



## MARKET INTEGRATION IN SHIFTING CULTIVATION- THE CASE OF THE TANGKHUL NAGA TRIBE IN MANIPUR

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### ABSTRACT :

*Due to improvement in road connectivity and other means of communication followed by the expanding global economy in the rural areas, shifting cultivators who were once isolated from the outside economy is increasingly integrating with the urban-based and market economy. In order to seize the opportunities provided by the outside market system, the shifting cultivators' are adopting innovative land use system, cropping pattern, production and labour arrangement. The shifting cultivators' not only gathers the household needs especially food requirement but they also generate seasonal income by selling the crops and vegetables in the nearby local markets. And so, shifting cultivation that was done as subsistence farming has become more market-oriented in terms of production relation. Market integration in shifting cultivation not only improves the living condition of the farmers but also led to substantial changes in the practice as well.*



**KEYWORDS :** Tangkhul Naga, North east India, Jhum, Market Integration, Livelihood.

### INTRODUCTION

Shifting cultivation<sup>1</sup> which is commonly known as 'jhum' cultivation in the north east India has been discontinued in many parts of the country. But it still remains as the main source of livelihood for many tribal families<sup>2</sup> especially in the north east region where 90 percent of shifting cultivation is concentrated (Ninan, 1992). In the north east region, Manipur with 53.8 percent has maximum land use under shifting cultivation followed by Nagaland with 31.5 percent (Yadav and Kaneria, 2012). In Manipur, as per the Environmental Information System (ENVIS) Hub Manipur Status of Environment and Related Issues<sup>3</sup>, more than 83,000 families are engaged in this kind of agriculture system. Shifting cultivation which is one of the oldest mixed forms of agriculture system practice by the Tangkhul Naga tribe and that has sustained for many years (Shimray, 2002) still remains as the main source of livelihood; where more than 50 percent of rural families in Ukhrul districts are engaged in shifting

<sup>1</sup> It is also known as 'swidden agriculture', 'slash-and-burn' agriculture and 'jhum' cultivation in North east India and Bangladesh. And these terms are use synonymously in this writing.

<sup>2</sup> Even though the exact number of tribal families involves in shifting cultivation is not known it is believed that not less than four lakhs tribal families in the north east region are involves in shifting cultivation (Ninan, 1992).

<sup>3</sup> Environmental Information System (ENVIS) Hub Manipur Status of Environment and Related Issues is a website hosted by Directorate of Environment, Govt. of Manipur and sponsored by Ministry of Environment and Forests, Govt. of India. Available at [http://manenvis.nic.in/Database/JhumingandDeforestation\\_2712.aspx#](http://manenvis.nic.in/Database/JhumingandDeforestation_2712.aspx#)

cultivation for living (Statistical Year Book of Ukhrul, 2014). Moreover, in Manipur, increased in population, underdevelopment and non-availability of suitable employment in non-agricultural sector coupled by the difficulties arising from financial and technological constraints and irrigational problems in establishing permanent agriculture system is forcing the tribal people who mainly dominates the hill areas to engage in farm activity predominantly in shifting cultivation (Reimeingam, 2017).

Across the world, shifting cultivation is viewed by social scientists and policy makers as well as the general public to be primitive, backward, and unproductive; and a subsistence form of agriculture system (Thrupp et al, 1997, ICIMOD, 2006, FAO, IWGIA, & AIPP, 2015). Even in India, shifting cultivation as an agriculture system has been disfavoured by the policy makers as well as by the government considering it as subsistence based agriculture economy (Das, 2006). But Thrupp et al. (1997) argue that although some shifting cultivation in some remotes areas especially in the Amazon and Congo Basins are largely subsistence, most are not confined to subsistence as even the traditional shifting cultivators also usually pursuit multiple economic activities which are closely linked with the local and regional markets. According to Jamir (2015), the general belief that shifting cultivators are subsistence farmers with little or no surplus seems to be one sided assessment of the situation as it does not take into account the 'secondary' produce from shifting cultivation fields and fallow forests. Moreover, even if most of the agriculture produce from jhum are mainly for household consumption, the farmers usually sells the surplus crops and vegetables in the nearby markets for cash income (ICIMOD, 2006, Khisa and Mohiuddin, 2015, FAO, IWGIA, & AIPP, 2015).

