

**Chapter-6**

**FACTORS AFFECTING THE**

**SOCIO-ECONOMIC**

**CONDITIONS OF MAO NAGA**

**FARMERS**

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### **Factors Affecting the Socio-Economic Conditions Of Mao Naga Farmers**

Agriculture is the economic mainstay of the people in Senapati District (area under study) with 88.6% of them engaged as cultivators (Annual progress Report, 2006-2007 of Krishi Vigyan Kendra, Senapati District). Therefore, it is understandable that, for any developmental work, substantial subsidy or grant must be given to the cultivators who constitute the larger chunk of occupational group in the district. This chapter is an attempt to identify and analyze the factors affecting the socio-economic conditions of Mao Naga Farmers so as to examine the means available for their development concerned. In view of the fact that the lives of farmers revolve around agriculture, it has been found most of the identified factors are connected with agriculture. Major findings are as follows:

#### **6.1: Natural Setting of Agriculture**

Geographically, the area of residents and agricultural fields of the Mao are generally located on the top of the mountains or on the hill-slopes of the mountains. Preferred settlements in such sites must have been on account of security reasons as in the early days, attack from enemies and wild animals were common and head hunting was practiced. Certain length of roads continues to remain steep and zigzag even in the present situation although roads have been broadened and surfaced largely. In view of this, transportation on this road is inconvenient and the transport cost is comparatively higher. Water supply for household use as well as irrigation face a setback as the settlement areas are often much higher than the water sources. However, Mao dominated area is considered as the greenery of Manipur because of rich natural resources, soil fertility and salubrious climatic condition. (See Map 6.1: indicating the level of soil fertility in Mao inhabited area). Different kinds of fruits and vegetables are produced throughout the year from the region. Agricultural produce from the Mao region are known for delicious taste. They are highly in demand in the neighbouring cities and town markets and they fetch better prices than brought from other places. Nevertheless, the survival that Mao farmers have to make through rugged natural setting is also distinctive. The topography is mountainous. Farmers have small

holding and non-contiguous land. They use antiquated agricultural implements and practice primitive agricultural method. All these make their production labourious. In addition, the long and tedious distance that they have to walk between the residential areas and the field areas through very difficult route, crossing creeks and ranges of hills with dense jungle are other factors affecting the farmers. That is why the exhaustive labour a Mao farmer puts in to produce agricultural crops especially paddy does not consumerate with the output. Such is not always the case for all the Naga farmers like that of Angami Naga or for other non-Naga tribe like Boros in Assam whose terrace fields are mostly found in the plains and adjacent to their houses.

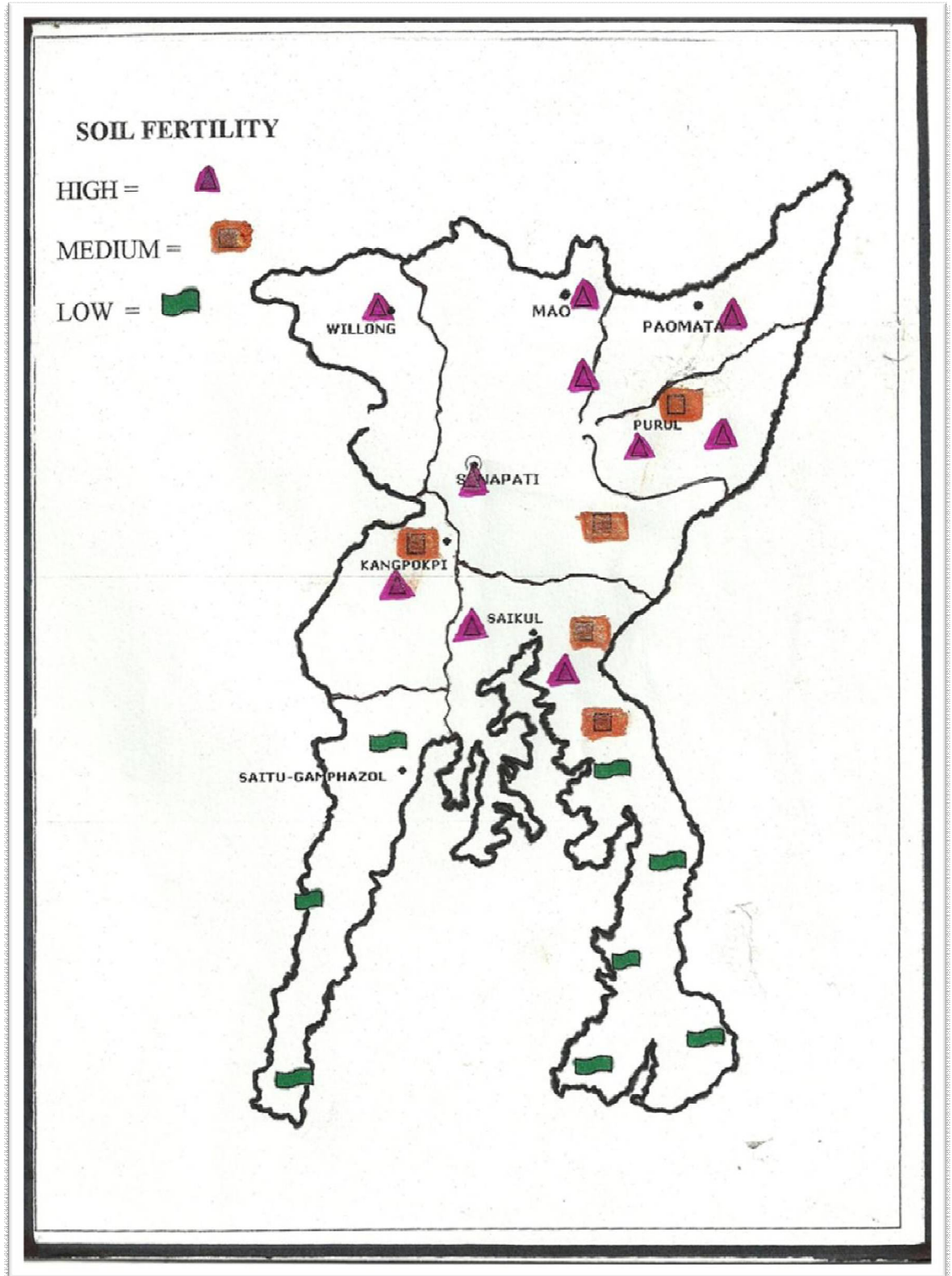
## **6.2: Hardships of Mao Farmers**

In Mao community, when a child becomes sixteenth day old, he/she is initiated into the agricultural practice according to the Mao rites. Lokho, a Mao noted scholar writes

“The child is carried by her mother on her side, while she also carries implements of work in a basket on her back. They may be accompanied by the father or by some children. The implements consist of a spade, a knife, a few feathers of a cock, and some springs of indigo plants and a jar of wine. They are taken to some place outside the village and the mother digs a patch of the ground and leading the hand of the child, plants the feathers and the plants. She also spills a little wine around the plant on the ground. Then she collects two pebbles of stones and carries them back home. The pebbles are then put in the crib of the baby for a while” (Lokho, 2004, p. 3).

