MIZORAM UNIVERSITY JOURNAL OF HUMANITIES & SOCIAL SCIENCES
A Refereed Bi-annual Journal
ISSN(P): 2395-7352
eISSN: 2581-6780
Vol. VI, Issue 1 (June 2020) http://www.mzuhssjournal.in/

Shifting Cultivation and Environment: A Study of Subsistence to Profit in Mizoram

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Abstract

The practice of shifting cultivation is the basis of subsistence among the people of Mizoram. Jhuming is performed in areas ranging from gentle to steeply sloped regions with about 15-20 items grown at a time. There have been major changes in recent times regarding the practice as well as the kinds of produce grown by the Jhoomias. The practice, however, has been a topic of debate by different stakeholders such as research scholars from social science and natural sciences, policymakers and farmers towards degradation thesis. While some studies have explained the sustainable practice of Jhoom cultivation though, it is challenging with increasing population pressure. In the wake of the increasing population pressure, urban-rural dynamics, industrialization, the emergence of market opportunities, improvement of infrastructure of roads and better connectivity, coupled with policy interventions by states, the farming organization of shifting cultivation is undergoing rapid transformation. There are debates as to whether the politics of this change in cultivation have led to the demise of the cultivators or the persistence of the practice. Regardless, it is important to understand these changes within the practice that is rendering the evolution of the practice which in turn, affects the farmers and the environment.

Keywords*: Environment, Jhoom Cultivation, Population, Subsistence, Sustainability.*

Shifting cultivation as a system of land use and agriculture is widespread in the mountainous areas of the north-eastern region of India. The term frequently used for the practice is *Jhum* and the people practicing it are called *Jhummias*. It is also referred to as *slash and burn* cultivation and *swidden* cultivation. The term swidden is derived from Scandinavia meaning that land is clear by burning fire. Pelzer (1945) defines the system as, "the rotation of fields rather than crops, a short cropping period (1–3 years) succeeded by a

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long fallow period (5–20 years), and clearing by means of slash and burn". Mertz et al. (2009) describe it as the system of crop cultivation where land is kept fallow for a longer period of time to enrich natural soil fertility with woody vegetation that will be cleared using fire before the actual plantation. It is commonly present worldwide ranging from tropical and sub-tropical areas of South East Asia, Latin America, the Caribbean, to the grasslands of Africa (Ramakrishnan, 1992).

In Mizoram, as necessary in this practice, a new shifting cultivation block of land is selected every year depending on a good fallow cycle. The Village Head/Village Council decides the selection of land. Mention may be made of some of the chief operations of the practice in Northeast India that include 1). Rotation of fields (rather than of crops) 2). Use of fire for clearing the land 3). Keeping the land fallow for regeneration for a certain number of years (fallow cycle/Jhum cycle) 4). Use of human labor 5).Non-employment of draught animals 6). Non-use of plough but the use of simple and crude tools 7). Mix-cropping in a single plot and 8). Construction of lines or fire separators between the fields and the forests.

For centuries, shifting cultivation has been an important farming practice of the Mizos in Mizoram. It has been the solely practiced form of agriculture for ages and is still widely practiced even today. It is not only a mere livelihood but a way of life carrying 'symbolic meanings' to the socio-cultural life and ecological landscapes, an essential entity of survival and economic life of the Mizos even today.

This can be seen from the very fact that the three main festivals of the Mizos such as Chapchar Kut, Mimkut and Pawl kut are connected with Jhum operations. Locally known as "Tlangram lo neih" it is closely linked to the culture and tradition and almost all the activities of the Mizos revolve around it.

Mizoram is a state located in the southernmost part of northeast India with a population of 11.2 lakhs as of 2014. The whole topography of the state is clad in thick forests, on hills and steep slopes and there ishardly any plain (flat) areas. Cultivation is arduous in the steep slopes and hills and so Jhum cultivation is considered to be the best-suited form of agriculture in such topographies favoring varieties of crops underJhum cultivation. Besides, wetland rice cultivation along with some horticultural products such as citrus fruits, grapes, oil palm plantations are prominent in the gentle slopes and foothills.

