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Shifting Cultivation in North-East India : Reviewing Land Policies and their Implications

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The continuation must account for ways to make the practice sustainable and ensure inclusive rural transformation in the North-East region.

ABSTRACT

Shifting Cultivation is an age-old practice in North-East India. However, with the adoption of neoliberal growth models and the consequent push for high revenue generating modes of cultivation, such as settled agriculture, the practice of shifting cultivation has degraded. This paper re-interrogates India's position on shifting cultivation and advocates for its continuance through implementation of better policies. However, the continuation must account for ways to make the practice sustainable and ensure inclusive rural transformation in the North-East region.

Keywords: Shifting agriculture, north-east region, land, sustainability

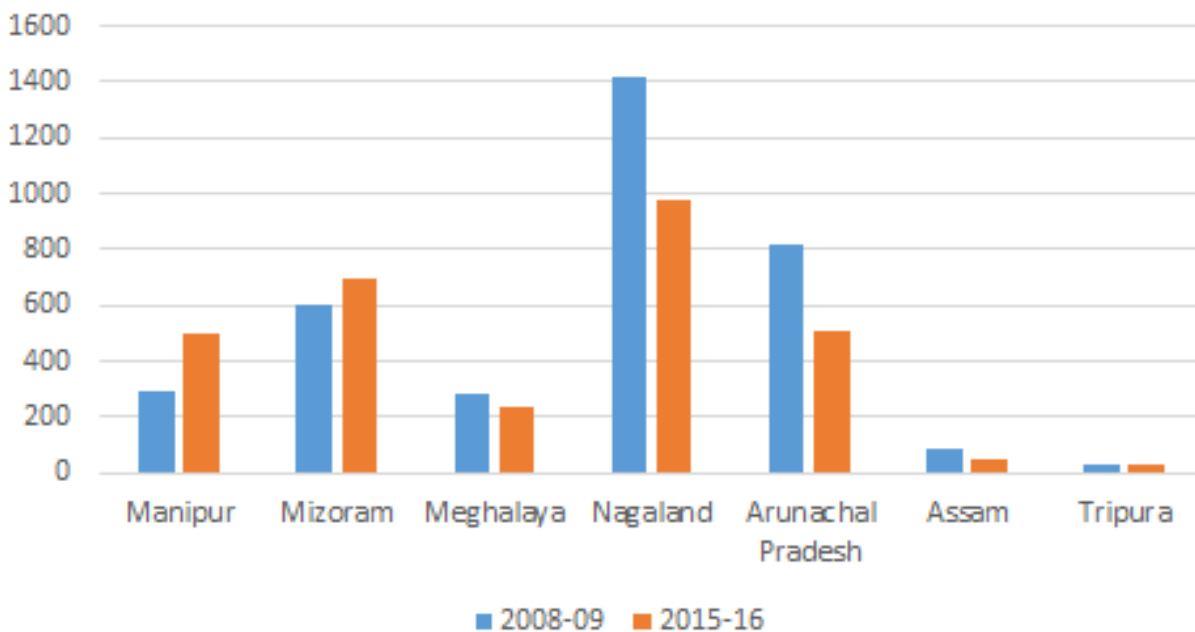
CONTEXT

Shifting cultivation [SC] is one of the oldest forms of cultivation dating back to 8000 BC, the Neolithic age. For the people of the North-East region [NER] of India, shifting cultivation has been the dominant mode of food production and the economic mainstay. However, in the last few decades, the states and the central government have heavily targeted the practice as a threat to biodiversity and climate change.

