

# Industries as Partners for Sustainable Forestry in India-Issues and Options\*

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## INTRODUCTION

India is a land of great physical, ecological, social and cultural diversity. It is one of the 12 mega diversity countries and supports 16 major forest types varying from mangrove, tropical, sub-tropical, temperate forests and alpine pastures in high Himalayas. The geographical area is 329 million ha. The population has increased from 390 million in 1951 to more than 940 million now. The livestock population increased from 292 million to 450 million. As such, the pressure on forests has increased considerably leading to unsustainable withdrawal of fuelwood, timber, fodder and consequent degradation of forests and pastures.

Presently, India has 63.96 million hectares of forest cover (19.47% of geographical area), out of which only 38.57 million ha. (11.73%) has forest cover of more than 40% crown density and the balance (25.39 million ha.) is degraded having 10 to 40% crown density. Moreover, nearly 6 million ha. of scrub area is also legally classified as forest.

### Forest Policy Evolution

The contemporary forest policy, management and silvicultural systems, since inception in 1864, developed mainly with the objective of production of commercially valuable timber on sustainable basis. Moreover, the initiation of rapid development after independence in 1947 led to the establishment of large number of paper and pulp mills, saw mills and plywood factories as well as growing rural and urban housing needs gave a quantum jump to the demand for forest products specially timber and bamboos.

By the mid 1970s, it was realized by the foresters that the demand for fuelwood, fodder and non-wood forest products for local use was rising rapidly with growing population and the old custodial and timber oriented system of management needed to be changed. It became a subject of national debate at various levels since early eighties. As a result, the new National Forest

Policy of 1988 has redefined the priorities. The main thrust areas are:

- \* Maintenance of environmental stability through preservation and restoration of ecological balance and protecting the vast genetic resource. Derivation of economic benefit must be subordinated to this principal aim.
- \* Meeting basic needs of the rural and tribal people, especially of fuelwood, fodder, non-wood forest products and small timber in keeping with the carrying capacity of forests.
- \* Raising the productivity of forests and achieving the policy goal of having 33% of country's area under tree cover (66% in hill areas).
- \* Industry is to be encouraged to develop its raw material by interacting with the local people and communities for use of the manpower and land through financial and technical inputs as well as buy back arrangements. Monoculture should not be allowed in natural forest areas with rich biodiversity.
- \* Ensure people's close involvement in programmes of protection, conservation and management of forests.

### Emerging trend of demand-supply of wood

India has a growing stock of 4.74 billion M<sup>3</sup> with an annual increment of around 87.62 million M<sup>3</sup>. However, as in 10 million ha. of good forests, falling in National Parks and Sanctuaries, no commercial extraction is permitted, only 12 million M<sup>3</sup> of timber and 40 million M<sup>3</sup> of fuelwood is being officially extracted. The unrecorded extraction for meeting local needs under existing rights and concessions in forest areas is many times more.

The current demand of timber is around 30 million M<sup>3</sup>, out of which 8.3 million M<sup>3</sup> is needed for paper, pulp and panel products and 15.4 million M<sup>3</sup> for saw milling i.e. housing, packaging, furniture, etc. As such, during 1994-95, nearly US \$ 600 million worth of wood

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and wood products were imported. The total timber requirement is estimated to grow to a level of 60 million M<sup>3</sup> by the year 2000 (20.5 million M<sup>3</sup> for paper, pulp and panel products and 27 million M<sup>3</sup> for saw milling).

Moreover, the current requirement of fuelwood is around 280 million tonnes, which is likely to rise to 356 million tonnes by 2000 A.D. There is thus an ever enlarging gap in the supply and demand scenario.

### **Policy options for sustainable management of Forests**

It is evident that the current requirement and growing demand cannot be met from the present incremental growth. Moreover, the raising of plantations, mostly government funded, have only reached a level of one million ha. per annum in degraded forests and around 0.30 million ha. in private lands. This will not even meet the fuelwood need of the country on sustained basis while growing demand of industrial wood will degrade the remaining natural forests. Moreover, in view of highly polluting nature of producing wood substitutes like aluminium, plastic for steel products as well as shortage of recycled paper, the demand for industrial wood will continue to rise.

