

**ASSESSMENT OF SHIFTING AGRICULTURE PATTERN
IN CHANDEL DISTRICT, MANIPUR**



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CHAPTER I:

INTRODUCTION

The Chandel District, formerly known as Tengenoupal district, is a hill district with an area of 3, 313 sq km out of which the forest area is around 2328 sq km. It is located in the south eastern part of Manipur, about 64 km from Imphal. The population of the district as per 2011 census is 1, 44,182 with 28,801 household. The district is inhabited by around 20 different indigenous tribes such as Anal, Aimol, Lamkang, Kuki, Moyon, Monsang, Chothe, Thadou, Paite, Maring, Zou, etc.

The whole district is divided into four sub division namely, Tengenoupal Sub-division (94 villages), Chakpikarong Sub-division (168 villages), Chandel Sub-division (97 villages) and Machi Sub-division (67 villages).

The hill communities of Manipur are dependent on arable land for their livelihood. Two types of agriculture are common in the hill areas; *Chinglou* (shifting cultivation) and *Tamlou* (settled cultivation). *Chinglou* is the shifting cultivation practiced in the highland in the hills and *Tamlou* is the permanent cultivation practiced in the lowland at the base of the hills. *Tamlou* is more favourable for the cultivation of rice as compared to *Chinglou* owing to its soil fertility and the physical location as well. The land has not only provided the villagers food and economy for sustenance but also cultural and historical significance of the ancestral land and the coexistence among the tribal communities in the hills. But, the increasing population, the development of infrastructure projects, and militarisation of the state, etc. in the last few decades, have exerted additional pressure on land and its produce, pressing them to adopt various measures to sustain the increasing pressure, including the need to seek and define alternatives to sustain traditional agricultural practices.

Chandel district comes under Tengenoupal Forest Division of the state. It has about 81 percent forest cover of the total geographical area. The dense forest on Myanmar border has valuable teak tree in abundance. Forest provides firewood, charcoal, wood and many other forest resources. As per the state Forest Report of 1991 and 2001, 756 sq.km areas were under dense forest in 1991, which had increased to 812 sq. km in 2001; open forest area in 1991 was 1998 sq.km and in 2001 it was 1906 sq. km., area of scrubs increased in 2001 from 20 sq. km in 1991 to 49 sq. km in 2001. Nevertheless, total forest area in the district has gone down in recent years due to the practice of shifting cultivation and other myriad factors.

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total forest area in the district has gone down in recent years due to the practice of shifting cultivation

and other myriad factors.

Chandel has the highest timber production among the districts. It has also large area of forest under bamboo covering 478.38 hectares.

The changing pattern of agriculture practices in Manipur and Chandel District, in particular, can be explained in terms of both internal and external factors. Internal factors include growth of population, decreasing soil fertility and increasing pressure on land. External factors include development of infrastructure projects and expansion of wildlife sanctuaries, and climate change etc. A study to assess this changing pattern within Manipur with initial emphasis and focus on Chandel District is commissioned as a pilot process.

The concern of the present study is the sustainability of agriculture in the midst of the issues and challenges facing agriculture in the hills of Chandel District. Borrowing the definition of “sustainable development” by the UN Commission on Environment and Development, 1987, Sustainable agriculture can be defined as the agricultural development “that meets the needs of the present without compromising the ability of future generation to meet their own needs”. It should be environment friendly such as land, water, air, forest and other natural resources; benefit all classes of people and also sensitive to the needs and abilities of the future generations.

ASSESSMENT OBJECTIVES:

- An effort to study the traditional system of agriculture, and to understand the changing pattern in the nature of traditional and the present system of agriculture
- An attempt to look at the increasing pressure caused by agriculture on forests
- An attempt to look at the factors undermining agriculture, viz, development projects, marketing, conflict situation and their impact on agriculture
- An attempt to look at the co-relation between agriculture and climate change
- An attempt to look at the alternatives source of livelihood and its impact on agriculture
- An attempt to explore the sustainability of agriculture and factors undermining sustainable practices and identify ways and means to promote sustainability of agriculture in Chandel district
- An attempt to look at the approaches of the state government toward promoting indigenous agriculture and securing sustainability

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METHODOLOGY ADOPTED

A research question is prepared to guide interaction with villagers and community members while conducting surveys in assessing the present and changing pattern of agricultural practices among five different indigenous communities of Chandel District. The research process also includes group discussion with key leaders and community representatives from the villages identified to provide additional inputs and also to verify the information collected and processed based on primary and secondary data. The study is primarily based on surveys.