A child, by five years learns the tactics of cultivation while accompanying the family to the field besides taking care of the livestock and keeping the hearth warm by making fire. Rizvi & Roy (2012) believe that “the absence of beggars and parasites within Naga community can be attributed to the training a Naga receives in his family as a child” (p.46). Having experienced and accustomed for generations by tough life, Mao farmers are skilled to keep a pace of their normal walking speed even in difficult landscape. In many cases, one way distance on walk between the house and the field itself takes around an hour or in some cases around 3 hours walking distance.

**Map-6.1: A Sketch Map of Senapati District Indicating Mao Area and its Level of Soil Fertility**



Source: Department of Agriculture, Senapati

Some farmers cultivate in “Kashii” nearby Maram (another land inhabited by Maram Naga tribe) which is 50-55 kms far away from the village in distance and climatically different from their village. Agricultural plots are scattered (See Table-6.1) and a lot of time gets wasted walking to the fields. Tedious distance between the residential areas and the field for cultivation was one of the main reasons behind the formation of some village like Robve Solephe. Earlier Robve Solephe was the name of the field cultivated by the villagers mostly from *Robvemei* village. To reach the field, they had to walk through ill-defined seasonal road as there was no good road or transportation facilities that one way distance between the house and field would take them not less than two hours. So in order to save energy and complete their plantation in seasonal time, they used to stay back in the thatch huts constructed nearby their fields. In course of time, population increased and more farmers started staying and for even longer period. Gradually people started constructing better huts or small houses and even started settling which subsequently turned into a village. Today, Robve Solephe village is recognised by the government of Manipur.

### 6.3: Fragmented Land Holding

More often than not, holdings of land in Mao are scarce and fragmented. A Mao household owning a land of upto 1 acre of land or producing a barn of paddy (equivalent to 50 tins or 600 Kg of paddy) have three or more different plots scattered over a distance of about 1 to 20 kms from the villages and between the fields as indicated at Table-6.1. It is also found that a household owning land of upto 3 acres of land have as much scattered plots of 15. Farming is more labourious when the agricultural plots are fragmented and it rules out big farming practices.

**Table-6.1: Scarc and Fragmented Land Holding of the Respondents**

Land holding (in acres)	No. of respondents	No. of scattered plots														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Landless	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Upto 1	126	41	37	15	14	8	4	6	1	-	-	-	-	-	-	-
1 to 2	109	1	16	19	17	12	13	14	7	3	5	2	-	-	-	-
2 to 3	24	-	-	-	3	2	-	6	1	2	1	2	2	3	1	1

This is due to the increase of population pressure where land gets divided into smaller holdings amongst the siblings after every generation. Gradually, in this way, many of

the farmers sink into landless labourers affecting their overall socio-economic conditions. We see at Table-6.1 that the number of landless farmers is 41 (13.7%). The types of land owned by the land holders are shown at Table-6.2. Wet terrace fields, which is the most preferable and convenient type of cultivation is owned by only 13.1%. Dry terrace fields are owned by 91.1%. But the practice of dry terrace fields is tedious and they cannot be cultivated whenever there is scanty rainfall. Jhum fields which provide food crops and cash crops to the farmers are not owned by majority of the respondents i.e 56.3%. Majority (61%) of them own a garden which provides continuous food crops throughout the year. And majority of the respondents i.e 53.7% do not own any forest land. With the growth of population, forest land vegetated with trees have been largely cleared. Conversion of jhum plots into permanent garden has become common. A study on the indigenous traditional cultivation practice of the Mao farmers shows that the jhum cycle in the Mao area has been reduced to 2-3 years instead of 5-7 years in the past due to population pressure on the jhum land resulting decreased per capita availability of shifting cultivation land area to the forest farmers (Pfoze, Chhetry, Chanu & Devi, 2010). Besides, it has also been noticed that the duration of shifting cultivation period which usually used to be 2 years has also been extended beyond 2 years. However, the longer the duration of fallow, the more fertile the soil becomes and yields better crops.

**Table-6.2: Types of Land Owned by the Respondents**

Sl.No.	Types of land	No. of respondents		Total
		Own	Do not own	
1.	Wet terrace fields	34(13.1%)	225(86.9%)	259 (100%)
2.	Dry terraced fields	236(91.1%)	23(8.9%)	259 (100%)
3.	Jhum fields	113(43.7%)	146(56.3%)	259 (100%)
4.	Garden	158(61%)	101(39%)	259 (100%)
5.	Forest land	120(46.3%)	139(53.7)	259 (100%)

The most important form of land relation amongst the Angami Naga in Nagaland as identified by Christina (2006) is ownership of land. Carruthers and Ariovich (2004) assert that “ownership involves socially recognised economic rights” (as cited in Christina, 2006, p.2). Different types of ownership identified by Christina are ownership by individuals, by households, by clan and even by a community such as a village. Community ownership implies that individual members of the community have access to the land owned in common. On the other hand, individual ownership implies that the land belongs exclusively to the individual and others have no access

to it. Being a Naga society, the same nature of land relations among the Angami Naga as stated by her applies to the Mao Naga as well. Not all the Mao households own individual land but every needed household is allocated with portion of community land to cultivate. That is how in recent years, community virgin land has been exploited. Sometimes, community ownership of land tend to disappear and become permanent when the household occupy or cultivate the land for a very long period as is the case of Robve Solephe villagers who initially occupied the village land of Punanamei has now began to be seen as owned by the individual household. A change in the recent trend in the land tenure in the villages is the increasing number of land owners leasing out land or cultivating on leased in land by landless or less land owned households involving certain amount as share-croppers. Due to landlessness or small individual land holding, a large number of respondents with land or without land of their own i.e. 170 (56.6%), were found to be cultivating on group/clan/village land and others' land on sharing basis as well as by paying certain amount of rent in addition to cultivating on their owned land (if any). Table-6.3 shows the number of respondents cultivating on group/clan/village/other's land.

**Table-6.3: Nature of Land Used by the Respondents for Cultivation**

<i>Sl. No.</i>	<i>Nature of land used by the respondents for cultivation</i>	<i>No. of respondents</i>	<i>%</i>
1.	Cultivating on group land or other's land on sharing basis /paying rent or by free	170	56.6
2.	Leased out	26	8.7
3.	Only dependent on their own, did not lease in or lease out	104	34.7
Total		300	100

Group/clan/village/community land cultivation is where the household is temporarily allotted by the group with portion of land (usually as much as it needed) to produce sufficient food. But one does not come across communal ownership of terraced rice fields. Terraced fields are cultivated in the form of sharing basis i.e the land owner gets 1/3 of the total produce and the cultivator gets 2/3 of the total produce. Table-6.4 shows the production of paddy by the respondents. 11.7% of the paddy cultivators have to share 1/3 of the production with the land owner and 27.3% also have to share part of their 1/3 production with the land owner.

