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Political Economy of Shifting Cultivation in North-East Region

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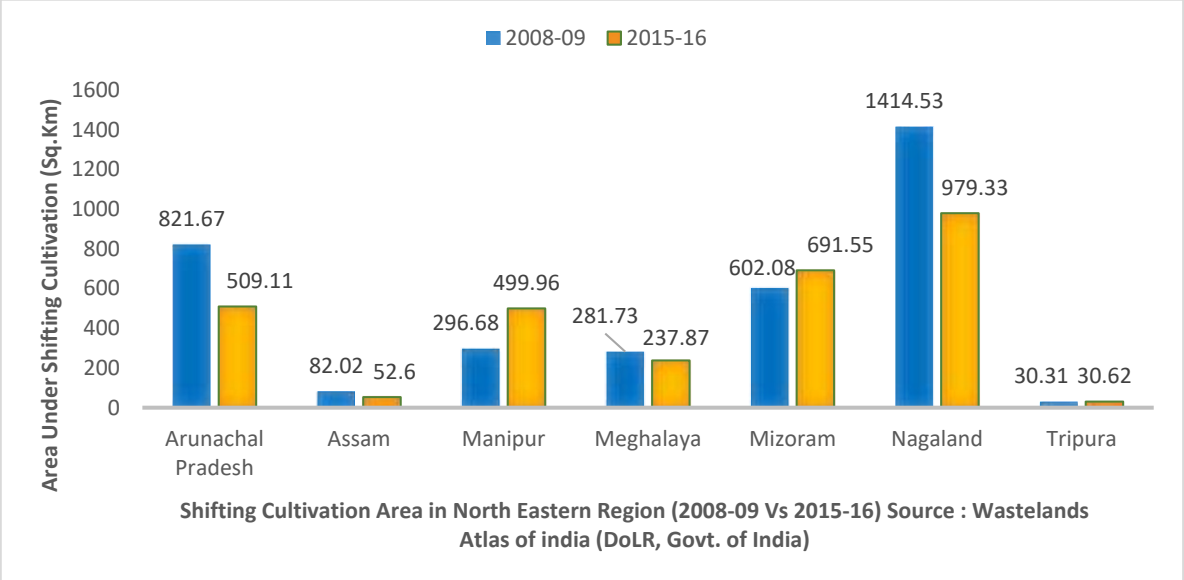
Abstract: *Shifting cultivation is a type of agricultural system where a patch of vegetation is cleared by the slash-and-burn method and assorted varieties of crops are grown in the cleared land after few seasons of cultivation on that land a new patch of land is selected for cultivation. Shifting Cultivation has been often being deemed as a harmful and a wasteful technique. important consideration about balance between its benefits and ecological consequences. Yet, the farmers of North- East Region of India continue to produce their crops using this method raises. The main aim of this paper is to analyze Shifting Culture, in the North- East Region of India (NER), as well as to examine its effects on the environment. The paper, first, provides a trivial introduction to the process and the concept of Shifting Culture. Furthermore, it traces the history of Shifting Culture in NER. A short introduction giving the current scenario of farming in NER and how the state perceives Shifting Cultivation as a farming system to frame its policy discourses- further adds to the argument. In addition to this, it also analyses the overall environment as well as economic implications of Shifting Cultivation. This paper studies the question: What are the changing perceptions about Shifting Cultivation? Finally, the research concludes by exploring and developing alternative models of farming. This research will help to understand how the socio-cultural life in the north-east is dependent on this genre of farming system. It will also help to study the political economy of Shifting Cultivation in NER.*

Keywords: *Shifting Cultivation, North-East Region of India, Environment, Agriculture*

