



Jhum cultivation in Northeast India

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INTRODUCTION

Jhum cultivation commonly known as slash and burn agriculture is an age-old traditional agricultural practice in Northeastern region of India. It is when farmers clear land by slashing vegetation and burning forests and woodlands to create clear land for agricultural purposes. Jhum cultivation is a local name for slash and burn agriculture practiced by the tribal groups in the northeastern states of India like Arunachal Pradesh, Meghalaya, Mizoram and Nagaland. In the north eastern region, the Jhum cycle is reduced to 2-5 years from 20-30 years. However, jhum cycle of 15-20 years is sustainable. The cycle of agricultural operation in all these areas of North-East Region is marked by the following stages: (1) Selecting the forested hilly track; (2) Cleansing the forest tract by cutting down the jungle during December/January; (3) Drying and burning of fallen shrubs/trees into ashes during February March; (4) Fencing the cleared plots; (5) Worship and sacrifice; (6) Dibbling and sowing of seeds for mixed cropping; (7) Weeding operation; (8) Watching and protecting the crops against depredation by wild animals, pests, etc.; (9) Harvesting; and (10) Threshing and storing. Shifting cultivation usually starts before December with the clearing of forest areas. By mid-February to mid March i.e. before onset of monsoon, drying and burning of debris takes place and followed by ploughing and cultivation of crops. For several years, farming of the plot continues, until the soil loses fertility. After harvest, land is left fallow and cultivators repeat the process in a new plot. First plot remains fallow and vegetative regeneration takes place till the plot is reused for same purpose in a cycle. People involved in jhum cultivation are called Jhumia. In North-East India about 7.6 lakhs ha area is affected by shifting cultivation. Amongst North Eastern states Nagaland is the worst affected state followed by Arunachal Pradesh, Mizoram, Meghalaya, Manipur Assam and Tripura (NRSC, 2011).

Impact of Shifting Cultivation

Shifting cultivation is an agricultural system in which plots of land are cultivated temporarily, and then abandoned. This system often involves clearing of a piece of land followed by several years of wood harvesting or farming, until the soil loses fertility. Once the land becomes inadequate for crop production, it is left to be reclaimed by natural vegetation, or sometimes converted to a different long-term cyclical farming practice. Every year thousands of hectares of forest are destroyed as a result of the practice. Shifting cultivation are causing changes in forest ecosystems (Henriques, 2007). One of the most important negative environmental impacts of shifting cultivation is the damage that it causes to the soil system. It accelerates the soil erosion manifold. Besides causing air pollution due to burning, shifting cultivation is responsible for loss of soil nutrients and useful soil fauna and microbes. Burning of slash lowers soil acidity, organic matter and total nitrogen. Most shifting cultivation practices are subsistence level farming system having very low output/input ratio compared to other farming systems/methods. Excessive agricultural activity of shifting cultivation not only decreases the forest area, but also changes the primary forest into secondary woodland of shrub. On the phase of soil property, it accelerated the soil and gully erosion, and acidification (Das et al., 2012). The cultivation of Jhum leads to loss of natural forest ecosystems creating huge impact on environment. The extraction and the felling of large tracts of forest cover on the onset of Jhum distribute the environment in many ways. Loss in forest cover results on climatic variation like-uneven rainfall, precipitation, wind, humidity etc. The loss in biodiversity affects the environmental climatic conditions of a region affecting the abode of various faunas. Deforestation that results from the cause of shifting cultivation interference with the rain as vegetation plays a vital role in the rain cycle. The mass destruction of forest cover with forest canopy gaps lead to

deforestation and this limit in rain formation due to low limited evapo-transpiration.

There are several alternatives approaches for jhum cultivation such as Promotion of modern agriculture, Bamboo based agroforestry, jhum fallow management, Agroforestry approach, Multistorey agroforestry and Tree farming etc.

Jhum cultivation has been the mainstay of survival for many tribal communities for ages. However, there is a sharp decline in the practice of jhum cultivation which is related to low fertility and low yield due to a shorter fallow period leading to less income generation, which does not fulfill the basic needs of marginal farmers. Although jhum cultivation is a centuries-old technique, it is expensive and lacks a systematic approach. Another significant reason for its decline is the lack of proper transportation facilities and poor road conditions due to torrential rainfall in North Eastern areas. With the expanding population and demand for food among the tribal communities, there is a need to adopt a new farming strategy that may provide consistent year round income.

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