making money, not paper. In the first decade of its operation, the Mill had paid for itself many times over. If now the bamboo was finished, they always had the option of closing down the Mill and investing the money earned in other ventures such as manganese mining. The basket weavers unfortunately had no such options (Gadgil, M. and Guha, R. 1992).

## **Aping the West**

For the first time, the 1952 Forest Policy mentioned wild life preservation. Soon thereafter an Indian Board of Wild Life headed by the Maharaja of Mysore was established. Many members of the Indian aristocracy were great shikaris and interested in wild life. They played a significant role in moulding the country's approach to nature conservation. To shape this approach, the ruling classes turned to the ideal of National Parks of the United States, completely ignoring our own rich traditions.

When the Europeans first stepped on it, the American continent had been occupied by American-Indians for over ten thousand years. They had established major kingdoms like Mayas and Incas; they had evolved great schools of art, sculpture and literature. Yet, the North and South American continents were teeming with wild life and many sites had been cared for by the inhabitants as sacred sites. Aided by their superior technologies, metal implements and the susceptibility of the natives to the diseases brought in by them, the Europeans wiped out these civilizations, as well as the natural world. They destroyed great libraries and killed all men of learning. While slaughtering millions of bisons that roamed the prairies, they only consumed delicacies like the tongue, letting the huge carcasses rot. Only after nearly three centuries, as this assault was completed, and the last frontiers were being closed, did the colonizers begin to think of preservation of nature. They then went on to establish National Parks like Yellowstone. A false impression was created that Yellowstone was a pristine natural habitat. In fact it had been moulded by centuries of prudent land use, respectful of nature, by the Amerindians. Some of these Amerindian groups still inhabited the Yellowstone landscape. The Europeans wanted to get rid of them and dedicate the locality to nature based recreation for themselves. So they promulgated the idea that National Parks should be free of all human habitations. As the British Revenue officials had remarked of Reservation of Forests in India, this creation of U.S. National Parks was confiscation, not conservation. The task of conservation had been carried on for centuries by the Amerindians from whom it was now being confiscated.

This utterly inappropriate framework was accepted by the anti-people Forestry establishment, and by the Rajas-Maharajas spearheading the wild life conservation effort. India's educated middle classes, so full of admiration for the West, also embraced this framework. This is the genesis of the influential anti-people school of conservation in India today.

## **Shikar companies**

Many rajas, maharajas, landlords owned private forests teeming with wild life in the British times. Amongst the most notable of these was the Gir forest of the Nawab of Junagarh. When the British first conquered India, lion was widely distributed to the north of Narmada river. Every British aristocrat visiting India wanted a lion's head as a trophy for his drawing room. And of course many Britishers residing in India shot them at will. So by 1900 just a handful of lions survived only in Gir. These too would have been shot out had the Nawab of Junagarh not pretended that they were extinct, and staved off the pressure of visiting British dignitaries being invited for a lion hunt.

The wetlands of Bharatpur were another famous wildlife treasure trove, teeming with wildfowl. This wetland, created by bunding of a rivulet in 1763, became a great attraction for shooting parties of the maharaja of Bharatpur and his guests in the 1900's. The British Viceroy, Lord Linlithgow boasted of having shot 4273 birds on a single day, on 12<sup>th</sup> November 1938. Indeed this feat was commemorated with a stone plaque.

Many of these rajas, landlords set up shikar companies after independence. Foreign tourists flocked to them to shoot tigers, panthers, gaur. This continuing massacre, now supported by jeeps and superior firearms, largely polished off the wild life by 1970's. The Wild Life Preservation Act, passed in 1972, brought this shikar business to a close.

## **Who is to blame?**

Forests and wildlife was thus decimated over the first quarter century of independence – through liquidation of private forests, through large scale

felling as roads connected hitherto inaccessible regions on account of development projects, through decimation of the resource base of forest based industries practicing excessive, undisciplined harvests. All this served the interests of the ruling classes; it was in no way being driven by the marginalized rural, tribal communities, who were being blamed all the time by the officials. A classic case of how these groups were victimized was that of the village forests of Uttara Kannada district, earlier a part of the Bombay State. The village forests of Chitragi, Muroor-Kallabbe and Halakar were established in 1930 as a rare example of implementation of the provision for handing over reserve forests as village forests in the Indian forest Act 1927. This was done on basis of recommendations of a Forest Grievance Enquiry Committee of the district in 1922, which had praised the age old, excellent community level management of these villages. They were functioning well till the linguistic reorganization of the state brought Uttara Kannada district to Karnataka. Promptly, the Karnataka forest Department served notice on these Village Forest Committees liquidating them on the pretext that the Karnataka Forest Rules had no provision for village forests. Tragically, the Chitragi villagers totally destroyed their dense forests within fifteen days of receiving the notice, those of Halakar and Muroor-Kallabbe appealed. Finally, people of Halakar won the court case after 28 years of litigation and have continued to manage their village forest very well to this day.

The basket weavers of Karanataka gheraoed the Finance Minister in 1974, protesting that the Dandeli paper Mill had devastated the bamboo stocks, despite the assurance of the so-called scientific forestry that the bamboo resources would sustain the mill in perpetuity. As a result, I was asked to investigate the management of the bamboo resources of the State. When I initiated the studies, the Foresters and the Mill management agreed that bamboo stocks had been severely depleted, but entirely blamed it on the use of bamboo by villagers and grazing of livestock in the forest. I then undertook systematic field research on bamboo ecology and management. *Bambusa arundinacea*, the principal bamboo species of Karnataka, is notable for the development of a thorny covering at its base. Under natural conditions this covering protects the young bamboo shoots that cattle, buffaloes, porcupines, wild pigs, monkeys and men all relish. The Paper Mill management considered this thorny covering a great nuisance and asked their bamboo harvest labour to remove it. The Mill then proceeded to harvest bamboo right from the ground level, further exposing new shoots. The villagers, on the other hand,

were aware of the ecological function of the thorny cover, left it intact, and harvested bamboo from above waist height. Under these practices, new bamboo culms were successfully added to the clumps that continued to thrive. On the contrary, new recruitment ceased for bamboo clumps being managed by the Mill, and the clumps were gradually wiped out. There were other ways too in which the Mill's harvesting practices, violating the official prescriptions, were destructive. In the study jointly supervised by Forest Department officials and Paper Mill officials, we reached the clear conclusion that the lion's share of the blame for decimation of bamboo resources lay with the Paper Mill.

## **Awakening environmental consciousness**

Mindsets change with each generation. In the quarter century following independence in India, or indeed following the end of Second World War all over the world, indifference to environmental considerations and to quality of people's lives characterized the pursuit of economic development. This began to change around 1972. That year saw the convening of the Stockholm Conference on Environment, which attracted a number of world leaders. Mrs. Indira Gandhi's speech at the Conference, arguing that poverty was the greatest polluter and stressing the urgency of eliminating poverty made a great impact. That was also the time of the famous Chipko movement in Garhwal Himalayas. The official machinery saw teak and pine resin as the most significant produce of forests; the 1952 forest Policy also called for continually pushing up commercial profits from forests – although most of these profits did not flow to the state, but were cornered by private industry. But the exhaustion of forests in the pursuit of these profits impoverished people. So when trees supplying vital leaf fodder for livestock of Garhwal Himalayas were made over for felling for manufacture of badminton rackets to a factory in far away Bareilly, the peasants rose in protest. The people declared that what forests should yield is soil, water and fodder. They were successful in putting a stop to the fellings.

One of the outcomes of the spread of this new consciousness was the enactment of the Wildlife Protection Act of 1972. But while framing it, no heed was paid to Mrs. Indira Gandhi's Stockholm pronouncements that removal of poverty was a prerequisite for protecting the environment. Rather, the Act

was framed blindly aping the west, within the framework of the anti-people conservationist philosophy. It paid no attention to needs of people, to India's great traditions of nature conservation. India supports world's largest primate populations, often mingling with its human populations. Its countryside is dotted with peepal, banyan and other trees regarded as keystone ecological resources. Many of our rivers have sacred pools that shelter well grown fish. Kokre-Bellur, a village near Bangalore welcomes hundreds of pairs of pelicans to nest on trees scattered around the village. But there was no acknowledgement of these practices in drafting the Wild Life Protection Act. There was no thought also of how the many nomadic communities, like Phase Paradhis, Baverias, Mir Shikars or Hakki Pikkis, largely dependent on hunting, would subsist once these activities were declared illegal. No attempts were made in our so-called socialist state to find for them alternative livelihoods. Instead, the Government machinery turned to extorting bribes from these people to permit them to continue their traditional hunting practices. There is no data on the extent of such corruption. So I attempted to make a rough-and-ready assessment from a Phase Paradhi group of Vidharbha. They report that over 2006-07, forest and police officials have extorted Rs. 1150 in cash and another Rs. 3245 in kind from eight of their families.

When the Wild Life Act was passed, there was no formal documentation of age old protection by people to colonies of pelicans and storks in Kokre Bellur. But the name of the village itself is Kokre Bellur, the good village of storks, and this protection extends from times before 1860's, when Jerdon mentions it in his classic Birds of India. People used the droppings and remains of fish collecting under the nests as an excellent fertilizer for their fields, and happily co-existed with the birds. But how such happy coexistence is threatened once the anti-people state machinery steps in was demonstrated in the village of Nelapattu in Andhra Pradesh. Here pelicans nested on trees fringing an irrigation tank, protected by villagers who waited till the breeding was over, and then used the nutrient rich waters to irrigate their fields. With the Wild Life Protection Act in force, this area was declared a Bird Sanctuary and the Forest Department promptly banned the use of tank for irrigation. This naturally turned the farmers against the birds, hurting simultaneously the cause of nature conservation and agriculture.

In 1972, when the Chipko Campaign was involving people in nature conservation, and when the Wild Life protection Act was passed, the

Karnataka forest Department decided to take up commercial fellings from hitherto protected sacred groves of Coorg, praised with great enthusiasm by Dietrich Brandis. The reason was that the large softwood trees, in demand by plywood industry had been exhausted from the Reserve Forest areas. These trees had been made over to the industry for a pittance, for as low as Rs. 60 for a giant Appimidi mango tree that every year yielded mangoes worth hundreds of rupees famous for pickling. So when these softwood resources were exhausted, the Forest Department started felling the enormous trees in the sacred groves revered for generations by the people. In Uttara Kannada district, for instance, they clear felled sacred groves extending over hundred or more hectares and replaced them by Eucalyptus plantations. Incidentally, these Eucalyptus plantations later turned out to be miserable failures.

## **Corrupt fellings of Bedthi**

As environmental consciousness took root in the country in early 1970's, the Planning Commission made Environmental Impact Assessment mandatory for all major projects beginning in 1977. One such project that came up for EIA was the Bedthi Hydroelectric Project in Uttara Kannada district of Karnataka. I was a member of the EIA team and was shocked when the assessment was conducted in great haste, and the committee was pressurized to quickly clear the project. So I decided to participate in an open, public Environment Impact Assessment organized through a local college and Farmers' Co-operative. As a member of the committee I had full access to the Detailed Project Report and pertinent maps. When the public EIA was initiated, we undertook detailed field studies. It was then revealed that a particularly dense tract of forest that was outside the submersion area had been deliberately marked as falling within the submersion area, and was already being felled with great vigour. It was, of course, quite wrong to start this felling before the project was officially cleared; indeed, the project was dropped later. What was worse was that corrupt officials were using the excuse to destroy some of the finest forest of Bedthi valley.

## **Joint Forest Management**

It was clear by 1972 that contrary to the pronouncements of the 1952 Forest Policy, the forest resources were being rapidly exhausted. At the same time, the hollowness of the assertion that people's co-operation should be ensured without involving them in any meaningful way was becoming evident. It was clearly time for some new initiatives, and Ajit Banerjee, a progressive Forest official of West Bengal took the lead in involving people in forest protection and regeneration at Arabari in Midnapore district. The sal forests of this region had been devastated, but, when protected, sal can coppice well and the forests can regenerate. Sal leaves as well as oil seeds are of value and people were informally assured of full rights over these non-timber forest produce. They were also assured of some share in the timber that may be harvested in due course.

The Left Front Government of West Bengal in time formalized this programme, and the Government of India recommended in 1990 that these Joint Forest Management programmes be extended to all the states of the country. This initiative caught attention world wide and attracted substantial amount of foreign aid. This has had the unfortunate consequence of turning it into a Government programme for spending foreign funds with little genuine involvement of local community members in the decision making processes. So, on paper, there are by now 99,868 such committees (involving 1.38 crore families) in 28 states, in charge of a big chunk of the most degraded forest of the country. While organizing this programme, it would have been entirely appropriate to employ the Village Forest provisions of the Indian Forest Act, 1927, that clearly permit assigning any Reserve Forest to local communities as Village Forest. Unfortunately, this has never been considered. Most significantly, people have, by and large, failed to receive their agreed upon share in the eventual timber harvests. For instance, people have been cheated out of any such share throughout the State of Maharashtra.

## **Aggressive Forestry**

By early 1970's most of forest resources of value to the industry that could be extracted through selection fellings from Reserve Forests had been exhausted. The Private Forests had also been well nigh liquidated. So new ways had to be found of making cheap resources available to the trade and industry. The National Commission on Agriculture stepped in the breach. They

advocated that a new "Aggressive Forestry" must replace the Conservation Forestry approach. To facilitate this, Forest were changed from being a state responsibility to a concurrent responsibility of state and centre in 1976. The National Commission on Agriculture's prescription was to clearfell the natural, so-called miscellaneous, forests and replace them with monoculture plantations of fast growing industrial species to support domestic production as well as export. It was recommended that Forest Based Industries and Saw Mills should be set up in the vicinity of forested tracts and that roads should be developed to tap forests from remote, inaccessible regions.

All of this was, of course, to be dedicated to industrial needs. The National Commission on Agriculture simultaneously recommended that no fuelwood or small timber be made available to village communities free of charge. To cater for village needs it was recommended to promote agroforestry on private lands and social forestry on community lands. This translated into forest departments establishing "Forest Development Corporations" and covering all their lands, including those clothed by rich, natural forests in hitherto inaccessible tracts into monoculture plantations of Eucalyptus after clearfelling the standing forest. At the same time, the Social Forestry wings were endeavouring to blanket community lands, including grazing lands and sacred groves, as well as lands under cultivation, with similar stands of Eucalyptus. Indeed a Eucalyptus craze swept the country during 1970's and 80's.

## **Nature Lovers**

Village communities suffering from the manifold activities of Forest Departments continued to protest. One stream of protest involved the demand for rights over forest lands under cultivation, whose ownership was not vested with the tillers. Such, for example, were lands of tribals who had been settled for Forest Departmental Works in forest villages in many parts of the country. The other stream was to press for nature-friendly and people-friendly treatment of forest lands. To this end, a number of "Save Forests, Save Man" conferences were held in tribal tracts of Maharashtra in 1980's. These conferences of forest dwellers stressed the need to plant trees on bunds and in fallows on farm lands, and to protect and regenerate the surrounding forests.

