

Greening of the earth

Necessity and role of pulp and paper industries

MISRA R.P.*

Background

The geographical area of our country is around 328 million hectares (Ha.), out of which, at least 1/3rd of the total land is badly degraded.

The area under forest is 23% or around 70 million Ha. but the actual area under productive forest is not more than 30 to 32 million Ha. The balance area contains either poor growth or practically no forest cover.

The Forest Policy of 1952 had prescribed a target of 33% under forest cover which has not been possible to achieve till date, inspite of 42 long years. The National Forest Policy 1988, also envisages massive afforestation programme but very little has been achieved.

It has been projected by Department of Space that we are loosing well stocked forests by nearly 1.5 million Ha. per annum and if the present rate of deforestation is not checked then we may have sufficient food but nothing to cook it by the turn of the Century.

The extreme seriousness of the present situation can be gauged from the fact that due to large scale deforestation, there is a rapid increase in the area of wasteland which is seriously undermining the productive resource base and endangering the vital life support system. 8,000 million tonnes of top soil is being washed off every years because of total absence of forest cover and 34 million Ha. or 20% of the agricultural land has become flood prone due to deforestation.

It has been reported that 93 million Ha. of Wasteland is available outside the forestry sector which needs to be rehabilitated immediately.

In some of the countries trees are often planted to establish tenure rights, whereas in India they are often harvested to demonstrate claims on the land. A farmer needs a permit to harvest the trees and another permit to transport it. The farmers have limited awareness of laws, rules and regulations, as a result of which middlemen/contractors get the loans assured from the purchase and sale of tree products.

Need for Afforestation

With the limited land resource in the country and a large population of human and cattle, there is a growing ecological and socio-economic crisis. A serious concern for the greening of land is inevitable when we realise that almost half of the land in this country has its productivity much below the potential. We are self sufficient on the food front at present but we cannot remain complacent by seeing the present rate of population growth. The need for timber, pulpwood, fuel and fodder also has to be satisfied. Most of the afforestation problems are not a result of natural phenomena, but are the consequence of some human behaviour which has resulted in over use and under investment in particular lands.

The unprecedented growth of population has forced to take resource to intensive agriculture which can be profitable only if it is raised in conjunction with tree crops so as to promote agro-coenosis by striking a correct balance between annual and perennial crops.

The wastelands available in our country both in and outside forest sector provide opportunities and

*General Manager (Forests)
Harihar Polyfibers.

hope for the future and at the same time pose a formidable challenge. These lands can be made productive once again for serving the society in its battle for survival.

Strategy For Afforestation

The strategy for massive afforestation programme will have to be bifurcated into two sectors, viz., Forest Area and Private Wastelands.

The forest today are rich estate of trees and other forest produce. They need to be managed intensively to protect them for the ecological benefits and economic returns. A higher productivity can be achieved by replacement of degraded and poor value crops with species of higher productive capacity and economic value.

The massive afforestation programme on Private Wastelands can be undertaken only with the support of the people themselves i.e., individual farmers.

The Afforestation Programme are not a luxury. Its main object should not be only improvement in the environmental quality or tree planting for the sake of soil conservation or controlling erosion. Its primary object should be to contribute to the overall economic development of the country particularly in bringing millions of poor people above the poverty line

Requirement of Wood and its Availability

The present pattern of annual consumption of wood in our country is as hereunder :—

Sl. No.	Wood-use	Quantity in Million Tonnes	%age
1.	Firewood	163	88
2.	Pulpwood for Pulp and Paper Industries	5	3
3.	Timber (27.84 Million Cubic Mtrs)	17	9
		185	100

The above table establishes beyond reasonable doubt that the Forest Resources of India culturally and historically support more than 70% of our population living in rural areas for their energy needs,

apart from meeting the requirement of timber for Pulp and paper Industries.

The need of the growing population and ecological security of the community are of paramount importance but could only be achieved if the forests are silviculturally productive and managed on the principle of sustainable development.

The new phase of development set for the country under the new policy of the Government will require much larger quantities of Pulp and Paper and as such the requirement of Pulpwood is bound to considerably increase in the years to come.

Role of Pulp and Paper Industries

The denuded land in India is so vast that many agencies are needed to bring it under forest cover. In such a situation Pulp and Paper Industries can be asked to raise captive plantations to meet their requirement of wood.

The Industry is capable of providing good Management for Afforestation Programme as a part of Nation Building Activity. The Industry can be expected to deal much more fairly with workers paying them better wages, introducing health and recreational facilities.

The Industry also understands the need for training for those who work on well managed projects and would be able to set up and manage Agro-Forestry Projects of their own. The Industry has definitely a better track record in giving the desired result in a given time-frame.

Pulp and Paper Industry has a long standing association with forest operations and is fully equipped to provide effective Project Management for implementation of Afforestation/Plantation Projects. Industry looks at Management as performance and believes in doing not knowing alone. Its test is not logic but results and only legitimacy is performance.

The Industry will have a long term stake in raising Pulpwood Plantations to meet its wood requirement on a sustainable basis economically and as such it will do its best to see that the Affores'tation/Plantation Projects achieve the desired results.

Captive Plantations

In many countries, the integration between Forestry and Forest Based Industries is being achieved by adopting a concept of 'WOOD BASKET' around User Industry. According to this concept the User Industry is tightly surrounded by its own Scientifically Managed Plantations of high yield species. A good land is allotted for the purpose and suitable species which can be raised as short rotation crops are selected. Besides ensuring sustained supply such a configuration results in reduction in cost of administration and transport and makes it possible to utilise 100% biomass generated to meet the energy requirement.