Improved access to expanding global markets over a century or more has induced shifting cultivators to scale back subsistence production in favour of smallholder commercial crops (Thongmanivong and Fujita, 2006, ICIMOD, 2006, Cramb et al., 2009). According to Cramb et al (2009), such change in shifting cultivation is accelerated by the improvement in transportation, market infrastructure and the activities of market intermediaries; where it encourage the farmers to change from being 'part-time' to 'full-time' producers for the markets. So, shifting cultivators instead of specializing in one product like rice for household consumption have started vertical business integration across a large range of agricultural and other forest products to improve their living condition (Castella et al. 2012). According to Grogan et al. (2012), exposure to external markets and its opportunities results in subsistence farming being rapidly replaced by a more cash-driven or income oriented economy. Market integration is considered as one of the main drivers of change that influenced the practice of shifting cultivation (FAO, IWGIA, & AIPP, 2015). Also, as the cash and the global economy reached the shifting cultivators due to improvement in road connectivity and other means of communication, the farmers who traditionally grow variety of subsistence crops have begun to cultivate cash crops for market production (Fox, 2000). Subsequently, the shifting cultivators are adjusting their crop selection where they incorporate more and more commercial species (Thongmanivong and Fujita, 2006, ICIMOD, 2006, Jamir, 2015) and are adopting innovative practices in order to seize the opportunities provided by the outside markets (FAO, IWGIA, & AIPP, 2015). As the shifting cultivators are allocating most of their resources to supplying the market and rely on purchasing commodities and services; subsistence farming which was the most important characteristic of shifting cultivation becomes a spare-time activity (Thrupp et al, 1997). Shimray (2012) observe that the practice of shifting cultivation among the Tangkhul Naga has been largely influenced by changed in socio-economic system, increase population and particularly by the exogenous market forces. According to Shimray, this trend of exogenous market forces encouraged the shifting cultivators to aim for cash income and extensive commercial cropping in shifting cultivation.

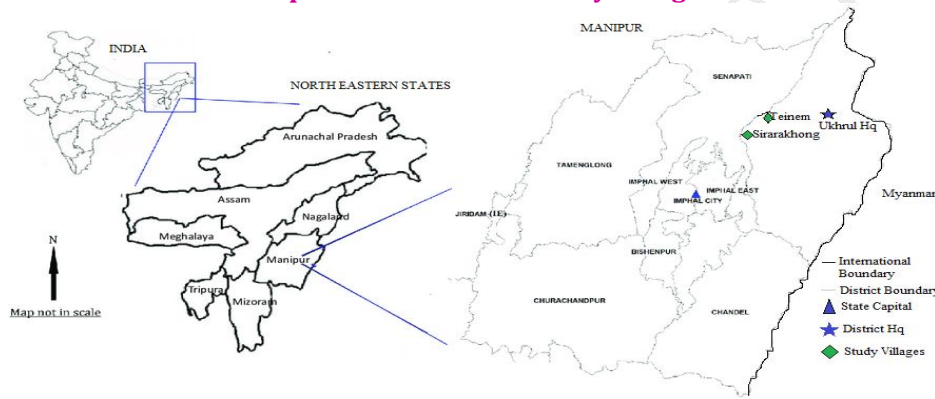
This micro-level qualitative study<sup>4</sup> is based on the study in two Tangkhul Naga villages-Teinem and Sira-rakhong which lies in the western part of Ukhrul district<sup>5</sup> for a doctoral degree. In these two

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<sup>4</sup> For this study, 100 households (10 percent of the total household of each village) were surveyed, 50 key informants were interviewed using semi-structured interview and participant observation. Purposive sampling was used in both the cases.