People's response to the Karnataka Pulpwoods Ltd. is notable in this context. This Joint Sector Company was assigned 30,000 hectares of grazing and other community lands by transferring land under control of Revenue Department. There were widespread protests when these lands began to be cleared of existing tree growth and being planted with Eucalyptus. In 1989 people from several villages uprooted the Eucalyptus seedlings and planted the lands with species like neem, jackfruit and ber. Many of these people's plantations are thriving today. For instance, the community forest of village Kusnur in Hangal taluk of Karnataka is an excellent example of forest under Joint Forest Management.

This chorus of protests against the destruction of natural vegetation by the Forestry Establishment was gradually joined by the urban middle classes, who had hitherto, by and large, supported the establishment. This middle class was now being attracted to the natural world, taking up hobbies like bird watching. In 1952 when the Indian Board for Wild Life was established, such concerns were restricted to a small segment of the elite that included Maharajas and people like Dr. Salim Ali and Jawaharlal Nehru. As education spread and the middle classes became more prosperous, they began to enjoy wildlife. Organizations like the World Wild Life Fund with a sizeable urban, middle class membership set up large numbers of nature clubs. Along with this people began to visit sanctuaries like Gir, Tadoba, Sariska, Bandipur in considerable numbers and nature based tourism began to prosper.

## **Forest “Destruction” Corporations**

When Forest Development Corporations were set up in many parts of the country, and began to cut down large tracts of natural forests, Dr. Salim Ali asserted that these were not Forest *Development*, but rather were Forest *Destruction* Corporations. Mrs. Indira Gandhi knew him well, and in 1981 declared in a public meeting that it was time to reexamine the working of the “Forest Destruction Corporations”.

I had an opportunity to study the functioning of the Forest Development Corporations in three different contexts. When the proposal to clear large tracts of natural sal forests of Bastar and plant them up with tropical pine was opposed by many tribal groups, I came to serve on a committee looking into the whole programme. The choice of tropical pine was being pushed on the

basis of supposedly high production of a pilot plantation of the species. As a committee we discovered that this pilot plantation lay in ruins, and there were no proper records available of the performance of tropical pine at all. The whole affair was a gigantic fraud.

In Karnataka large tracts of tropical rain forests had been cleared to plant *Eucalyptus* on the expectation that these would substantially step up productivity to levels of 28-30 tons per hectare per year. In fact these plantations fell prey to pink disease and were an utter failure. Narendra Prasad and I found that their annual yields were only in the range of 1.5 to 3.0 tons per hectare. At the same time, the yields of *Eucalyptus* on private farms in drier tracts of the state averaged 15 tons/ha/year.

As a follow up of the Chipko movement, Dasholi Gram Swarajya Mandal began to organize a series of ecodevelopment camps in the Alakananda valley in Garhwal. At these camps volunteers worked shoulder to shoulder with local villagers to undertake soil and water conservation works, to build stone fences and to plant seedlings of a variety of local species of value to people. A comparative assessment of the performance of these people's plantations and plantations in similar terrain by the Forestry establishment was undertaken by the Space Application Center, Ahmedabad using satellite imagery, and by Narendra Prasad and me through field studies. The people's plantations were far more successful, and we found that the percentage of survival in people's plantations was around 80%, while that in official plantations stood around 20%.

Evidently, these thoroughly inefficient Forest Development Corporations were in no position to ensure the supply of raw material to the forest based industry. At the same time, the Assam agitation of 1980s choked off the flow of timber from the Northeast. So India's forest based industry began to look abroad for its raw material, and supplies of Malaysian, Indonesian timber and pulp from New Zealand and Canada began to pour in. As this transition was being completed, the Government of India imposed a ban on further clearing of natural forests in 1986. So supply of cheap raw material to the industry had to be abandoned as an objective, and the Forestry Establishment now began to focus on promoting nature-based, especially tiger-centered tourism.

## Forest Conservation Act

With Forests becoming a concurrent subject of state and central Governments in 1976, the Forest Departments began to strive with greater vigour to further strengthen their stranglehold. A cornerstone of this effort was the Forest Conservation Act of 1980. This Act required the clearance of Central Government for any diversion of forest land towards non-forestry purposes. This led to some positive, and other negative results. The positive result was a deceleration in the speed with which forest land was being diverted for development projects or to regularize the encroachments by the high and mighty. But there were negative implications as well. Since the definition of what constitutes "forest" had been left deliberately vague right from 1865, there were disputes as to the lands over which Forest Conservation Act would apply. The High Court of Goa interpreted this very broadly to declare that all land with tree growth – other than orchards of fruit trees – were to be considered forest lands. This meant that farmers who had taken up *Eucalyptus* or such other wood production on their own lands ran into serious problems marketing the produce. The Act also ensured that villages encircled by forest land would forever remain deprived of facilities such as electric supply. Over all, the Act permitted Forest Departments to harass people in many ways. Worst of all, the Act did not prevent Forest Departments themselves from degrading good forests, such as clearfelling sacred groves to raise *Eucalyptus* plantations.

## Biosphere Reserves

The system of wild life conservation that came into vogue following independence passed all costs of conservation on to local communities. Dr. H.S. Pabla, a thoughtful Forest Official of Madhya Pradesh has calculated that the annual income of the State Forest Department was 500 crores and the expenses 400 crores. Compared to this he estimates that people suffered direct costs of 94 crores in damage from wild life and spent an estimated Rs. 528 crores in attempts to prevent wildlife damage. Thus, as with economic development, the costs of nature conservation too, were inflicted on weaker segments of the society, creating conflicts between conservation and development. The Biosphere Reserve programme, initiated in 1986, was an

attempt to develop models of nature conservation compatible with people's development aspirations. But the whole programme was distorted in its implementation. For instance, the Nandadevi Biosphere Reserve in Garhwal Himalayas merely deprived people of opportunities to pursue their traditional means of livelihood – sheep rearing and portarage. On top of it, the programme became an instrument to harass the women of Reni and Lata villages that had played a leading role in the Chipko movement.

## **Progressive forest policy of 1988**

The Forestry establishment attempted to further consolidate the hold they had acquired with the 1980 Forest Conservation Act by drafting a new Forest Act. However, this met with stiff opposition from many organizations of people who strived to formulate a more pro-people and pro-nature forest policy. The urban middle classes, too, aware of the destruction of natural forests wrought by the Forestry establishment supported such a move. This led to the new Forest Policy of 1988. This policy emphasized the need to protect the remaining natural forests and to cater to needs of forest dwellers. It called for promoting a people's movement to meet these objectives. It relegated to the background the need to generate revenue from forests. Of course, this was acceptable to the ruling elite because there was little scope left for supporting forest based industry or trade. From this time onwards, the economic interests focused on nature based tourism.

## **Environmentalism: pro-people, anti-people**

1980's witnessed a rapid increase in environmental consciousness amongst the people at large. Out of this came the Forest Conservation Act of 1980, and the establishment of a Central Department of Environment shortly thereafter. People from many different sectors of the society began to ponder on concrete steps that needed to be taken to protect the environment. Inevitably, many different streams of thinking emerged. Many from the rich, industrial nations argued that environment will only be protected by the rich and the educated, that poor masses of India would never support an environmental movement.

Movements like Chipko clearly demonstrated that this thinking was in error. Many amongst the weaker sections of the Indian population, living close to the earth, have a tremendous stake in a healthy environment. Their quality of life is closely tied to the availability of water in streams and lakes, on catching fish and crabs, or consuming wild tubers, leafy vegetables and fruit. They clearly visualize their self interest in protecting their environment. Their cultural traditions include guarding banyan and peepal trees, peafowl and monkeys, blackbuck and nilgai. When in a position to do so, they participate vigorously in good management of natural resources as has been the experience with Orissa's Community Forest Protection groups. With such a perspective, a pro-people environmental philosophy has taken root in India, elaborated by Gandhians like Chandi Prasad Bhat and Sundarlal Bahuguna, left-oriented movements like Kerala Sastra Sahitya Parishat with its emphasis on people's planning, and journalists like Anil Agarwal and Sunita Narain.

Yet, admittedly, people are today often engaged in activities destructive of the natural world. This is a result of their being deprived of all rights over natural resources, especially since the British rule, and of these resources being diverted, often at incredible levels of subsidies to serve urban-industrial interests. Thus bamboo has been handed over to paper mills at Rs. 1.50 per ton, while basket-weavers, who were being forced to buy it at Rs. 1500 or more per ton, had no choice, but to helplessly watch paper mills devastate it. It was inevitable that under these circumstances, the grass-roots traditions and practices of prudent use of natural resources have often withered away. We have in India a school of environmental philosophy that only sees the resultant destruction of nature by the poor, completely ignoring its devastation by a corrupt political-bureaucratic combine serving narrow vested interests. The English educated middle and upper classes are heavily represented amongst its adherents. The anti-people machinery of forest and wildlife wings strongly supports this perspective, which is accepted by many influential lawyers, jurists, journalists as well. The wide gulf between this segment of the society and people at grassroots is a major cause for the growing influence of Naxalism. The leadership of this school of thinking is vested in hands of people making large profits out of nature based tourism.

## **Blunder of Bharatpur**

Management of forests thus turned to nature based tourism as its *raison-de-etre* in the decade of 1980's. With this, the Wild Life Sanctuaries and National Parks began to cover more and more land. Keeping people out of these protected areas became an article of faith, regardless of whether it served the cause if wildlife or not. A striking example of the incalculable damage that may be inflicted by thus unthinkingly treating people as enemies of nature comes from the story of the notorious ivory and sandalwood poacher Veerappan. His gang operated unchecked for full 20 years on the forested hills bordering Karnataka and Tamilnadu, even after murdering several Government servants. They killed an estimated 2000 tuskers, and wiped out all well grown sandalwood trees. They could inflict such devastation with impunity because people were totally un-cooperative with the Government machinery, which they saw as bent only on harassing them.

Even so knowledgeable a scientist as Dr. Salim Ali subscribed to this perspective without examining the issues in depth. The Bharatpur wetlands, famous for the large heronries in the rainy season and the enormous flocks of migratory birds visiting in winter, was one of the first wildlife sanctuaries to be created after independence at the instance of Dr Salim Ali in the 1950s. He had worked for years at Bharatpur, banding thousands of migratory birds. Bharatpur had been subject to grazing by buffaloes and other uses such as collection of khus grass by local people for centuries, and had remained a biodiversity rich habitat. However, Dr Salim Ali felt that the habitat would greatly benefit from a cessation of buffalo grazing and was supported by experts of the International Crane Foundation. These recommendations led to the declaration of the locality as a National Park in 1982. The rigid regulations applicable to a National Park called for total cessation of livelihood activities of local people, so buffalo grazing was banned without any alternatives being offered. There were protests; seven people were killed in the firing that followed, but the ban was enforced.

This intervention led to a totally unexpected outcome. It turned out that buffaloes were keeping under check a water loving grass *Paspalum*. When grazing stopped this grass grew unchecked, rendering the wetland a far worse habitat for waterfowl, the prime objective of the National Park management. The numbers of visiting Siberian cranes have also been declining. Residents of the village Aghapur adjoining the National Park have an intriguing suggestion in this regard. They believe that Siberian cranes earlier had better access to underground corms and tubers, their major food, because the soil used to be loosened while digging for khus roots. Since this collection was stopped on

declaration of National Park, the soil has been compacted reducing their access to this food. This is a plausible hypothesis worth exploring further (Gadgil et al 2000).

## **Adaptive management**

So, given the uncertainties in understanding and predicting the behaviour of complex ecosystems like the Bharatpur wetland, how do we proceed? The modern theory of management of living resources proposes that we should, in all humility, accept severe limitations to our current ability to predict future system behaviour, and focus on providing more limited, context specific prescriptions. Moreover, we should make extensive use of detailed locality and time specific, including historical, information. We should organize a system of on-going monitoring of the situation on the ground and continually feed this information into updating management prescriptions. Such a system has been termed an "adaptive management system" (Walters, 1986).

Indeed, it is widely acknowledged now that, today, ecologists are in no position to offer any general guidelines for managing biodiversity or forest resources that would be of practical value in the field. Thus, there are no universal laws, for instance, that all human uses would lead to erosion of all forms of biodiversity. Some uses would lead to erosion of some components of biodiversity, other uses to enhancement of other components. Since sweeping generalizations are not feasible, what is required is to try out various options, monitor the consequences, and make corrections as we go along.

Such an adaptive approach would firstly attempt to put together all available information, including practical ecological knowledge of local people, to assess what measures might be favourable; such as, enhance the ability of wetlands like Bharatpur to support water birds. If such an assessment suggests the possibility that an elimination of grazing by buffaloes may be helpful, a decision could be made to explore the consequences of such elimination. This would not involve a complete ban for all times at all. Instead, it would entail elimination of grazing in some parts of the wetland, initially for a year. The consequences of such elimination would be carefully monitored, preferably in a transparent and participatory manner, by involving local students, teachers and community members, and assessed. If this suggests a beneficial effect, there could be a continuation and perhaps increase in the

portion of wetlands where grazing was eliminated. If it suggests a negative effect, the area over which grazing was eliminated would be reduced, and careful monitoring continued over the area on which grazing is regulated to assess if elimination of grazing over two consecutive years turns out to be helpful. There would be a further assessment after two years; and so on. This would undoubtedly be a far better way, both practically and scientifically to manage complex systems like ecosystems.

Indeed, as Slobodkin (1988) puts it, ecologists at their best remain naturalists, aided by modern technology and computational devices, but for most practical purposes relying on accumulated experience. Many people of our countryside, too, are engaged in accumulating pertinent ecological experience while pursuing their manifold subsistence activities. The level of detailed ecological monitoring that they undertake out of sheer necessity cannot be matched by any formal scientific effort, in spite of all our advances in remote-sensing and informatics. What is then needed is to organize a system of utilizing the information being thus continually gathered by the ecosystem people in the task of adaptive management of biodiversity (Gadgil et al 2000).

## **Positive experiences of Orissa**

The decade of 1980's also saw some very positive developments. Amongst these were the Community Forest Management systems of Orissa. These spontaneously established village forest committees are an excellent example of "adaptive management". Dhani forest committee is one such self-initiated, informal village forest committee. It brings together five villages and has promoted the regeneration of 840 hectares of forest tract since 1987. The General Body of the committee oversees the management of the forest as well as issues such as framing rules, resolving conflicts, taking action against offenders, and distributing benefits. The General Body is assisted by an Executive Committee for day to day management, and an Advisory Committee. The General Body has a regular meeting once a year. But in an emergency, such as a forest offense or amendment of existing rules, a meeting of the General Body can be called at any time. Over the years the committee has changed its rules in response to changing conditions. In the first year of operations, for instance, no people or cattle were permitted to enter the forest. After that the area was opened for grazing outside the rainy season from October to June. At the same time, people were permitted to enter the forest to collect dry and fallen wood and leaf litter

between July and February. Subsequently, poor members of the community were permitted to extract a limited quantity of fuel wood. Restoration of the vegetation has also led to the return of wildlife to the area. The Dhani Village Forest Committee considered a proposal to declare the forest a wildlife sanctuary. But the proposal was rejected on the grounds that it would lead to a take-over by the government and denial of villager access to forest resources that had been replenished by their voluntary efforts (Perrings and Gadgil 2003). Today these Forest Protection Committees of Orissa are a shining example of what people can accomplish, and what constitutes adaptive management.

