Chapter 1

General Introduction
The forest is a peculiar organism of unlimited kindness and benevolence that makes no demands for its sustenance and extends protection to all beings, offering shade even to the axeman who destroys it - "Gautam Bhdha, (cf Dwivedi, 1980). During the permo carboniferous period, about 350 million to 225 million years back, forests in India were so gigantic and novel that the period was called as "the Golden age of forest". This fact has been confirmed with the presence of rich coal deposits in various areas of the country. Man is a dynamic force but because of his too frequent shortsightedness in the treatment of his environment he can be his own greatest enemy, (Marsh, 1964). Lowenthal et al. (1958) saw man as a free agent "working independently of nature".

Luna (1989) described that of India's 329 million hectares of geographical landmass nearly 74.74 million hectares which is nearly 27.7% is classified under forest cover as against 33% enunciated in National Forest Policy, 1988. This area includes all types of forests notified and covered under the Indian Forest Act. FAO (1968) has defined the forest land as "all lands bearing vegetative 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 livestock and wildlife. According to the recent estimate nearly 4.34 million hectares of forest area is lost during 1951-52 to 1982-83 (Luna, 1989).

Madhya Pradesh is the largest state in India having 4,42,841 sq. km. geographical area. The forest area in the state during 1980 was approximately 1,40,000 sq. km. which is nearly 31.70% of the geographical area of the state and 22% of the forest area of the country (Agarwal and Namdeo, 1985). But the present condition of the forest area as indicated by the National Remote Sensing Agency is that the state has only 18% forest of the total forest area of the country, (P.T.I. 1991). Total population of M.P. is 5.21 crores out of which 22.97% i.e. 1.9 crores belong to tribals residing in and around the forests. This population economically and ecologically depends entirely on the forests for their livelihood and day-to-day needs. They have a symbiotic relationship with the forests.

Out of the total geographical landmass of Sagar (Ca. 10252 sq. km.) forest occupies only
290004 ha. area which is only 0.60% of the state's area. Tribal population of the district is about 3,90,621 which is 28% of the total population (cf. Disttt. Stat. Book 1989).

Forests are amongst the most important natural and renewable resources which play a vital role in the industrial and economic development of the country. Besides meeting local demands of people for timber, fuel, fodder and employment, they also perform multiple roles—productive, protective, bioesthetic and recreational; they are also of high biological and scientific value. The wood continues to be the source of fuel in the form of fuelwood or coal to 70% of the Indian population. The mineral coal is also a product of ages old vegetation. Synthetic cloth and paper are the product of wood pulp. Tribals and forest are so closely related, that tribals cannot visualise their life without forests. They are connected in one way or the other with the forests right from the birth to the death. The dependence of man on forests may be grouped, in:

**Physical terms**: Dependence for the requirements of food, fuel, shelter, and other allied pursuits.
Economic terms: Collection and sale of minor forest produce.

Ritualistic terms: Collection of forest produce for the use of socio-religious rituals.

The forest provide socio-economic security to the tribals of all ages; the old and children, who may be in a position to collect some quantity of forest produce. By this way they have the satisfaction of having contributed something which ensures an inbuilt system of social security. Forests provide grazing facility without which tribals cannot maintain cattle. Economy of these people revolves around agriculture and forestry: and the common subsidiary occupation of the people is collection of minor forest produce which is substantially a source of income for them particularly during lean period when they have no other work to do. Thus, forest is the chief source from which they get most of their edible items, fuel, fodder and medicines etc., (Agarwal and Namdeo, 1985).

Cooper (1970) stated that human beings progress over past mellenia has been the result of increasing technological ability to interfere
constructively in natural ecological processes. The reasons for the loss of forest cover are mainly excessive biotic interference, removal of cut was far exceeding than the forest could produce on a sustained basis, diversion of areas for agriculture in the name of more production of food grains, and overall compulsive socio-economic and historical resources, (Luna, 1989). Some of the facts related to forest as described by Verma (1991) are that:

(i) In our country the annual need of commercial wood is 2.80 crore cubic metres whereas the annual growth of forest is only 1.20 crore cubic metres.

(ii) There is need of 93.20 crore tons of green and 78 crore tons of dry fodder whereas the production is only 25 crore tons of green and 41.40 crore tons of dry fodder.

(iii) Need of fulewood in India per year is 23.50 crore cubic metres whereas its production per year is only 3.60 crore, cubic metres.

(iv) India has the lowest per capita forest area of 0.11 hectare.

Deforestation for many developmental activity or clearance of forest for commercial
plantations cause disastrous effect and consequently the great discontentment. There adverse effects can be evidently seen near Eucalyptus and teak plantations. This also affects adversely the agriculture, cattle rearing, availability of timber, fuel and minor forest produce to such an extent that tribals have become averse to the man made forests since traditional forest produce would not be available from the plantations. Role of forest in the protection of catchment areas of lakes agricultural lands from floods, soil erosion and in the maintenance of soil fertility is of immense importance. The forest resources are however exhaustible if not properly cared. Still faster are exhausting the nutrients of soil which are vital to plants. Under normal tropical condition of India, it takes 300 years to form 2.5 cm. thick new soil cover whereas it takes only one year to loose it if vegetation cover is not in proper, form.

It is now being increasingly realized that the reduction in forest cover results in serious soil erosion, droughts, floods and ecological damage on a scale leading to desertification with serious repercussion
jeopardising the ecological equilibrium, Mrs. Gro Harlem, ex prime Minister of Norway as a chair person of world commission on Environment and Development said "A sustainable ecosystem must be our aim, one in which the global family can live in balanced harmony with the whole of Nature", (cf. Tiwari, 1987). Thus the present day forest need rehabilitation with the motto of "Development without destruction" which however requires the understanding of basic limitations due to topography, edaphic conditions and biotic interference. In the present plan these aspects have been investigated for the forest of Sagar district.