villages, agriculture remains as the main occupation of the villagers. Terrace cultivation<sup>6</sup> and shifting cultivation are the two main agriculture systems followed by the villagers. In terrace cultivation, rice which is the staple food of the people is grown entirely as mono-crop; whereas in shifting cultivation mixed form of agriculture system is followed where varieties of crops and vegetables are grown in jhum field apart from rice. Scarcity of water due to vagaries of monsoon which left many terrace fields uncultivated followed by the declined in productivity due to decreased in soil fertility has led to declined in the livelihood importance of terrace cultivation. So, shifting cultivation that has sustained for many years remains as the main source of livelihood for the villagers. But with steady improvement in road connectivity and other means of communication followed by expanding global economy, the shifting cultivators who were poorly or irregularly connected with the outside economy is increasingly integrating with the local markets. This has led to substantial changes in the practice of shifting cultivation. So, this paper seeks to analyze how increased market integration impacts the life of shifting cultivators and the practice in particular, in context of the Tangkhul Naga<sup>7</sup> shifting cultivators.

**Map 1: Location of the Study Villages**



Source: Google Images (Edited)

**Table 1: Characteristics of the Studied Villages**

Name of the village	Number of Households	Total Population	Male	Female	Total no. of Cultivators	No. of Male Cultivators	No. of female cultivators	Total Literacy	Male	Female
Sirarakhong	202	1,243	620	623	438	222	216	89.89 %	92.22 %	87.57 %
Teinam	802	4,058	2,031	2,027	1201	671	530	83.09 %	85.56 %	80.67 %

Source: District Census Hand Book of Ukhrul, Manipur, 2011

Images: Cultivation of other crops as the main crop (instead of rice) in jhum for market production

<sup>5</sup> Ukhrul District- one of the hill districts, which lie in the north-eastern part of Manipur is basically dominated by the Tangkhul Naga tribe- one of the largest tribe in the state.

<sup>6</sup> Terrace cultivation is of two types: wet terrace- where water supply is required during the cropping season as well as during the off-season and dry terrace cultivation- where water supply is required only during cropping season. In the hilly areas, the water supply for terrace cultivation depends solely on monsoon water.

<sup>7</sup> Tangkhul is a Naga tribe living in the Indo-Myanmar border area occupying the Ukhrul district in Manipur, India and the SomraTangkhul hills (Somra tract) in Upper Myanmar. According to Shimray (2004), the international boundary (Indo-Myanmar) that divides the Tangkhul Naga country makes the Tangkhul Naga tribe a citizen of two countries. Even though, majority of the Tangkhul Naga lives in Ukhrul district of Manipur (India), there is some Tangkhul Naga who lives along the Somra hills track in Saigong sub-division of Myanmar.





(a) Chili (*Capsicum Annum L*) locally known as 'hathei' (b) Broad bean (*Vicia faba*) locally known as 'hawai mubi'

Source: Personal (from the study villages)

### Market Integration and its Underpinning

According to Thrupp et al (1997), shifting cultivators' communities cannot view as a group of people who are isolated from the outside world because their economic activities are closely linked to local and regional commodity, labour markets and the cash economy. In case of the Tangkhul Nagas', the influenced of market forces which led to uncontrolled and sporadic commercial shifting cultivation started during the early 1990s is a recent development (Shimray, 2012). With the steady improvement in road connectivity and other means of communication followed by the expanding global economy in the rural periphery, the rural shifting cultivators are increasingly integrating with the local markets especially the districts' headquarter- Ukhrul and the state's capital- Imphal. This exogenous market forces not only led to expansion of village economic activities but provides greater opportunity to integrate with the local and regional markets. The farmers perceived market integration is one of the main drivers that is pushing the rural shifting cultivators for a greater integration with the urban-based and market economy.

Even though, the core of shifting cultivation as subsistence farming is strongly attached among the farmers, the shifting cultivators often explore the opportunities in response to favourable market conditions (Gragon et al., 2012, FAO, IWGIA & AIPP, 2015). In order to seize the opportunities provided by the outside markets, the Tangkhul Naga shifting cultivators are adopting innovative land use system, cropping pattern, production and labour arrangement. Such adaptations developed by the farmers are based on their traditional knowledge and limitations of their local environment. One important characteristic of market integration is that it provides increase opportunities for cash income and so, the commercialization of traditional subsistence crops offers financial benefits to the rural farmers. Moreover, due to increased market integration and the subsequent increased in the demands of the agriculture products in the markets, the farmers are cultivating the subsistence crops mostly indigenous traits intensively for commerce purpose.