One of the primary obstacles, in a developing country like India, for raising of high quality plantations is lack of adequate financial resources and technical knowhow. The government funds should naturally go for raising fuelwood, small timber and fodder plantations for meeting the requirements of local people and tribals who are dependent on forests for their basic needs. In view of the growing gap between demand and available sustainable yield, the government agencies will have to raise around 3 million ha. per annum of fuel wood, fodder and timber plantations including the regeneration of felled forest areas to meet the highly subsidised basic survival needs of the rural poor and forest dwellers.

As such, it is imperative to plan and develop large scale plantations of fuel wood as well as economically important timber involvement of all stake holders like local people, industry, NGOs and the Government. It is also essential that more than 30 million ha. of degraded forests and scrub area should be replanted within the next 10 years along with raising of 10 million ha. through agro forestry and social forestry in private and community lands. This will go a long way to ensure sustainable management of forests and meeting substantially the forest policy goals of having 33% of land area under tree cover. Faced with the resource crunch, naturally planting for industrial timber will get very low priority in Government investment planning.

Keeping in view the growing demand-supply gap, it is proposed that the forest based industries should invest in a big way in raising of forest plantations in government and community degraded lands of around 0.4 million ha. per annum. At the end of 10 years, 4.0

million ha. of plantations will yield 60 million M<sup>3</sup> of commercial timber/pulp and 20 million M<sup>3</sup> of fuelwood per annum @ of 20 M<sup>3</sup> per ha. Average incremental yield to meet major part of industrial fibre needs on sustainable basis. The industry should also encourage agro-forestry operations in farm lands through financial and technical help to meet the balance requirement.

There are strategic advantages in involving the industries in large scale plantation activities of bringing in much required financial and technical inputs in this area. These plantations, in addition to timber and pulp wood, will also generate income and employment for rural people, provide fire-wood, grass, medicine, plants, fodder and small timber (thinings) for local use as well as environmental benefits like soil and water conservation, carbon sink and ultimately reduce pressure on natural forests and help in bio-diversity conservation.

### **Environmental concerns and safeguards**

In adoption of such a course of action, the main concern of some environmentalists and NGOs is that industries will resort to monoculture and usufructs (grass, fuel and small timber) from such forest lands will not be available to local people. Moreover, it may discourage people's participation in forestry development and agro-forestry activities, which are the main planks of the 1988 Forestry Policy.

As such, following safeguards will have to be ensured before any degraded Government forest land is used for raising commercial or industrial plantations:

- a) The maintenance of traditional and customary rights of the community in the land.
- b) Adequacy of nearby forest areas required for growing fuelwood, fodder and other forest produce needed by the local people, including tribals;
- c) Preventing the spread of monoculture thereby adversely affecting the biodiversity of the forest ecosystem.
- d) Only degraded, and not rich and well-stocked forest areas, are taken up for industrial plantations.
- e) Agro-forestry and farm-forestry activities are not adversely affected and are encouraged.
- f) That cash crops like cashew, rubber, tea, coffee, oilpalm, etc., are not planted under the guise of industrial tree plantations.
- g) Local people's representatives should have a say in management and distribution of use fruits from these plantations.

### **Sustainable supply of Industrial Wood-The way ahead**

Various concerns indicated above can be resolved through following operative options.

- a) As India has nearly 25 million ha. of degraded forest area and 6 million ha. of scrub land planting of

around 4 million ha., industrial plantations in 1.0 years time should not pose any problem for other users.