The Forest Report 2017 states that Mizoram has the highest forest cover as a percentage of its geographical area of any Indian state, with 86.27% under forest. This has stayed more or less within the 80-90% gap within the past two decades (State of Forest Report). Within the past few decades, there has been a rapid decline in the area under cultivation and the number of cultivator families even though the population has been steadily increasing.

As evident from figure 1 given below, the number of cultivator families is rapidly declining although the total population has been on the rise. On the other hand, Jhum

cultivators continue to dominate as a percentage of the total number of cultivator families with 80% of the cultivators practicingJhum in 2016-17. Therefore, Jhum cultivation is still the dominant form of agriculture practiced in the state although this is a drop from 2009-10 when the number of Jhum cultivator families constitutes 89% of the number of cultivator households. (Source: Agriculture Statistical Abstract 2016-17 and 2009-10, Govt. of Mizoram).

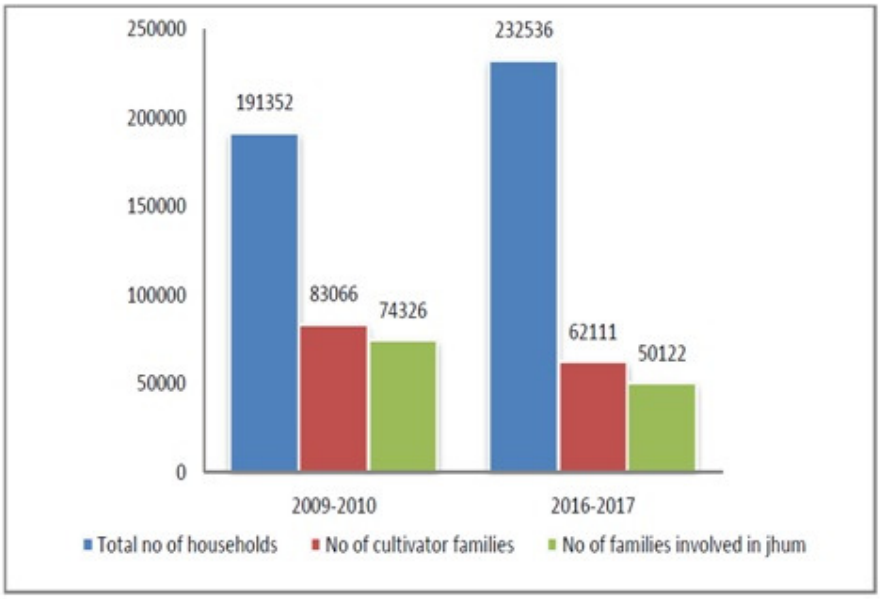

Fig.1: Graph showing a decline in the number of cultivator families and no. of Jhum cultivators

The total area under cultivation in the state has reduced substantially when comparing 2009-10 and 2016-17 (refer to fig.2). The area under Jhum cultivation (for rice only) in Mizoram has also reduced from 56.7% in 2009-10 to 38.8% of the total area under cultivation in 2016-17 (Agriculture statistical Abstract, Govt of Mizoram).

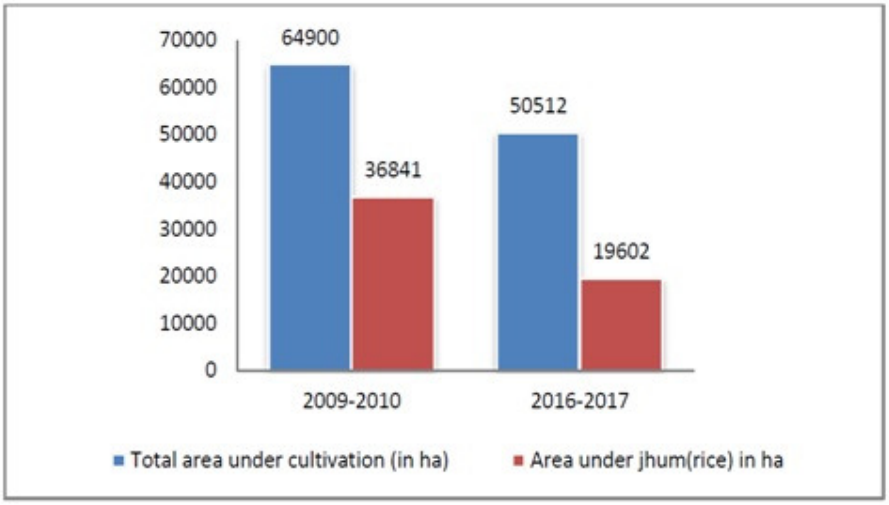

Fig. 2: Graph showing decline in area under cultivation and area under Jhum (rice)