**Table-6.4: Production of Paddy by the Respondents on Sharing Basis**

Sl. No.	Production of paddy in Kg/tin/barn	No. of respondents				
		Only from owned land	From owned land + from sharing basis	Only from sharing	Total	%
1.	Nil	-	-	-	20	6.6
2.	upto 600 Kg (50 tins/1 barn)	4 (1.3%)	57 (19%)	23(7.7)	84	28.0
3.	601 to 1,200 Kg (51-100 tins/above 1 barn to 2barns)	68(22.7%)	22(7.3%)	8(2.7%)	98	32.7
4.	1,201 to 1,800 Kg (101-150 tins/above 2 to 3 barns)	53(17.7)	3(1%)	3(1%)	59	19.7
5.	1,801 to 2,400 Kg (151-200Kg/above 3 to 4 barns)	30(10%)	-	-	30	10.0
6.	2,401 Kg & above (201 tins & above/ above 4 barns)	8(2.7%)	-	1(0.3%)	9	3.0
Total		163(54.4)	82(27.3%)	35(11.7)	300	100

With the kindheartedness of some land owner, some respondents get to cultivate land for a certain period of time without any system of returns in agreement. The number of respondents cultivating on such land is 5. The number of respondents who lease in land by paying is 14 (4.7%) and the number of respondents who lease out is 26 (8.7%). Insufficient land holding by the farmers has been identified as one of the major attributing factors of emerging land lease system. (We have already seen at Table-5.10) in chapter 5 that 13.7% of the respondents are landless and more than 90% are marginal farmers owning land of less than 2.5 acres). Thus, communal ownership of land plays a very important role for the economic life of landless/less owned land farmers as they rely on communal land for livelihood. Because, for those who lease in, rent for the land becomes an additional burden though those who lease out afford to get an extra income. *Taphou Pfosemei* villagers residing in the border area of Maram lease in land from the land of Maram people (another Naga tribe neighbouring Mao). Land area owned and inhabited by Mao people as a whole is rather undersized according to the size of Mao population. Therefore, exploration of other employment opportunities or any other opening of frontiers becomes the need of the hour.



#### 6.4: Cultivation Practices

Cultivation practices of the Mao are by and large primitive. They can be typified as:

- a) Shifting cultivation;
- b) Practice of forest cultivation in olden days for substitution of rice ( which is no more in practice)
- c) Terrace Rice cultivation (dry and wet);
- d) Permanent garden cultivation; and
- e) *Chiikhu*–Reserved forest not cultivated

These cultivation practices are all traditional and have been the source of livelihood for Mao farmers. A brief description of each type of cultivation is given below:

##### a) Shifting Cultivation

Pelzer (1957) defines shifting cultivation as "an agricultural system which is characterised by a rotation of fields rather than of crops, by short periods of cropping (one to three years) alternated with long fallow periods (up to twenty or more years, but often as short as six to eight years); and by clearing by means of slash and bum" (as cited in Christanty, 1986, p.227). Shifting cultivation is the system under which temporary clearings of land, usually forest land, are done and cultivated for short periods. When a clearing or plot is cultivated for a couple of years, it is left fallow for some years so that it regains its natural vegetation and fertility. Meanwhile the cultivator shifts his agricultural operations to new clearings. Because of such shifting from one plot or clearing to another by the cultivator, this form of agriculture is known as shifting cultivation. It is also known as "slash and burn" cultivation because the cultivator cuts and slashes the vegetation and burns it before sowing the seeds. It is also known as swidden cultivation because only simple hand held tools are used in agricultural operations. In North-East India, it is known as *jhum* cultivation. This type of cultivation is found in many parts of the world. It is widely practised in the hilly areas of North-East India, including by the Mao Naga farmers in Manipur. For Mao farmers, the main objective of shifting cultivation is to grow crops, particularly potato and maize, though various types of vegetables are also grown. Generally selection of the plot depends on: Land which was left fallow in the last cycle for a minimum period of atleast two years; Location where sun shine can reach for the crops to thrive and leveled land or less sloppy where soil does not erode

too much. It is locally called as “*pfole*”. The first year of *pfole* is called as “*oni*” and the second year or a subsequent year (s) of such cultivation is called as “*ori*”. The cycle of shifting cultivation begins during dry season i.e September/October. First of all, the selected site is cleared by indiscriminate cutting of trees and felling them for firewood purpose as well as to remove unwanted shade to the crops. Some cultivators prefer to completely clear the ground; others leave smaller trees to speed regeneration during the fallow period. The smaller felled trees/branches are being used for fencing the fields and supporting several climbers’ plants like squash, beans, cucumber, etc. Some trees preferably big trees which stand at the boundary site of the jhum are spared from cutting to use it as boundary demarcation between family/neighbourhood plots though there are also other movable or immovable objects which are used as land boundary markers. Slashing of shrubs and herbs is done close to the ground so as to expose in the sunshine to be dried to make it easy to burn into ashes. The debris, tree trunks, twigs and the thorny shrubs are collected and burnt at different places in the jhum site. Care is taken to prevent fire from spreading to the nearby forest by burning the heap with soil or soil being placed all around the fire to conserve forest in traditional sense. Soil of the jhum site is tilled and the roots of plants are looped off. After a week or so the soil is again dibbled to make it ready for sowing of seeds. As most of the jhum site is sloppy, great care is taken in such a way that stones, small logs and branches of trees are laid at the edge of open corner and also placed across the lower sides of the slope to tie the soil together from slopping downward and preventing rainwater from taking away the top soil. Fencing of the site is also done to protect the crops from the animals and thieves. Ashes from the burnt debris are spread on the soil or sometimes are shuffled where a particular seed like cucumber, bottle gourds or cucurbits seed is sown. Seeds like, mustard, reddish, cabbage, till are spread on the soil while spade is used to sow potato, maize, ginger peas, beans. Vegetables saplings like tomato, colocasia, brinjals, chillies which are initially raised in a nursery beds are also transplanted in the jhum site. Once the crops begin to grow, continuous weeding is done to protect the crops till harvesting. Support is provided with sticks for the creeping vegetables. To make sure that the land does not go waste, different types of crops are planted. Human labour is the only force of

input in jhum cultivation practiced by the Mao farmers. The implements used by the Mao farmers in jhum cultivation are dao, axe, spade, wooden mattock, hoe, rake, etc. and all the works are done by hand only and no watering is done in shifting cultivation practices. *Ori* or the second year of cultivating the jhum involves discarding the old vegetation plants for replacement with new vegetation. It also includes trimming off the fresh branches that have grown from the tree stumps cut in the previous year. In some practice, trees are merely trimmed or pollarded. In trimming, only the leafy tips of branches are cut off, while in pollarding the branches are cut off near their bases. Parts of felled saplings or branches are removed from the site for fencing or for household requirements such as shelter for seed material of potato, spring onion or used for the shelter of domestic animals. Meanwhile the land is tilled and the debris dibbled. Old vegetation plants of maize, beans and others are collected and burnt so that new vegetation can be grown. Once the soil is ready for sowing, plantation and transplantation of the crops is done as in the previous year. After the last root crop is harvested the site is usually abandoned and kept fallow to regain fertility of the soil.

