CHAPTER II

IMPORTANCE OF SOCIAL FORESTRY

Forests have a great role to play not only in economic and industrial building up of the nation, but also in moderating climate, soil and water conservation and checking floods and ecological degradation. It is generally understood that the economic development of any country refers to industrialisation. Industrialisation can eradicate the poverty of the nation and can improve the living standards of the people. But taking into consideration the merits and demerits of industrialisation in Western countries, it may well be stated that the agrarian country like India, has got tremendous potentialities for economic development through scientific development of forests. Machine and Nature can work hand in hand for the betterment of mankind.

Gautam Budha says, "Forest is a peculiar organism of unlimited kindness and benevolence that makes no demand for its sustenance and extends protection to all beings, offering shade even to the axeman who destroys it. The word forest is derived from the Latin root "foris" meaning "outside", the reference being to a village boundary or fence, and it must have included all uncultivated and uninhabited land. Today, a forest is any land managed for the diverse purpose of forestry, whether covered with trees, shrubs, climbers, etc., or not. The Indian word "jungle" has been adopted in the English language to describe a collection of trees, shrubs, etc., that are not grown in a regular manner, as contrasted with "forest" which is any vegetation under a systematic management.

In the British Commonwealth forest terminology, forest is defined as "a plant community predominently of trees and other woody vegetation usually with closed canopy. The forest in India have been described as "an area set aside for the production of timber and forest produce or maintained under woody vegetation for certain indirect benefits which it provides" e.g. climatic or protective.

Legally, forest is "an area notified and covered under Indian Forest Act". This does not indicate the presence of trees, etc., in the area, but the hidden object is to manage the area for the purpose not other than the forest. This does not include the private forests. Forest is therefore, an area managed for the production of forest produce and/or other influences. Forest land as defined by F.A.O. in its 1963 word forest inventory is as follows :

"All lands bearing vegetation association dominated by trees of any size, exploited or not, capable of producing wood or other forest products, or exerting an influence on the climate or water regime or providing shelter for live stock and wild life".

ROLE OF FORESTRY IN ECONOMIC DEVELOPMENT

For ages, the forest has shaped the life, economy and habitat of the country. History illustrates that for thousands of years man has recklessly destroyed forests for cultivation, habitation, industry, fuel, fodder, construction and timber, etc. There is a significant relation between forests and economic development of India. The role of forestry in Indian economy may be stated as follows :

Forests and the Industrial Wood

Forests are valuable natural resources, wood from forests provides raw material for several industries of national importance. Sawn wood for construction, railway sleepers and furniture, panel products including plywood, veneers and fibre boards, pulp and paper, match wood and round wood for poles and wineprops are needed for vital industries. The National Commission on Agriculture made an assessment of the needs of these products for the country for 1980, 1985 and 2000 A. D. The requirements worked out are given in Table 1.1

TABLE 1.1

Aggregate Wood Raw Material Requirement for 1980, 1985 & 2000 A.D.

(In thousand cubic meters)

SR. NO.	ITEM	1980	1985	2000
1	Sawn wood	13,145	15,665	22,940
2	Plywood and Veneers	520	700	1,345
3	Fibre board	85	105	155
4	Pulp and paper	3,675	4,715	9,680
5	Match wood	535	680	1,415
6	Round wood	7,045	8,165	11,645
	TOTAL	25,005	30,030	47,180

(NOTE : The figures are rounded)

SOURCE : Report of National Commission on Agriculture Part IX (Forestry)

The total production of timber in the country is of the order of 13.5 mm^3 per annum against the estimated requirement of about 30 mm^3 for 1985 and 47 mm^3 for 2000 A. D. It can well be appreciated that it is going to be extremely difficult to bridge the gap. In the past, lops and tops, side cuts, bark, etc., of the trees were left behind and the villagers generally had unrestricted approach to these for their bonafide use. With the raw material famine for industry, this source is now no longer available to them. This means more pressure on the existing wastelands and forests.

