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An Inventory of Forest Resources of the North-Eastern Region

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Ecologically speaking, the north-eastern region is a part of the humid tropics. The forests of the humid tropics are rich in natural resources. Apart from wild species of plants and animals the region abounds in lesser known plants of food value and is also a store house of the germ plasm of a variety of cultivated plants such as rice, citrus, etc.

The forests of the humid tropics, however, are extremely fragile. The soil is highly leached and nutrient deficient. The nutrients are chiefly stored in the large living biomass. Large scale disturbances by the industrial man has tended to destroy the delicate balance between the forest biomass and the other units of the ecosystem. Large scale deforestation releases nutrients held in the living biomass which then cannot be stored in the soil compartment as the latter is thin and infertile; the nutrients are lost through water released through heavy rains. The system is not able to hold back the nutrients.

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Very often the recovery of the ecosystem is not possible. Such large scale 'desertification' of sites are now common in the north-eastern hill areas. Large scale timber extraction by the industrial man, fuel wood extraction by the rapidly increasing human populution and reduced jhum cycle (intervening fallow phase period between two successive croppings on the same site) from a more favourable 30 years or longer to 4 or 5 years in the recent past are the chief reasons for this ecological damage. Even selective felling of trees as practised by the foresters in some of the large forest reserves often results in creation of larger gaps in the forest than are intended.

Shifting agriculture is the major land use in the north-eastern hill areas. Shortening of the jhum cycle has resulted in distortions of various kinds. Considering the magnitude of the problem, what should be the correct approach of solving it? Jhum is a land use based on valid scientific principles and perhaps the only viable land use available for meeting the varied needs of the tribal for food, fuel and even fibre. The food available range from cereals, legumes and vegetables. The system is energy-efficient and the whole set of operations involved are based on efficient capture of resources like light and nutrients through multiple cropping and efficient recycling of resources which are fast depleted in a transient environment of a steep hill slope with light rainfall.

Any development strategy for this region has necessarily to be centred around jhum in the absence of viable alternatives. Besides, jhum is inseparably linked with the socio-economic and socio-cultural aspects of the life of the tribal population. All previous attempts to replace jhum in the region have failed. Terracing, suggested as an alternative, requires heavy input of petro-based fertilizers that are costly and difficult to procure. The leaching losses get exaggerated under terracing resulting in in poor efficiency in fertilizer use. The three-tier system (with upper part of a slope left forested, mid-portion of plantation crops and lower part being terraced) of ICAR may have only limited applicability because it is too rigid a system and would conflict with social organization of the tribals. In many Latin

American countries, shifting agriculture has been replaced by large scale plantations such as rubber. In some parts of the north-east this has been tried. With public enterprises taking up this transformation of land use, the tribals often get alienated from the land resulting in greater misery. I personally feel that these have to be co-operatives laying emphasis on family and village as units for development. Even the cultural practices could, perhaps, be adapted in such a manner that the emphasis on inorganic fertilizer is minimized through recycling of organic manure.

We must design packages of development suited to each unit area. Horticulture, agro-forestry systems, development of medicinal and aromatic plant cultivation suited to the region, could be considered. Social forestry systems would have to receive much emphasis. All these would help in lengthening the jhum cycle to at least 10 years or more which could make the jhum system ecologically and economically viable. The forestry system developed should be based on indigenous tree species—the region has indeed a rich variety of tree species available. Indigenous trees could also be used for revegetation of desertified areas if planned on the basis of an understanding of germination and establishment of native trees and their subsequent tree architecture. Whatever, mature forest ecosystems are still available in the region should be declared as 'biosphere reserves' for preserving the rich germ plasm for posterity. Only a multi-pronged approach could ensure economic well being for the tribal people, while providing maximum ecologic security.