Thus, in the practice of shifting cultivation, primitive method of cultivation is predominant. It is labour intensive as all the work is done manually using simple tools. There has been a shift from producing only food crop to growing cash crops in the jhum fields and they form an important source of farmers' income. Ample varieties of seasonal crops are produced by Mao farmers such as potato, maize, cabbage, beans, brinjal, tomato, tomarillo, sesame, collard greens, leek, yum, cucurbits, squash, ginger, garlic, varieties of peas, gourd, cucumber, plum, peach, passion fruits, guava, lemon, grapes, bananas, etc. We see at Figure.6.1 that 75.7% of the respondents sell crops. Most of cash crops are produced from jhum fields. We would also guess as ratified from the respondents' view that about 60-70% of the vegetables consumed at home are produced from the jhum fields. Changes have also started taking place where a fairly large quantity of the demand for local consumption is met from the product of Assam and Imphal. Their own production being insufficient, they have to depend on imported vegetables. This is due to their primitive method of cultivation which in turn hampers the economic conditions.

## **b) Practice of Forest Cultivation in Olden Days**

In earlier times, Mao people used to cultivate two three other alternative crops for substitution of terraced rice whenever any kind of natural calamity that befall them by forest cultivation of millet, oats and maize. Forest cultivation was practiced in those days for replenishment of their old stock of barns, to meet any future eventuality along with usual terrace cultivation of rice. Jhum cultivation of millet, oats, maize, etc. are much easier in process than terraced cultivation of rice. Forests with thick or thin with plants and grasses are cut down and burnt off after it gets dried up. And the turf or the soil used to be tilled all over the surface. After sometime, the roots of plants and trees are also burnt off so that the whole surface becomes soft with loose soils. And over the trimmed soil the seeds of millet and oats are spread or sown. And after being sown, the soft lose soils are turned over with hoe so as to avoid being eaten by birds. These groups of crops are usually harvested soon after the terraced rice seedling transplantation are over.

Among forest cultivation of millets, oats, maize, etc. there used to be another important kind of rice called *pfolero* cultivated without the help of water all through-out its life span from the seed sowing till the time of harvest in a dry land. This kind of rice is cultivated by sowing the seed upon the soft/ loose soil after being trimmed on the dry farm land without the process of transplantation. Just the same time millet and oats are harvested this kind of rice is also harvested soon after the seedling transplantation of terraced dry and wet cultivation of rice. Therefore, cultivation of *pfolero* along with millet, oats and maize need minimum amount of water such as occasional rainfalls. Among the crop of jhum cultivation, millet has several kinds of seeds. Its plant with various sizes of stalk and leaves are found. The seeds of millet are broadly of two kinds when cooked. Some are sticky and some are non-sticky after being cooked. The sticky kinds are usually prepared to make wine. And non-sticky kinds are cooked as a substitute to rice during meal time.

## **c) Terrace Rice Cultivation**

Depending on the accessibility of water in the terraces, Mao farmers practice two types of terraced rice cultivation: (a) Wet terraced rice cultivation (*moko do*) and (b) Dry terraced rice cultivation (*dothu do*). Wet terrace cultivation is called so because it is a practice in which enough water is available to be

retained in the fields throughout the year and kept inundated even when no crop is grown. On the other hand, in the practices of dry terraced rice cultivation, water is retained in the fields only from plantation season till the paddy ripens. The terraces are kept dried during the rest of the season. That is why it is called dry terraced rice cultivation. In both the types of terraced rice cultivation (wet and dry), different varieties of rice are invariably grown such as *Mahra*, *Tongou*, *Mikriio*, *Mazha*, *Kolaro*, *Nechiro katie*, *Nechiro kakra*, *Phurian*, *Disha*, etc. some varieties of which have been in cultivation since ancient times and some are of improved varieties. But wet terraced rice fields are preferred it comparatively requires lesser labour.

Generally, the process of terraced rice cultivation cycle begins in December when the village king announces *chiizhii* - after which a small but some best part of the fields is repeatedly ploughed (tilling and breakage of clods) to grow paddy seedlings. Just before sowing, the soil surface of the plot is again carefully levelled using a bamboo bar or the side edge of the hoe blade after which a handful of paddy seeds is scattered evenly on the mud. The nursery plot is chosen from such a place where land is fertile enough and have sufficient moisture or good access to irrigation water and drainage paths to grow good seedlings. Though the best fields are reserved for nurseries, some farmers to upland the field and rice nurseries, apply chemical fertilizer while some still apply manure mainly made from cow and buffalo dung, chicken droppings, pig droppings, husks and ashes from the kitchen. Weeding is done as often as when required and affordable. And in case destruction by insects, pesticides are applied. In the meantime, dry terrace fields are manually worked over by hacking the stubbles of the previous year's paddy on the ground and by digging them. As the lumps get dried, it is broken into pieces which ensure that the weeds are uprooted. Some farmers have started using power tiller to plough and harrow instead of manual labour. Meanwhile farmers from the same plot or neighbouring plot come together and do collective maintenance of work, dredging the channel beds, or clean and repair the complex network of canals so as to link and allow water to flow to the terraces when rain begins. This is for the reason that as one observes a series of paddy fields in a local, it may give an impression that it belongs to one owner. But, legitimately, it is owned by many people. Some may own just one terrace or two and some are

divided among siblings by inheritance. Because of which communal service is done and the allocation of irrigation water is managed and determined by Mao customary practices especially when irrigation water is insufficient. Later, when water comes, it is divided among all the different owners through negotiation by notched cuts at dividing points which makes sure that it flows from head to end or from one owner to another on an hour to hour or day to day basis. When water channel cannot be constructed because of topographic restrictions, a bypass is formed using a pipe made of bamboo or rubber. When the first rains begin in May or early June, soil and weeds on the surface of the dike wall are shaved off by hoe which is later trampled down deep into the mud by feet. Terraces are enclosed by strong earthen dikes. A distinctive feature of cultivating dry terraced fields by Mao farmers is that repairing the dike itself involves seven stages. Such stages require huge amount of labour using hoe, legs and hands. This is due to shortage of water, to prevent from percolation and moreover to avoid sliding of the terraces since the walls of the terraces are very high. Seven stages of repairing the dike are:

- i. *Donghoshile* - Using hoe, weeds are shaved off with thin layer of mud from the previous year's dike.
- ii. *Dopra kopriile* - The inner layer of the terrace closed to the dike is also shaved off so as to pave the way for water to pass through.
- iii. *Dopra shi moniile*- A small outer and inner part of the dike is softened with hoe and trampled into mud by mixing and digging with water.
- iv. *Hriilowo pfiipra matele*- the trampled mud on the field surface is likely scooped up on the dike with a hoe.
- v. *Ophino tihile* - The dike is then trampled over with legs to seal up the basement of the soil stuffing with enough soil to prevent leakage.
- vi. *Ododuhile* - To uniformly compact the dike, mud is again scooped up and smeared on the dike.
- vii. *Odomuzule* - Finishing touch of the mud-covered dike is done by making the dike smooth and beautiful either with hands or using hoe.