The extent of benefits which can be derived from such concept are briefly mentioned as hereunder :-

Benefits of Captive Ptantation

Assumed Requirement 100,000 MT

Area Required

Assumption

Rotation 8 Years
Yield 50 T/Ha. at Rotation Age
2000 Ha. × 8 = 16,000 Ha/
= 169 Sq. Kms.

i.e. Area encompassed in a radius of 7.2 Sq. Kms.

The requirement of area will further reduce if more advance technology of obtaining a higher yield per unit area is achieved in our country also as has been done in Brazil, Australia etc.

Benefit in harvesting cost in intensive Management

- (i) Reduction in Harvesting Cost :: Rs. 30.00 per MT
- (ii) Reduction in Transport Cost :: Rs. 100.00 ,,
- (iii) Reduction in Management Cost

:: Rs. 20.00 ,,

Total : Rs. 150.00 ,,

Indirect Benefits

- (i) Assured supply of wood of right species; and
- (ii) Intensive Management and Protection of the crop.

The Pulp and Paper Industry is, therefore, an appropriate agency for assigning Wastelands, both in and outside the Forestry Sector for Afforestation in the quickest possible time.

Projects Under Implementation By Grasim Industries

Farm Forestry Project

— Harihar Polyfibers (HPF), a Unit of Grasim Industries Ltd. is the first Industry in the country to undertake massive Resource Development Programme.

— HPF launched a Farm Forestry Project in the year 1984 for raising plantations on degraded Wastelands, Marginal and Sub-Marginal Land of farmers in five drier Districts of Karnataka State. An area of 9,918 Ha. (around 25,000 Acres) have since been covered under this project. The harvesting of plantations raised in the year 1984 has already commenced on completion of 7 years growth by the planting stock.

— Under this Project, extension services which consist of motivation, induction and training of framers for raising tree crops is provided free of cost by HPF at an estimated cost of almost Rs. 15.0 lacs per year.

— HPF also supplies high quality planting material (seedlings) to the farmers at a subsidised rate on which the annual expenditure works out to about Rs. 10.0 lacs.

— HPF is assisting the farmers in processing their loan applications and sanction by participating Banks.

Subsidized Distribution of Seedlings

— HPF has also set up seven nurseries in five Districts of South Karnataka for supply of **Subsidized Distribution of Seedlings**. A modest start was made in the year 1991 by distribution of 14.0 lac seedlings. The response received was so encouraging that it has been decided to distribute 40.0 lac seedlings at subsidized cost. The annual expenditure on this Project is estimated to be Rs. 25.0 lacs.

Resource Development Projects

- To sum up Resource Development Projects are as hereunder :-

Name of the Project	Annual Area Coverage (Ha.)	Seedlings to be Raised for Distribution (Lacs)
Farm Forestry Project	2,000	40.0
Subsidized Distribution of Seedlings	2,000	40.0
Total :	4,000	80.0

Research Activities

- It was realized by HPF that successful implementation of Plantation Projects would need multi-disciplinary and problem oriented Research work. It was in this background that it has set up a Research and Development Complex in the name and style "Grasim Forest Research Institute" (GFRI) which at present is conducting extensive research on the following species both by Macro and Micro Propagation.

Bamboo	(Dendrocalamus strictus)
Sisoo	(Dalbertia sisoo)
Casuarina	(Casuarina equisetifolia)
Eucalyptus	(E. tereticornis and E. camaldulensis)

- The initial results achieved in out-planting of both rooted cuttings and Tissue Culture Seedlings are quite encouraging and may reduce rotation by two years, besides increase in volume per unit area.

Wood Availability to GRASIM

It will take many more years and inconceivable expenditure and hardship before GRASIM can reap the benefit of the new Projects under implementation. The work force of 32 professionals and trained Foresters of 77 Field Technicians are actively engaged in the Resource Development Projects.

Marketing

The Plantation/Afforestation Projects will have to be financed by the Commercial Banks with a refinancing arrangement from National Bank. One of the pre-requisites for sanction of such Projects is that marketing of harvested produce should have a firm tie-up arrangement. The Pulp and Paper Industry can easily provide a buy-back arrangement for such harvested produce with a proviso that it will offer a remunerative/prevalent market price at the time of harvesting which could be jointly fixed by the Industry, concerned Bank and National Bank.

The Industry also has the requisite infrastructure for harvest, transport and allied operations to make the produce marketable.

Generation of Employment and Ecology

It has been estimated that eight million jobs and required to be created annually to prevent increase in unemployment and if unemployment is to be actually reduced then more than eight million jobs will have to be created every year. The entire Industrial activity in the country has not produced more than half a million jobs per year. Poverty, the result of unemployment and absence of social security system is therefore, India's major problem today.

A major alternative to create gainful employment rapidly on a massive scale lies in Afforesting the forest areas of degraded land. The Afforestation Programmes can create million of jobs with least capital investment.

CONCLUSION

The Plantation projects implemented through the Industry would help to

- Create a renewable resource of fibrous raw material for the Mill;
- Increase the production of fuel wood for local needs;
- Improve the ecological balance of the area;
- Actively engaged in the interest of the local population in tree planting; and
- The supply of 'elite' planting material to farmers from nurseries.