The population density of Mizoram was 52 persons per square kilometer as compared to the national population density of 382 according to the 2011 census. It is highly urbanized with 51.5% of the population living in urban areas. In addition, the state has a high forest cover at 86.27%. This could imply that the population density in rural areas must be even lower where most of the cultivation takes place. In other words, the land-man ratio is still high especially in rural areas.

Policies and programmes introduced by the state government have mostly been aimed at eradicating the practice and providing the shifting cultivators with alternative livelihoods. An example is the New Land Use Policy (NLUP) which was introduced in 1985-1992 at a smaller scale and then again in 2011-2015. Its main objective is to put an end to the practice of shifting cultivation by giving the farmers alternative sustainable land-based activities. However, these have mostly failed as it is evident from official data that shifting cultivation is still the dominant form of agriculture practiced in the state. The fieldsare demarcated and distributed among the farmers and field houses or rest houses are constructed. The distribution is done by draw of lots conducted by the village heads to ensure fairness in the process. The clearing/slashing of fields for shifting cultivation takes place in the months of November to December and sometimes up to January. The fields are left to decompose/dry until March and April when the land is burned. To ensure that the forests outside of the fields do not catch fire, fire-lines are created. Then the fields are cleared and prepared for sowing from the months of March to June with reference to crops. Different crops are cultivated within a single plot. Removal of weeds takes place as soon as seeds are sown until harvesting takes place in the months of August to November. After harvesting, the land is left fallow to regenerate. The period between two slashing/clearing of a block of shifting cultivation land constitutes a fallow cycle/Jhum cycle. Each year, village communities slash the vegetation on selected sites during winter, wait for it to dry, and then burn it in situ before planting a variety of annual crops to coincide with the return of the rains (Toky and Ramakrishnan 1981). Typical shifting cultivation crops include upland rice (*Oryza sativa*), sugarcane (*Saccharum officinarum*), maize (*Zea mays*), chilies (*Capsicum annum*), eggplant or brinjal (*Solanum melongena*), lady‘s fingers/okra (*Abelmoschus esculentus*), squash (*Sechiumedule*), pineapple (*Ananas comosus*), Cassava (*Manihot esculentum*) ginger (*Zingiber officinalis*) and turmeric (*Curcuma longa*) and herbs such as Mustard (*Brassica juncea*).

Several shifting cultivators have transitioned from a subsistence-oriented level of production towards the profit-oriented level of production and land use. With the onset of the rapidly increasing population, increase in economic opportunities, policy interventions, the emergence of markets and change in urban-rural dynamics, the state of shifting cultivators and their practice is rapidly undergoing change. Swiddening has always been characterized by change, but since the onset of modern independent nation-states, government policy and the expansion of capitalism in new forms have transformed the landscape and swidden practices through mechanisms that are different in the extent and depth of their landscape effects than ever before (Fox et al., 2009).

In light of the above information, a study was conducted on two villages in the district of Serchhip district which constitutes the second highest proportion of shifting cultivators out of the total number of cultivators in a district (Agriculture Statistical Abstract 2016-17). Khumtung and Tlungvel are the first two villages in the district along the national highway as one goes from Aizawl. Thus, these two villages were selected in April 2019. From this study, changes in land use and ownership, fallow cycle, cropping patterns, labor, market opportunities, the reasons for continuing the practice and reasons for the decline in the number of Jhum cultivators could be collected elaborately.

Shifting cultivation in Khumtung and Tlungvel

Prior to the independence of India, land in Mizoram was administered by the Mizo chiefs who claimed full authority on land with its resources. After the chieftainship was abolished by the Assam Lushai Hills district Act, 1954, the Chiefs were paid compensation in lieu of surrendering their rights over land and all lands since then have come under the jurisdiction of the state. The land tenure system in Mizoram is such that all land is owned by the State Government according to the sixth schedule of the constitution.