It's conventionally viewed as an economically inefficient and environmentally hazardous form of cultivation. While critics believe that the practice is hazardous for the environment as it destroys the soil, water, and the region's flora and fauna (Rahman et al., 2012), various scientific and agroecological studies prove otherwise. Terming this view as a 'false narrative', proponents of the practice say that shifting cultivation is perhaps more sustainable than settled agriculture and monoculture; practices that the government overtly promotes in the region (Behera et al., 2016; Kerkhoff and Sharma 2006; Raj 2010)

Through policy interventions like the New Land Use Policy [NLUP] 2011, Forest Policy 1988, and Jhum Land Regulation 1948, governments have made consistent efforts to terminate shifting cultivation and replace it with high revenue generating settled-agriculture. However, these policies have been unsuccessful in putting an end to the practice in the region. While the area under shifting cultivation has reduced to some extent, in states like Mizoram and Manipur it has continued to grow (Figure 1). According to a recent NITI Aayog report (2018: 6), about 8500 sq. kilometres of land in the NER is still used for shifting cultivation.

Image 1: Shifting Cultivation Lands in NEH region of India



Source: Department of Land Resources(2019)

However, these policies have succeeded in degrading the practice, leading to higher carbon emission and biodiversity loss. They also threaten the vast knowledge systems of traditional practices which may be useful for combating existential challenges like climate change and loss of forest cover in the region. In light of these observations, this paper evaluates the existing land-use policies in the region which act as a deterrent to the practice of shifting cultivation. Further, it explores innovations which can help resolve the current situation, wherein government interventions are not taking effect.

UNRAVELLING THE GOVERNMENT'S LAND POLICIES

While India has no policy framework in place to deal with the practice of shifting cultivation, various other policies ranging from forest and agricultural to indigenous policies, affect the practice of SC. Given the immense negative lobbying against shifting cultivation, the underlying premise of most of these policies has been to replace the practice with settled agriculture and allied activities. This replacement is seen by these governments as a profitable venture and as a way to open up possibilities for large-scale development projects in the region (Leblhuber and Vanlalhraia 2012: 85).

Evaluating the New Land Use Policy (2011)

According to the Mizoram state government, the main aim of the New Land Use Policy is “to put an end to the practices of shifting cultivation by giving the farmers alternative sustainable land-based activities” (NLUP Implementing Board n.d.: 2). Under NLUP, the state provides INR 1 lakh directly to households in the region to facilitate the shift towards alternative livelihoods like horticulture or settled agriculture. While the policy has made an effort to create opportunities for income diversification, its primary objective is to terminate ‘wasteful’ shifting cultivation seems misdirected.

In Mizoram, the policy is promoted under the garb of rural livelihood improvement. However, various studies have pointed out that the goals of NLUP have been contradictory in nature, as it has failed to bring about any tangible improvement in the livelihoods of the locals since its implementation in 2011 (Leblhuber and Vanlalhraia 2012; Raman 2016). Mizoram’s Labour and Employment Department further substantiated these claims when in January 2018 it reported that 64,281 persons are registered as unemployed in the four employment exchanges of Mizoram, of which the city of Aizawl alone accounts for 47,811 (Hausing 2018).

An analysis of land area in Mizoram revealed that despite decades of practising shifting cultivation, over 90% of land area in the state was under forest cover, much of it owing to the bamboo forests planted as a part of the SC cycle (Raman 2016). However, recent decline in forest cover has occurred in tandem with decline in shifting cultivation and rise in settled agriculture. This suggests that the policy has been counterproductive in its goal of increasing forest cover. Experts have pointed out that the decline of SC fields as well as forest cover in Meghalaya have mainly been caused by monoculture practices promoted by

the government under NLUP that formalised forest land titles that were earlier decentralised and managed by traditional laws (Morung Express 2020).

While the practice of shifting cultivation is largely based on community ownership of land, the NLUP has intensified the process of land acquisition in the region, resulting in massive land dispossession among tribals (Leblhuber and Vanlalhraia 2012). As the government's intervention is increasing, the community's role in environmental management is shrinking, leading to a loss of confidence in their communities and their ability to regulate customary laws. The NLUP has failed to acknowledge that shifting cultivation is not just a mode of food production for the locals in the state but also deeply intertwined with their community life and socio-cultural values.