### Outcome of Market Integration Improve Livelihood

Better access to local and regional markets for both selling their agriculture products and buying the other household needs has helped improve livelihood and food security. Accessibility to outside markets enables the farmers to sell their seasonal crops and vegetables without being wasted; thereby providing increase opportunities to earn meagre seasonal cash income. With this meagre income, the farmers can take care of their children or sibling education and other household

requirement as well. Likewise, now the farmers not only gather the needs of the household especially food requirement but can earn a good seasonal income, thus improving the overall living condition of the rural farmers. So, shifting cultivation- one of the oldest mixed forms of agriculture system and that has sustained for many years remains as the main source of livelihood for many rural families. Majority of the household (99 percent) perceive shifting cultivation as their main source of livelihood that provides food security and source of income to the farmers.

### Changes in Land Use System

For the Tangkhul Naga, land and local environment particularly forest is not just a mere habitat or political boundary. It is the basis of the socio-cultural and economic life of the people (Shimray, 2009). According to Shimray (2012), the land use under shifting cultivation has been largely affected by the increase population and exogenous market forces in particular. In the traditional Tangkhul Naga society, shifting cultivation was done mainly community land.<sup>8</sup> But such land has been shrinking in many villages mainly because of the encroachment and forceful claimed by the villagers. Moreover, public land in many villages including the study villages has been kept as reserved forest which strictly prohibits access of resource and any agriculture activities in such forest. So, the emergence of individualism in community land and the subsequent changes in community land use has led to increase use of private land for jhum cultivation.

In the past, when the population was low and the land was abundant, even if someone uses private land for jhum cultivation, it was used free of cost or by giving some parts of the products to the owner of the land as a token of gratitude. Now, such traditional land use practice has discontinued. Majority of the household (83 percent) agreed that land use practice in shifting cultivation has changed. With the steady increase in population and the subsequent increase in the number of household depending on shifting cultivation followed by increase market integration, land that was once freely used has been commoditized (Li, 2003, Shimray, 2012). The emerging land use system in the study villages is the leasing<sup>9</sup> of jhum land for a specific period like two or three years by giving certain amount of money to the landlord.

The amount of money for leasing jhum land again varies from one village to another village. In case of the study villages, the fee was Rs 7000-10000 per year for one village and Rs 10000-13000 per year in the other village. The differences in term of fee for jhum land is mainly determines by availability of forest and the number of dependence. Such changed in land use system is not confined only to the study villages but it is increasingly adopted in many Tangkhul Naga villages as there is steady increase in village population and the subsequent scarcity of land for such cultivation. But again, there may be some slight differences even among the Tangkhul Naga in terms of land use practice from one village to another village depending on the availability of forest. The increase commoditization and privatization of community land not only increases social and economic disparity within the society but the land that was a symbol of influence and status in the traditional society has been challenged by the wealth base on money.

The other phenomenal change in land use under shifting cultivation is the discontinuation of traditional mode of shifting cultivation where the farmers move to a new field after cultivating it once or twice and leaving it fallow for many years (15-20 years or so). Maintenance of proper fallow period is important feature as it helps to maintain productivity and sustainability of the system. But now, instead of clearing new forests after a year or two, the farmers now cultivate the particular plot of jhum

<sup>8</sup> Among the Tangkhul Nagas village community land is called 'Yarui lam'. Community land consists of undivided land belonging to the village as a whole. Any bona fide household or member has a right to occupy and use community land for agricultural purposes, without paying any land tax to the village council, but only temporarily (Shimray, 2009).