Shifting cultivation is practiced on land that is communally owned by the village which the village council borrows from the government on lease. The council members then decide which block(s) are to be cultivated for that particular year depending on the number of years the block has been left fallowed. Sometimes, the fallow cycle is determined by the number of cultivation blocks. Besides, a good fallow cycle, the choice of a shifting cultivation block is also greatly influenced by its proximity to roads. An area can also be counted under fallow for natural regeneration if it is not cultivated and this happened when the area lies far away from the roadways or places difficult to extend the cultivation in the said blocks.

The allocation of land among the cultivators is conducted by the village council in a democratic manner by draw of lots. The size of land allocated to a family depends on family size, availability of labor and needs. Only the residents of the village can be allocated land. The average size of landholding is about 2 acres in both the villages. Meanwhile, for people who want to own private land, a maximum of 2 acres from the communal land can be requested from the village council. These are usually the fallow lands. However, this is applicable only if the household does not own any private lands. Another way of owning private land is to buy from the government or from individuals who own lands.

It is not necessarily required that an active shifting cultivation block in a particular year should be utilized by all shifting cultivator families. The request for the sites of cultivation on a particular patch of land has come again for the next consecutive year, it was not denied as shifting cultivation is mainly done with the community association in terms of sharing labor, protection of land from wild animals and other unforeseen activities. Everyone can go for cultivation and they have equal rights over the use and accessibility of land. This practice also establishes a sort of social security for all its members. Apart from the shifting

cultivation land, a huge portion of the communal lands is part of conservation sites and bamboo groves. Recently, a group of people has started taking lands for cash crop plantation.

The commercialization of shifting cultivation i.e. the change in land use system from subsistence to a profit-oriented level of production has rendered changes within the system in certain ways. These changes are shaped by certain political-economic processes in certain ways. One of the visible changes is the conversion of land into private farms or permanent cultivation sites. Lots of fallow lands are now utilized for commercial cash crop plantation. This has affected the overall community resource management such as fallow blocks, mix-cropping cultivation methods, shared labor, etc. The current scenario is not yet able to predict or estimate the significant effect of such changes though it has already started its own course showing on the productivity and income of the people with shifting cultivation. The privatization activity of cultivation sites was at a very small scale in the 1980s and earlier, it started to take off into the 1990s and eventually at a larger scale in the 2000s. This has led to increased competition for lands because those lands which are closer to the roads have geographical advantages over the farther lands. A handful of shifting cultivators while still cultivating on the communal lands also own private lands. Thus, there arises a form of heterogeneous ownership of land among the cultivators.

The privatization and competition of owing land particularly those fertile areas and the one closer to the village or roadways pressure the cultivators on fallow areas which are not easily accessible or fertile. The competition is not at the moment feasible as there is enough land under fallow areas, however, this fragmentation into permanent land ownership and cultivation method is bound to show its repercussion in the near future.

Role of Village Council

The authority of managing and governing the land under cultivation lies at the hands of the village council, the most authoritative body in looking after the overall use and distribution of land for cultivation. They are responsible for providing and administering the existing traditions norms of land and land-use patterns including settlement of land disputes. They play an important role in the selection of sites, creation of boundaries, setting of forests fire and regulation of fines to those who couldn't maintain the firebreaks in time, construction of rest houses in between the fields, etc. However, changing political economy has influenced some of its functions and its deliberation is affected in one or the other. This disturbance is mainly related to the privatization of farmlands by reducing the associated power and responsibilities of the council members.

Fallow Cycle

It is claimed that the fallow cycle is about 7-10 years in Khumtung and this is expected to increase in the coming years. In Tlungvel, the fallow cycle as the cultivators claim is about 7-8 years and is also projected to steadily increase. Although compared to 30-40 years back, when the fallow cycle used to be as long as 10-15 years and this is now reduced, farmers lament that they still produce a good harvest of the crops they grow now.