National Forest Policy (1988)

National Forest Policy (1988) views shifting cultivation lands as forest lands and discourages the practice on the grounds that it adversely affects the environment and productivity of land (ibid. 1988: 7). The policy also treats the post-harvest fallow areas as waste lands without valid tenurial claim, despite the fact that they are an integral part of the shifting cultivation cycle.

Further, it encourages rehabilitation of these lands through social forestry and energy plantations. Over the years, jhum lands have also been targeted by multiple government agencies for cultivating cash crops like tea, coffee, timber, and rubber (DTE Staff 2018). Studies indicate that this reallocation of fallow lands for cash crop cultivation is possibly the main cause behind the shortening of shifting cultivation cycles and reduction in total land available for shifting cultivation (Kerkhoff and Sharma 2006: 28). However, the existing policy does not ensure any alternative non-farming income opportunities and/or greater tenurial rights to alleviate the pressure on remaining shifting cultivation lands (ibid.). As a result, the practice has proved unsustainable in the region.

The land use classifications under this policy also fail to capture the diverse stages of shifting cultivation, particularly the transitional stages in its fallow phase. As a result, shifting cultivation as a distinct land use practice has become invisible, which has made the estimation of the extent of shifting cultivation almost impossible (International Centre for Integrated Mountain Development 2021: 4). Moreover, shifting cultivation is not registered in land use surveys as a distinct land use category and is usually categorised as 'wasteland' or 'unclassified state forests' because older fallows in an SC landscape are treated as forest land, and not as cultivable land undergoing fallowing.

These inaccuracies have undermined proper estimation of land use and land cover in the context of shifting cultivation, thereby hampering the measurement of the extent of the practice. The lack of proper estimation of the same implies that the number of people engaged in the activity can also not be gauged accurately. This is counterproductive and defeats the basic aims of the policy as they have serious implications for poverty alleviation, climate change mitigation, and adaptation measures in the region.

Implications of the existing policies

The policies that currently govern the practice of shifting cultivation in NER were not designed keeping in mind the diverse and dynamic land use involved in the practice. As a result, this form of cultivation has experienced degradation over the years. Firstly, as discussed above, the existing land policies have undermined the process of proper land classification. A Landsat image analysis conducted to map the forest-agriculture frontier of West Garo Hills district in Meghalaya, found vast differences between the on-ground situation and the official reports, including those from Forest Survey of India, Wasteland Atlas of India, and state government reports (Kurien et al., 2019: 21). The study inferred that these differences have resulted from the lack of clear definitions and poor understanding of what constitutes shifting cultivation and forests (Ibid.). This in turn has also hampered the ability of governments and external agencies to devise programmes aimed at strengthening the practice of shifting cultivation or improving the livelihoods of shifting cultivators through poverty alleviation programmes.

Furthermore, these policies have impacted the food and nutritional security of the region. A study conducted in Meghalaya found that the consistent push for adopting settled agriculture has led to an increase in cash crop production in the region (Behera et al., 2016). This has changed the consumption patterns and reduced the diversity of staple foods consumed in such cash-crop regimes. Additionally, replacement of kitchen gardens and forests has also adversely affected the consumption of leafy vegetables and wild foods in the cash crop areas, thereby impacting the nutritional security of the locals.

The transition to growing commercial crops in the region has resulted in an increased prevalence of mono-cropping, and use of fertilizers and pesticides, affecting the region's ecology and biodiversity. While the cash crops that are tree crops are able to replicate the soil conservation features of natural forests, areas where rubber trees are grown have become increasingly susceptible to tropical cyclones and seasonal fires. In Meghalaya, mono-cropping areas in Khasi and Jaintia hills were also reported to have experienced an increase in pests and diseases (Department of Agriculture Meghalaya 2006: 64; Behera et al., 2016).