<sup>9</sup> The term leasing is use loosely and informally in this case as there is no such legal agreement between the landlords and leaseholder as such. The leaseholder will pay certain amount of money to the landlord to cultivate the land for a specific period. Later, when the period of leasing is over, the same jhum land is again leased out to other farmers by the landlord in the same manner.

continuously for many years. In the study villages, the period of cultivating the particular plot of jhum is about 7-10 years or more. The farmers intensely used the particular plot of jhum by cultivating some crops like potato, beans, cabbage, etc for commercial purpose following mixed, multiple and rotational cropping pattern with sequential harvesting. The shifting cultivators agreed that market integration in shifting cultivation has largely influenced the land use system in shifting cultivation. Similarly, Grogan et al (2012) also observe that there is a positive relation between market accessibility and intensification of land use in shifting cultivation practice.

### Changes in Cropping Pattern

Traditionally, rice was grown as the main crop in jhum field mixed with varieties of crop and vegetables like maize, local varieties of pulses, mustard, sesamum, tobacco, yam, garlic, gourd, onion, cucumber, beans, chilli, pumpkin, ginger, eggplant, etc which are mostly indigenous traits mainly for household consumption. But according to Shimray (2012), such traditional cropping pattern has been greatly influenced by exogenous market forces since the early 1990's where the shifting cultivators have started uncontrolled and sporadic commercial shifting cultivation on community lands by growing some crops like potato, cabbage and soya bean, etc entirely on a mono-crop system for commercial production. With steady increase in village population, scarcity of land and particularly increased market integration in shifting has led to phenomenal changes in cropping pattern. Majority of the household (57 percent) agreed that cropping pattern in shifting cultivation has changed due to increase market integration where they are cultivating some crops that are more cash-oriented and that is more demanding in the markets.

In the traditional mode of shifting cultivation, a particular plot of land was used to grow rice mixed with varieties of crops and vegetables just one cropping season and left un-utilized for the rest of the year. But due to increased market integration in shifting cultivation, the cropping pattern in shifting cultivation has undergone substantial changes. Instead of cultivating rice as the main crop; some crops like potato, cabbage, beans, etc are intensely cultivated as the main crop mixed with seasonal crops and vegetables (mainly for household consumption) following mixed, multiple and rotational with sequential harvesting. Moreover, some subsistence crops like traditional chili<sup>10</sup> the crops that were once grown as for subsistence purpose are increasingly cultivated for commercial purpose due to increasing demands of such crops in the outside markets. The other change is the selection of crops or increase cultivation of those cash-oriented crops. Such practice will lead to loss of important indigenous or local crops and vegetables which are more nutritious and well adapted to the local environment.

The other major outcome of commercial cropping is the increase use of inorganic fertilizers and pesticides by the farmers in jhum field. According to the farmers, the fertility of the soil declined after two or three years of cultivation and subsequently there is increase weeds and pest infestation. So, in order to increase their productivity and to control the weeds and pests infestation, some of the farmers used inorganic fertilizers and pesticides. The shifting cultivators do not encourage the use of such inorganic fertilizers or pesticides in jhum cultivation considering the negative impact on health and on the environment. According to farmers, these chemicals are used only in those crops which are cultivated intensely for market production but not in those crops meant for household consumption. But with the increased awareness about its negative impact on health and environment, the villagers have now started taking up certain measures to discontinue such practice. In fact, in one of the studied

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<sup>10</sup> In one of the study village, traditional chili locally known as 'hathei' was grown as subsistence crop. But now due to the increased demands of the crop in the outside markets, this indigenous chili is intensively cultivated by villagers for market production. Moreover, District Level Chili Festival is held every year in that village under the aegis of the Manipur Government to promote and to commercialize this indigenous chili.

village, the village authority<sup>11</sup> has banned the use pesticides in jhum field and is also considering banning the use of fertilizers as well.

### CHANGES IN PRODUCTION RELATION

According to Myint (1973) as cited in Cramb et al. (2009), the transition from subsistence production to market production in shifting cultivation takes place in two stages. In the first stage, such transition happens when the farmers use the larger proportion of their resources to produce for their own consumption, but use their spare land and labour to produce for the market, thereby minimizing the risk involve. On the other hand, the second stage occurs when farmers allocate most of their resources to supplying the market and rely on purchasing commodities and services, with subsistence farming a spare-time activity.

