A MATHEMATICAL MODEL TO STUDY THE IMPACT OF AWARENESS PROGRAM FOR SUSTAINABLE MANAGEMENT OF RESOURCE BIOMASS BY TRIBAL POPULATION

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ABSTRACT

There is the largest concentration of forest resources in India along with equally large concentration of tribal and rural population. Tribal population and rural population are highly dependent on forest resources for their livelihood. Degradation and depletion of forest resources, increase poverty and suffering among the rural population, therefore it is imperative to educate the tribal population to use the forest products efficiently and make efforts for sustainable management of forest resource biomass. Proper awareness of tribal population is demand of the time. Keeping these objectives in mind, we have formulated a mathematical model consisting of biomass, tribal population, trained tribal population, awareness programme to aware and train the tribal population for efficient use of forest products. Local and global stability analysis of the mathematical model along with the persistence of the system is checked using the theory of nonlinear ordinary differential equations. Analytical results obtained are justified numerically through numerical simulation. The important parameters are investigated and a variety of variables to change in these parameters is determined.

KEYWORDS: Forestry Biomass, Population, Stability, Persistence