Primary data are collected from interviews of the members of village authorities of Chandel district and the findings of the study are reviewed qualitatively. Secondary data is also collected from newspaper articles, magazines and project work to ascertain the pattern of agriculture practices in Chandel and other factors impacting such agri practice.

Reference from similar realities both in terms of issues and challenges from other indigenous communities in places like Thailand and Philippines forms a key component of the process. The definition of alternatives for a viable and sustainable agricultural practice as espoused by community members based on their needs is accorded key priority. Reference is also sought practical solutions and practices of other IP communities in similar circumstances.

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Chapter II

INTROSPECTION INTO THE SYSTEM OF AGRICULTURE IN CHANDEL DISTRICT

The present section focuses on the system of agriculture in the selected 7 villages in Chandel District. The villages are Aimol Tampak, Khongkhang, Chahmol and Bongjang in Tengenoupal sub-division, Purum Chumbang in Chandel sub-division, Khunbi village in Machi sub-division and Lamlong Khullen also in Machi sub-division. The chapter looks at the profile of each of the villages separately. The village profile includes the type of tribe inhabiting the village, the total area of the village, the number of household and population etc. It further looks at the type of agricultural practice, crop variety cultivated and the cultural practices associated with agriculture. It will also look at the present and changing agricultural practices and the persisting issues and challenges facing the agricultural practices in each of the villages separately.

1) AIMOL TAMPACK VILLAGE

The Aimol Tampak Village in Tengenoupal Sub Division of Chandel district is village is inhabited by the Aimol tribe. The total Aimol Reserve Area, spanning the land of Saite, Tuipte, Lungmuk Chingyang is approximately 150 sq. km is also shared by nine other Aimol villages of Kumbeerei, Aimol Khunyai, Aimol Chingnunghut, Khodamphai, Ngairong, Chandanpokpi, Aimol Khullen, Aimol Satu. The Aimol Tampak village has 42 households, out of which 12 families have legal entitlement over land. The total population of the village is 160. Twenty Eight family members are in Government Service and earning Pensions.

The type of agriculture among the Aimol is semi-permanent shifting cultivation. The Aimol people completely uprooted the forest trees in the area decided for agriculture by the community and the forest land is used for the cultivation. The land is cultivated for another 5 to 7 years. Almost every family has land for shifting cultivation.

The indigenous rice varieties in the Aimol Tampak are *Ching Chathai*, *Chate*, *Chapui*, *Ching Moirang*. A serious concern is that with the abandoning of their traditional seeds, the Aimol people no longer cultivated in Aimol reserve land as most of the farmers have shifted to wetland cultivation. This is a serious matter which requires an urgent intervention as the loss of traditional rice varieties of Aimol People also constitute a loss of their natural and cultural heritage of the Aimol People.

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Accordingly to villagers, due to labour intensive nature of shifting cultivation in the hills and challenges of accessibility in areas demarcated for agriculture, most family have abandoned shifting agriculture in their reserve land area and now adopted wetland agriculture. This shifting agriculture pattern is not just for Aimol Tampak but also for the rest of the Aimol villages in Aimol reserve land area. This is despite the fact that all families of Aimol Tampak and other villages have access to community land in their reserve area.

Since most of the households don't hold land, many community members entered into army, police, and masonry. Among the 40 households there are around 20 families who are in the government service. Many of the villagers have also taken up weaving, agriculture labour, carpentry and rickshaw puller as alternative source of livelihood.