Traditionally, the Tangkhul Naga economy was basically one of household production and consumption and the focused of shifting cultivation was primarily of self-sufficiency (Shimray, 2012). But this traditional notion of shifting cultivation no longer hold true due to change in socio-economic outlook of the people, demography, land use practice, etc coupled by influence of exogenous market forces and expansion of global economy. It was found that majority (84 percent) of the household do shifting cultivation for household consumption as well as for market production, 13 percent of the households involves in shifting cultivation basically for commercial production and only 1 percent do shifting cultivation basically for household consumption. This shows that the production relation in shifting cultivation is moving from household consumption towards market-oriented production.

In case of the Tangkhul Naga shifting cultivators, the nature of transition in shifting cultivation can be considered to be in second stage. Even though, the farmers grows some crops and vegetables for subsistence purpose, the farmers are allocating most of their resources or services for market production, where according to them subsistence farming is a spare time activity. Moreover, rice which was grown as the main crop has been replaced by some crops like potato, cabbage, beans, chili, etc which is cultivated intensively for market production. Also, even if the farmers cultivate some seasonal crops and vegetables for household consumption, the same are sell in the market whenever there is a surplus. Accordingly, the choice of crops grown in jhum field is changing where crops (indigenous traits) like rice, maize, yam, pumpkin, etc. which was grown traditionally for subsistence purpose has been replaced by some other crops which are more cash oriented.

### CHANGES IN LABOUR ARRANGEMENT

The other important phenomenon that has changed due to market integration is the nature of labour arrangement in this traditional form of agriculture system. Shifting cultivation is a labor intensive form of agriculture system. The various agriculture activities involved in shifting cultivation are not only heavy and difficult but strenuous and tedious in nature. In the traditional Tangkhul Naga society, household labour and exchange of labour<sup>12</sup> are the two main sources of labor force that gathers the labor requirement within shifting cultivation (Shimray, 2012). Usually, the nature of labour arrangements in shifting cultivation is often linked with the customary rituals or social relation in a given community (Thrupp et al. 1997). But due to increase market integration such traditional labor practices have been replaced by daily wage agricultural labourer- a labour arrangement without any

<sup>11</sup> Among the Tangkhuls in Ukhrul (Manipur, India) local governance, particularly with regard to the use and management of natural resources, is firmly entrenched in a traditional institution locally known as 'Hangvu' or village authority. This institution is composed of the chieftain and a council of clan elders. They decide on all matters relating to local governance, including land use, access, and control of land resources.

<sup>12</sup> Exchange of labor is considered as an integral component and a common feature among the shifting cultivator's community. In the Tangkhul Naga society, the exchange of labor practiced in the form of 'working-guild' which is a collection of groups of people of the same age cohorts that work together on a rotational basis (Shimray, 2004). According to him, this exchange of labor is a pan-human phenomenon of giving and receiving.



social and cultural significance. Such change in labour arrangement among the shifting cultivators has been observed in other parts of the world where the traditional labour practice like exchange of labour which serves both as labour mobilization and for social gatherings, has to a large extent been substituted by paid laborers—this is mainly a consequence of commercialization and market integration (Grogan et al., 2012). This change in labour arrangement from household kin labour practices to hired labour among the tribal community who basically depend on shifting cultivation is viewed as one of the major changes within the tribal societies (Sengupta, 2013).

In the traditional Tangkhul Naga society, the practice of wage labour was rare and such practice was not encouraged by society. And whenever labour was hired, it was usually compensated with clothes or paddy and compensation with money is believed to be rare practice in the past. In the olden days, even if they were aware of the value of money, they did not consider it an essential medium of exchange (Shimray, 2012). But due to change in the socio-economic outlook of the people and the increased importance in the values of money as a medium of exchange, hiring of daily wage labourers to perform the various agriculture activities in shifting cultivation is increasingly adopted in many Tangkhul Naga villages. The replacement of traditional labour like household labour and exchange of labour by daily wage labour becomes a burden especially for the marginal farmers as the wage for hiring agriculture laborer is steadily increasing every year. And as such, the marginal farmers have to struggle th eir living as they have to hire a labour and to make a living out of it. This give rise to a certain situation where some marginal farmers who once involved in intensive cash crops cultivation for market production has to scaled back to subsistence farming. Such change in labour arrangement not only give rise to economic deprivation and increases social polarization in the society but created class division and social stratification in what was a largely egalitarian society (Sengupta, 2013).