## **PIL of 1995**

The influence of the anti-people school of environmentalism has had many consequences over the past 15 years or so. The Public Interest Litigation has played a significant role in the environmental movement since 1985-86. It has led to important interventions in cases like mining near Mussoorie or air pollution in Delhi. One such PIL was filed by the World Wide Fund for Nature – India in 1995. It pleaded that the rights and privileges of people living in the vicinity of Wild Life Sanctuaries and National Parks be properly settled. This opportunity was seized upon by the Forest Officials simply to abrogate all rights without due process. This meant serious hardships for forest fringe dwellers.

## **Stay on regulation of encroachments**

The land settlement under the British regime ensured that people could gain only from land under the plough, land from which the Government could collect taxes. The state could not tax community lands, and in consequence, created a system so that people gained little from it. Much of such land was made over to Forest Department, with total alienation of people from this land. This system was further strengthened by the 1952 Forest Policy. Thus has been created an equation between personal gain from encroaching on forest land, and no stake for the people in the health of common lands, especially, forest lands. During colonial times, Europeans were encouraged to encroach on huge tracts of forested lands to establish tea, coffee, cardamom estates, and Indians to encroach on it for petty cultivation. But as forest cover

began to shrink rapidly after independence, the state initiated measures to contain forest encroachment.

The key question, of course, is how to regulate encroachment on forests. At the time of initial forest settlement, the rights of forest dwellers had not been properly recorded in a large number of cases, especially in the case of tribal communities. As a result, in several cases, land under cultivation for many generations had not been assigned to them. In other cases, people had no option other than to encroach on forests to survive. Thus, when the first dam on Sharavathy River in Karnataka was completed around 1950, the educated, well-to-do orchard owners, whose lands were submerged, were given alternative land and compensation. But the illiterate, small holders received no compensation, nor alternative land. Instead, when the time came for filling up the reservoir, they were bundled into a truck, and left in the middle of Ripponpet Forest Range to survive as well as they could. So they encroached on the forest to eke out a living. While legally these people are certainly in the wrong, such encroachment is surely justified morally.

At the same time, the rich have also been encroaching on forest land all over, ranging from owners of large cardamom estates to operators of tourist resorts. Such encroachment is clearly unjustified and deserves to be firmly discouraged. We thus have a situation where some, such as tribals whose traditional land rights were not properly recorded, or many poor refugees from development projects, have justifiable claims over "illegally" occupied forest lands for cultivation; while others have encroached without any justification. It would be right and proper to carefully discriminate amongst different brands of encroachment and deal with them in a just fashion. But this cannot be accomplished by a machinery, which itself has been involved in illegal cutting of forest, as was narrated above in case of land outside the submersion zone of Bedthi hydel project. So the anti-people environmental lobby was insistent that all apparent encroachment on forest land must be sternly dealt with.

But the political class cannot accept such an extreme position. To woo people in the elections, they need to make concessions. So the Governments did take decisions to regularize certain recorded encroachments. In Maharashtra the tribal cultivators' interests were being supported by a confederation of people's movements called "Jabaran Jot", or "Plough with

Force". The pressure of this lobby resulted in the Government of Maharashtra passing two resolutions to regularize encroachments in 1978 and 1979. But these were not implemented despite numerous campaigns; instead there were continual attempts at eviction of tribals. So the "Shoshit Jan Andolan" (Movement of Exploited People) pleaded in Supreme Court that these Government Orders be implemented (Petition no.1778/86 : Pradeep Prabhu versus Government of Maharashtra). As a result, the court granted stay on eviction of petitioners. More significantly, the court agreed to the admissibility of oral evidence and involvement of local communities in assessing the merits of land claims.

But as the Courts adopted an activist stance in relation to environmental issues, the Forestry establishment, as well as the anti-people environmentalists turned increasingly to them. From 1996 on, the Courts began to stay the execution of regularization of tribal cultivation of forest lands. This fuelled further tribal unrest. In the meantime, evictions of tribals continued unabated. These were further accelerated by the Circular of 3/5/2002 from the Inspector General of Forests. The Government of Maharashtra was forced to reckon with this discontent, and on 17 September 2002 issued an order staying the evictions. In consequence, it was decided to establish village committees authorized to decide on the validity of the land claims in an open gram sabha assembly.

In 2002 the Supreme Court constituted a Central Empowered Committee to assist in issues pertaining to forests and wildlife. The anti-people school of environmentalism has played a dominant role in constituting this committee, in deciding on its membership and in its functioning. Many of the decisions of this CEC have worsened the plight of the forest dwellers, while strengthening the bureaucratic hold. At the same time, incidents like the killing of all tigers from Sariska are amply demonstrating that the autocratic Forestry establishment, with its long tradition of devastation of forest and wild life resources, is singularly unsuccessful in its formally assigned task of nature conservation.

## **The sorry experience of BRT hills**

BRT hills are a forest covered range in Karnataka to the east of Nilgiris. It is the traditional homeland of Soliga tribals, who earlier they practiced hunting-gathering and shifting cultivation. They have protected a large sacred grove on one of the mountain peaks, harbouring a magnificent *Michelia champaka* tree. When this area was declared a wild life sanctuary, Soligas could no longer hunt or practice shifting cultivation. So gathering of honey, medicinal plants and amla (*Phyllanthus emblica*) became the mainstay of their subsistence. A voluntary organization, Vivekananda Girijana Kalyana Kendra, has organized them effectively and helped set up a system of regulated collection, processing and marketing of forest produce. A scientific institution, ATREE, has been engaged in a study of the Soliga forest produce collection practices and their impact on resource stocks. They have come to the conclusion that these practices are entirely sustainable. The Soliga earnings had also improved because of their processing industry. Most regrettably, the Forest Department has banned all collection of forest produce for marketing in 2005, forcing Soligas into destitution.

## **Sariska disaster**

The Tiger Reserve of Sariska close to Delhi is a favourite tourist destination. Sightings of tigers at Sariska had become a very rare event since 2003. Yet the Forest Department claimed that a goodish number of tigers still roamed Sariska. So, under pressure of public outcry, the Government of India asked CBI to look into the matter. The CBI reported that all tigers had indeed been poached out of Sariska by 2004. Apparently, carcasses of several poached tigers had been skinned and left to rot. This creates a grand stink and it was inconceivable that the official machinery would not be in the know. So while local villagers and paradhis would have been engaged in poaching, CBI concluded that this must have been done with official connivance. But in the end, while many villagers were beaten up, no government servant was called to book.

We have diametrically opposite experiences in other cases of poaching, where local people have taken the lead in apprehending poachers. Such cases involving Salman Khan and Nawab of Pataudi have drawn wide publicity. More

recently an ex-Minister of Maharashtra, Dharmaram Atram has been implicated in a poaching case.

## **Aspirations of forest staff**

In 2005, the Prime Minister appointed a Tiger Task Force to look into poaching of tigers and evident problems in protection of wild life. I had an opportunity of serving on this group. In this context we had extensive discussions with forest officials at all levels, from watchers and guards to Principal Chief Conservators of Forests. We asked them for their suggestions as to how the Departmental staff could work with local communities to enhance the efficacy of wild life conservation programmes. There are some excellent models of this, especially in case of Periyar Tiger Reserve in Kerala. But with the singular exception of officials from Periyar, none others had any interest in talking about working with people. Their constant refrain was: give us more guns, more allowances, more powers, declare Tiger Reserves disturbed areas like parts of Northeast and Kashmir. Give us the pay, the facilities and the powers of Army. This is indeed a tragedy for India's natural heritage. How can such a self-serving machinery conserve our natural resources?

## **Tribal Self-rule**

Yet, we have been marching ahead, albeit haltingly, thanks to the growing strength of our democratic institutions. As a part of this process, the provisions of Panchayat Raj were extended to Scheduled V Areas in 1996. This conferred on local communities full rights over fuelwood, grazing and minor forest produce. Yet important MFP's like bamboo and tendu were immediately excluded from these rights. Within a year, the Government of Maharashtra declared that the Gram Panchayats were incompetent to handle MFPs and handed over monopoly rights to Tribal development Corporation. This was totally unjustified, and was done without any consultations with the Panchayat authorities. So people ended up gaining little out of PESA.

## **Biological diversity Act**

Biological Diversity Act of 2002 (BDA), aiming to promote conservation, sustainable use, and equitable sharing of benefits of India's biodiversity resources, including habitats, cultivars, domesticated stocks and breeds of animals and microorganisms, is yet another progressive step. The Act provides for the establishment of a National Biodiversity Authority (NBA), State Biodiversity Boards (SBB) and Biodiversity Management Committees (BMC) at the level of Panchayats (gram, taluk and zilla), Municipalities and City Corporations. The BMCs are authorized to regulate harvests of biodiversity resources within their jurisdiction, and to charge collection fees for this purpose. They will have at their disposal "Local Biodiversity Funds" into which such income, as well as other grants will be deposited. The NBA is authorized to scrutinize all Intellectual Property Rights related applications and ensure that they properly acknowledge the contributions of providers of indigenous knowledge. NBA is expected to consult all local BMCs in this respect and to ensure appropriate arrangements for equitable sharing of benefits. It is clearly appropriate that the gram sabha, or the Committee constituted by it to manage biodiversity resources under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (TFRA) should perform the functions assigned to the Biodiversity Management Committees under the Biological Diversity Act.

While there are many significant initiatives such as Joint Forest Management and Watershed Development towards decentralization of ecosystem management, none of the institutions set up for the purpose have a statutory backing. The BMCs have the required legislative support and should therefore be in a position to strike roots more effectively. Moreover, BMCs would serve to take science right down to the grass roots, since, the rules lay down that *"The main function of the BMC is to prepare People's Biodiversity Register in consultation with local people. The Register shall contain comprehensive information on availability and knowledge of local biological resources, their medicinal or any other use or any other traditional knowledge associated with them."*

## **Compensatory Afforestation Fund**

We now have in place many measures to guard against further depletion of India's forest cover. One of these is the requirement that the Net Present Value of any forest land diverted for other purposes such as mining or river valley projects be paid for by the project proponents and deposited in a Compensatory Afforestation Fund. This fund has now grown to 70,000 crores and the challenge before us is to use this money constructively. Given the disappointing experiences of the many Forest Development Corporations, it is clear that such a huge fund should not be put at exclusive disposal of the state machinery. It would surely be very much more appropriate to use it for supporting local communities to protect, to promote natural regeneration, and to restore species rich natural biota on community forest lands that would be put under their management through the provisions of the Tribal Forest Rights Act.

## **Worsening rural unemployment**

We are delighted that India is shining, that we are progressing towards a great power status. But our development is plagued by inequalities. Employment is a significant area which brings out how our growth process is failing on inclusiveness. The number of workers is growing, particularly in non-agriculture, but weaknesses appear in unemployment, the quality of employment and in large and increasing differentials in productivity and wages. Agriculture lost its growth momentum from the mid-1990s and subsequently entered a near crisis situation. Consequently, agricultural employment has increased at less than 1% per annum, slower than the population and much slower than non-agricultural employment. Furthermore, this has been associated with a sharp increase in unemployment (from 9.5% in 1993-94 to 15.3% in 2004-05) among agricultural labour households which represent the poorest groups. It seems unlikely that there would be much growth in employment in the farming sector. So we must meet this challenge by enhancing the productivity of non-farm lands. Some 30% of India's villages are located on fringes of forests. For these at least a most promising avenue is to enhance the productivity of the currently highly unproductive Community Forest Resource lands. Employment could then be generated to protect and restore these lands, as well as in processing the produce of such lands.

## **Employment guarantee Scheme**

A National Rural Employment Guarantee Scheme (NREGA) has been instituted since 2006 by the Government of India on the pattern of Maharashtra's 30 year old Employment Guarantee Scheme. The long term objective of this programme is to augment the natural resource base to generate self-employment. At the same time it aims to ameliorate rural poverty by providing immediate employment, or in its absence, unemployment allowance. The Act attempts to ensure transparency and people's participation in the entire process. In particular, it is the Gram Sabha that is expected to assess the employment needs of the various families in different seasons and on that basis plan the entire basket of work to be undertaken. Soil and water conservation and afforestation works are to be undertaken on a priority basis under NREGA. These may also be carried out on private lands of tribal and other economically disadvantaged families. The Gram Sabha is expected to prepare such a plan each year by December, and this plan has to be accepted so long as it conforms to the overall plan of works to be undertaken under the scheme. A minimum of half of these works are to be executed by the Gram Panchayat; and private contractors can have no role in this scheme.

## **Moving ahead through forest rights**

Prior clearance of Central Government became a mandatory requirement while granting any rights over forest lands, following the Forest Conservation Act (FCA) of 1980. The Supreme Court subsequently ruled against granting of any rights to tribals while pronouncing its judgment in the Godavaran case. In the backdrop of the FCA and various interpretations and rulings of the Supreme Court, it became evident that tribals would not be able to assert any rights through the courts; and that a new legislation was needed. The Scheduled Tribes and Other Traditional Forest Dwellers (Right over the Forests) Act of 2006 (TFRA) is the result of the efforts that were put in after this realization.

TFRA, whose implementation was initiated on 1st January 2008, presents a major opportunity and a great challenge, not only for conservation, but also

for sustainable use and regeneration of the country's forest, as well as domesticated biodiversity. In its preamble, the Act declares that the recognized rights of the forest dwelling scheduled tribes, and other traditional forest dwellers include the responsibilities and authority for sustainable use, conservation of biodiversity and maintenance of ecological balance, thereby strengthening the conservation regime of the forests while ensuring livelihood and food security of the forest dwelling scheduled tribes, and other traditional forest dwellers. The rights granted under TFRA include secure individual or community tenure, or both, on all forest lands, including reserved forests, protected forests and protected areas such as Sanctuaries and National Parks to which the community had traditional access. The Act recognizes ownership claims over land that was already under cultivation as of December 2005 up to a maximum limit of 4 hectares. Thus TFRA in no way allows for any new forest land being brought under cultivation. This land may be passed on to heirs but cannot be sold to any third party. Hence the fears that the Act will encourage further deforestation or takeover of forest land by outsiders are completely unfounded.

The people are apt to continue cultivation on a substantial part of the land to which they will acquire individual tenure. Many of these forest and forest fringe dwellers are poorer households engaged in organic agriculture out of necessity and maintain traditional crops and cultivars and land races of domesticated animals. It would be worthwhile promoting their continued involvement in *in situ* conservation of traditional crops, cultivars or land races.