The effort to minimise the loss of precious irrigation water is seen in the process of these stages. It is believed that according to Mao specific environment, Mao farmers probably adapted such traditional and unique method. Besides, while preparing the dikes, efforts are taken to make shallow

cuts in each terrace to pass water from upper terrace to lower terrace or from one terraced field owner to another through spillway (*dziikhe me*). A separate water conduit (*dziikho*) is also dug to drain excess water in times of heavy rain. In the process, surface fields are dug and stubbles are ploughed under the mud. Dried clay soil is ploughed and mixed with water with much difficulty. To compact the soil and ensure that the field can hold water effectively; continuous turnover of the soil is done because with insufficient water, paddy does not grow properly. Occasionally fields get dried that even deep cracks and fissures develop. Irrigation water leaks from such cracks and in severe cases it collapses the terraces. Thus, sometimes, besides the normal labour that is involved in the process of paddy cultivation for favorable rice growth, a lot of labour is spent in maintaining proper structure of the paddy fields. Some farmers instead of manual work use buffalo with plough and yoke to crumble and soak. It is also done by hands using hoe by farmers who do not have buffalo or terraces which are too steep and small for buffalo to plough till the fields get flooded and puddled. The puddling of the fields get the weeds drown which gets overturned in the surface soil, and when they have sufficiently decomposed and mud is well puddled, the field is ready for transplantation. However, in the practice of wet terraced rice cultivation, fields are worked out during April by digging over the mushy surface (*moko kashi*) while the dikes are repaired by shaving off the outer layer of the previous year's dike with fresh mud scooped up and properly smeared. In order to make the soil soft enough to be transplanted, second time plowing *odzii kashi* is carried out under flooded condition with irrigation water. Though farmers are illiterate yet they are sensible that they become well aware of the coming of the rice sowing season (around June) when they see certain flowers bloom and hear the chirping of certain migratory birds. Moreover, *Chijjini* festival (celebrated on 27<sup>th</sup> June according to Mao calendar) marks the beginning of paddy transplantation. Very soon before paddy transplantation, terraces are once again levelled with a pole made of wood or bamboo (*odzii kovie*) and when there is sufficient standing of water in the fields; seedlings are transplanted meticulously by transplanting one seedling or two/three together if small with space of around four inches between each seedling. By the end of July all the work of transplantation is over. *Saleni* - a post seed sowing

festival marks the end of plantation season. According to Mao customary practice, it is a taboo to harvest paddy that is sown after *Saleni*. This festival also provides the farmers with an occasion for recreation and entertainment after 1-2 months from most stressful work. After all the seedlings transplantation is done, scarecrow (*lopro khi*) is erected to scare away wild animals from paddy destruction. Terrace owners who practice pisciculture or rear snails put up a symbol called *prodzii* which signifies restriction to others to fish or collect snails or any kind of aquatic insects from such terraces. In the spillways of such terraces, a bamboo strainers (*okho dziitsche*) are fitted therewith ensuring the fish to retain in the terraces while water passes through it. After two to three weeks of transplantation, the field is cleaned and weeded. It is said that if the fields are not weeded, it decreases the yield and the more times weeding is repeated, the higher the yield becomes. While farmers weed, they often collect a lot of aquatic insects from the fields for consumption. Not only weeds on the dike and field surface are pulled up but weeds on the dikes walls are also hacked away by swinging a long pole made of steel, iron or bamboo. Till the time of harvesting, three rounds of cleaning and weeding is done. Most of such work is done manually. Only very few farmers use chemical herbicides. Pesticides are also applied where there is damage of paddy by insects. By the time the paddy begins to ripen, cleaning is done in and around the paddy to keep away the rats and other rodents. After the rice is headed, weeding and stalk bundling is done where 10 or more piles of rice stalks are tied up into one bundle to protect the plants from falling due to strong wind or rain . Farmers from the same plot or neighbouring again come together for cleaning and mending of road to carry the paddy home. The harvest is usually ready by October and reaping is generally completed by November. During harvesting, the implement used for cutting off the grains is sickle. The reaper holds the sickle in the one hand, then is pressed and pulled against the stalk of the rice plants held in the other hand. Care is taken that the stalk with the ears are cut at a short length which are then thrown over the shoulder into the basket or in the cloth tied at the back of the reaper and later take it to the threshing floor. The threshing operation is done by trampling on the stalks. Sometimes harvested stalks are lifted over their heads and beat them down onto the threshing floor or threshed by using a traditional thresher



made of bamboo or wood to separate the grains. Then, the paddy is again cleaned properly by winnowing it on the triangle shaped fan made of bamboo strips. The threshed rice is then put into basket or jute sack or fertilizer bag and carried up to home on the back. A person can carry about 45 kgs of rice at a time. From the furthest fields, it takes hours to carry a rice bag up to the village. These days paddy is carried in vehicles to the villages so it reduces the burden of the farmers to carry like in the olden days. After the grains are brought home, it is once again exposed in the sun and finally stored in the bamboo barn and wooden box in the granary/storage room. The various stages of terraced rice cultivation practiced by Mao farmers shows how they grapple to survive with the age old traditional and labourious practices. And though there has never been a written record of such unique technologies, it is still followed by the contemporary Mao farmers which their ancient forefathers have practiced generation after generation. In short, Box-6.1 shows the stages of terrace rice cultivation.

In short, year round input is to be given in the production of paddy. But the output of paddy is harvested only once in a year. That means farmers put labour of almost 12 months in a year but they are without any output of paddy for almost 11 months. That is why the output does not return as much as the input of labour, money and time resources. Besides the year round labour, they need to spend money if they need to hire the service of labour and draught animals/tiller and transportation cost to carry the paddy home. Such labour intensive involved in the production of paddy is comparatively insufficient with the labour input.

Terraced rice cultivation provides bi product facility. While terraced wet cultivation of rice being the main objective at first, pisciculture was later practiced in the same paddy field. Fish of various kinds and snails are simultaneously reared in the same inundated wet paddy fields. Apart from fish, snails are another item of delicacy among the Mao community. Certain fish need a depth of six or seven feet. Such kind of fish is reared in the center of a wide rice fields with a separate enclosure within the inundated paddy fields. Some farmers release young fish even in dry terraced fields during plantation season and harvested along with paddy. It is a tradition of Mao that in terraced fields where pisciculture is not practiced or snails reared by the owner, any

member of the village can collect fish, snails and other shell fish for food even if the fields do not belong to him or his relatives or village. Farmers also pick up many kinds of edible wild herbs which grow on the dike of terraced fields and irrigation channels from season to season.

**Box-6.1: Farmers' Calendar on Terraced Rice Cultivation**

<i>INPUT</i>			<i>OUT-PUT</i>
<i>Month</i>	<i>Work done for the cultivation of</i>		
	<i>Dry terraced rice fields</i>	<i>Wet terraced rice fields</i>	
January – February	Land is prepared to sow paddy for seedlings.	Same as dry terraced fields	Nil
March	Paddy is sown for seedlings Land of the terraced rice field is tilled	Same as dry terraced fields	Nil
April	Tilling the land of terraced rice field continues Breakage of clods Dredge the channel beds, or clean and repair the complex network of canals so as to link and allow water to flow to the terraces when rain begins	Terraced rice field is dug over the mushy surface	Nil
May – July	Dike wall is shaved off Previous year's dike is repaired Surface fields are dug and stubbles are ploughed under the mud. Continuous turnover of the soil is done to decompose and prevent water from percolation	Dike wall is shaved off and previous year's dike is repaired.	Nil
	The field is once again dug under flooded condition or get it ploughed by buffalo to make the soil soft enough to be transplanted. When the field is ready for transplantation, terraces are once again levelled with a pole Seedlings are transplanted.	Same as dry terraced fields	Nil
July (last week) till August	The field is cleaned and weeded ( 2 times) Weeds on the dikes walls are also hacked away by swinging a long pole	Same	Nil
September	By the time the paddy begins to ripen, cleaning is done in and around the paddy fields to keep the rats away from eating paddy. As the paddy plants get ripened, weeding and stalk bundling is done where 10 or more piles of rice stalks are tied up into one bundle to protect the plants from destruction due to strong wind or rain. Farmers from the same or neighbouring plot come together to clean and mend the road to carry the paddy home.	Same	Nil
October – November	Threshing operation Paddy is cleaned by winnowing fan and Filled in a basket/jute bag of fertilizer and carried home Exposed in the sun and finally stored in the bamboo barn and wooden box in the granary/storage room.	Same	<b>Harvested</b>
December	Tilling begins for farmers to grow supplementary food during dry season.	Nil	Nil