The Aimol Tribe confronts a serious challenges to pursue their traditional shifting agriculture and also in wet rice cultivation. In particular, wet rice cultivation has not proved profitable since the cost of seeds, pesticides and herbicides and the labour cost required to maintain agriculture is very high. Cultural practices and rituals associated with agriculture among the Aimol people are lost with the decreasing significance of agriculture in the village. Moreover, wet rice cultivation only allows cultivation of mono crops as against the traditional cultivation of mixed variety of crops and traditional seeds in the Aimol Reserve Area.

Given these adverse changes and reality, many Aimol are moving out to other service sectors, such as masonry, weaving, pulling rickshaws etc, which is underpaid and is insufficient to meet the needs of the family. This trend is aggravating with minimal support of the Government of Manipur. There has been no government subsidy for pesticides and fertilizers which has made agriculture in the hills all the more difficult. There has been no provision for loan required to purchase equipments necessary for farming. Moreover the technicality of the procedure to get a loan from the bank made it all the more difficult. Subsidy on pesticides, herbicides and fertilizers never reached the villagers. Villagers are of the opinion that with Government support, the villagers can resume their traditional agricultural practices.

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Picture 1: Agricultural land of Aimol Tampak
Photo Courtesy: Jiten Yumnam

Another alarming pattern is that some Aimol families have adopted Charcoal preparation from forest. As charcoal is in high demands in the valley, especially during winter time, many families resort to burning or destroying forest to meet the supply of charcoal. Thoubal charcoal preparation provides some families an alternative source of livelihood, but is highly destructive for the forests protection and conservation.

An unfortunate development is that the government is planning for the construction of Kangoi Aimol Dam over the Sengvai River by the Irrigation and Flood Control Department. The construction will lead to submergence of the forest area of the Aimol Reserve Forest and also affect fisheries. There is no effort on the part of the authorities to conduct participatory impact assessment as of now. The communities are apprehensive that the construction will directly lead to shortage of water in the immediate downstream for communities depending on the Sengvai River. But there has been minimal support from the government on alternatives suggested by the villagers such as creating water logging points in streams at several points which could improve agriculture.

2) KHONGKHANG VILLAGE

The Khongkhang Village in Tegnoupal Sub division of Chandel District is inhabited by the Chothe Tribe. There are approximately 61 Households and 321 family members in the village. There was 25 household in the village in 1990 and now it has increased to 61 household. The total land area of Khongkhang village is approximately 400 sq km, as per the description of the villagers. The village boundary touches the Lokchao River, the Chakpi River, Nimkeiku Lok, Khullen Lok and Singpibung Chingyang (hill range). There is community ownership of land in the village and it is the village

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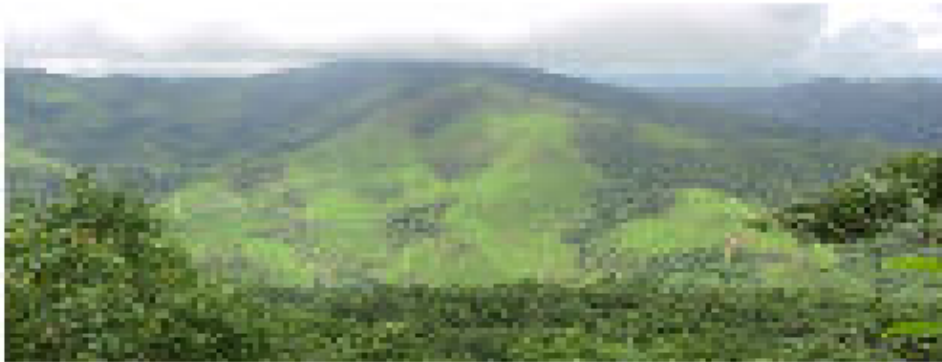
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authority which decides on the matters regarding agriculture; where to cultivate for the particular year and for the succeeding years as well. The Khongkhang Village Authority is made up of seven members from the community, from the men-folk.



Picture 2: Chothe Tribe cultivation in Khongkhang village

The indigenous rice varieties of Khongkhang village are Sanglite, Maichomnu, Sangkhoinu, Sthou (Chahao), Ningshi Sthou (Red Chahao), Sthou Ngounu (Chahao Angouba), etc. Crops such as pumpkin, Colocasia roots, Ash gourd or winter melon (*Benincasa hispida*), Ginger, Turmeric, Beans, Sponge guard or ridge gourd (*Luffa acutangula*), Cucumber, etc are also cultivated. Bamboo shoot preparation is a huge income earner for the village.