As mentioned in (Singh 1996), the viability of Jhuming and its appropriate production is possible under specific conditions even if there is a short duration of Jhum cycles by only around 7 years. But farmers did mention as to how their rice production has been reduced. The expected increase in the fallow cycle and fallow lands is, however, contradictory. Although the expected increase is based on reduction of cultivated land and shifting cultivators due to increasing rate of land privatization and movement of people for other professions from rural to urban,more lands have come under the purview of private ownership which is usually on the fallow lands and this would mean a reduction in the fallow cycle and area of fallow lands. But since the land-man ratio in both the villages is still high according to the farmers, they claim that there is still adequate land for all the shifting cultivators and although there has been an increase in private farms, the fallow cycle is not affected much as of now.

Cropping Patterns

Diverse crops are grown in a single plot of land in shifting cultivation. A noteworthy change in cropping pattern of shifting cultivation in the areas is the significant reduction in rice cultivation. Cultivation then was generally for rice along with some locally consumed crops for subsistence but this situation has changed. Cultivators have now shifted their focus from household-level consumption to market-based production in terms of crops used for plantation as well as production rate for some of the cash crop items. Such crops include ginger, turmeric, chilies, cucumber, onion, tomato, brinjal, leafy vegetables, and other locally consumed crops. Now there are only a handful of people who still cultivate rice and that too for subsistence mainly. So now, with the money that they get from the cash crops, they buy rice from the markets which are considered a cheaper alternative than growing rice.

Above all, the farmers are also getting a good amount of their produce by away of selling with the coming up of better road connectivity, tourists from different places. The decision for crop plantation is highly linked with these factors as well. There are certain crops that grow well on steeper slopes and crops that don‘t and so on and so forth with the gentler slopes and the flatter parts. There is a certain combination of crops that are very successful in getting a good market return such as Ginger and turmeric on steep slopes, vegetables and other crops that grow with rice or maize together. Such mix-cropping and inter-cropping methods are closely related to the nature of slopes and the size of the plot available. The plantation of different crops including legumes are arranged that it still provides a good mechanism for checking soil erosion as well as generation of soil fertility. There are also certain crops that farmers grow on their fallow lands by not putting many efforts but they do get some good economic returns. Home gardens have become an important source of subsistence for the farmers aside from generating income at a smaller scale. Farmers usually grow locally consumed crops which they don‘t grow in their shifting cultivation fields in home gardens for domestic consumption without having to buy from the market. This helps them to save money and in generating income for some farmers.

Farmers claim that rice yields for domestic consumption could last for only up to 5-7 months since the turn of the 21st century. Before, it lasted longer and sometimes even up to

the whole year when the fallow cycles were as long as 10-20 years which was back in the 60s till the 80s. This could be attributed to the reduced fallow cycle. However, the production or yields of other crops have been more or less adequate according to the farmers since they are usually short duration crops. Thus, it could be an implication that the adequate fallow cycle required for a good yield could differ for different crops.

The area dedicated to various market-based products has increased while the area under rice cultivation has reduced. As a result, the field sizes of individual farmers have also reduced. Farmers claim that rice cultivation takes up more area of land and produces lesser income as compared to the cultivation of certain local cash crops which require a lesser area of land to get higher yields andcash income. Also, they cited that rice could be harvested only once a year, while these cash crops can be harvested multiples times within a year.

It is to be noted here that all these changes in the cropping pattern and farmers' adaptation to permanent cultivation are intertwined with the complex relationship present between the political economy of the state and ecology of fields and farming.

Labour

The changing pattern of land use in Mizoram has created different forms of human resources particularly labor force which is different from what has been followed traditionally. This has brought about the emergence of a new agricultural laborer or wage worker class. Apart from this, due to the reduction in the shifting cultivator numbers brought about by various reasons, the labor availability in the shifting cultivation particularly at the community level has also reduced.

As mentioned earlier, shifting cultivation is dependent on community labor sharing mechanisms and there is no concept and necessity of hiring labor for cultivation purposes. Traditionally, there was no concept of labor rather than a reciprocal form of participation in the cultivation process for the villagers or neighboring shifting blocks. The recent privatization and migration of people along with cash crop plantation have ruptured the community cohesion and reciprocity of the workforce. This has greatly affected the poor families who have are hand to mouth means of living where they can't afford hiring labor for cultivation while it also simultaneously create wage labor and benefitted some of the daily wage earners.