## DISCUSSION

Increased market integration in shifting cultivation has greatly improved the overall living condition of the rural shifting cultivators. Better access to outside markets enables the shifting cultivators to sell their seasonal agricultural products from jhum field without being wasted thereby increasing opportunities for cash income. Now, the shifting cultivators not only gather the needs of the household especially food requirement but can earn a good seasonal income by selling the crops and vegetables in the nearby local markets without being wasted. Such diverse economic activities in shifting cultivation have helped to strengthened livelihood and food security of the shifting cultivators. Even though, market integration has some positive outcome, it is not free from its negativity.

One of the major impacts of market integration as mentioned above is the changes in the cropping pattern- where the farmers are increasingly cultivating some crops like potato, cabbage, beans, etc intensively for market production. Such specialization of some crops for commercial purpose according to some studies increases the vulnerability of the shifting cultivators due to fluctuating commodity prices and insecure market system (Cramb et al., 2009, FAO, IWGIA, & AIPP, 2015). Even though, abandoning of traditional subsistence mode of shifting cultivation and specialization of some crop for market production provides opportunities for cash income and immediate financial benefits; such practices involve certain uncertainties and risk especially for the marginal rural farmers considering the following reasons. First, most of the farmers are small-holder commercial jhum cultivators where some of them are doing such practice by renting someone's jhum land. So, price manipulation by some big businessmen (which some farmers felt) apart from the fluctuating commodity prices due to insecure markets could increase the livelihood vulnerability of the marginal rural farmers. Secondly, specialization of some crops for market production increases the livelihood uncertainties as there is an increase chance of crop failure due to vagaries of monsoon. Such uncertainties not only would leads to indebtedness or landlessness<sup>13</sup> among the rural farmers especially the marginal farmers who depend mostly on other jhum land for such practice but can leads

<sup>13</sup> Shimray (2012) observe that landlessness among the Tangkhul Naga villages is increasing as the marginal farmers have to sell their patch of agriculture land during the medical emergency or to repay the loan for children's education.



to other social problems like poverty, migration, etc. Moreover, such practices can also leads to loss of some indigenous crops and vegetables.

The other important issue that needs to consider is the intensification of land use system. Such intense land use in shifting cultivation challenges the sustainability of shifting cultivation (Ramakrihsnan and Patnaik, 1992, Fox, 2000). The lack of proper fallow period will not only leads to declined in productivity of the land but will increase the use of inorganic fertilizers and pesticides as being observed in the study villages; thereby challenging the sustainability of the system and loss of credibility of being an organic farm products. Moreover, such intense land use will increases deforestation as there is a low chance of re-vegetation of such forest even after being left fallow due to poor soil and high soil erosion; thereby turning into barren land. So, restoring the traditional land use system of agro-forestry jhum cultivation will not only help to maintain the sustainability of the system but will prevent massive deforestation. So, proper regulation on land use and management system that promotes sustainability and conservation of the ecosystem should be taken up by the concern local level authority.

## CONCLUSION

Market integration in shifting cultivation not only improved the living condition of the farmers but it has also led to substantial changes in the organizational structure as well. The steady increase in population and the subsequent increase in the number of dependence followed by the non-availability of forest have challenged the sustainability of shifting such practice. So, it is important to understand that traditional subsistence shifting cultivation system could remains as an important component of livelihood strategies that not only provides resilience in the face of turbulent change but that helps to maintain the sustainability of the system.

It is well understood now that conservation and sustainable development is like the two sides of the same coin, so closely interlinked that one cannot be achieved at the expense of the other. While it is unavoidable to bring technological changes in agriculture development, the policy makers and the government needs to adopt a holistic approach that promotes conservation and development based on ecological situations, socio-economic conditions and socio-cultural variations. Such approach will not only ensure sustainability of the agriculture system but the peoples participation be ensured, as it would be based on a value system that they can appreciate and identify with.

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