Replacing shifting cultivation with settled agriculture has also proved to be unsustainable for the region's geography. Agricultural intensification in the region has had adverse impacts such as drying of water sources and decline in soil fertility (NITI Aayog 2018). On the other hand, post-harvest fallow lands have higher potential for carbon storage and higher species richness, soil, and water holding capacities, than other permanent agricultural practices (Ghosh 2020). Scientific evidence points out that the practice of SC is generally well suited to heavy rainfall and environmental conditions of the region and is thus less harmful for the environment and biodiversity.

TRADITIONAL PRACTICES AND INNOVATIONS TO IMPROVE SUSTAINABILITY OF SHIFTING CULTIVATION

With the advent of market economy and change in institutional regimes from traditional institutions to private property, shifting cultivation in north-east India has undergone massive transformation. However, in some parts of the region traditional practices continue to prevail. In the Nokrek Biosphere Reserve in Garo Hills, in Meghalaya and Lazmi villages of Nagaland, traditional practices continue wherein there is high involvement of village institutions in managing the various stages of cultivation (Bhuyan 2019: 93). These regions also allow long fallow periods which aid in forest conservation.

On the other hand, owing to population pressure, a number of villages across these states have been forced to reduce the fallow lengths for soil and forest regeneration to an insufficient extent. In these regions, farmers are, however, applying innovative ways to improve forest regeneration and crop production. In Nagaland's Khonoma village, for instance, the Angami Naga tribe developed the Alder coppicing system by retaining and pollarding nitrogen-fixing Alder trees that facilitate fallow regrowth (Ghosh 2020). Adoption of diversity in crop management, soil conservation, and retention of trees have helped in preserving the practice of shifting cultivation in these regions (Bhuyan 2019 : 93).

Local Innovations

An interesting case of farmers' innovations in the region is that of the Adi community in Upper Siang district of Arunachal Pradesh. Karthik Teegalapalli, a researcher at NCBS, who studied the soil management practices of the tribe for months, found that the people of this community have identified nine types of soil and plant crops according to the nature of the soil in the region. In an interview he said, "for me this was surprising because it shows Adis know what kind of crops take up what kind of nutrients and how it affects other crops" (Pendharkar 2018). The study also discovered that the people of the Adi tribe make use of rocks in areas where corn is grown and logs in places where chillies are cultivated. As opposed to what the official policy on shifting cultivation claims, field research proves that the farming community is actually highly knowledgeable.

Another study conducted by researchers at Mizoram University identified three tree species that can be planted in fallow lands to accelerate soil and forest regeneration, and enhance carbon sinks (Thong et al., 2020). One of the species is Tropical Amazonia, which observed 90% survival rate when it was transplanted into fallows which had partial vegetation. Their research suggests that transplantation of these species enables faster rehabilitation and soil regeneration and results in lesser primary forests being burned down for practicing shifting cultivation.

These knowledge systems are extremely important as they can aid the formulation of policies on conservation strategies in the region and also help in developing climate change mitigation policies for efficient preservation of forest carbon stocks.

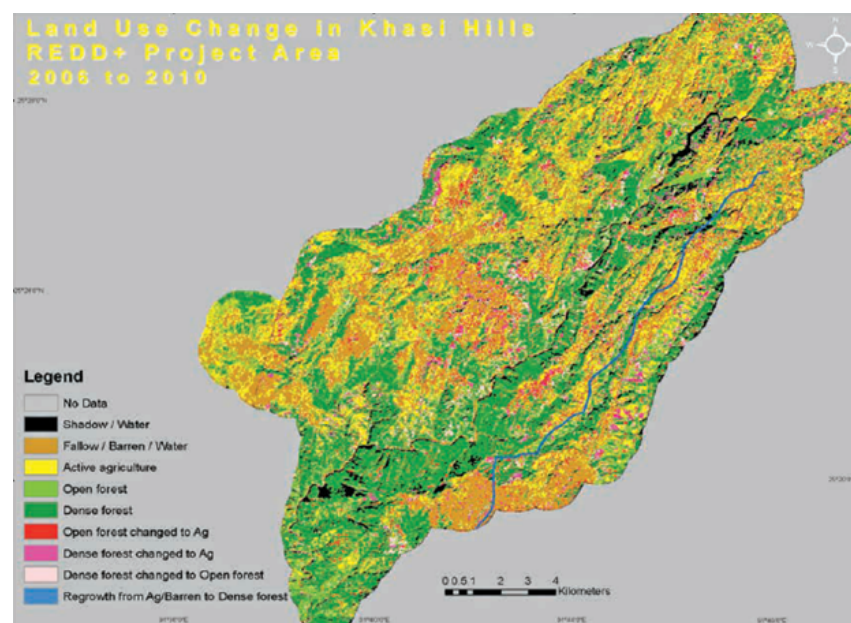
Significance of REDD+ in shifting cultivation landscapes