Farmers and the Market

With improved road infrastructure and connectivity opening up new market opportunities, farmers are more attracted to the market and market-based products and they could see their vegetables and horticultural products in the market easily. This has definitely led to the diversification of crops and cropping patterns to generate more income. Consequently, there is an increased ability for the farmers to diversify their livelihoods in different ways such as animal husbandry, horticulture, pisciculture, settled farming as well as small agro-based industries including creating juices, snacks, noodles and so on. Poultry and piggery farms also provide a good income. Despite a good income generated from the

attracted market situations, crisis loom towards the farmers especially when they are unable to understand the market-based strategies that are closely related to which crop will be appropriate or in favor of market demands. However, many of the farmers who are also the one selling products directly to the customers have learned a lot with time and they could develop a market based friendly strategies of what to plant or not, they have now become quite aware of market-oriented cash crops with better profits at their end.

For example, one of the farmers described how they had to sell lady‘s fingers at very low prices the previous year although they produced a good harvest because there were no buyers and no market and fixed rates and they had to sell them quickly before the crop got spoiled. Their test of the market sometimes thus goes wrong in terms of diversification of crops with lots of risks involved in the production and selling. On the other side, with the increased ability to diversify livelihoods with increased incomes, amny of the shifting cultivators are now able to own private lands for their own private use as well. Grogan et al (2013) states:

> “Alternative and complementary livelihood options to shifting cultivation are increasingly being explored, often in response to favorable market conditions. Better infrastructural service, more favorable location (closer to towns/ urban centres) coupled with a larger and denser population, provide greater opportunity for trade and an increased demand for labor favors livelihood diversification”.

Policies and Response

Land-use systems are introduced to do away with the dominant perception of shifting cultivation being primitive and unproductive system of land use and an agent of environmental degradation. This has shown that there were no policies and initiatives for the development and successful continuation of shifting cultivation as an aged old tradition in Mizoram. No programmes for strengthening it with a sustainable approach wereintroduced rather the government was instrumental in introducing programmes to reduce and prevent shifting cultivation such as permanent land-use alternatives, cash crop plantation programmes, animal husbandry, etc. However, most of the efforts remain unsuccessful.

One of the programmes introduced is the New Land Use Policy (NLUP) in Mizoram. It was first introduced in the years 1985-1991 at a smaller scale and then again from 2011-2015. It was mainly focused to provide alternative farming as sustainable livelihood ways of land using. Shifting cultivators in the villages under study lamented that they were encouraged and persuaded by the government to adopt other livelihood strategies. When it was introduced in the year 2011, the farmers who opted for settled farming were to be provided with cash subsidies, high yield variety seeds, advanced tools and implements along with chemical fertilizers and pesticides within a time span of 5 years to grow high-value exotic crops including coffee, rubber, oranges, and tea plantations and so on. The respondents expressed temporary income support, the plantation was not sustained as income generation from the produce was not satisfactory and there was no further assistance or additional

service. As a result, they were unable to produce a good harvest as they do not have the required skills and cash to supplement the new system of cultivation. A lot of them had to work as wage laborers, as a result, to make ends meet. Even if the crops did well, there ended up being no market linkages for the exotic crops to sell and they had to sell them at a very meager price. The alternatives ended up being a one-time support system unable to adopt locally and the majority of them reverted back to shifting cultivation for household and market-based production. This old tradition could easily be maintained by them without requiring too much cash input. Apart from this, there were reports of instances when shifting cultivators themselves did not receive the cash subsidy of NLUP while people who were not qualified as beneficiaries received it. Farmers further stated that apart from the irregular payment and absence of further assistance, the cash subsidy provided by NLUP was insufficient capital for the settled farming to take off. Instead of using the NLUP fund to discontinue Jhumming, the farmers used it to further supplement their livelihoods. For example, some farmers bought vehicles, some used it to construct paths and roads to farms, some used it to upgrade housing infrastructure, while some used it for personal care. On the other hand, there was no policy over the shifting cultivation in terms of banning it throughout the states and people have selected the one which is in favor of them.