1. INTRODUCTION

Although Shifting Cultivation has been discouraged and discontinued in several parts of India, it is still being practiced rather predominantly by the indigenous communities[1] of the North East Region of India[2] (NER). Shifting Cultivation[3] is a primitive method which originated in the Neolithic period[4] during the 8000 B.C. It has been given names such as Roca in Brazil, Milpa in Central America, Masole in Congo. In NRE, it is referred to as Jhum, Dabi, Bewar, Podu etc. Shifting Cultivation is a type of farming system where the farmers produce variety of crops using the slash and burn technique on the agricultural land[5]. After harvesting the crops, the farmers then move on to a new piece of land. Hence, Shifting Cultivation is done on rotational basis. The land of the North-East Region of India is suited for the practice of shifting cultivation since it is a biodiversity hotspot, enveloped with dense forested, hilly areas with heavy rainfall as well as regeneration of vegetation. A 2018 NITI Aayog, Government of India, report mentioned that approximately 8,500 square kilometers is still being used for shifting cultivation in NER[6]. About 86% of the total cultivated area of NER India is under shifting cultivation, mainly practiced in the hilly areas[7]. Shifting cultivation is extensively practiced across the North-East Region (NER) of India, Known by different indigenous names among the different tribes of the area. Nagaland accounts for the highest proportion of land under jhum cultivation, followed by Manipur, Meghalaya, Arunachal Pradesh, Tripura, and Mizoram. Nagaland also records the largest number of families engaged in shifting cultivation[8,9]. There have been multiple debates about the practice of shifting cultivation[10]. The growing market competition, consumerism as well as the increasing population makes shifting cultivation a fast and easy method of producing crops. A section of intellectuals believes that continuance of shifting cultivation with necessary and effective[11]reforms can do little damage to soil erosion as high humidity and heavy rainfall in the region do not permit the soil to remain uncovered for long[12,13]. A 1997 report of Ministry of Environment and Forest argued that shifting cultivation in the NER region of India did not always negativity affect the ecological system[14]. In fact, shifting cultivation added approximately 17,00 sq km land which consisted of abandoned or scrap vegetation. However, the dominant argument has always regarded it as a wasteful technique which has contributed to loss of biodiversity, soil erosion and more. The policy makers of the country have also deemed shifting cultivation as a primitive and an unproductive method and hence,

discouraged it in their policies and programs. Still being a prominent part of agricultural process and farming system, shifting cultivation has been closely related to the cultural and social identity of the people of NER. The community as a whole carries out the process of shifting cultivation. The tribes of the region associate this farming system with a sense of communal responsibility[15]. Since the lands used for agriculture are owned by their respective tribal communities, farming requires communal participation. Shifting cultivation has also played an important role for traditions and customs carried out by people of NER. It can be seen as a way of life, merging the cultural identities of the farmers practicing this process.



Shifting Cultivation Area in North Eastern Region (2008-09 Vs 2015-16) Source : Wastelands Atlas of india (DoLR, Govt. of India)

2. MATERIALS

This research is based on empirical approach. The data collected is secondary data from:

1. Articles and reports of institutions such as Niti Aayog, Government of India etc.
2. Articles published in various journals;
3. Reports of researchers on Shifting Cultivation and the North-East Region of India;
4. Papers published by various organizations on the subject;

Internet Websites.

3. METHODOLOGY

Field surveys and Data collection: Ground-based surveys are essential particularly to understand the socio-ecological context of this practice. Due to the difficult topography in NER, many areas lack cadastral surveys, making traditional data collection methods unreliable, however remote sensing images[16],[17] are widely used to map shifting cultivation areas in contrast to the labour-intensive field survey[18]. Satellite imagery (like Landsat-8 and Sentinel-2) and GIS provides more consistent and updated data to monitor accurately shifting cultivation, especially in hilly regions where traditional agricultural statistics are weak.