Besides, the dry terraced cultivation also provides multi-agricultural facilities. To utilise the multi – agricultural facility in a dry terraced cultivation, water

has to be drained away just before the rice is harvested. By the time the terraced rice fields become completely dry, the fields are ploughed and wait till the lumps of soils are dried up. The dry lumps of soils are soon smashed into pieces and thus various arrangements used to be made according to the type of crops and vegetables that has to be harvested within three to four months so as to enable start the next crop especially rice seedling which must be transplanted within June and July as the climate in Mao used to be comparatively colder.

**d) Permanent Garden**

Permanent garden or simple sedentary type of cultivation represents the fixation of shifting cultivation. Mao farmers generally practice this type of cultivation around the little available space of their houses if any or in the vicinity of the residential site of the village, and also on the ridges of the terraced rice fields and periphery of the huts. Permanent garden land is made used judiciously by planting all kinds of vegetables on a permanent basis making sure that no space is left empty during any season of the year. The importance of such plantation is that it secures the households in providing vegetables throughout the years. The gardens are kept fertile with the manure of the pig, cattles, chicken, husks, household refuse and ashes. Permanent garden is one of the most ancient and useful practices of Mao farmers yet in recent years, with population pressure, permanent garden in and around the residential villages are less visibly seen as they are converted into residential site while shifting cultivation fields have been converted to garden. As mixed cropping is done throughout the year, farmers with good and big garden draw a very good income from the crops grown in the garden.

**e) *Chiikhu* –Reserved Forest not Cultivated**

*Chiikhu* refers to a forest where groves of trees are grown for firewood and timber purpose (mostly naturally grown and sometimes planted). In most cases this type of forest land is not cultivated to grow vegetables or other cash crops because they are located in a slope or far from the inhabiting areas. Firewood is collected as when needed. Mao farmers are sensible towards preservation of such forest. By their traditional practice, it has been known to them that trees cut in the right season i.e in the month of September/October allows the trees to grow the best new stems from the stumps which also resists termites in the

timber. Maintenance of such forest land is done by visiting the plot once in a while to make sure that fresh trees are not cut by others or boundary demarcation destroyed by others. Communal ownership exists over forest land because as per customary practice of Mao, any member of the village even if the portion of the forest does not belong to him/his clan/his village, can collect dead branches or twigs to be used as firewood. Also anyone can collect edible fruits and leaves, medicinal plants, roots, mushrooms or any tubers for human consumption as well as for animals. In the same way, a man can hunt in any of such forest land of the village. But fresh wood are restricted to cut without the consent of the land owner. Such general rights also imply Mao as an egalitarian society. Therefore, forest is an important resource for Mao farmers. Findings from the study indicate that all the farmers are depended on such valuable potentials of natural forest products in one way or the other. 21% of the respondents not only collect such products for household consumption but even get income from the sale of forests products.

It can be said that all these cultivation practices of the Mao farmers are by and large primitive and dependent on rain only. Therefore, though maximum year round input is put into the production of crops, harvest remains poor which affect the economic growth of the farmers. Yet, they have also been the source of livelihood for Mao farmers.

### **6.5: Agricultural Pattern and Farm Techniques**

Studies have shown that notwithstanding the acres of land owned by the household, the productive capacity or land capability depends on its location, soil fertility, facility for irrigation and application of manure and fertilizer. Thus, a farmer with small acreage of fertile plain land can produce more than the farmer with larger acreage on hill slopes. Masood, Nazima & Zamara (2012) means the term technology as “application of knowledge and tools accurately for achieving the envies goals and economic objectives” (p.344). Modern agricultural technology can boost crop production, and the diffusion of modern scientific practices has been encouraged through dissemination to the best local farmers (Thandee, 1986, p.165). The agricultural pattern, techniques and technology adopted by Mao farmers have been examined below.

### a) Source of Irrigation Water

All the food crops and cash crops produced by Mao farmers are only rain fed except little part of terrace rice cultivation which has irrigation sources from river water and streams. Sometimes they have to be brought through complicated system of channels from a very far distance. Finding from the field survey indicates that only 34 respondents (11.3%) have perennial source of such water to cultivate part of their paddy. Rest of them rely on rain water. Estimating from the source of such irrigation water, we can infer that more than 90% of the cultivation is irrigated by rain water. Table-6. 13 shows the percentage of respondents who could not cultivate part of their paddy fields during 2008-2012 due to lack of irrigation water. Due to lack of irrigation source, crops do not grow properly whenever there is rain deficit. And paddy fields are forced to remain fallow whenever monsoon comes late. Mao being in a colder region, its summer season does not last as long as hotter regions. Rice seedling transplantation must be done by June-July i.e much earlier than hotter regions. Otherwise, late transplantation of the rice seedling results immature growth of rice plants. Power facility does not arise when fields are too far off from the villages for electric connection with electric current of only 25-30% in a day. Other options like obtaining a generator and kerosene remain beyond the reach of the farmers.