The Chothe Tribe of Khongkhang Village practices shifting cultivation, shifting annually in different forest areas of their village land. Villagers' clear forest in such a way that trees are cut in a certain portion of their stem without uprooting the trees and plants to facilitate regeneration and re-growth over a period of time. Trees are cut in branches and stems proportionate to the land area to be cleared. Some families cut only the branches. The burning of the cut branches and leaves etc led to formation of natural fertilizers and also due to the decomposition of twigs, leaves, roots etc.

Multiple cropping is practiced along with the cultivation of rice. Most of the crops are cultivated for the consumption of the family and not for marketing. The cycle was approximately 12-13 years a decade ago but due to the growth of population pressure on land has increased resulting in the decrease in the cycle. But nowadays, the Jhum cycle is approximately 7-8 years. Due to the increased pressure of land, shortening of Shifting Cultivation cycle, the fertility of soil has been reduced. In order to improve agriculture, fertilizer, mostly urea is used. Some families also used pesticides. In due course of time, agriculture has become fertilizers and pesticides intensive. Villagers of

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due course of time, agriculture has become fertilizers and pesticides intensive. Villagers of

Khongkhang are worried that agriculture can no longer sustain their livelihood in the succeeding years.

Pest infestation of all crops, especially Rice cultivation has become common. Narangta, a disease in rice plant, where the leaves become red and dry during tubing and harvesting time has become common. Villagers use pesticides and weedicides to control pest. The increasing use of fertilizers has reduced the nutritional value and the taste of food. The use of fertilizers has also reduced that life span of the seeds of rice, vegetables and fruits. It cannot be stored for more than two years.

Another serious changes noted in Khongkhang village is the drastic reduction in the production of various types of citrus foods, especially, lemon, orange, Nobab or Pomelo (*Citrus maxima* or *Citrus grandis*), Haribob, Heithum or sweet lemon (*Citrus limetta*), which were abundant till late 1990s. There is mass drying up of Lemon and oranges in Late 1990s. Haribob which was earlier grown in the entire Khongkhang village has now confined to vicinity of streams and rivulets.

The tradition and cultural practice of the village associated with agriculture is losing its significance due to the religious influence of Christianity. Hunting of animals has been seriously affected resulting in the decrease in the number of wild animals. Many wild animals, such as Sabeng, Sajal, and deer are extensively found in the forest earlier and their number is reduced significantly

There is negligible support livelihood means support from the Government of Manipur. PDS supply is received only once a year. Some initiative from the Horticulture department was seen such as the introduction of non- local seeds variety of lemon, banana and Yongchak or twisted cluster beans (*Parkia speciosa*). Even Horticulture Department which used to have a farm in Khongkhang abandoned and shifted to other places.

Alternative source of livelihood for the village is collection of bamboo shoots and its fermentation, cultivation of Haribok, and manufacture of charcoal. Charcoal is manufactured from burning of woods after clearing forest. The clearing of forest and manufacture of charcoal is facilitated by the village authority themselves. The use of forest trees has been mostly to meet community needs such as the construction of church.

There has been case of militarization which has an impact on agriculture. Hectares of land have been confiscated by Police and Assam Rifles against the will of the villagers for example, approximately 5 Sq. Km of land has been acquired by Assam Rifles in a village between Lungtatkuk Tuisu and Leingang along the National High way 39 without taking the consent of the village authority. The forest area burnt down by the army is slated for Jhum cultivation for the year 2014. The army denied

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There has been case of militarization which has an impact on agriculture. Hectares of land have been

confiscated by Police and Assam Rifles against the will of the villagers for example, approximately 5

Sq. Km of land has been acquired by Assam Rifles in a village between Lungtatkhek Tuisu and

Leingang along the National High way 39 without taking the consent of the village authority. The

forest area burnt down by the army is slated for Jhum cultivation for the year 2014. The army denied