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Prospects of Jhumming for Indigenous Tribes of Arunachal Pradesh, India

Tonlong Wangpan, Tapi Taka and Sumpam Tangjang

Rajiv Gandhi University, Rono Hills, Doimukh-791 112, Arunachal Pradesh, India



The North East region has its own unique combination of living species, habitats and ecosystems, which together make up its diversity rich resource. Environmental, biological, social-cultural and economic factors prevailing in the Indian Himalayan region (IHR) have resulted in the evolution of diverse agro-ecosystems. Shifting cultivation is the major agricultural practice of a large number of tribal populations of north-eastern Himalaya and is the most extensive and highly organized land

use based on empirical knowledge accumulated through centuries, in harmony with the environment. Slash and burn agriculture or shifting cultivation is a crucial form of agriculture in undulating hilly terrains of Arunachal Pradesh, North-Eastern India. One hand the State has settled agriculture whereas, on the other hand constitutes very small portion which are restricted only to river valleys. This highly organized agro-ecosystem is transferred from their indigenous fore fathers

through centuries, in harmony with the environment. Jhum is the form of agriculture in which a piece of forest land is slashed, burnt and cropped without tilling the soil, and the cropped land is subsequently fallowed to attain pre-slashed forest status through natural succession. The State is recognized for its rich biodiversity and myriad of colorful tribes with their rich cultures. Generally, indigenous population of the state is agrarian and more than 80% of the population is still using agriculture as a source of livelihood and sustenance. They are very rich in traditional knowledge regarding their peculiar landscape and agriculture system curved out from generations of experiments.

Shifting cultivation involves series of steps such as selection of a site in slopes, slashing, burning and clearing of vegetation followed by preparing field for growing crops of agricultural importance. After completion of the cycle, the soil loses its fertility and a fresh site is chosen for cultivation and same cycle is repeated. Nevertheless, the used plots is likely to keep fallow for about 8-10 years till it regains its fertility.

About 8-35 crops are grown together and harvested sequentially from July to December while the crop compositions depends upon the sites and cycles length



of the shifting cultivation Mixed farming is a general rule of jhumming where they integrate cereals like rice (*Oryza sativa* L.), millets (*Setaria italica* L., *Panicum miliaceum* L., *Eleusine coracana* L. and *Pennisetum glaucum* (L.) R.Br.), Maize (*Zea mays* L.); with other important domesticated and subsidiary edible plant species such as Topioca (*Manihotesculenta crantz.*), Dioscorea sp., *Colocasia esculenta* L., sweet potato (*Ipomoea batatas* L. (Lam.)), Ginger (*Zingiber officinale* L.) and local vegetables such as pumpkin (*Cucurbita moschata* Poir.), white gourd (*Beninca sahisvida* Thunb.), coriander (*Coriandrum sativum* L.), soybean (*Glycine max* L. (Merr.)), brinjal (*Solanum melongena* Linn.), *Solanum nigrum* L., chilli pepper (*Capsicum* spp.), bitter gourd (*Momordica charantia* L.), tomato (*Lycopersicum esculentum* L.), and sesame (*Sesamum indicum* L.). The farming of subsidiary crops and vegetables enable



Different landscape showing Jhum (Slash and Burn) cultivation in Noth-East India.

them to sustain the lean season when there is scarcity of food grains in granary.

The entire traditional society revolves around the taboos, beliefs, folktales and legends. For instances, they perform many rituals during the time of sowing and harvesting within the family, among villagers and also in the entire community. However, the methods of farming and rituals performed during the cultivation of crops may vary slightly with the ethnic people and communities inhabiting different social, physical, environmental and climatic condition.

On the other hand, the reduction of Jhum cycle in many regions from about 20-30 years to 2-3 years owing to modernization, human population growth and increasing anthropogenic pressure are the current burning issue. It is often considered responsible for causing soil erosion, flash floods, landslide and degradation of primary land resources, depletion of forest resources and environment. Further, depletion of vegetation also pushes many important floral as well as faunal species to extreme limits of extinction. However, due to inhospitable hilly geographical features, high rainfall, poor irrigation facilities and inaccessibility of plain land, the settled agriculture or terrace cultivation is not successful in this area. Therefore in

spite of implementation of many government policies and lack of other possible alternates shifting cultivation still plays a pivotal role and primary means for sustenance for thousands of villages in remote areas.

The entire Jhumming process may be assumed as a wise strategy planned and prepared by the ethnic people which they have learnt from years of experiment and subsequently transferred to the next generation to present generation. Their strategy focus on deriving maximum possible sustainable output from the hilly slopes in terms of production of adequate food items from cultivation of crops, collection of timber from Jhum fields, practice of mix farming ensuring crop diversity, judicious use of land for cultivation, performing community feasts for get-together, rituals to ensure good harvest, ceremonies and finally continuing the legends by passing it to next generation. Besides farming, activities such as fishing, hunting and harvesting of non-timber forest products (NTFPs) indirectly helping in enhancing sustainability of Jhum among them.

The indigenous people considered this system is not just as a means of livelihood, but a way of life as it is deeply rooted into their traditional and socio-cultural norms. Thus, currently it is very

hard to eliminate this practice since it is associated with the core of their culture and socio-economic conditions.

However, effort may be given to encourage improved Jhum cultivation on scientific foundation and adoption of eco-friendly techniques. In this region, the agricultural practices may be assumed as an assortment of inherited ideas, techniques and knowledge that makes us more aware about the predominant and successful journey of Jhum in Arunachal Pradesh till date.

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