CHAPTER-I

GENERAL INTRODUCTION
Continuous depletion of the world's forest resources is not only the concern of scientists today but also of the politicians and the common man because of increasing awareness of environmental problems. There are direct and indirect evidences that emphasize the role of forests in maintaining the earth's environment congenial for living beings. Out of the total forest cover of the world, roughly 50% belong to the tropical forests that control the global environment. These tropical forests seem to be disappearing faster than those of other regions. As per the state forest report 1991 of the Forest Survey of India, the forest cover in the country is 83.0 million hectare, or 19.44% of the total geographical area of the country. Out of this, dense forest (crown density 40% & above) occupies 38.5 million ha. and the open forests [crown density 10% to less than 40%] cover 25.0 million ha. of the land. But the recorded forest area is 77.0 million ha of which 41.5 million ha. is reserved forest and the rest protected [23.3 million ha.] and unclosed forest (12.2 million ha.) (Agrawal and Narayan, 1988).

Madhya Pradesh is the heart-land of India. It is not only the largest state of the country but has the largest forest area i.e. 155414.41 km$^2$ which is 35.09% of its geographical area and about 22% of the country's forest area (S.F.R.I., 1988).
The impact of loss and degradation of forest is in form of soil-erosion, loss of biological diversity and damage to wildlife habitat. Degraded forests fail to meet human needs in terms of economic and ecological services and support for agricultural purpose (Agrawal and Narayan 1988).

The population of the world is continuously increasing and with it are also increasing the demands of forest products. Plants are essential for all living beings. They are the only natural system that replenish oxygen and fix carbon dioxide into food material. Without plants there would be an imbalance in the natural carbon cycle, resulting in to poisoning of atmosphere.

Modernisation is affecting nature in two ways. Firstly, raw materials are being used up indisariminately; secondly, the very face of the nature is being changed drastically. Monoculture in silvicultural practices and preference to particular crop pattern is grossly affecting biodiversity of the planet. Furthermore, the land area is being fast encroached upon for agriculture and human habitation. Emphasis on cash crops, genetically manipulated crop species and forest trees accentuate depletion of biodiversity. Needs of the ever growing human population and the livestock is resulting in over exploitation of nature. The overall effect of all these is reflected by changes in climatic conditions (Mishra, quoted by Agrawal and Narayan, 1988).
About 50 percent of the world's total forest area (2000 million ha.) is located within tropics distributed in three main regions namely tropical Africa, tropical America and Tropical Asia. About 580 million hectares is of tropical rain forests. It is commonly believed that the tropical forests play an important role in global ecology and are of vital importance in maintaining environmental quality (Anon, 1991).

The present situation of forests is a matter of concern to the forest workers, scientists, politicians, researchers and also to common people, as deforestation is going on at a very fast rate. So, it is becoming a great challenge to the authorities. In India, the deforestation rate was reported to be well over one million ha/year during the last three decades. The Food and Agriculture Organisation (FAO) of United Nations has warned in 1976 and pressed the need for planting trees and plants that can be used as fuel and cattle-feed. This was nomenclatured as social forestry. Several states have launched ambitious programmes of social forestry with the help of several foreign agencies like World Bank, U.S. Agency of International Development, Canadian International Development Agency (CIDA) and Swedish International Development Agency (SIDA) etc. By the end of 1988 19.3 Lakh, hectares of land in India was brought under the scheme of social forestry costing Rs. 600 crores.
The importance of seed used for raising plantations in forestry is a recognized fact, but was not followed in practice. It is only recently that genetic quality of seeds, is being screened before raising plantations. (Willan, 1985).

India is among the richest in the world in its floral and faunal resources but, these are rapidly declining owing to over exploitation of these resources through the pressure of exploding population and continuing poverty.

There is an immediate need to conserve these resources and to adopt a strategy to ensure the management, so that they may yield the greatest sustainable benefits to the present and future generations.

There is a big gap between demand and supply of forest products in various parts of India and to meet the shortage, raising of man made forests of long and short rotations and forests farming in private sector is necessary.

The development and growth of the economy of any country depends substantially on an adequate flow of foreign exchange. The forests are always a huge source of several raw materials which can be directly exported as final products. In our country greater efforts are required to increase the quantum of major forest produce. Paper and pulp require special attention because we have to import a huge quantity of these products from some of the industrialised region of the world such as Europe. India with a favourable climate,
cheap labour and other factors can produce industrial wood at much cheaper rates as compared to different items of export i.e. minor forest products such as gum, resin, plant materials used in dying and tanning, essential oils, wild animals and birds. Attention should be given to the production, harvesting and marketing of minor forest products. To attain this large target, it is very essential to have some proper investigation on physio-chemical characteristics of different tree seeds.

Keeping this view in mind, a plan has been made to assess the natural forestry of four leguminous plant species of the forests of Sagar. To attain this, experiments on the following objects were designed.

(a) Determination of phenological events of various forest plant species.
(b) Standardisation of the morphological parameter of the seeds was also planned to find out the most vigorous provenances.
(c) Study of on stored seed in different containers and conditions.
(d) Studying different conditions of edaphic and climatic factors.
(e) Storage of seeds and process of seed deterioration in terms of germination vigour and other biochemical consideration.