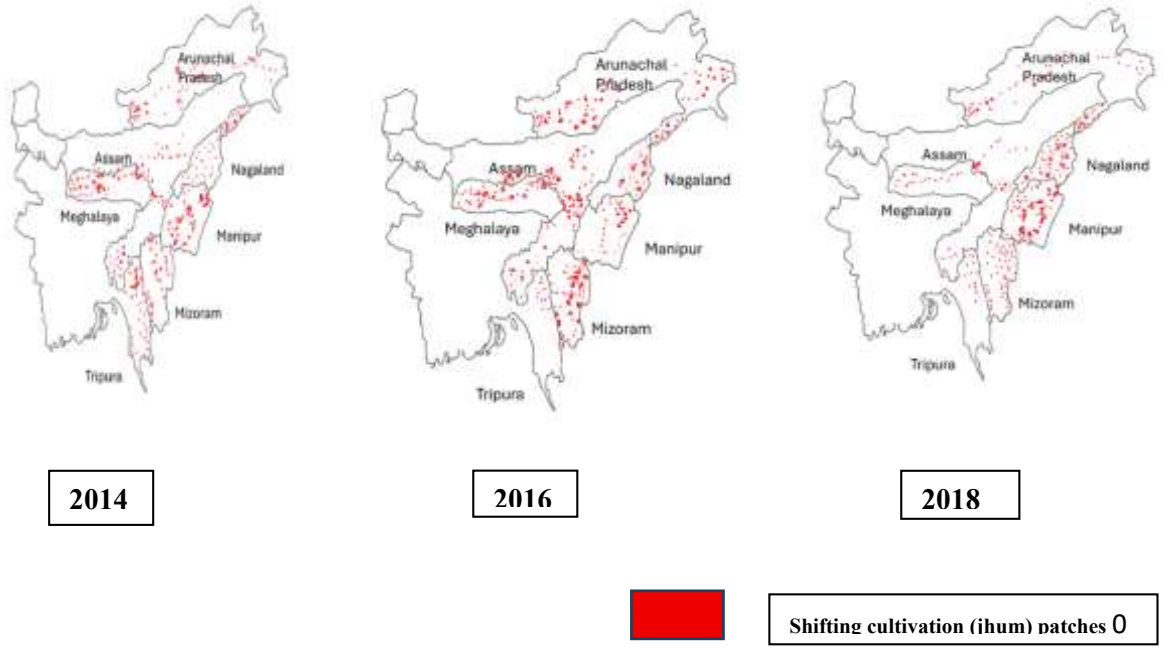
4. RESULTS AND DISCUSSION

4.1. State on Shifting Cultivation

The Government of India has implemented multiple programs as well as policies to discourage the method of shifting cultivation. It has been evident that the Forest Department of the Government of India has condemned shifting cultivation as it emanates multiple ecological problems[19]. It is deemed unfit for farming purposes. One of the policies introduced by the department was Social Forestry and National Afforestation Program for tree plantations on Jhum lands in 1998[20],[21]. Social Forestry aimed for:

1. Environmental stability,
2. Restoration of ecological,
3. Checking Soil Erosion,
4. Efficient utilization of forest resources and massive afforestation, etc.

In order to stop shifting cultivation, this program also advised alternative avenues of income harmonized with right lands practices. Furthermore, it stated that "efforts should be made to contain such cultivation within the area already affected, by propagating improved agricultural practices. Area already damaged by such cultivation should be rehabilitated through social forestry and energy plantations" [22,23]. This program-initiated tree plantation on the areas of shifting cultivation. However, these plantation schemes only lasted for approximately 4 years, without fully addressing the food security needs of the NER farmers. Therefore, the farmers went back to shifting cultivation after these plantation schemes were over. Apart from Social Forestry and National Afforestation Program, the government also encouraged the use of fertilizers, settled agriculture with the promotion of proper irrigation facilities to secure the methods of horticulture as well as sericulture instead of shifting cultivation[24]. Furthermore, a special task force[25] on micro-irrigation[26] was constitution by the government under the chairman N. Chandra babu Naidu with the aim to "seek guidance on improved technologies, appropriate policy. interventions and strategic institutional supports"[27]. However, even after implementing their respective suggestions, shifting cultivation still very much prevailed. In addition to policies and programs, there were multiple schemes into play, such as; Soil conservation and land reclamation for permanent agriculture in hills, providing variety of post rehabilitation incentives as assistance for purchasing power tiller, setting Jhummias on wet terraced land or valley[28]. The Jhum settlement was, however, opposed by the tribes. Hence, it failed to meet the excepted success. It can be argued that even though the programs and policies undertaken by the government had compelling vision, they fell short at the implementation level. Recent data show a decline in the total area under shifting cultivation in the NER; However, it continues to remain widely practiced, with nearly 8,500 sq. km still in use, particularly in states such as Nagaland and Manipur.



4.2. Cost- Benefit Analysis

4.2.1. Environmental

It is evident that Shifting Cultivation is not an isolated process. The aspects of the method affect socio-economic[29], political, ecological as well as cultural lives of people. It is an important source of livelihood for the growing population in the NER communities. This traditional process of farming has affected the biodiversity of the region to a large extent. Various surveys conducted by researchers indicate that the farmers practicing the method are certainly aware of its environmental and ecological effects. They acknowledge that over the time, shifting cultivation has led to depletion and degradation of soil, loss of forest covers and wildlife in the area as well as increasing fire accidents. Its impact does not only stop here. The clearing of trees and bushes further depletes fuel wood, fodder for animals and therefore, results in shortage of food. Even with adequate awareness about the harmful effects of shifting cultivation, the farmers continue to use this method. Therefore, the question of sustainability of shifting cultivation arises. "Understanding the sustainability of shifting cultivation system requires the understanding of factors, which are local in nature" [30]