The Act additionally, provides for diversion of forest land up to 13 hectares for facilities managed by the Government, such as (a) schools; (b) dispensary or hospital; (c) anganwadis; (d) fair price shops; (e) electric and telecommunication lines; (f) tanks and other minor water bodies; (g) drinking water supply and water pipelines; (h) water or rain water harvesting structures; and so on.

## **Community lands**

TFRA confers secure community tenure on "Community Forest Resources", defined as customary common forest land within the traditional or customary boundaries of the village or seasonal use of landscape in case of pastoral communities, including reserved forests, protected forests and protected areas such as Sanctuaries and National Parks to which the community had traditional access. On such land, they will enjoy:

- Right of ownership, access to collect, use or dispose of minor forest produce which have been traditionally collected within or outside village boundaries; TFRA defines MFPs as all non-timber forest produce of plant origin including bamboo, brushwood, stumps, cane, tussar, cocoons, honey, wax, lac, tendu leaves, medicinal plants and herbs, roots, tubers and the like;
- Other community rights of uses or entitlements such as fish and other products of water bodies, grazing (both settled and trans-humant) and traditional seasonal resource access of nomadic or pastoralist communities
- Right to protect, regenerate or conserve or manage any community resource which they have been traditionally protecting and conserving for sustainable use
- Right of access to biodiversity and community right to intellectual property and traditional knowledge related to biodiversity and cultural diversity
- Any other traditional right customarily enjoyed by the forest dwelling scheduled tribes, and other traditional forest dwellers as the case may be, but excluding the traditional right of hunting or trapping or extracting any part of the body of any species of wild animal.

Furthermore, the holders of any forest rights, Gram Sabha and village level institutions in areas where there are holders of any forest right, are empowered to:

- Protect the wildlife, forest and biodiversity:
- Ensure that adjoining catchment areas, water sources and other ecological sensitive areas are adequately protected;
- Ensure that the habitat of forest dwelling scheduled tribes, and other traditional forest dwellers is preserved from any form of destructive practices affecting their cultural and natural heritage;
- Ensure that the decisions taken in the Gram Sabha to regulate access to community forest resources and stop any activity which adversely affects the wild animals, forest and the biodiversity are complied with.

TFRA very specifically visualizes empowering Gram Sabha and village level institutions to protect the wild life, forest, and biodiversity. It confers on the forest dwellers the responsibilities and authority for sustainable use, conservation of biodiversity and maintenance of ecological balance. TFRA establishes links to the Biological Diversity Act (BDA) through its clause 2(n),

by stating that "sustainable use shall have the same meaning as assigned to it in clause (o) of section 2 of BDA. BDA visualizes the establishment of Biodiversity management Committees at the level of all local bodies to implement its objectives. Hence it would be appropriate that the gram sabha under TFRA should perform the functions assigned to the Biodiversity Management Committees under the Biological Diversity Act.

## **Forest Rights : some misgivings**

It must be admitted of course that many people have misgivings about the Tribal Forest Rights act. They fear that:

- The rights conferred on tribals and traditional forest dwellers would result in large scale tree felling
- The implementation of this act will adversely affect wildlife and biodiversity
- Tribals and forest dwellers would not be in position to prudently manage Community Forest Resources.
- Outsiders will capture the land of forest dwellers and encroach on lands rich in natural wealth.

But let us ask: what may one expect, if in place of local communities, we give more powers to the anti-people machinery of the state? Will this lead to better protection of the forest cover, of wildlife, and halt encroachment of outsiders? Consider our experience of last six decades of the independence, leaving aside the awesome destruction of the continent that was once an ocean of trees, in the colonial period.

- When nearly 11 % of the country's land surface under privately owned forests was made over to forest authorities, delays and corruption resulted in destruction of the bulk of this tree cover.

- Whenever roads reached earlier inaccessible forest areas due to developmental projects, there were large scale fellings of state forests.

- Forest based industries were made available bamboo, or huge trees for pulpwood, at throw away prices and promptly exhausted these resources.

- Forest Development Corporations turned themselves into (in words of Dr. Salim Ali and Mrs. Indira Gandhi), Forest Destruction Corporations and clear felled huge tracts of rich natural forest without ensuring its replacement by productive forests.

- Forest departments played a major role in destroying the sacred groves under many guises.

- With people viewing forest authorities as their enemies, the notorious criminal Veerappan remained at large for two decades, despite killing several government officials and devastated the sandal wood trees and tuskers of Karnataka and Tamilnadu.

- All tigers were poached out of the very well funded Sariska Tiger Reserve. Yet the government machinery did nothing beyond disseminating false information on the number of tigers.

- The anti-people policies of forest authorities have landed rich wildlife habitats like the Keoladev Ghana National Park in serious trouble.

Consider, on the other hand, what our people have accomplished, despite the powers that be continually giving them false promises, trying their best to weaken people's organizations, and trying to co-opt people in the corrupt system.

- All over the country keystone ecological resources like pepal, banyan, gular trees survive in good numbers.

- Even today we are discovering new flowering plant species like *Kuntsleria keralensis* in sacred groves protected by people in the thickly populated coastal Kerala.

- Monkeys, peafowl still survive in many parts of our country.
- Number of chinkaras, blackbuck, nilgai are actually on increase.
- People play a leading role in arresting poachers of animals like blackbuck.
- In many parts of Rajasthan people are protecting community forest resources like "Orans".

- In Nagaland many community forests are under good management.
- Many Ban Panchayats of Uttaranchal are managing forest resources prudently.

- Many village communities of Central Indian belt are managing well forest resources over which they earlier enjoyed nistar rights.

- Many village communities of Gadchiroli district in Maharashtra have still maintained forest areas over which they used to exercise nistar rights in excellent condition.

- Village like Halakar in Karnataka is still preserving its village forest well in spite of many attacks by state machinery.

- Peasants of Ratnagiri district have ensured good regeneration of their private forests

- Thousands of self initiated forest protection committees of Orissa have regenerated forest brought under community protection.

One must also emphasize that the excellent present day forest cover of Switzerland has regenerated entirely on community forest lands. Our plea therefore is that since the TFRA is now a *fait accompli* let us set aside our misgivings and strive to see what may be accomplished through a positive, constructive approach. In this context we can visualize following four programs:

1. Restore a diverse plant cover on Community Forest Resource lands employing a variety of species that would support livelihoods.
2. Set aside 5- 10% of Community Forest Resource lands for regeneration and conservation of natural biota on the pattern of sacred groves.
3. Sustain the cultivation of some of the traditional cultivars of crops on private lands made available under TFRA.
4. Sustain the cultivation of promising indigenous varieties of fruit trees on private lands made available under TFRA.

## **Diversity of useful species**

A substantial area of forest land throughout the country will thus be assigned to local communities with full rights over all non-timber produce including bamboo and cane. They would also be in a position to undertake activities to regenerate such resources, and manage them by regulating access to them. They will have the authority to collect and dispose, or sell these non-timber produce. Much of this land today bears degraded vegetation or vegetation reduced to stands of a handful species of little local use such as Eucalyptus, Acacia auriculiformis, or Glyrecedia. On the other hand, local community members have interest in the maintenance of a wide variety of species with a range of uses. For instance, the People's Biodiversity Register of Chavani village in Raigad district of Maharashtra records on-going local uses of 183 out of 240 locally known, naturally occurring species of flowering plants. When motivated and authorized to do so, the local people will choose to encourage natural regeneration, or undertake replanting of a great diversity of plant species, thereby substantially enhancing the stock of the nation's biodiversity.

To concretely assess such possibilities, we collaborated with local community members, and NGO workers in 9 tribal villages of Nandurabar, Aurangabad, Amaravati and Gadchiroli districts of Maharashtra in developing management plans for their Community Forest Resource lands, over June-

September 2008. During this exercise people of Dhomanipata village in Amaravati district listed 162 species as being of special interest to them. These included 23 medicinal plants, 50 trees, 10 fish, aquatic animals like crabs, prawns and turtles, lizards, birds and mammals. Their action plan includes raising and planting seedlings of 16 species including sitaphal, amla, ber, guava, mahua, chironji, mango and jamun.

Such a program of ecorstoration should focus on the country's indigenous biodiversity elements. However, it would be inappropriate to take a purist view and reject species like sitaphal (*Anona squamosa*). Although, sitaphal may have arrived a few centuries ago from South America, it is now naturalized and over a third of Maharashtra's sitaphal production comes from the wild plants. The ecorstoration activities may therefore emphasize natural, supplemented by artificial regeneration of indigenous biodiversity elements.

## Ecorestoration

The activities focusing on conservation and ecorestoration of community forest resource lands employing a diversity of life sustaining and economic plant species may include:

- Identification of a diversity of indigenous plant species appropriate to different ecological regimes, representing different successional stages, belonging to different growth forms and requiring different periods to start yielding useful produce, and providing manifold services
- The species may be chosen so as to provide any of a whole range of ecosystem, subsistence and commercial services: [a] Soil/water conservation [b] Fencing [c] Fuel [d] Fodder [e] Green manure [f] Thatch [g] Small timber [h] Bamboo [i] Cane [j] Basketry [k] Mat weaving [l] Wild food for home consumption, especially as sources of micro-nutrients [m] Wild food for market [n] Gums [o] Medicinal plants [p] Tendu [q] Lac [r] Honey.

There are excellent possibilities of availing NREGA funds to support many of the component activities such as:

- Promoting natural regeneration
- Raising seedlings,
- Undertaking plantations along with necessary soil and water conservation measures

Other complementary activities that need to be taken up include:

- Organizing seed or propagule collection. This, for instance, is currently a component of the school eco-clubs programme of Maharashtra
- Instituting systems of sustainable harvests
- Organizing local level value addition and processing
- Organizing marketing systems
- Compilation of a species database on the basis of available information covering all relevant aspects from ecology, propagation, utility, value addition, and marketing. This should be in both local languages as well as in English.
- Focused studies on key issues such as nutritive value, food processing techniques, marketing
- Field level studies under different ecological and socio-economic regimes of seed collection, nursery techniques, planting techniques, harvesting techniques, processing and marketing

## **Establishing “safety forests”**

Although the practice of protection to sacred groves is linked to religious beliefs, people are often clearly aware of the many ecological services that these tracts provide. This is why the practices not only persist in some localities, but in places there are instances of spontaneous establishment of new groves. Thus 25 villages have come together in the Dharmagad region on the border of Almora-Pithoragad districts of Uttaranchal to establish an extensive sacred grove dedicated to the deity “Kokila mata” on the crestline of the hills. People are permitted to collect dry wood or twigs from the grove, but believe that they will incur the wrath of the deity if they cut green trees. Similarly, villagers from Bada Bhilwada and Shyampura in Jhadol taluk of Udaipur district in Aravali hills have set up a sacred grove dedicated to Kesariyaji after performing the ritual of “kesar chhidakov” or spraying saffron, in association with activists of the NGO, Seva Mandir. People are permitted to cut grass by hand on payment to the Grove Management Committee; no other harvests are allowed.

Sacred groves, thus revived in Mizoram and Manipur after conversion to Christianity, are now being referred to as “safety forests”. One may visualize the establishment of such safety forests on 5% or 10% of Community Forest Resource Lands throughout the country. This could create a network of

groves, ponds, pools in rivers and streams, rich in biodiversity. It is with this in view that Maharashtra's Network on Joint Forest Management and Biodiversity has advised that 10% of the land area be set aside as safety forests while preparing microplans.

## **Protecting agrobiodiversity**

The lands to which people would receive clear titles under TFRA are those already under cultivation. However, people are now free to develop orchards on such lands. Much of this land is currently under organic agriculture, largely because of compulsions. But this is desirable from a biodiversity perspective, since these farms today support many traditional crops and cultivars. It would be appropriate to promote programmes of conservation of agrobiodiversity on such farms.

Indeed, the importance of such *in situ* efforts has been well recognized. For instance, the "Protection of Plant Varieties and Farmer's Rights (PPVFR) Act 2001" provides for registration of traditional cultivars or farmer's varieties by both individual farmers and communities. The Protection of Plant Varieties and Farmer's Rights Authority has set up a National Gene Fund to arrange for benefit sharing to farmers and communities whose varieties may have provided the foundation for further development of commercial varieties. The National Gene Fund is also meant to support capacity building of Panchayats to organize on farm conservation efforts with respect to traditional cultivars and farmer's varieties. However, barring some limited voluntary efforts no extensive programs to promote on farm conservation of crop genetic resources have been put in place. The Forest Rights Act provides a tremendous opportunity to promote such programmes on extensive tracts of farm lands that are a treasure trove of agrobiodiversity.

## **Part 2 : Conserving and restoring Community Forest Resources**

### **Nurturing Community Forest Resources**

The Tribal Forest Right Act is a great challenge that could be turned into a golden opportunity to conserve, indeed rejuvenate, our biodiversity resources, put them to prudent use and take their benefits to some of the most disadvantaged segments of the Indian society. The act aims to empower tribal

and other forest dwelling communities to engage in conservation of biodiversity, its sustainable use and in protecting the forest ecosystem. It is hoped that this would strengthen conservation regime for the forests, along with livelihoods and nutrition of forest dwellers.

To translate this into reality calls for forest dwellers prudently managing their community forest resources. For this, the concerned communities must act in unison, must carefully plan the management of community forest resources and then wisely put such management plans into operation. This is, undoubtedly, a arduous task. Nevertheless, there are many recent developments that have helped create a favourable enabling environment (Gadgil, M. 2007). These include:

- The TFRA has conferred substantial authority on local communities in management of forest resources. At the same time, the communities have the responsibility of guarding the forest wealth and using it prudently. This calls for a careful assessment of forest resources, planning for its sustainable utilization and effectively implementing the management plans. No centralized machinery can accomplish this, nor is it desirable that centralized structures should be in charge of such responsibilities. Such management calls for fine tuning to the locality and time specific features and adjusting the management practices to the context in a flexible manner. This can be best accomplished by involving people living close to nature, through the agency of their Gram Sabhas. For this purpose, the Gram Sabha may act through a Village Biodiversity Committee supported by a study group.
- The Biological Biodiversity Act (BDA) calls for establishment of Biodiversity Management Committees (BMC) at the level of Gram Panchayats, as well as Taluka and District level Panchayat bodies. These BMC's have the responsibility of documenting local biodiversity resources and associated knowledge to support good local level management. They are also authorized to regulate and manage these resources. Much may be accomplished by establishing synergy between the provisions of TFRA and BDA.
- The National Rural Employment Guarantee Act offers an excellent opportunity of involving people in conservation and restoration of ecological resources. Gram Sabhas are fully empowered to plan the works

to be undertaken under NREGA. This planning could be effectively linked to that by Village Biodiversity Committees set up under TFRA.

- The Protection of Plant Varieties and Farmers Rights Act (PPVFRA) provides for registration of traditional cultivars as well as farmer's varieties. The funds from the National Gene Fund set up under this act can be used to promote continued on farm conservation of agro-biodiversity. The planning for management of this agro-biodiversity can be made an integral component of natural resource management plans at the Gram Sabha level. This could facilitate rejuvenation of biodiversity on both community forest lands and cultivable lands in the forested tracts.