The success stories of NLUP in terms of trying to provide the Jhummias alternative livelihoods were usually those who have moved on to non-farming activities such as animal husbandry, forestry (bamboos), driving auto-rickshaws, and so on to name a few. The success met with settled farming was usually with the already established well-off farmers. Success in the sense that these were usually farmers who were already successful in their attempt to settled farming such as horticulture and wet rice farming and the NLUP offered some to supplement their already established settled farms. This has consequently also attracted certain private investors who are absentee owners from the community or outside the local area. This has created a double burden to the poor farmers who were living on fallow land on a rotation basis and shared workforce. Shahnaz Kimi Leblhuber & Vanlalhruaia (2012) notes:

> The NLUP operates in such a way as to disrupt the well-organized system of Jhum cultivation. The policy works out to be a high-cost activity, requiring not only high investment, but also high recurring expenses. Under the government‘s policy, the majority of cultivators grew cash crops (among other activities), while, paradoxically, they continued to depend on Jhum cultivation for food production. Mizoram is too heterogeneous, both socially and politically, for the government‘s policy to be successful. During the implementation of the NLUP system, power struggles between state bureaucracy and local village councils have increased. It is difficult for the Jhum cultivator to trust an administration that has yet to prove its credibility. Such distrust also arises from the historical trajectory of top-down development plans, which provided neither incentives nor opportunity for growth.

A programme that the farmers claimed they benefitted from is the National flagship program (100 days of wage employment) of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) which provides cash to the farmers. In the two villages, what they do with the money is, the beneficiaries donate a majority of it and pool it amongst them, the village council conducts a meeting where the whole community participates and a consensus is arrived on what to do with the money. They then sometimes use the money for the construction and maintenance of roads and paths to the farms, construction of rest houses, and purchase of solar panels to be used in the rest houses, construction of water reservoirs and improvement of village infrastructure and so on and so forth.

Conclusion

The transition in traditional food production driven by shifting cultivation which was subsistence oriented towards a more profit-driven system of land use has multiple implications on the socio-economic condition of the farmers. The changes in shifting cultivation via NLUP have affected the land and land use with its management and how farming is perceived. This has in turn affected production and market structure linking it to various environmental challenges. This provides a major change in the social and cultural values of the Mizo society. Now, people have treated the land as a commodity rather than the item for social cohesion and harmony. At present both types of land ownership (private and communal) are found in the villages though if one goes back in time it is found that originally all lands were under community ownership. Thus, the surrounding commodity-money economy has led to the commodification of agricultural production in shifting cultivation and although this has not broken up the community character and possession of land in the two study villages, it has a great potential to do so and should be carefully administered.

Under the traditional Jhum system of cultivation, the level of production is such that almost the whole quantity is consumed by the producers. They used a barter system for exchange and this economy was simple, self-sufficient, and self-contained, maintaining a positive balance between their needs and the quantities they produced or gathered. But under the impact of growing commodity-money relations, the tribal population has shown a tendency to secure private property in the land so that the surplus produced may fetch money for exchange with other amenities of life including land. It should be noted here that almost all other agricultural or horticultural products of Jhum cultivation have substantially come under the shadow of commodity-money.

In addition, with differences in the ability to diversify livelihoods which could be due to a lot of reasons, there is a growing wealth gap between the already established wealthy farmers and the poorer farmers. The materialistic gain and power relations established through this new ownership has invited major economic vulnerability among the shifting cultivators by even allowing them to migrate and take new opportunities available in urban areas. However, such changes have also made all the farmers conscious of investing their money on cultivating crops and vegetables which are in high demand at the market. On average, every household cultivatesthe land for market-based crops and vegetables. Those