Besides, paper industry is largely dependent upon wood as a raw material. Without paper from wood, the business of world would half, communications would be restricted, monetary system would be disturbed, publication of books, magazines, news papers would stop. It is true that paper can be manufactured from other materials such as grasses, rags, bagasse, etc., but not in the increasing quantity required for the world today. To meet the increasing demand of paper industry bamboos may also be planted. After four years bamboos start giving culms. Bamboo today forms about 67 percent of raw materials used by paper mills. Bamboo, if planted on private lands of tribals will greatly improve their economy.

Eucalyptus is in great demand for the paper pulp and rayon industries. Mill owners of Karnataka are prepared to make advance payments everywhere to growers until the tree is ready for harvesting in 5-8 years. One acre of Eucalyptus, when ready for felling, can fetch upto Rs. 40,000. As a result, many farmers in gujarat have

started growing Eucalyptus instead of food crops. This species may easily be planted on the bunds of agricultural fields and the species is felled after every five years and will fetch a good amount of money and the tribals and other weather sections of the rural people will be benefited enormously.

Besides, paper and a large variety of boards such as plywood, chip board, paper board, fibre board, etc., are manufactured out of wood and used extensively for various purposes. When wood is heated with acid under properly controlled conditions, the celluloses and hemicelluloses are converted into sugars, which can be separated and purified to produce glucose and xylose. Alcohol, glycerine, yeast, citric acid and a number of other products can also be manufactured from wood. Production of sugars from wood has been experimented in U.S.A., but the process was not commercially successful. Production of sugars, alcohol and yeast from wood has been started in some European countries such as France, West Germany and Switzerland.

Forests and Small Scale and Cottage Industries

Paper, plywood, particle board mills are major wood consuming industries but small scale industries viz, furniture industry, sports goods, pencil making, packing, match factories, toy industries, textile industries, etc., also use wood in varying quantities. Species such as teak (Tectona grandis), Siss (Datbergia sissoo), Shisham (Dalbergia latifolia), Sal (Shorea robusta), Walnut (Juglans regia), Gamari (Gmelina arborea), etc., are generally used for furniture. Lesser

known species are also used for cheap furniture. Sports goods industries are developed in Punjab, Uttar Pradesh, Jammu and Kashmir and Maharashtra. Six Indian species are found suitable for manufacturing pencil splints. About 7000 cubic meters of wood is used for this purpose. Packing cases are important in present day trades. Alternative material such as paper boards are available but still wooden packing cases remain an important item in packing. Most of fruit packing cases are wooden. Species such as chir, Khair, Fir, Spruce, etc., are used for this purpose. It is estimated that about 0.5 million gross of all grades exist in India. Earlier, bobbins were being imported but now most of the indigenous requirement is being met with the production in the country. Due to improvement in quality, precision and stadardisation of the product, the quality is comparable to that of the foreign manufacturers. Many timber species are used for production of wood toys. Wooden toys are popular in rural areas of the country because these are comparatively cheaper than plastic or metal toys.

Bamboo and cane provide material for basket, mat making and for furniture. Fruits of several trees such as, Mahua, Neem, Kanji are used for extraction of oil. These are generally referred as "minor forest products". But this does not mean that these are of minor importance. These are equally important from the point of view of cottage industries. Fibres from plants and grasses have been used traditionally for making ropes. Silk and Tussar worm rearing depends on leaves of Mulberry and Arjun trees. The lac and shellac industry depends on the existence of Palas, Ber, Kusum and Pipal trees.

Bee-keeping has been a favourite part-time occupation in villages having flowering trees. Several forest trees provide subsistence diet to the poor villagers in difficult times. Mahua flowers, Sal seed, Aonla fruits and several tubers form part of such fare.

Forests and Animal Rearing

The livestock of the people living in and around forests depend on forests for fodder and grazing. Nearly 55 million animals are estimated to be grazing in the forest areas of the country. Pressure is more near the centres of habitation. Normally, the forest floor provides nourshing grasses, legumes and shrubby foliage. But when forest cover is destroyed the soil gets improvised and succulent vegetation is replaced by rough grasses and shrubs. These provide little nourishment. Scarcity of forage impoverishes the animal wealth which affects the production of milk, milk products and meat. In an agricultural economy like ours, livestock is also important for providing motive power for ploughing, harvesting, transport of men and material, and lifting water. A weakened animal stock leads to inefficiency in all these activities.