## Advancing step by step

Communities will have to progress systematically, step by step, during the course of the implementation of the TFRA (Campaign for Survival and Dignity. 2008, NFPPW 2008). We outline below a series of such steps, specially focusing on prudent management and restoration of Community Forest Resources.

### Steps in implementation of TFRA

#	Step	What do we do	When
1	*Convening first gram sabha at the level of Gram Panchayat *Agreeing to gram sabhas functioning independently at the level of vadi/pada/revenue villages - If this is not possible, electing the Forest Rights Committee, & calling for claims by Gram Panchayat level Gram Sabha	a] Be present in large numbers b] Agree to convening of gram sabhas at the level of vadi/pada/revenue villages c] Make a written request to all government agencies to provide all required information, maps etc d] If there are difficulties in convening separate gram sabhas at the level of vadi/pada/revenue villages, then elect a Gram Panchayat level Forest Rights Committee and decide on a date to decide on Community Forest Resources and their boundaries	As soon as possible
2	Convening first gram sabha at the level of vadi/pada/revenue villages, electing the Forest Rights Committee, calling for claims	a] Be present in large numbers b] Elect the Forest Rights Committee and c] Arrive at a date to decide on Community Forest Resources and their boundaries	As soon as possible

3	Gram Sabha deciding on Community Forest Resources and their boundaries	a] Prepare a list of community forest resources b] Decide on boundaries of community forest resources, recording them on map/s, passing appropriate resolution c] Verifying whether Govt agencies have provided the required information, and if not requesting for an extension of the time limit for the work of Forest Rights Committee d] Initiate steps to set up Biodiversity Management Committees (see step 12)	As soon as possible
4	Acceptance of claims by the Forest Rights Committee	Put together needed evidences and submit claims to the Forest Rights Committee	Within 3 months of call for claims
5	Verification of claims by Forest Rights Committee	Be present to show the actual location	
6	Gram Sabha passing resolution with respect to claims	Be present in large numbers	
7	Gram Sabha forwarding its resolutions to sub-divisional committee	People dissatisfied with Gram Sabha resolution to appeal to sub-divisional committee	Within 60 days of Gram Sabha resolution
8	Sub-divisional committee to examine Gram Sabha resolutions and send appeals received for reconsideration by Gram Sabha	A] Insist on transparency in the functioning of sub-divisional committee B] Attend gram sabha meeting to present your case at the time of reexamination	Gram Sabha to be convened within 30 days
9	Sub-divisional committee to prepare and forward proposals to district level committee	People dissatisfied with sub-divisional committee resolution to appeal to district level committee	Within 60 days of sub-divisional committee resolution
10	District level committee to examine all resolutions received and examine appeals	A] Insist on transparency in the functioning of district level committee B] Attend district level committee meeting to present your case at the time of reexamination	
11	District level committee to accord final approval to all forest rights claims	Ask for certified copies of registration of all forest rights granted	
Steps 12 to 17 relate to activities to be undertaken in connection with the management of Community Forest Resources. These activities may be			

<p>initiated right from inception (step 1), i.e. at the time of arriving at an acceptance of gram sabhas functioning independently at the level of vadi/pada/revenue villages. If this is not possible, these activities may be initiated at the time of Gram Sabha deciding on Community Forest Resources and their boundaries (step 3)</p>		
12	<p>Convene Gram Panchayat level Gram Sabha to establish Biodiversity Management Committee; in this connection obtain, if possible, agreement to gram sabhas functioning independently at the level of vadi/pada/revenue villages</p>	<p>a] Be present in large numbers b] Agree to convening of gram sabhas at the level of vadi/pada/revenue villages to establish Biodiversity Management Committees</p>
13	<p>Prepare Biodiversity Management Plans at the level of vadi/pada/revenue villages and on that basis plan on employment guarantee works</p>	<p>[a] Establish Biodiversity Study Groups; involve local teachers and students in these groups [b] Compile all relevant information relating to biodiversity and on that basis prepare an action plan for management, including restoration of biodiversity [c] Plan on pertinent Employment Guarantee Scheme activities</p>
14	<p>Prepare Biodiversity Management Plans at the level of Gram Panchayat and on that basis plan on employment guarantee works</p>	<p>[a] Prepare an action plan for management, including restoration, of biodiversity at the Gram Panchayat level on the basis of such action plans at the level of vadi/pada/revenue villages [b] Plan on pertinent Employment Guarantee Scheme activities at the Gram Panchayat level on the basis of such plans at the level of vadi/pada/revenue villages [c] Gram Panchayat level Gram Sabha to finalize the proposed Employment Guarantee Scheme activities at the Gram Panchayat level and forward the plan to the Taluk level Panchayat</p>
15	<p>Take charge of management of Community Forest Resources</p>	<p>Initiate activities to manage and restore Community Forest Resources with the help of Biodiversity Management Committees addressing the rights and responsibilities conferred by the Tribal Forest Rights Act, as well taking proper advantage of provisions of Biological Diversity Act, PESA, Protection of Plant Varieties and Farmers' Rights Act and National Rural Employment Guarantee Act</p>
16	<p>Establish a "safety forest" on parts of Community Forest Resources to promote conservation/</p>	<p>Accord full protection to the safety forest with the help of Biodiversity Management Committees taking proper advantage of all pertinent Acts</p>

	regeneration of natural biota	
17	Initiate conservation of selected local cultivars on some part of cultivated lands	[a] Register local cultivars on basis of provisions of Protection of Plant Varieties and Farmers' Rights Act [b] Initiate planning for continued on farm conservation of selected local cultivars on the basis of the action plan for management of biodiversity [c] Obtain financial support for activities pertaining to on farm conservation of selected local cultivars from the National Gene Fund established under the Protection of Plant Varieties and Farmers' Rights Act

## Requesting information

It is important that a written request be made to Government authorities for all pertinent documents and maps as soon as gram sabha is convened for the first time to put forth claims for forest rights. Availability of such information is vital to formulating and staking proper claims, for both private and community forest resources. In particular, certified true copies relating to the following items of information may be requested:

Government official	Information items
Sub-divisional officer, Revenue	[a] Nistar patrak and Vajibul arj records and maps [b] Private and forest land records and maps [c] Any other documents and information that may be relevant evidence under TFRA rule no 13
Superintendent of Land Records at Taluk level	[a] First land settlement record and maps [b] Records and maps of any resurveys [c] Any other documents and information that may be relevant evidence under TFRA rule no 13
Divisional Forest Officer/ Deputy	[a] Maps of all Forest Compartments in the vicinity of pertinent settlements [b] Documents and maps of Working Plans and micro-plans relating to Forest Compartments in the vicinity of pertinent settlements [c] Information, year by year, over last 10 year period relating to quantity and value of all non-timber forest produce of Forest Compartments in the vicinity of pertinent settlements [d] Any other documents and information that may be relevant evidence under TFRA rule no 13

## Sustainable, prudent use and rejuvenation of biodiversity

The Government of Maharashtra guidelines suggest the establishment of a committee to protect wildlife, forests and biodiversity at the level of each gram sabha. This committee can act all the more effectively by taking advantage of the provisions of the Biological Diversity Act. The Biodiversity

Management Committees at Gram, Taluka and District level established under this act have the authority to manage biodiversity resources within their jurisdiction, to permit or prohibit outsiders from accessing biodiversity and to charge collection fees for accessing biodiversity. At the same time, the Biological Diversity Act deals with knowledge associated with biodiversity. TFRA also confers on forest dwellers rights on knowledge associated with biodiversity and cultural diversity. It is therefore desirable that implementation of TFRA be linked to that of BDA in this context as well. This is because the BMCs have the authority to regulate access to knowledge associated with biodiversity and to charge collection fees for this purpose. The National Biodiversity Authority (NBA) has the responsibility of regulating patents and other intellectual property rights (IPR) pertaining to Indian biodiversity and associated knowledge. The NBA can agree or refuse such IPR applications or impose conditions relating to benefit sharing with Indian holders of knowledge associated with biodiversity. NBA is expected to consult local BMCs in granting such permissions or deciding on benefit sharing arrangements.

It would therefore be desirable to decide that the Gram Sabha committee concerned with conservation of wildlife, forest and biodiversity should also serve as the Biodiversity Management Committee under the BDA. We will refer to this committee looking after both the functions in an integrated fashion as the in the Village Biodiversity Committee in the discussion that follows.

The BDA prescribes establishment of Biodiversity Management Committee at the level of Gram Panchayats. It would be clearly desirable if such committees are built from lower levels of wadi / pada/ mohalla/ revenue villages. For this purpose, the Gram Panchayat level Gram Sabhas, meeting the first time for TFRA implementation, should examine the possibilities of establishing synergy with the implementation of BDA and begin by authorizing the establishment of Biodiversity Management Committees (BMC) at wadi / pada/ mohalla/ revenue village levels. Such grass root level BMC's may then take up the task of assessing and planning for sustainable use and restoration of Community Forest Resources, each within their own jurisdiction. If there are any difficulties in such devolution of responsibilities, it is, of course, always possible to undertake such an exercise at the level of the Gram Panchayat.

The village communities surely have a great deal to gain in the long run from prudent, sustainable use and restoration of biodiversity. Instituting systems of such use will have many immediate positive consequences as well. For instance, the Government of Maharashtra has asked for information on nature of Community Forest Resources (e.g. *Buchnania lanzan* fruit, or *Anogeissus latifolia* gum), the Forest Compartment/ Survey numbers from which it is collected, the total area involved, and the annual amount collected. For this purpose, we need detailed records of the various biodiversity resources, locations where they occur, and the extent of availability and harvest. Little such information is available today. Indeed, in a study sponsored by Karnataka Planning Board, it turned out that Karnataka Forest Department had only limited information on 27 out of 300 species of medicinal plants used commercially in the state; there was no data at all relating to the other 227 species. Evidently it is necessary to initiate special efforts to put together such information.

To this end, we can take advantage of the provisions of the Biological Diversity Act. The rules promulgated under this Act, in force as of 15th April 2004, include the following provisions:

22. Constitution of Biodiversity Management Committees

(1) Every local body (i.e. Panchayat, Municipality etc.) shall constitute a Biodiversity Management Committee (BMC) within its area of jurisdiction.

(6) The main function of the BMC is to prepare People's Biodiversity Register in consultation with local people. The Register shall contain comprehensive information on availability and knowledge of local biological resources, their medicinal or any other use or any other traditional knowledge associated with them.

(7) The other functions of the BMC are to advise on any matter referred to it by the State Biodiversity Board or Authority for granting approval, and to maintain data about the local vaid and practitioners using the biological resources.

(8) The National Biodiversity Authority (NBA) shall take steps to specify the form of the People's Biodiversity Registers, and the particulars it shall contain and the format for electronic database.

(9) The NBA and the State Biodiversity Boards shall provide guidance and technical support to the Biodiversity Management Committees for preparing People's Biodiversity Registers.

(10) The People's Biodiversity Registers shall be maintained and validated by the Biodiversity Management Committees.

The Committee shall also maintain Register giving information about the details of the access to biological resources and traditional knowledge granted, details of the collection fee imposed and details of the benefits derived and the mode of their sharing.

Thus, all local bodies in the country, Gram, Taluk, and Zilla Panchayats, Town Municipalities and City Corporations would have the responsibility of documenting:

- Comprehensive information on availability and knowledge of local biological resources, their medicinal or any other use or any other traditional knowledge associated with them;
- Data about the local vaidas and practitioners using the biological resources;
- Details of the access to biological resources and traditional knowledge granted, details of the collection fee imposed and details of the benefits derived and the mode of their sharing.

## **People's Biodiversity Register**

Such People's Biodiversity Registers could be a very effective tool of managing and regenerating biodiversity while paying careful attention to time and locality specific details. A great deal of experience has accumulated over the years in designing these Registers since the initiation of the programme by Foundation for Revitalization of Local Health Traditions, Bangalore to record the rapidly eroding folk knowledge of medicinal uses of plants in 1995 (Gadgil, 1996). Two other NGOs, Navadhanya of New Delhi and Deccan Development Society of Hyderabad continued the activity, focusing on recording the occurrence and management practices of land races of cultivated crops to support their on-farm conservation, as well as promotion of farmers' rights. Kerala Sastra Sahitya Parishat, the leading People's Science Movement of the country went on to prepare PBRs covering all 85 gram panchayats of the district Ernakulam over 1998-99 as an element of the people's planning movement in the Kerala state (Ernakulam District Biodiversity Committee, 1999). The M.S. Swaminathan Research Foundation of Chennai has prepared PBRs in Wynaad district of Kerala and Paschim Banga Vigyan Manch and Society for Environment and Development of Kolkata at several sites in West Bengal with a similar motivation. Following the passage of the Biological Diversity Act, the Madhya Pradesh Biodiversity Board has vigorously propagated the preparation of PBRs in representative localities in all of the state's eco-regions over 2004-05. However, the most systematic

attempt of preparation of PBRs, covering 52 sites in 7 states and UTs, was undertaken by a network coordinated through the Centre for Ecological Sciences, Indian Institute of Science, Bangalore, initiated as a part of the Biodiversity Conservation Prioritization Programme sponsored by WWF (India) over 1996-98 (Gadgil et al, 2000). Subsequently, the Union Ministry of Environment and Forests, funded CES to conduct pilot exercises of preparation of PBRs in a number of Gram Panchayats in the states of Karnataka and Maharashtra. Furthermore, CES was asked to conduct five Regional Workshops at Bangalore, Pune, Delhi, Bhuvaneshwar and Guwahati during 2003 to discuss the methodology of PBR preparation with a range of stake-holders including technical experts from Universities, research institutions, Botanical and Zoological Surveys, Forest and other Government Departments, school and college teachers, workers from NGOs, and members and office-bearers from Panchayat bodies. These five Workshops, each lasting 3 days, and involving a total of around 500 people, provided an outstanding opportunity to discuss all pertinent issues in depth and obtain very substantive feedback. Assimilating all this experience, CES has formulated an appropriate methodology and designed a Relational Database Management System called "PeBINFo" for this purpose. This could be adopted for the purpose of organizing the information needed to support good management of Community Forest Resources.

## **Environmental education projects**

In addition, the students engaged in undertaking Environmental Education projects could provide inputs of substantial value. In this context, the National Curriculum Framework exercise undertaken in 2005 has made two important recommendations that have been accepted by the Central Advisory Board on Education, namely,

- Involve students in first hand observation, and collection and interpretation of information on their own environment.
- Create a model system of collection of information on the status and on-going changes in various environmental parameters with the help of a decentralized network of high schools and junior colleges.

These recommendations are now being translated into practice and provide an excellent opportunity to involve students in generating information to support good management of Community Forest Resources.