4.2.2. Economic

There are multiple indicators of sustainability which help to understand the Cost- Benefit analysis of shifting cultivation[31]. One important factor is employment; i.e. the total number of people of NER that are accommodated in this agricultural system. An Employment Based Analysis argued that the net returns are higher in shifting cultivation. It supports three times as many people. For a developing economy, larger subsistence support would be an important criterion for choice of land use[32]. Another factor to measure the sustainability is the total population shifting cultivation feeds. For how long can it accommodate the people of NER? This factor also includes the total capacity of the land. Traditionally, the land was abandoned and left to regenerate after the slash and burn technique for a period of one or two decades. However, with the increase in demand for produce due to the growing population, the time period has now been reduced to 2-3 years. The continuous increase of population adds pressure on the land which reduces and intensifies the shifting cycle for the farmers33. Recent reports have shown that more than 20% of the population of the region is engaged in the process of shifting cultivation. This includes both commercial cultivation as well as private cultivation done by tribal communities. Kluwer, W., & Trust, A. in their recent report stated that the virtual total revenue from shifting cultivation was approximately 70% percent of the price of total yield of crops.

4.3. Alternate Models to Shifting Cultivation

There have been multiple alternative methods advised by various researchers and government officials as a more sustainable method of farming than shifting cultivation. In 1976, D.N. Borthakur along with R.P. Awasthi and S.P Ghosh advocated the agricultural method of horticulture to increase the productivity of farming lands. They also suggested a plan which was two- staged i.e. short term till the permanent settlement of Jhumias and long-term permanent settlement[34]. Horticulture is closely related to domestic gardening, producing fruits and vegetables[35]. It yields higher returns from the land while simultaneously developing and conserving the natural resources. Since the switch to horticulture is a extensive settlement, they also advised starting poultry farming as well as fisheries as a subsidiary income source[36]. Another alternative method to shifting cultivation is terracing plantation. Since the North- East Region of India is a hilly region, terrace farming could be seen as an efficient method for agriculture. It not only prevents the erosion of soil, but also contributes to the conservation of soil. Various researchers such as Saradindu Bose and A.K Agarwal argued that the shift could only be done in a planned manner with intensive research, demonstration as well as policy of persuasion. This could only be done if the local farmers and the indigenous communities are included in the planning as well as the decision making. The remedies for the problems need to come from the local inhabitants[37.] Husain Majid, an Indian geographer believed that since the process of shifting cultivation is deeply rooted in the history and identity of the people of NER, it cannot be completely removed or eliminated. Therefore, there is a need for technology and process to innovate shifting cultivation[38]. The innovative process needs to work so there is minimum ecological disturbance and there is a balance between the recourse utilization and the ecological management. For instance, adopting organic manures as well as fertilizers. Ratna Bhuyan argues that the shifting lands can be transformed into sedentary farms where they can cultivate crops and derive profits permanently. Sedentary farming, unlike shifting cultivation does not require rotation of fields. It is practiced by a settled farmer in an assigned or selected land[39]. As mentioned, when discussing the state and its relation with shifting cultivation, some of these alternative methods advised were a prominent part of the policies and programs laid out by the government. However, it is important to note that these alternative methods can only be implemented with proper planning done by the government. Not only is the implementation of the policies crucial but the evaluation is also essential in order to understand the drawbacks or benefits of those policies and programs. The decision-making committees for these policies should include the locals and the indigenous tribes for developing proper guidelines and measures. Furthermore, incentives need to be provided to the farmers for switching from shifting cultivation to any of the other methods of farming[40]. Significant effort also needs to be made for regeneration of the soil and land. Since the recent studies argue that there is an inequality in the distribution of land by the indigenous communities, policies on land ceiling and transfer is desirable. In addition to this, proper irrigation facilities, more employment opportunities for the NER as well as a consumer market need to be established to better assist the implementation of new methods of farming[41].

5. CONCLUSION

Since the process of shifting cultivation is practiced by the indigenous communities of the NER region of India, criticism of this process indirectly meant criticism of the tradition and culture of the

community. Being an old and a primitive method of farming which has often been seen as a part of their tradition, the ingenious people largely disapproved the usage of new and modern farming practices. Balancing both tradition and environment, the alternative models need to be introduced and implemented in such a way that benefits the farmers in terms of profits but also preserves the natural resources and the eco-system at the same time. The process of shifting cultivation continues to affect multiple disciplines of lives. It is a ground- level reality which needs to be dealt with proper decision-making i.e. legislative as well as financial power. It requires an effort to understand how the indigenous communities and the farmers are dependent on shifting cultivation. The fragile interconnectedness of traditions and identity along with economy and environment needs to be kept in mind while new policies and programs are implemented and analyzed.

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