Forests and Fuel-wood

For the rural masses fuel comes only next to food. With trees having been cut or greatly reduced wood fuel is no longer easily available. Indeed, over a greater part of the country a fuel famine prevails. In the Himalayan region, there is no alternative to wood fuel.

The forests having receded, a greater part of the time of the hill folk is spent on collecting firewood. This work is carried out by tradition by women. Groups of women going out early in the morning with ropes and sickles and returning home late in the afternoon with a paltry head-load of fuel-wood sticks is a common sight in the hill villages. They have to walk miles before they can collect a small bundle. It is estimated that nearly half of their working hours are spent on this drudgry. In the plains, the position is no better. As wood is not available, villagers resort to burning cowdung for fuel. It is estimated that as 73 million tonnes of cowdung is burnt annually to cook food and to provide warmth. This amounts to nearly 15 percent of the total non-commercial energy consumption of the country. Normally, cowdung should be returned to the fields as manure for maintaining their productivity. Burning of this valuable material thus, adversely affects the fertility of agricultural lands. It has been rightly said that in India, food is being burnt to cook food.

Forests and Environment

The treeless expanse of land provides an environment least conducive to healthy living. Tree leaves, recharge the atmosphere with life giving oxygen, take away excess carbon dioxide and transmit moisture to the atmosphere by way of transpiration. It is estimated that one hectare of wood land consumes 3.7 tonnes of carbon dioxide and gives out 2 tonnes of oxygen per year. A tree covered environment is much healthier to live and work in. Amongst the immediately

preceptible effects of loss of vegetative protection are soil erosion, floods and droughts. If trees and other vegetation are present, they bear the brunt of winds, heat, cold and rain water first in their crowns and foliage. In a wooded area the flow of rain water gets regulated through the leaves and the spongy material overlying the soil, but in a barren, unprotected surface the rain drops hit the soil directly and the water flows torrentially, dislodging and carrying with it the soil particles, which have taken to hundreds of years to form. This results in disastrous floods in lower areas causing damage to life and property. It is estimated that nearly 6,000 million tonnes of soil is washed away every year in floods. The average annual damage caused by floods over a period of 25 years (1953-78) has been estimated as follows :

i)	Area affected	8.2 M.Ha.
ii)	Cropped area affected	3.5 M.Ha.
iii)	No. of houses damaged	9.25 Lakhs
iv)	Population affected	24.6 M.
v)	No. of cattle lost	77,000
vi)	No. of human lives lost	1,240

SOURCE : India, Ministry of Energy & Irrigation
(New Delhi, National Floods Commission Report, 1980)

The total damage for the period was estimated at Rs. 539.9 crores at 1952-53 prices. The area damaged by floods during the period has shown a steadily increasing trend from 1972 onwards. The total damage due to floods during 1982 was assessed at Rs. 1410 crores.

As there had been a lot of deforestation during the fifties and sixties, it would not be difficult to connect the increasing damage to increased forest denudation.

Forests and International Trade

Forests may be responsible for the development and maintenance of a profitable export trade. "If our forests are properly protected, managed and used, we probably shall have an excess supply which may be the source of a very extensive and profitable export trade. It is for better for the national economy to export than to import. A favourable balance of trade will ensure most satisfactorily to the economic welfare of the nation.

Forests and Miscellaneous Services

Forests may render miscellaneous services to the nation. Economic benefits like erection of hydro-electric, irrigation, grazing, minerals and recreational industries, etc., may be rendered by forests. Provision for health, recreation and vacationing for enjoyment constitute another industry of the country. Forests are a valuable assets in times of famine and scarcity for they are not only capable of yielding vast quantities of fodder but also can yield large quantities of edible fruits and roots. These fruits and roots are much helpful to the poor people in times of famine and scarcity.