## Preparation of Biodiversity Management Action Plan at the level of Wadi/ Pada/ Revenue Villages and planning for Employment Guarantee works on the basis of that Plan

To conserve, sustainably use, and augment biodiversity resources, and generate employment while doing so are surely highly desirable objectives for every village community, as well as the larger society. To attain these objectives it is important to understand the status, and ongoing changes in the biodiversity resources, how these relate to gains and losses incurred by different sections of the society, and how they could be managed well on basis of a broad consensus. If systematically recorded, such information would provide a sound foundation for good management. To accomplish this, we may proceed along the steps outlined below to collect information, and on its basis prepare a management action plan. Such information may be organized in a set of tables as suggested below.

#	Objective	Table no
1	Deciding on the area to be claimed as Community Forest Resources by the village community	
2	Finalizing the area to be claimed as Community Forest Resources in consultation with all neighbouring village communities. This will be the "Study Area".	1
3	Preparing maps of Community Forest Resource Area	
4	Putting together a study group	2
5	Recording the history of Community Forest Resources	3.1
6	Recording the history of relevant human communities	3.2
7	Recording local stakeholder groups	4
8	Recording external stakeholder groups	5
9	Recording nomadic stakeholder groups	6
10	Recording details of families requesting employment under NREGA	7
11	Recording the name and description of various landscape/ waterscape elements	8
12	Recording ongoing changes in various landscape/ waterscape elements	9
13	Recording biological elements of significance occurring in Community Forest Resource Area	10
14	Recording current status, ongoing changes and uses of significant biological elements	11
15	Recording current status of management of significant biological elements	12
16	Recording the preferences of various stakeholder groups in terms of management of Community Forest Resources	13
17	Preparing a Community Forest Resources management plan and an action plan relating to significant biological species and landscape/ waterscape elements on basis of consensus amongst different stakeholder groups	14
18	Deciding on NREGA works pertaining to various landscape/ waterscape elements	15
19	Deciding on NREGA works pertaining to significant biological elements	16

As mentioned above, we conducted an exercise during June- September 2008 in nine villages of Nandurbar, Aurangabad, Amaravati, and Gadchiroli districts in collaboration with local tribal youth and voluntary organizations to assess what may be possible on ground in terms of such planning for good management of Community Forest Resources. We use some of the information collected during these exercises as illustrative material in the discussion that follows.

## **Deciding on the area to be claimed as Community Forest Resources by the village community**

Good management of Community Forest Resources can play a very significant role in conserving, rebuilding, augmenting country's biodiversity resources, and at the same time enhancing the quality of people's lives. So Gram Sabhas meeting to file claims under TFRA should seriously address these issues along with claims on land under cultivation.

In this context, the following criteria may be considered while staking claims:

- (a) Community rights such as nistar by whatever name called;
- (b) Traditional grazing grounds; areas for collection of fuel wood, leaf manure, roots and tubers, fodder, wild edible fruits and other minor forest produce; fishing grounds; irrigation systems; sources of water for human or livestock use, medicinal plant collection territories of herbal practitioners;
- (c) Remnants of soil and water conservation structures, sacred trees, sacred groves, sacred ponds or riverine areas, burial or cremation grounds;
- (d) Government records of earlier classification of current Reserve Forest as Protected Forest or as gochar or other village common lands,
- (e) Memoranda of Understanding with the Forest Department relating to Joint Forest Management;
- (f) Auction of minor forest produce collection rights,
- (g) Earlier or current issue of grazing permits;
- (h) Areas assigned to Large Areas Multipurpose Societies or Forest Labour Cooperatives by whatever name called;
- (i) Areas assigned to Tree Growers' Cooperatives;
- (j) Earlier or current practice of traditional agriculture.

## **Finalizing the area to be claimed as Community Forest Resources in consultation with all neighbouring village communities**

In a large number of cases members of several village communities may be using the same area for purposes such as grazing or collection of wild tubers, and so on. It is then essential that mutual agreement be reached on demarcating separate areas, exclusively assigned to each specific Gram Panchayat, with further understanding as to which particular wadi/ pada/ revenue villages will access resources from which areas. In the absence of such agreements, all stand to lose. It is therefore highly desirable that these issues be resolved on a priority basis. It is areas so decided upon that may then serve as "study areas" for further compilation of information.

### **Information relating to the Community Forest Resources area should be entered in the following table:**

1	Name of study area	Bhandri
2	Data Collection Start Date	01/07/08
3	Data Collection End Date	29/07/08
4	Village/ ward/ town/ city name	Bhandri
5	Name of Local body: Panchayat	Kohona
6	Pin Code of principal post office within study area	
7	Taluk	Chikhaladara
8	District	Amaravati
9	State	Maharashtra

## **Preparing maps of Community Forest Resource Area**

While staking a claim, it is necessary to append a map or a sketch of the Community Forest Resource Area. For this purpose a map or sketch may be prepared on the basis of the maps obtained from official sources. It should be noted that such a Community Forest Resource Area may include forests of any description, including Reserve Forest, Wild Life Sanctuary or National Park. It would be essential to mark Survey/ Compartment numbers in the map/ sketch thus prepared for official purposes. In addition, it would be worthwhile to prepare another map for working with people for a collaborative planning exercise. This map may employ locally used place names familiar to people. People do participate enthusiastically in preparing such a map.



## Putting together a study group

It would be useful to assign the responsibility of putting together information, and on its basis, preparing a management plan and an action plan, to a study group. Such a study group may comprise local students, teachers, activists from self help groups and other community based organizations, and knowledgeable individuals interacting closely with the natural world such as herders, fisherfolk, dispensers of herbal medicines and so on. The information compiled may include their names, addresses, age, gender, photographs etc. In addition, mention may be made of the nature of contribution of different members. Such contribution may be include: (1) Collecting information on the basis of direct observations; e.g. students may estimate numbers of Mahua trees or availability of firewood, (2) Providing information on the basis of personal experience, e.g. knowledgeable fishermen may assess on-going changes in fish populations in a water body, (3) Recording information on the basis of interviews of knowledgeable individuals or groups of people, (4) Recording information on the basis of documents, e.g. number of families below poverty line or amounts realized through auctioning minor forest produce such as shikekai, (5) Assigning scientific names for various biological elements with the help of experts, (6) Organizing information collected by others in a tabular form or where feasible in a computer database, (7) Co-ordination, guidance, validation of collected information.

#	Name of group member			Role in study process	Time period	
	First Name	Middle Name	Last Name		From	To
1	Arjun	Maharu	Paradke	Collecting information	29/07/08	30/08/08
2	Jaisingh	Rehamsingh	Pawar	All steps involving mapping & information collection	29/07/08	30/08/08
3	Budha	Raisingh	Pawar	Info re trees	29/07/08	30/08/08
4	Raisingh	Keshrya	Pawar	Info re leafy vegetables	29/07/08	30/08/08
5	Sata	Shivaji	Pawar	Info re medicinal herbs	29/07/08	30/08/08
6	Indrasingh	Sukhlal	Pawar	All steps involving mapping & information collection	29/07/08	30/08/08
7	Bharsingh	Madya	Pawar	Info re trees & tubers	29/07/08	30/08/08
8	Kaysingh	Tulshiram	Pawar	Recording	29/07/08	30/08/08

				information		
9	Pratap	Ukhdu	Pawar	Info re trees	29/07/08	30/08/08
10	Padmabai	Sakharam	Pawar	Info re leafy vegetables	29/07/08	30/08/08
11	Lilabai	Bamnya	Padvi	Info re leafy vegetables	29/07/08	30/08/08
12	Kamarsingh	Attarsingh	Pawar	All steps involving mapping & information collection	29/07/08	30/08/08
13	Attarsingh	Supadu	Pawar	Info re trees and cultivars	29/07/08	30/08/08
14	Gora	Phokaya	Pawar	Info re medicinal herbs	29/07/08	30/08/08

## Recording the history of Community Forest Resources

It is important to note down the history of the Community Forest Resource Area in order to stake a claim and to plan for its effective management. For instance, the area may have been subject to Nistar rights or part of Joint Forest Management arrangements. There may be documents pertaining to such arrangements of relevance to staking claims or preparing management plans. It would be useful to bring all of this on record.

## Recording the history of relevant human communities

The history of concerned human communities is also of relevance. The TFRA assigns rights to non-Scheduled Tribe forest dwelling communities that have been dependent on forest resources for three generations, i.e. 75 years. These rights should go to deserving people, but not be usurped by others. To ensure this, we must record the settlements, movements of people and their livelihood strategies. We must also record the history of visits by various nomadic communities to the Community Forest Resources Areas over the last 75 years.

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Table 3A and B: *History of Community Forest Resource lands and associated human communities, Thakarwadi, Taluk Khultabad, District – Aurangabad, Maharashtra.*

The settlement of Thakarwadi began around 1972-73. Prior to that the Thakar tribals were living within the jurisdiction of Nirgudi Gram Panchayat. Till that time they earned a livelihood collecting minor forest produce in Mhaismal - Tisgaon forest. After a number of sugar factories started

functioning, many Thakars, along with Bhils, Banjaras, Buddhists and Dalits began to emigrate as sugarcane harvest labourers between October- end of May- early June.

Although Thakars have been forest dwellers since time immemorial, they were landless. They began to be employed on famine works and Employment Guarantee Scheme works following the drought of 1972-73. Under this scheme a number of works such as construction of a tank in Thakarwadi- Nirgudi- Tisgaon, nala bunding, leveling, roads were taken up.

At this time the Yuvak Kranti Dal movement grounded in the philosophy of Jay Prakash Narayan, Dr. Babasaheb Ambedkar, Mahatma Jotiba Phule and Rajsrshi Shahu Maharaj became active in the area. One of its programs was the establishment of Lok Samitis in a number of villages. These took up issues of land, fodder, water and employment. They asserted the rights of tribals, dalits, denotified and nomadic communities on natural resources like land, water and forest. Readings of Mahatma Phule's book "Cultivator's Whip-cord" were organized in many villages. The book discusses how forest dwellers were displaced as a consequence of British forest policy. This policy severed the bond between forests and tribal communities. They were dubbed as criminals. That created a continual conflict between forest department, police and tribals. The poor were prevented from taking their cattle and goats into the forests.

The Yuvak Kranti Dal Lok Samitis organized people's movements in Thakarwadi- Nirgudi, Mhaismal, Tisgaon, Bhillwadi, Chincholi, Akhadwada, Lamangaon, Takli (R.R.), Tanda, Dhamangaon and other villages in the Khuldabad Taluka against this background. This movement spread to Phulambri, Kannad, Sillod, Vaijapur, Gangapur; altogether over 700 villages of Aurangabad District.

A part of this movement included cultivation of barren forest lands and village grazing lands under Revenue Department. The forest had been destroyed through the connivance of contractors, traders and Government officials. They had all profited from this destruction. The tribals had witnessed these happenings. Consequently, they were very much upset. *"The British threw us out of the forest. They unilaterally took away our traditional forest rights by enacting unfair laws. In independent India the bureaucracy devastated whatever forest that remained with support of the elite. Hence, we have every right over forest land. We are not habitual criminals. The Indian constitution guaranteed our right to work and earn a livelihood."* On the basis of this stand, people occupied Revenue and Forest lands in Thakarwadi-

Nirgudi area and began to cultivate it. As a result the Revenue and Forest Departments attacked them with the help of police. There were court cases. People spent 3-4 months in the jail. The litigation continued for 15 years; but the people did not vacate the occupied lands.

The Yuvak Kranti Dal Lok Samitis working with the platform of Shoshit Jan Aandolan and Bhoomiheen Hakk Samrakshan Samiti, promoted cultivation of Bajra, Pigeon Pea, Green Gram, Cotton, Maize, Jowar, Matki, Onion, Wheat, Vegetables along with planting of useful trees on farm bunds. As a part of this campaign a large number of trees such as Neem, Mango, Tamarind, Custard Apple, Ber, Lime, Drum Stick, Curry Leaf, Bamboo, Mahua, Teak, Marking Nut, *Anogeissus latifolia*, Jamun, Guava, Fig and Karath were planted. Not only were they planted but have now grown to large size. These trees bring out the contrast between the miserable plantations raised by Forest Department while spending lakhs of rupees and the trees raised through community effort by tribals and dalits.

At this time the tribals and dalits were living at the old Rambhau's Thakarwadi. But about 65 families set up the new Thakarwadi- Bhillwadi around 1972-73 to assert their traditional forest rights. They cleared the land and built their new houses on the land under cultivation. Thus they re-established their bond with the forest lands.

There were repeated demands that Thakarwadi- Bhillwadi settlements should be given the status of an independent Revenue village and that land rights through 7/12 documents in the name of husband and wife be granted on the encroached forest and grazing lands. As a result Thakarwadi was recognized 20-25 years ago. It became a recognized settlement with house tax, a school up to 4th standard, community hall, electricity, water supply and road connection. Roads were constructed within the village. The Nirgudi Gram Panchayat has 9 members. Of these 4 are elected from Thakar- Bhill- Banjara- Buddhist communities. Today a Thakar holds Deputy Sarpach's post. Today's Thakarwadi- Bhillwadi has thus won recognition through a prolonged struggle.

Many people have dug wells on the Revenue- Forest land under cultivation with their own effort without any Government assistance. Many farm ponds have been constructed under NREGA. Houses have been constructed in Thakarwadi under the Government's Indira Awas Yojna. The Taluka Panchayat has supplied farm implements.

This settlement and farm lands are on the Mhaismal hill. There was tremendous soil erosion on the hill during the monsoon rains. The floods

damaged crops. To halt this erosion and losses the 65 families have dug trenches through communal labour. Thakarwadi has a culture of community action and is submitting the Forest Development Action Plan on the basis of this tradition.

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## Recording local stakeholder groups

Indian society is highly complex, and often quite heterogeneous. Hence, any village community may include groups which relate to the natural resources in very different ways and may differ greatly in their preferences as to how various species and different landscape and waterscape elements are to be managed. For instance, the village community may include cotton growers who may wish to make extensive use of pesticides to protect their crop. However, this may be detrimental to fish or wild honey bees and go against the interests of groups that depend on these resources. Similarly, landless families primarily dependent on agricultural labour may wish to bring gochar or community grazing lands under cultivation, while landholding farming families may wish to see these retained as village common lands to provide fodder for their cattle.

There may be conflicts of interest amongst local and external stakeholders as well. While local stakeholders may wish to fish the river with restraint, using traps, hooks and nets, the outsiders may wish reap quicker harvest with more destructive means such as dynamite. Bamboo harvest labourers employed by a paper mill may wish to clear-cut bamboo clumps to maximize their own earnings, while local basket weavers may wish to harvest only a proportion of clumps from any given clump.

To prepare a workable Biodiversity Management Plan, it is essential to appreciate these varying interests and to work out a consensus. As a part of the planning exercise, it is therefore necessary to identify the major stakeholders; local, external and nomadic, record their composition, major activities relating to natural resources and then go on to note their perspectives, possible conflicts and required compromises.