Reducing Emissions from Deforestation and Forest Degradation [REDD+] is a mechanism for reducing greenhouse gas emissions, wherein financial value is created for the carbon stored in forests. Introducing the discussion on REDD+ in shifting cultivation landscapes in India is crucial at the moment as it is one of the few mechanisms which have the capacity to effectively manage the practice without hampering crop production. Additionally, greater focus towards preserving forest ecosystems is the need of the hour in NEI, as carbon storage in the region is shrinking and the impacts of climate change are worsening in areas where the practice of SC is prevalent.

While there is limited information available on how REDD+ policies interact with land use systems under shifting cultivation, research conducted by Borah et al. (2018) suggests that the most optimal strategy under REDD+ in sub-tropical forests in mountainous areas is to spare old-growth forests and intensify cultivation in smaller areas. This helps in retaining the maximum level of landscape carbon and enables farmers to meet their production needs in a smaller area of land. The REDD+ mechanism is also financially beneficial as it provides monetary incentives to maintain a relatively longer fallow cycle or transform back from a short to long fallow cycle while avoiding forest degradation.

An important example of a REDD+ project implemented within shifting landscapes in India is the Khasi Hill Community REDD+ project. It was introduced with the aim of reversing deforestation and degradation through forest protection and restoration measures in Meghalaya (Sun et al. 2016 : 3648). This project has been successful in not just improving land use in the region but has also significantly contributed to institutional and financial empowerment of the locals. The project has helped the local communities to build financial capital through payments into the federation which overlooks the project, based on their ability to limit deforestation and forest regeneration (Poffenberger 2014: 238).

Image 2: Land-use change in Khasi Hills REDD+ project area 2006–2010.



Source: Poffenberger (2014)