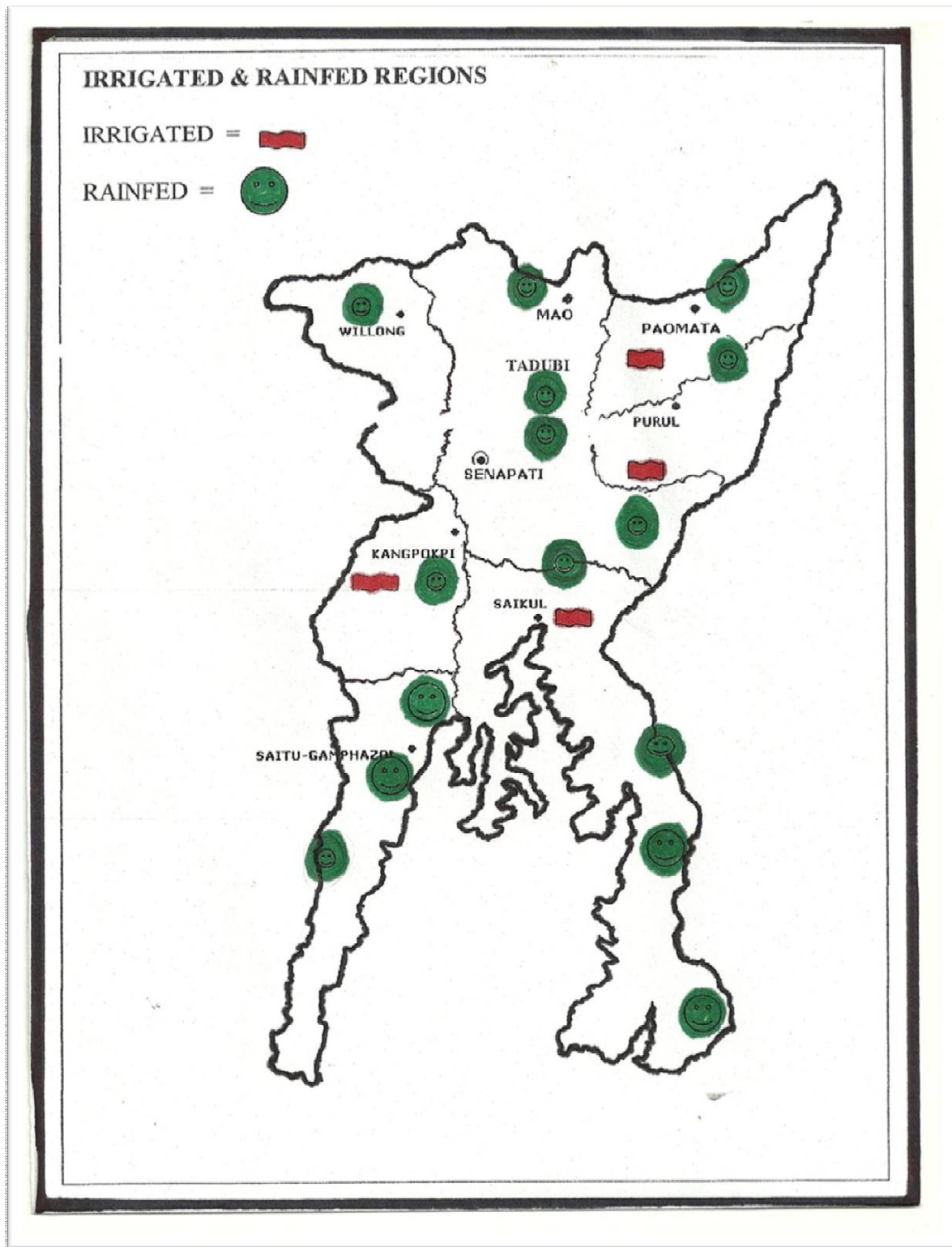
### b) Style of Ploughing

Mao farmers by and large adopt primitive method of cultivation. Simple statistical data at Table-6.5 shows the style of ploughing by the respondents. We see that 24.7% of the respondents depend only on manual labour for ploughing the agricultural fields. Manual labour being tiresome and labour consuming not only limits agriculture production but hinders them to develop beyond subsistence level. 39% of the respondents use both manual labour and draught animals for ploughing and 36.3% plough the agricultural fields with the help of draught animals and tiller.

**Table-6.5: Style of Ploughing**

<i>Style of ploughing</i>	<i>No. of respondents</i>	<i>%</i>
Only manual labour	74	24.7
Manual and draught animal	117	39.0
Manual, animal and tiller	109	36.3
Total	300	100

**Map-6.2: A Sketch Map of Senapati District Indicating Mao Area as Rain Fed for Cultivation**



Source: Department of Agriculture, Senapati

The use of draught animals and tiller decreases intensive labour requirements of the farmers. However, the use of draught animals and tillers are held back by some farmers due to factors like hilly and difficult region where tillers cannot reach or too small terraces for the tiller or draught animals to plough or small and fragmented land holding or due to financial problems that farmers do not have access to. Depending on the village, the price of renting animals and tiller varies. But in most cases, the cost of tiller usage is between ₹ 210/- to -250/- per hour of service and the price of renting draught animals is between ₹800/- to ₹ 1,200/- per day or sometimes it is calculated according to the region or productivity capacity from the terrace fields. Villages like Mao Karong and Taphou Pudunamei use cow as well as tiller to earthen up the dry land as well as for ploughing wet tilling of the fields. The rest of the villages use tillers and buffalo for ploughing the fields. But buffalo is used only for ploughing the fields in water before plantation.

### **c) Use of Modern Chemicals and Fertilizers**

Uses of chemical fertilizers have the advantage of divisibility because they can be used according to the size of the farms. Food and Agricultural Organization of the United Nations [FAO] (1972) report states that without the benefit of fertilizer, farmers would have to cover substantially more area to achieve the same total production and would necessarily break out land, which should never have been cultivated (as cited in Okoedo-Okojie & Aphunu, 2011, p. 364). Fogg (1965) also noted that “although it is impossible to greatly increase the amount of arable land, land substitutes such as fertilizers, new plant varieties, and improved cropping practices can bring about substantial increase in production and large decrease in the proportion of land that must remain in fallow”, p.280). Mann (1963) indicates that fertilizers alone have produced average increase in yield as high as 60% in some basic foodstuffs, and spectacular increases as high as 339% have been noted (as cited in Fogg, 1965, p.280). Thus, it is understandable that the use of fertilizers can greatly improve agricultural production and the uses of pesticides, insecticides and weed-killers can save the losses of agriculture from pests and diseases. But not all farmers have access to such modern facilities. Table-6.6 is an indication on the low usage of chemical fertilizers, pesticides, insecticides and weedicides by the Mao farmers.

**Table-6.6: Use of Chemical Fertilizers, Pesticides, Insecticides and Weed-Killers for Agriculture**

<i>Use of chemical fertilizers, pesticides, insecticides &amp; weed-killers</i>	<i>No. of respondents</i>	<i>%</i>
For paddy only	22	7.3
For vegetables only	91	30.3
For both paddy and vegetables	48	16.0
Not at all	139	46.4
Total	300	100

One can gauge from a glance at Table-6.6 that the use of chemical fertilizers, pesticides, insecticides and weed-killers among the Mao farmers is less. 7.3% use it only for paddy when affordable; 30.3% use for vegetables only especially for potato; 16% use it for both paddy and vegetables; and 46.4% do not use any kind of modern chemicals. The use of chemicals for fruits is exceptional though some fruits are grown from the same plot of potato field where chemicals are applied. As income is limited, for many, financial condition does not permit them to use improved agricultural fertilizers. Some are reluctant to use chemicals as the produce is used for household consumption. Farmers are aware that applying fertilizers and other chemicals can kill fish, snails and other aquatic insects used for food and can be harmful for health of both humans and other livestock. For those who do not use any chemical fertilizer, they either burn the debris; apply the droppings of domestic animals, ashes. Some bury the straw of the paddy when digging the field. Devi in her persuasion to promote organic farming strategy in Manipur makes a note that excessive application of pesticides and fertilizers has caused damaged to the soil and environment. Pesticides residue is the second largest agent causing cancer, next to cigarettes. Besides pesticides and fertilizers residuals that persist in the soil are harmful to the beneficial soil microorganism and earthworms thereby resulting in degradation of soil fertility. Fertilizers have a short term positive effect on productivity but along term negative effect on the environment where they remain for years after leaching and running off, contaminating ground water and water bodies.