Table no 4: Local stakeholder groups, Virpur, Tal Shahada, Dist. Nandurabar, Maharashtra				
#	Stakeholder Group Name	Associated significant activities (Max. of 20 activities per group)	Approx no. of units (Individuals/Villages/ Nomadic groups) involved including	Unit

			dependents	
1	Landless	Fuelwood sale	60	Family
2	Farmers	Fuelwood, small timber, poles, timber for agricultural implements	80	Family
3	Hunters	Hunting monitor lizards, quails, partridges, hare, peafowl	8	Family
4	Dispensers of herbal medicines	Corms, tubers, herbs, climbers	7	Family
5	Carpenter	Doors, furniture, agricultural implements	14	Family
6	Goatherds	Cutting ber, borgat, mocha, biya, dhavda etc trees	5	Family
7	Illegal woodcutters	Teak, poles	10	Family
8	Gum collectors	Dhavda gum	25	Family
9	Villagers	Fencing material and thorns, dhavda, borgat, kuvada	200	Family
10	Landless, farmers	Collecting tendu leaves	50	Family

## Recording external stakeholder groups

#	Stakeholder Group Name	Associated significant activities (Max. of 20 activities per group)	Approx no. of units (Individuals/Villages/ Nomadic groups) involved including dependents	Unit
1	Illegal wood cutters (Kaansai)	Fuelwood, poles, beams	150	Family
2	Illegal wood cutters (Nande)	Fuelwood, poles, beams,	200	Family
3	Illegal wood transporters on bicycles(Nande)	Sale of Fuelwood,	15	Family
4	Sellers of fuelwood (Kusumwada)	Sale of Fuelwood,	10	Family
5	Sellers of fuelwood (Navagav)	Sale of Fuelwood,	20	Family
6	Hunters (Kansai, Navagav)	Hunting hare, peafowl	10	Family
7	Herders	Grazing cattle, goat	500	Family
8	Herders- private*	Grazing cattle, goat	140	Family
9	Gum collectors	Gum of dhavda, khair	15	Family
10	Tendu leaf collectors ♦	Collecting tendu leaf	80	Family
11	Dispensers of herbal medicines (Navagav)	Collecting herbs, tubers	2	Family
12	Carpenters ▲	Manufacturing furniture, doors	9	Family

\*Nande-50, Kansai-20, Navagav-20, Kusumwada-20, Kamod-15, Dhavalghat-10, Agri-5

♦ Kansai-10, Navagav-15, Kamod-20, Dhavalghat-10, Agri-15, Chinchora-10

▲ Navagav-5, Nande-4

## Recording visits of nomadic stakeholder groups

1	Name of nomadic group used by local people		Sillekyataru
2	Native Place Details	Village / Panchayat	Ravuru Meenu Wadi
		Taluk	Narasimha Raj Pura
		District	Chikamagaluru
		State	Karnataka
3	Nomad Type	Nomad Type 1	Traditional nomads
		Nomad Type 2	Non-pastorals
4	Composition	Community's own Name	
		No. Of Males	9
		No. of Females	6
5	Camp Site Details	Name of Village, taluk and District	Kadari, Karkala tal., Udupi district
		Distance from Habitation	100 meters
		Frequency of Visits	Once a year
		Name of landscape/ waterscape element	On river bank
		Duration of Stay	One week
		From Month / Nakshtra	November
		To Month / Nakshtra	December
	Significance of this locality for their livelihood	Fishing the sole means of livelihood	
Nomad type1: Traditional/ Partially traditional/ Non-traditional nomadism			Nomad type2: Pastoral/ Non-pastoral

## Recording details of families requesting employment under NREGA

The National Rural Employment Guarantee Scheme is an excellent opportunity to engage people in nurturing Community Forest Resources. The scheme provides for 100 days of employment per family; in some states like Maharashtra it guarantees year round employment. Conservation of soil, water and vegetables and ecological restoration and afforestation are the foremost objectives of NREGA, so that works undertaken can readily support conservation and rejuvenation of Community Forest Resources and CFR lands.

The framework within which these works may be planned in any given district would be provided to all Gram Panchayats. The Gram Sabhas are fully authorized to select from amongst these works that would be appropriate to take up on Community Forest Resources lands and submit the plan to Taluka level authorities. The Taluka and district level authorities are required to accept these plans so long they conform to NREGA norms. Therefore, the Gram Sabha can consolidate the EGS work requirements of all families at the different times of the year, relate these to works desired to be undertaken on CFR lands and prepare proper yearly plans. In addition, if the district level framework does not include some otherwise appropriate components, the concerned Gram Sabha may lobby for inclusion of these items in the district level plans.

To initiate such planning of employment for nurturing Community Forest Resources, information should be collected on families that desire such employment, man-days and woman days of employment required at different times of the year, and other pertinent details and ensure that these families are duly registered under the scheme.

Table no 7: Details of families requesting employment under NREGA							
Sr. No.	Registration Number	Date of Registration	Name of Head of Household (Mandatory Information)			Address	No. of Members requesting Employment
			First Name	Middle Name	Last Name		
Individuals asking for Employment -1							....
First Name	Middle Name	Last Name	Gender	Age	No of days of work requested	Preferred months for undertaking work	.....

## Recording the name and description of various landscape/ waterscape elements

Any landscape on earth is likely to be a mosaic of different types of ecological habitats and of parcels of land or water bodies under different

regimes of private, community or state ownership. The different parcels may have different popular designations, as also formal designations such as survey numbers or forest compartment numbers. All of these may be variously relevant in planning for prudent resource use. In our particular context, the Community Forest Resource lands would be under control of forest departments and designated by various survey/forest compartment numbers. They would be popularly referred to by a variety of local names familiar to local community members. It would be useful to record these names, survey/ compartment numbers, approximate area and a general description of nature of terrain and cultural features as a basis of developing management plans and action plans.

#	Local name of various landscape/ waterscape elements	Description	Survey/ Compartment number/s	Approx area
1	Jamuthipathi Kosh	This landscape element has many small trees, hillocks and slopes. It has good forest cover	70	1 ha
2	Bavaji Baba	This landscape element is hilly. It had thick forest that has now become thinner. It has teak, tivas, palash. This would be a good area for tree planting	26	3 ha
3	Palli Pati	This landscape element is on a river bank. The river has a pool that retains water in summer, and is used for bathing and washing clothes by people of Bhandri	71	2 ha
4	Amkhora	This landscape element had very good growth of mango trees, hence the name.	29	5 acres
5	Bore Badla	This landscape element had a good growth of Ber trees, hence the name.	23	4 acres
6	Khubdi Gomej	This landscape element has a well known temple	07	3 acres

### **Recording ongoing changes in various landscape/ waterscape elements**

As a next step in the process of planning of management of Community Forest Resources, one should look at the on-going changes in the various landscape/waterscape elements, as a basis for appreciating which of these

changes benefit which stakeholder groups and which changes imply losses for which stakeholders groups. Thus, in the village Yeskudahi of Gadchiroli district of Maharashtra, a part of the earlier dense forest has been thinned, while another part has been brought under cultivation. As a result dense shrubby growth offering shelter to wild pigs has increased and the availability of a number of items of minor forest produce has reduced. These changes have partly benefited the stakeholder group of farmers; but, they too suffer from increasing level of crop damage by wild pigs. At the same time, the changes have implied a substantial loss in earnings for stakeholders dependent on collection of minor forest produce.

Table number 9: Ongoing changes in various landscape/ waterscape elements: Virpur, Tal Shahada, Dist. Nandurabar, Maharashtra		
Ser. No.	525	
Local name of landscape/ waterscape elements	Lal Pipi Sapati	
Extent of change over last ten years: Substantial increase, moderate increase, no change, moderate decrease, substantial decrease	Large trees	Substantial increase: Teak 30-35 ft in height
	Small trees, shrubs	Substantial increase: kuvda, palash, tendu, bamboo, dhavda, bohare, khair, ale
	Grass/ herbs	Substantial increase: hevara, povadya, other small miscellaneous grasses
	Wild animals	Substantial increase: hare, quail, partridge, olagi, pesara
	Domesticated animals	Moderate increase: buffalo, cattle, goat
	Other ecosystem components	
Reasons behind change	Establishment of Forest Protection Committee	
Stakeholder groups benefiting from change	Local	Virpur village residents
	External	Nil
Stakeholder groups suffering from change	Local	Collectors of poles, small timber
	External	Nil
Extent of change in gains: Substantial increase, moderate increase, no change, moderate decrease, substantial decrease	Substantial increase, about 25% for villagers	
Extent of change in losses: Substantial increase, moderate increase, no change, moderate decrease, substantial decrease	Moderate	

## Recording biological elements of significance occurring in Community Forest Resource Area

The Tribal Forest Rights Act requires Gram Sabhas to list in detail the various minor forest produce as well as fish and other aquatic species that have been customarily in their use. The forms prescribed by the Govt. of Maharashtra further ask for estimates of the amounts being so used. It is unlikely that such quantitative information will be available. In fact, a study of Karnataka Planning Board revealed that the Forest Departments too have little information in this context. However, it would be appropriate to initiate such studies now, while simultaneously: (a) Ask the Forest Department to provide all information on utilization of relevant species and produce over the last ten years. (b) State that while detailed quantitative information is not currently available with local people, steps are being initiated to gather such information to support formulation of management plans for the future.

Any Community Forest Area will harbour a very large number of biological species. A rough estimate suggests that this number (including bacteria, fungi, soil nematodes, mites, insects etc) may be as large as 50,000 for a circle of a radius of 4 km from village center. A majority of these will be species of fungi and small invertebrate animals, as yet unknown to science. Evidently, it is impossible to visualize any comprehensive coverage of this tremendous living heritage at the level of local village communities. One may therefore focus on (a) All traditionally used species, both terrestrial and aquatic, to which the community may wish to lay claim under TFRA, (b) All nuisance species such as weeds like Eupatorium or Water hyacinth, vectors of diseases like mosquitoes and ticks, or pests like wild pigs which should be brought under control, (c) Local crops and cultivars that may be registered under the Protection of Plant Varieties and Farmers Rights Act, and for which plans may be prepared to promote on farm conservation on a long term basis.

For such species/varieties one may record the local name in local dialect (e.g. irapi in Gondi), name in the official state language (e.g. irapi in Gondi is moha or mahua in Marathi), and where possible the scientific name (e.g. mahua is *Madhuca indica*). Additionally, one may record significant uses, or in case of nuisance species, disservices and the local names of landscape/waterscape elements where these occur.

Table 10: Recording biological elements of significance occurring in Community Forest Resource Area, Virpur, Tal Shahada, Dist. Nandurabar, Maharashtra			
Local Name of species, including in	Char	Jambu	Akale

tribal dialects			
Local Name of species in official language of state	Charoli	Jambhool	
Scientific name	Buchnanian lanzan	Syzygium cumini	
Major uses	Fruit consumed by birds and people	Fruit consumed by birds and people, preparing plate	Fruit consumed by birds and people
Major medicinal uses	Gum used as an ointment for chabak	Toothbrush	Toothbrush
Major Disservices	-	-	-
Names of landscape/ waterscape elements where present	Rarely near Umbarapani	Near Jambhipani, Rarely near Umbarapani	Umbarapani, Jambhipani, Sabadipani, Navagavpani

## Recording current status, ongoing changes and uses of significant biological elements

An appreciation of status, on-going changes in abundance and in uses /disservices of significant biological elements is another important component of planning for management of Community Forest Resources. For example, the regular use of fire by graziers to promote new flushes of growth of grass has manifold consequences, for instance, for regeneration of a number of tree species and might call for regulation as a part of the management plan. As another example, seed of Uppage, *Garcinia cambogia*, was earlier used to prepare cooking oil. A few years ago, it was discovered to contain certain chemicals very useful for treatment of obesity. As a consequence, the price of these seeds, and along with it the demand, has shot up substantially, leading to excessive and destructive harvests. It would be appropriate to work out measures of moving to more sustainable harvests, as well as explore possibilities of local level processing to add further value.

Table 11: Current status and trends in abundance, uses/ disservices relating to significant biological species. Bhandri, Panchayat Kohona, Tal Chikhaldara, Dist Amaravati, Maharashtra				
Ser No	1	2	3	4
Local name of species	Sagwan	Dudhari	Dhavda	Moka
Current level of abundance; 1 - Absent 2 - Rare 3 - Moderately common 4 - Abundant	Moderately common	Moderately common	Rare	Moderately common
Trend in abundance in last 10 years; 1) Substantial increase	Moderate decrease	Moderate decrease	Substantial decrease	Moderate decrease

2) Moderate increase. 3) Little \ No change 4) Moderate decrease 5) Substantial decrease				
Reasons behind Trend	Forest felling	Forest felling	Fuelwood collection	Almost finished
Nature and trend in changes in uses/ disservices in last 10 years				
Reasons behind such changes				

Table 11. Current status and trends in abundance, uses/ disservices relating to significant biological species. Thakarwadi, Tal. Khultabad, Dist Aurangabad, Maharashtra

Local name of species	Sagvan	Dudhari	Dhavda
Current level of abundance; 1 - Absent 2 - Rare 3 - Moderately common 4 - Abundant	Moderately common	Moderately common	Rare
Trend in abundance in last 10 years; 1) Substantial increase 2) Moderate increase. 3) Little \ No change 4) Moderate decrease 5) Substantial decrease	Moderate decrease	Moderate decrease	Substantial decrease
Reasons behind Trend	Forest felling	Forest felling	Largely disappeared
Nature and trend in changes in uses/ disservices in last 10 years	Moderate increase	Moderate decrease	Substantial decrease in availability as fuelwood
Reasons behind such changes	Forest felling	Forest felling	Use as fuel

## Recording current status of management of significant biological elements

Currently the lands that qualify as Community Forest Resources are under the control of forest department. They may be part of Joint Forest Management areas, where the local community members have a limited role; they may be other kinds of reserve forests from where local community members, as well as outsiders, including criminal elements, may be accessing resources illegally; they may be parts of wild life sanctuaries from which local community members are largely excluded, and so on. It is important to

understand the current status and interaction of all the various stakeholders as a background for planning a new regime for Community Forest Resources Lands.

Consider as an example bamboo resources that are currently largely dedicated to commercial interests, with long term leases at highly subsidized rates to paper mills. TFRA explicitly gives control over bamboo as one of the minor forest produce to local communities. Bamboo is a very significant resource to meet many subsistence needs of people, as well as a source of livelihood for some of the most disadvantaged segments of our population. Assertion of control over this resource and its good management is therefore a very significant issue. But for this to happen, it is necessary to appreciate the implications of the currently granted rights over bamboo to influential stakeholders like paper mills.