who can't afford commercial plantation get meager returns from their fields and some continue to farm at the subsistence level. Grogan et al. (2013) state that a more individualistic nature is emerging whereby some households, often characterized by both limited labor and capital, are left somewhat behind while others prosper. Under this impact, emerges a class of agricultural laborers employed by wealthier farmers. This changing aspect of land use has also feared especially the village council members towards the likely decline of the use and understanding of community farming and maintenance of resources including the loss of actual village territories. The politics of shifting cultivation through NLUP and non-availability of measures for strengthening the tradition has opened up to widespread debate and for this, earlier studies or experiences across the world could help in interpreting some of the real power relations or probable solutions to this challenge. If we take the example of the popular accounts of environmental change in Madagascar, then we see lots of errors, exaggerations and unquestioned assumptions which used to justify conservation fundraising, policies, and actions (Kull, 2000). This is also true in the case of shifting cultivation in which the justifications for policies, funds, and conservation attempts to abolish the practice have been based on debatable exaggerated assumptions about the practice being wasteful, unproductive, harmful to the environment, disturbs the ecological balance and reduces biodiversity and so on. In removing local control over resources, policies conceived within the degradation narrative have sometimes interfered with local management (Fairhead & Leach, 1995).

Policies that have tried to introduce settled farming taking more lands under the purview of private ownership have reduced the role of the village council in overseeing land use and allotment. Dove (1983), states that assumptions about shifting cultivation have facilitated the expansion of state control and market exploitation favoring the creation of newterritories. With this change, the farmer's role in the management of the environment also changes. C. Madegowda (2009) comments on the failure of development projects due to the lack of local knowledge and participation. Among the policies conceived within the shifting cultivation narrative, it is hardly ever the case that the peoples' opinions and knowledge are taken into consideration. Then a spontaneous loss of traditional norms and responsibilities came up affecting the regulation of traditional customs thereby slowly embracing new development programmes introduced by the government and other funding agencies.

These comments are instances of scholars describing how the shifting cultivation system has been shaped by different political-economic forces, how these forces are the main drivers of changes within the system and how these changes have worked out for the swiddeners themselves. Some argue that these political-economic forces are responsible for the demise of the swiddeners while some argue that these forces are responsible for the persistence of the practice. For example, Hurni et al. (2013) say that the extent of shifting cultivation is reduced due to new policies while it can be affected positively and negatively by the forces of market structure. Regardless of the impact of these forces, with the transformation of the system from a subsistence-based level of production to the surplus oriented level of production or commercialization of the practice, one see a phenomenon of

farmers being pulled into the world of capitalism by these same political and economic processes.

This, as a result, has created a sort of dependence among the shifting cultivators towards the institution of capitalism itself as compared to before when they produced at the subsistence level and were independent of any kind of politico-economic institutions. The post-colonial development approach was mainly to transform the simple form of the production system to a capitalist based surplus production influenced by the profit-making interest (Bela Malik, 2003). Das (2006), states that behind the involvement of the Indian Council of Agricultural Research and other state agencies, there was an inherent need to link the somewhat self-subsistent, semi-nomadic barter economy with the market economy. Thus, the intentions behind the state trying to do away with the practice also have to do with trying to generate income from its farmers which was not possible for the subsistence-based farmers of shifting cultivation. Therefore, they had to wean them away from the practice because, within the dominant neo-liberal economic development discourse, the practice is considered to be the most unproductive form of land use and people who practiced it are considered poor although they might be self-sufficient and have their food and livelihood secured. It is therefore questionable whether the Jhummias were originally poor and how this term poor and uneconomic has been understood within the discourse. The agrarian question about such a capitalist based approach is applicable in this study where capitalism has grabbed a strong hold. Thus, our understanding of what is sustainable and what is considered a good quality of life has to be deconstructed within a wider variety of perspectives and not just within the capitalist mode of thinking. Subsequently, the different issues centered on Jhum cultivation also cannot be looked through a narrow perspective.

In order to understand issues centered on Jhum and to come up with viable approaches to deal with the system and its issues, we have to first acknowledge that Jhum is constantly and rapidly changing in the modern-day due to certain political-economic processes and we have to understand how these forces are shaping the system and how these manifest themselves as a part of the socio-economic lives of the shifting cultivator farmers. We have to look at Jhum from a wider perspective in trying to understand it: population pressure on land, market integration and policy interventions, rural-urban dynamics, food and livelihood security of the farmers, conservation of forest and biodiversity, land degradation concerns as well as the traditional and cultural values instilled within the society by shifting cultivation practice.

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