



ROLE OF BAMBOO BASED AGROFORESTRY IN LIVELIHOOD IMPROVEMENT FOR RURAL PEOPLE ON DEGRADED LANDS OF UTTARAKHAND

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ABSTRACT: The agricultural land and forest area is shrinking day by day due to human interference in Uttarakhand. In this condition the only option is to raise trees outside forests on degraded land of farmers. The soil in the state of Uttarakhand has been degraded to a large extent due to constant pressure of degradation from vagaries of nature such as soil and water erosion, soil's physical degradation and chemical deterioration, water logging and presence of heavy metals in soil. Recently, in 2005 National Bureau of Soil Survey and Land Use Planning (NBSS&LUP), Nagpur of ICAR stated that 146.82 million hectare area was reported to be suffering from various kinds of land degradation. It includes water erosion (93.68 million ha.), wind erosion (9.48 million ha.), water logging/flooding (14.30 million ha.), salinity/alkalinity (5.94 million ha.), soil acidity (16.04 million ha.) and complex problem (7.38 million ha). The extent of land degradation in Uttar Pradesh and Uttarakhand, as estimated by NBSS&LUP and Indian Council of Agricultural Research (ICAR) is 15.3 mha i.e. 52% of degraded areas to Total Geographical Area (TGA) of the state. India has vast expanse of degraded lands and nearly half of our landmass is under various types of degradation and needs ecosystem restoration interventions through different agroforestry practices. The promotion of agroforestry on degraded land through planting of suitable bamboo species with medicinal and agriculture crops and develop a sustainable bamboo based agroforestry model for utilization of these lands in Uttarakhand to maintain soil fertility as well as economy on priority. To maintain this economy and ecology of bamboo may be a promising species under dry conditions in the state. In this condition, some changes in land use pattern are required to fulfill the needs of farmers. For this purpose some value addition with a normal agriculture is a need today. The forest areas have been the traditional source of medicinal plants and herbs. The position cannot be sustained much further because the areas under forests have been steadily shrinking on one hand and on the other hand the requirement of medicinal plants and herbs has increased steeply. This has resulted in unscientific and over exploitation of medicinal plants in the forests. About 95% of medicinal plants used by the industries are collected from the wild area. Over 70% of the plant collections involve destructive harvesting because of the use of parts like roots, bark, wood, stem and the whole plant in case of herbs. Keeping in view the cultivation of some agricultural crops with important medicinal plants like Sarpagandha, Ashwagandha, Satavar, Chitrak and Aloe vera etc. will enhance the economy by developing a suitable and economically viable bamboo based agroforestry practices. Especially high value medicinal plants are creating new dimension in the field of bamboo agroforestry. The medicinal plant industry puts together the various facets of this multi-disciplinary industry and its global interest. Today's need is emphasized to produce quality planting material, extension of farmer friendly propagation technologies for producing sufficient planting stock, managing the plantations properly, use of the proper silvicultural practices, age of harvesting, seasoning treatment, etc. to improve productivity, which will improve the economy of the stakeholders. The role of bamboo would also be effective in carbon sequestration, land reclamation, soil and water conservation, and sustainable development of the rural people of Uttarakhand through different utilization of bamboo with their value addition.