1	Local name of species	Bondara	
2	Existing Management Authority	FDCM employees and Forest Protection Committee working jointly	
3	Current system of management	Patrolling turn by turn	
		Gainer User Groups ( Local), nature of gains	Landless, farmers; fuelwood and headloads for sale
		Loser User Groups ( Local), nature of losses	FDCM and Forest Protection Committee; trees are being poached
		Gainer User Groups ( External), nature of gains	Nande, Navagav, Kansai: fuelwood and headloads for sale
	Loser User Groups ( External), nature of losses	Neighbouring villages get less fuel wood	
4	Changes in gains over last 10 years	Greater availability of fuelwood, also for sale	
5	Reasons	Forest protection	
6	Changes in losses over last 10 years	FDMC employees harvested all large trees by employing labourers	
7	Reasons	Removal of watchmen, government control	

## **Recording the preferences of various stakeholder groups in terms of management of Community Forest Resources**

The ultimate objective of the planning exercise is to arrive at a consensus amongst the different stakeholders on the various components of the management plan and on a specific action plan. These components should

include policies and rules to ensure sustainable use of land and water, vegetation and animal life, imposition of collection of fees, programs of eco-restoration and employment under NREGA to implement these programmes, value addition and marketing strategies. Since it is highly likely that the various stakeholders will hold divergent perspectives on many issues, a first step in arriving at the consensus will be to record their own specific perspectives. This would bring out areas of broad agreement that could be a foundation for building a consensus.

S No	Stakeholder groups	Desired elements of management of Community Forest Resources
(1)	Minor forest produce collectors (Women) (gum, karonda, chironji, marking nut, tendu, neem, custard apple, Anogeissus latifolia etc.).	Method of harvesting minor forest produce: Ensure that the MFP yielding tree is not damaged. Undertake relevant study and research. Enhance MFP production. Organize a nursery. Collect local seeds for raising seedlings. Soil and water conservation- Land contour survey, soil testing, bunding and water harvesting. Construction of farm ponds and forest ponds. Tree planting, Protection, Documentation. Processing MFP, technology training programmes. Marketing. Organizing Finances. Organizing Seed banks. Organizing water supply.
(2)	Grass Collectors (Pavnya, Gondal, Rabadi, Kunda, Kusali, Lal Gondal, Marvel)	Study, research and documentation of local grasses. Organizing grass seed supply. Introducing new, useful species. Organize and train grass collectors. Protecting grass, deciding on best way of using grass. Devising effective scientific methods of handling grass at various stages from cutting through marketing. Study markets for grass. Organizing Finances. Organizing Seed banks.
(3)	Vaidu (Dispensers of herbal medicine)	Organize and train Vaidus. Systematically document collection, processing, use and effects of medicinal herbs. Organizing collection of seeds, seedlings, tubers of medicinal herbs. Organize a nursery. Organize community action to develop a 50 acre medicinal herb garden and a model plot/plantation. Study markets. Organize Finances. Organize water supply.
(4)	Herders (Dhangars, Farmers, Farm Labourors.)	Study current system of grazing. Organize and train graziers. Organize a scientific system of cultivation, development and use of fodder. Organize finance.
(5)	Fuel wood Collectors	Study current system of fuel wood collection, which

	(Girls, Women)	<p>shrubs and trees are suitable for fuel wood, marketing system, extent to which livelihoods depend upon fuel wood collection and trade.</p> <p>Develop ways of gathering fuel wood in a non-destructive manner.</p> <p>Develop alternative sources of energy- solar energy, smokeless chulha.</p> <p>Collect seeds of superior fuel wood trees.</p> <p>Organize a nursery of superior fuel wood trees.</p> <p>Organize a fuel wood plantation.</p> <p>Organize finances.</p>
(6)	Cultivators of encroached grazing lands	<p>Study and documentation of the history and social movements of this group.</p> <p>Study and documentation of livelihood strategies of this group.</p> <p>Taking legal steps to acquire land ownership in the name of husband and wife.</p> <p>Organize bank of seeds of traditional cultivators.</p> <p>Bunding.</p> <p>Nurturing trees on farms and farm bunds.</p> <p>Organizing water supply.</p>
(7)	Carpenters, Iron smiths and Pardhis	<p>Organizing proper system of use of wood and forest resources.</p> <p>Developing bird and wild life resources.</p> <p>Plan and manage fuel wood supply for carpenters.</p> <p>Plan and manage wood resources required for house and cattle shed construction.</p>
(8)	Group practicing Fishing	<p>Study availability of fish and impact of fishing.</p> <p>Study species of fish available.</p> <p>Construct farm ponds and forest ponds and release fish seed.</p> <p>Construct a fish fry rearing pond.</p> <p>Arrange for finances and fishing equipments.</p> <p>Organize marketing of fish.</p>
(9)	Women stakeholders groups	<p>Investigate current role of women in the management of forest resources.</p> <p>Produce resource material (booklets, books, wall magazines, photographs, songs) in simple language.</p> <p>Arrange training programmes on management and development of forest resources.</p> <p>Empower women to manage forest resources.</p> <p>Arrange training on forest and revenue laws and regulations regarding use.</p>
(10)	School students, Teachers, Other staff	<p>Conduct awareness and training programmes relating to management and conservation of Community Forest Resources.</p> <p>Include Community Forest Resources as a part of the curriculum.</p> <p>Participate actively in gathering information on Community Forest Resources.</p> <p>Arrange biodiversity awareness training camps.</p>
(11)	Government Officials	<p>Participate in training on management and conservation of Community Forest Resources.</p> <p>Participate in training on forest and revenue laws.</p> <p>Participate in social audit of performance of</p>

		bureaucracy in relation to social responsibilities and duties. Share and organize information collected by Government machinery in collaboration with people.
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## **Preparing a Community Forest Resources management plan and an action plan relating to significant biological species and landscape/waterscape elements on basis of consensus amongst different stakeholder groups**

We are steadily progressing towards empowering Gram Sabhas to control, plan for and manage local natural resources. PESA assigns the ownership over minor forest produce, water bodies and aquatic biodiversity and minor minerals to the Gram Sabha. The Biological Diversity Act empowers it to look after all biodiversity resources – including cultivated plants and domesticated animals. TFRA assigns it rights over all Community Forest Resources, including tendu, bamboo and cane. NREGA authorizes Gram Sabhas to plan for conserving and rebuilding soil, water and vegetational resources. We must now work towards ensuring that Gram Sabhas indeed assume this important responsibility.

Such planning may relate to specific (1) landscape/waterscape elements, as well as (2) biological species. It may relate to various interventions, harvests, replenishment, levying collection charges, local level processing and value addition and marketing. While preparing action plans addressing these various facets, it is necessary to take on board the aspirations of different stakeholders, their perceptions as to what is practicable, and arrive at a consensus.

Table 14.1 Significant biological species and relevant landscape/waterscape elements from Community Forest Resource Area for which an action plan has been developed, Thakarwadi, Tal. Khultabad, Dist Aurangabad, Maharashtra		
S.No.	Significant biological species (local names)	Relevant landscape/waterscape elements (local names)
1. Large trees	Dhavda, bondara, sag,mohi, kharpali, dhaman, katedhaman, bamboo, kapase dhaman, babhool, ramkathi, sitaphal, anjan, bakan, godbor, amba, chinch, jambhul, vilayati chinch, kashesham, kavath, kadulimb, limbu, shivani, palas, sadoda, chandan, karavand, tembhurni, apta, bibba, peru, subabhool, katshivri, shikekai, karanj, bahala, avala, chikoo, naral, ramphal, shisam, adulsa, ghayapat, korphad, phetar, vad, umbar, bhokar, pimpal, bhendi, erandi	Bajkhear, lagdari, khatkali, uthala, nishandhondi
2.	Sheep, goat, cattle, buffalo, chicken	Household

Domestic animals		catlesheds, chicken pens
14.2 Details of action plan relating to significant biological species and relevant landscape/waterscape elements, Thakarwadi, Tal. Khultabad, Dist Aurangabad, Maharashtra		
Biological elements	EGS works	Other works
1. Large trees	<ol style="list-style-type: none"> <li>1. Nursery</li> <li>2. Soil –water conservation, contour bunding, nala bunding</li> <li>3. Digging trenches</li> <li>4. Digging pits to plant seedlings</li> <li>5. Filling pits with silt from tank and leaf litter</li> <li>6. Planting seedlings</li> <li>7. Preparing farm ponds, one for each farmer</li> </ol>	<ol style="list-style-type: none"> <li>1. Collecting seed, seedlings, tubers</li> <li>2. Burying an earthen pot near each planted seedling for water supply</li> <li>3. Preparing earthworm manure</li> <li>4. Collecting/ purchasing farmyard manure</li> <li>5. Making implements available</li> <li>6. Arranging for lift irrigation from Tisgav tank for seedlings</li> <li>7. Documentation( all components: plants, activities, programmes) photos, Xeroxing etc</li> <li>8. Training all workers</li> <li>9. Preparing resource material in simple language</li> <li>10. Organizing village level libraries</li> <li>11. Preparing plant based pesticides</li> <li>12. Arranging pesticide sprays</li> <li>13. Training in grafting and budding</li> <li>14. Erecting a green house for nursery</li> <li>15. Developing live fencing</li> <li>16. Organizing a wire fence prior to live fencing</li> <li>17. Transporting silt from tanks to pits</li> <li>18. Developing kitchen gardens</li> <li>19. Organizing local level processing and value addition</li> <li>20. Exploring markets, organizing marketing</li> <li>21. Arranging transport facilities</li> <li>22. Arranging for storage godowns</li> </ol>
2. Domestic animals, taking advantage of various Government schemes for SC,ST,DNT,OBC, women's groups		<ol style="list-style-type: none"> <li>1. Providing animals</li> <li>2. Constructing cattle sheds, chicken pens</li> <li>3. Arranging for veterinary care</li> <li>4. Arranging for collection and marketing of milk</li> <li>5. Marketing eggs and chicken</li> </ol>

## Deciding on NREGA works pertaining to various landscape/ waterscape elements

The Gram Sabha may decide on a comprehensive plan of soil and water conservation, construction of tanks, stone walls to regulate grazing and so on for the Community Forest Resource lands and link it to employment demand

from local community members. In this fashion, people of Mendha Lekha of Gadchiroli district undertook to construct a forest tank.

S. No.	1	2	3
Landscape/waterscape elements (local names)	Jamun badla	Jaitadevi badla	Sanditav badla
Survey no.	37	38	36
Nature of work	Farm bunds construction, digging pits	Digging pits, planting seedlings	Construction of bunds, C.C.T, D.C.T
Appropriate time of year	April- May	June-July	February-March
Manpower required	Men	75	20
	Women	25	20
	Days of work	30	30
Expected output/ outcome	Create employment, improve soil conditions, stop soil erosion, increase crop yields	Create employment, stop soil erosion, generate income after fifth year	Create employment, stop soil erosion, improve soil conditions,

## Deciding on NREGA works pertaining to significant biological elements

The Gram Sabha may decide on a comprehensive plan of restoration of populations of plant species that provide a variety of produce and services. Such plans may include raising of seedlings in a nursery, planting them on Community Forest Resource lands, guarding the planted areas and so on. Such works may be so planned as to fulfill local demand for employment under NREGA.

S. No.	1	2	3
Biological species (local names)	Sitaphal, avla, bor, peru, moh, charoli	Amba, sitaphal, ramphal, avla, chinch, bor, peru	Moh, charoli, chinch, jamun, tivas, biba, sevga, subabul
Landscape/waterscape elements (local names)	Jamun badla	Jaitadevi badla	Sanditav badla
Survey no.	37	38	36
Nature of work	Nursery, digging pits	Digging pits, planting seedlings	Construction of bunds, C.C.T, D.C.T

Appropriate time of year		Nov-Dec	June-July	February-March
Manpower required	Men	50	50	20
	Women	50	50	20
	Days of work	30	15	15
Expected output/ outcome		Create employment, provide seedlings	Create employment, stop soil erosion,	Create employment, provide seedlings

## In conclusion

The British enforced in India an act that violated all human rights, labeling a person, simply because he/ she was born in one of the notified criminal tribes, as a habitual criminal throughout his/her life. In a similar vein, the colonial Forest Act turned numerous age old ways of making a living into criminal activities with the stroke of a pen. Forest dwellers so deprived were forced into contributing free labour, or recruited as workers in tea plantation where conditions close to slavery prevailed. People were promised that such injustice would be eliminated during the freedom struggle led by Mahatma Gandhi. But once we achieved independence, these assurances were laid aside. It took five years after independence to disband the Act that labeled whole communities as criminals. It has taken sixty years to right the historic injustice done to forest dwellers. But this injustice was not merely meted out to people. The colonial system of forest management has done even greater injustice to our nature, degrading and converting the country's diverse plant communities into monocultures of species of little utility to the people.

Fortunately the tide is turning. Local people now have substantial rights over natural resources thanks to TFRA and other related Acts. At the same time, they have the responsibility of managing these resources prudently, in a sustainable fashion. The National Rural Employment Guarantee Act provides a good opportunity to protect, nurture, and restore the ecological resources. People would now undoubtedly use the space opened to them, the authority conferred on them, to promote a diversity of plant and animal species of value to them on the community forest resources lands. This could turn Indian forest lands into another Switzerland. The extensive forest cover of Switzerland has developed only over the last 150 years. Prior to that only about 4% of that country's lands had retained forest. This led to a public awakening and a restoration of the tree cover. But this regeneration was all

managed by local communities – not by any Government department. Working together, small communities of Switzerland revived the country's ecology.

Nature can thrive only if people are motivated to nurture it, it can thrive only through their endeavours. Our Tribal Forest Rights Act could accomplish just this. It could bring to an end the systematic 150 year old campaign to render India's forest cover monotonous and useless from the perspective of local people. It could permit us to once again turn these into forest lands – uncultivated, yet productive of abundance of food and teeming with wild life – as the forest goddess is praised in Rgveda.

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## **Back Cover**

### **Jungle Bachao- Manav Bachao**

The British described the newly conquered Indian sub-continent as an "Ocean of Trees". People of India had played a vital role in nurturing this tree wealth, and Dietrich Brandis, specially brought in from Germany as India's first Inspector General of Forests admired this contribution and insisted that a substantial part of forest land be left in charge of people as "Village Forests" when the Forest Laws were formulated. Although British reluctantly agreed, they never implemented this provision. This had the unfortunate consequences of destroying people's motivation in safeguarding forests. At Mahatma Gandhi's insistence, the congress had promised to change this anti-people forest policy after independence. But this did not happen. Quite to the contrary, when basket weavers had to buy bamboo at Rs. 1500 per ton in 1960's, the paper mills were supplied this raw material at a throw away price of Rs. 1.50 per ton. Such perverse policies were not only an injustice to people, they also resulted in devastation of forest and wild life.

After all it is the local people that benefit truly by sustaining the health of the local ecosystem. It is them that can guard and nurture these ecosystems most effectively. It is also they who possess locality specific knowledge of these ecosystems to manage them competently in a flexible fashion. Today, with TFRA in force, we have a tremendous opportunity to work with the people and to protect and rejuvenate our natural resources, while, at the same time enhancing the quality of people's lives.

In this context we can visualize four constructive programs:

1. Restore a diverse plant cover on Community Forest Resource lands employing a variety of species that would support livelihoods.
2. Set aside 5- 10% of Community Forest Resource lands for revival of natural biota on the pattern of sacred groves.

3. Sustain the cultivation of most promising of the traditional cultivars of crops on private lands made available under TFRA.

4. Sustain the cultivation of promising indigenous varieties of fruit and other MFP trees on private lands made available under TFRA.