WAY FORWARD

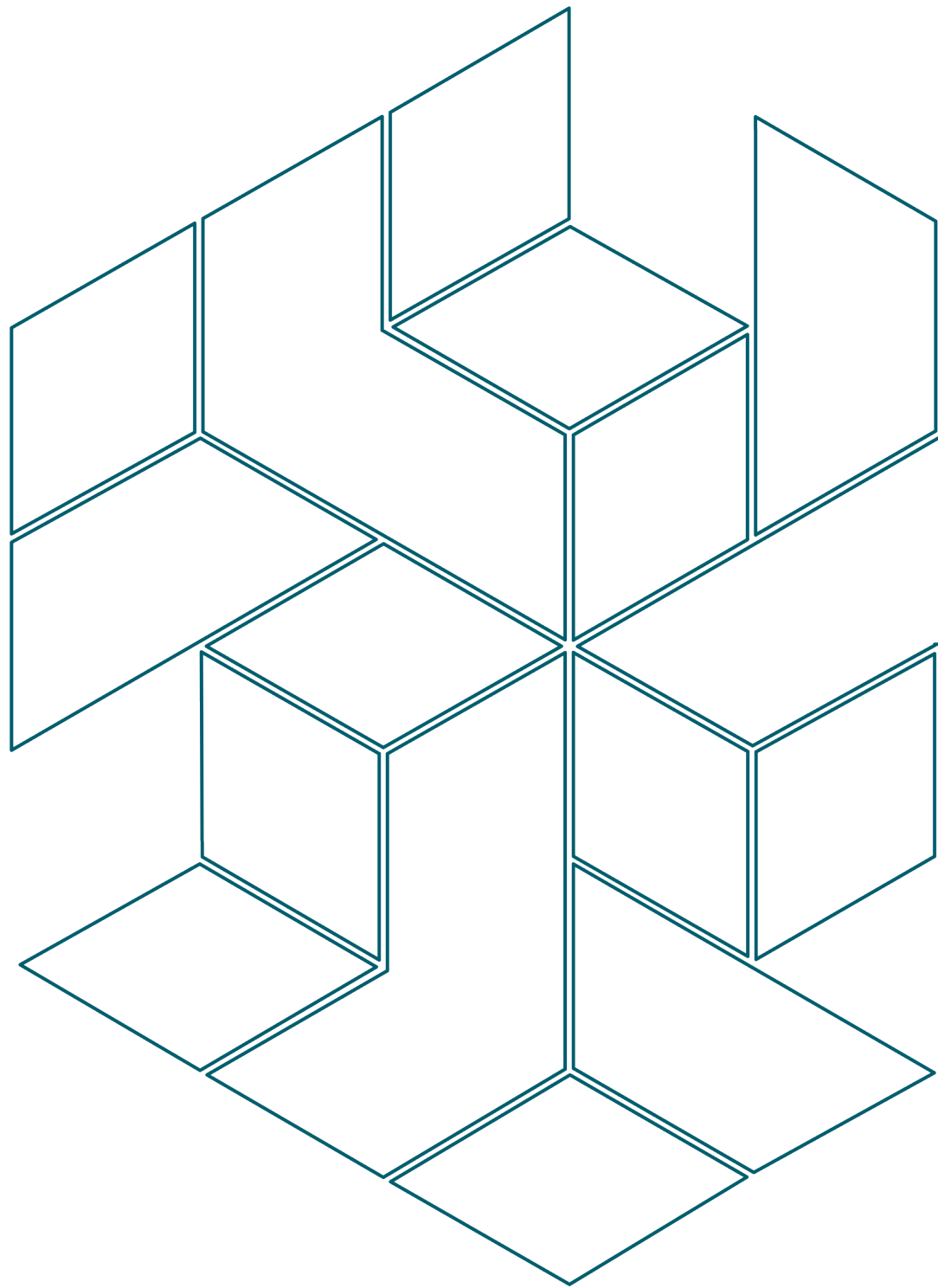
The indigenous communities in the NEH region have been successful in transforming the practice of shifting cultivation to a certain extent through local innovations like bund cultivation and transplanting species such as chestnut and olive trees. However, in absence of the state providing appropriate technology, the cultivators continue to face issues with making the practice of shifting cultivation relevant and sustainable in the current scenario. Thus it is essential to take cognisance of the fact that instead of forcing communities to surrender traditional systems of agriculture and natural resource management, policies need to be put in place to strengthen these systems, in order to combat the second generation issues that have cropped up. What is urgently required is revisiting and revising landuse and landcover classifications to improve adaptation approaches. This would be central to effectively managing change in shifting cultivation and ensuring inclusive rural transformation.

Evidence proves that the practice of shifting cultivation maintains a high level of carbon stocks, especially during the fallow periods. Harnessing this knowledge, payments-for-ecosystem-services [PES] need to be used to channelise capital into low-income rural communities that are well-positioned to protect and restore critical ecosystems. This can be done through capacity building programs for shifting cultivators, to implement these conservation strategies and to enable these farmers to meet their production needs (Borah et al., 2018). While indigenous communities have not been involved in discussions on climate change mitigation schemes like REDD+ so far, going forward, it would be integral to involve these communities in key decision making. It is essential for policymakers to not just recognise the key role of traditional knowledge that these communities carry, but to also incorporate those into mitigation and adaptation measures.

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