- b) To ensure protection of interest of local villagers and best possible technical inputs for high productivity, a tripartite management committee may be formed for each major site, consisting of experts from Industry and Forest Department and representatives of local "Panchayats" or Village Council.
- c) The entire investment and responsibility for operations and high quality technical inputs in field of tree genetics, seeds selection, nursery raising and planting, etc. will be that of the industry. The Forest Department/Corporation and villagers will provide support for protection from grazing, fire, illicit felling, encroachment, etc.
- d) The degraded forest land (less than 20% crown cover) preferably away from the villages will be selected with the approval of the villagers to avoid conflict with local needs of grazing and fuelwood collection.
- e) Traditional rights of the villages for grass cutting dry fallen fuelwood and medicinal plant collection will continue, in the planted area and will be regulated by the management committee
- f) 20% of the trees to be planted will be of mixed species of fuel, fodder, local fruits, etc., as per people's choice. These trees will belong to the Government for distribution of products and timber amongst the local people. The balance 80% will be commercial species (at least a mixture of 3 species) desired by the industry. This will avoid monoculture as well as clear felling of the site.
- g) Moreover, 5% of the 80% of the commercial crop will also belong to the Government as part of the opportunity cost of the land.
- h) To ensure development of agro-forestry and community as well as private planting, the industry will be allowed an area for planting which will meet only 60% of its raw material requirement. This will encourage the industry to provide financial and technical support and purchase guarantee at prevalent guarantee prices to encourage local villagers to plant trees in their land.
- i) The land will be utilised by the industry for a period of 30 years (three crops) provided it fulfils all the conditions to the satisfaction of the local village community and the Forest Department.

### **International Experience**

In most of the developed countries, the major part of the forest estate belongs to the forest based industries e.g. in USA, Canada, Sweden, Finland, Germany, etc. These forests are being managed on scientific lines with high technical inputs for increased productivity and sustainable use. In the developing countries, the local

demand is always much higher than industrial demand. However, with the onset of rapid development over the last few decades, the demand for industrial wood has risen sharply as is being experienced in India.

In keeping with this trend and to overcome any shortages of raw material for wood based industries, some of the developing countries have taken timely steps to involve industries and financial institutions in raising of commercial plantations in degraded government forest areas. Some of the success stories are as under :

#### **China**

The per capita consumption of paper products has escalated to 20.3 kg. per head per annum in last two decades as against India's current use of 3.2 kg. per head per annum. In the past few years, China has been raising around 5 million ha. per annum of plantations including substantial areas under industrial wood. The production of wood has increased by around 50 million M<sup>3</sup> a year.

#### **Chile**

Government's policy of providing subsidy to the extent of 75% of the plantation cost has resulted in rising of export of forest products from US \$ 40 million in 1980 to US \$ 900 million in 1990. It is expected to touch US \$ 2 billion by the year 2000 A.D.

#### **Indonesia**

The Government grants plantation rights to industry for industrial plantations through long term lease and provides 14% equity participation as well as 32.5% interest free loan with 12-16 years moratorium. Indonesia is now a leading paper and pulp exporting country.

#### **Philippines**

The Asian Development Bank provided soft loan of US \$ 25 million in 1991 to promote private sector industrial plantations. The government evolved a new land tenure policy of leasing out degraded forest land for 25 years for raising of industrial plantations. Large-scale plantation of *Acacia mangium* and *Gmelina arborea* are being raised all over the country to meet growing national and local needs.

#### **Malaysia**

The Asian Development Bank assisted by providing US \$ 24.5 million soft loan for a large scale project in 1984 for raising 40,000 ha. of plantations to reduce the pressure on natural forests for timber for industrial use. The project has been successfully completed by rehabilitating degraded forest for resource generation.

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### **CONCLUSION**

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Indian forestry is at a cross road, with only around 12% of land area having good forest cover (38.5 million ha.) and the growing demand of fuel wood and timber being many times over the sustainable yield. Only very wise management of existing forest resources and bold

initiative in greening of the nearly 30 million ha. of degraded forests can ensure sustainable management of this important natural resource. In this context, it must be realised that being a developing country, India faces severe resource crunch and Government funds can only be assigned to core social sectors of development and commercial plantations should be funded and handled by the private sector.

Keeping in view the success achieved by the other developing countries in the sphere, it is felt that India should also develop a new strategy of involving the private sector in close collaboration with local community in raising annually around 0.3 million ha. of commercial plantations, 0.1 million ha. of fuel and fodder plantations in degraded government lands and 0.2 million ha. of community plantations and agro forestry tree crops. This would meet the industrial demand and divert the growing pressure from the natural forests which will better serve the need of bio-diversity conservation and for meeting people's need for fuel,

fodder, small timber, medical plant and other non-wood products on sustainable basis.

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