#### **d) Cropping Pattern**

Cropping pattern of the farmers can affect the quality and quantity in the production of crops. To secure maximum crop production throughout the season, all the respondents except one practice mixed cropping. And they also mostly use



the same crop every year by preserving the materials for seeds or for transplantation. The practice of mixed cropping helps the farmers to secure the flow of crop production throughout the year in a limited space and time. It also reduces weed growth therefore reduces the labour for weeding. On the other hand, due to the practice of mixed cropping and lack of quality controlled seeds/planting materials, not much crops can be harvested at a time for commercial purpose. The only progressive farmer among the respondents from Taphou Pudunamei village adopts a different component for cultivation. This is done by single cropping system and replacing the old seeds/planting material every year. Therefore, when his entire produce can be harvested at a time, it is used for commercial purpose. His cultivation practice is also seen as an agribusiness rather than subsistence farming which considerably improves the income.

**e) Planting Materials**

The use of hybrid planting materials by Mao farmers is even lesser than the use of chemical fertilizers. Hybrids are bred to improve the characteristics of the resulting plants, such as better yield, greater uniformity, improved color, disease resistance, and so forth (wiki.com). Studies have shown that good quality seed has high return. It is less prone to disease and insect problem or free from pests and disease. They can be adopted for extreme climatic condition and cropping system of the location that has high produce value and marketability. Thus, seed is one of the keys to enhance crop production and productivity and a prerequisite for an efficient utilization of all farming aspects. But the general picture of the use of quality seeds and other hybrid materials is very low as we can understand from Table-6.7.

**Table-6.7: Types of Planting Materials/Seeds Used by Mao Farmers**

<i>Usage of planting seeds/ materials</i>	<i>No. of respondents</i>	<i>%</i>
Mostly composites/carry over	292	97.3
Mostly hybrids/purchase yearly	8	2.7
Total	300	100

Mao farmers produce mixture of crops many of which are of traditional varieties. They have a traditional practice of reproducing seeds / planting material which is done by positive selection of choosing the biggest or healthiest seeds/materials from amongst the crops that show no symptoms of diseases. They

are harvested separately and preserved with care. The same practice is done every year. Such method of using seeds/planting materials is practiced by 97.3% of the respondents though many of them get access to good quality potato. On the contrary, 2.7% of the respondents reported to be using mostly hybrid materials by purchasing quality planting materials on yearly basis. Lack of good seeds and planting materials negate the increased production.

**f) More Emphasis on Traditional Crops**

All the respondents are of opinion that paddy is the only crop which yields minimum output with maximum input. We see at Table-6.8 that 93.4% of the respondents produce paddy. For them, rice is procured only through terraced rice cultivation where harvesting is done once in a year. Paddy which Mao farmers grow is mainly for consumption as rice is the staple food. Rice is the only major production of Mao farmers and forms the basis of Mao farmers' economy. In olden days, number of paddy stored in barns was the main indicator to measure wealth in the Mao society. Besides, rice has a traditional significance that it is presented as special gifts to the kith and kin during marriages. In those days rice was paid in return for wage. Besides, rice was one of the most sought after items when barter system existed and repayment of loan was in terms of paddy. And according to Mao customary practice, any member of the community who violated the customary law was penalised by paying certain amount of paddy depending on the crime. Some cultivate paddy because, paddy can be stored for a long period of time (even 10 years) and it is considered as the most sustainable means for survival. It is believed that paddy produced by them is tastier and more nutritious than the market rice. It is also a common belief that if one consumes rice of their own production; they would relatively feel less hungrier and would decrease ageing pace. This belief is not only among the Mao but non-Maos. That is why the price of locally produced rice is more costlier than those of the non local rice. Therefore, to supplement the income, some farmers especially from *Charangho imu* (Sajouba village) even sell their produced rice at higher rate to the people in the cities and buy non-local rice at lower rate for household consumption. Some respondents, having left with no other way out for survival, they cultivate paddy. Table-6.8 shows the production of paddy by the respondents:

**Table-6.8: Comparison of the Production of Paddy by Mao Farmers with the Size of the Family**

<i>Production of paddy</i>	<i>Family size</i>					
	<i>1-3</i>	<i>4 -6</i>	<i>7-9</i>	<i>10 &amp; above</i>	<i>No. of respondents</i>	<i>%</i>
Nil	11	9	-	-	20	6.6
upto 600 Kg (50 tins/1 barn)	36	<b>34</b>	<b>10</b>	<b>4</b>	84	28.0
601 to 1,200 Kg (51-100 tins/above 1 barn to 2 barns)	26	44	<b>25</b>	<b>3</b>	98	32.7
1,201 to 1,800 Kg (101-150 tins/above 2 to 3 barns)	6	20	29	<b>4</b>	59	19.7
1,801 to 2,400 Kg (151-200Kg/above 3 to 4 barns)	1	14	10	5	30	10.0
2,401 Kg & above (201 tins & above/ above 4 barns)	3	1	5	0	9	3.0
Total	83	122	79	16	300	100

We see from Table-6.8 that the production of paddy by Mao farmers does not depend on the size of the family as we find that 3 households with 1-3 members could produce more than 2,400 Kg/201 tins/4 barns where as 4 households of more than 10 members who should be requiring more paddy produce only upto 600 Kg/50 tins/1 barn. It is said that 600 Kg (equivalent to 50 tins or 1 barn) of paddy is a little surplus for an adult couple to sustain in a year. For a farmer household of 6 members, consisting of two adults and four children (who do not brew and consume rice beer), it is estimated that about 1,200 Kg (equivalent to 100 tins or 2 barns) of paddy are required in a year. And for the same household of 6 members (who brew and consume their own rice beer) requires atleast an additional barn of paddy for rice beer. Some households have members especially children who stay away from home for job or studies for a very long period of time. Therefore, the requirement of paddy by the households varies. However, it can be understood from Table 6.8 that 20 households (6.6%) entirely depend on imported rice to sustain the family. It is also implicit that at least 80 households i.e 26.6% (indicated in underlined) would require to depend on imported rice to sustain the household. Besides, the estimation that every household is depended on imported rice can be supported with the fact as we see in chapter 7, Table-7.28 that 98% of the respondents take deliveries of rice from TPDS notwithstanding the fact that 2% of the respondents who also require have been denied access of the same. Mention also may be made that the quantity of rice being sold in retail shops in most of the villages is all indicative that the bulk of rice requirement is

met from outside region. It also poses a serious question when rice is the major and important product of Mao farmers yet remaining a deficit.

**g) Less Emphasis on Profitable Crops**

Respondents' opinion has also been obtained about agricultural activities which yields maximum output with minimum input. Respondents from *Robvemei* and *Ajiiche inu* villages believe that potato is one of the items because it requires minimum weeding. Few farmers from these villages have been able to exploit the switchover in the price rise. According to Kaikha, a respondent, *“the production of potato has been very beneficial these days because the same quality and quantity of potato produced from the same plot of land with the same labour could be now sold for about a fifth time of the price she was selling before 10 years”*. But throughout the study, there had been only one respondent from Taphou Pfosemei village who seemed to be conscious of growing more vegetables rather than paddy. The respondent commented *“I had once dumped paddy for booming vegetables and because of the profit that I get I am lured with the same practice of cultivating only vegetables”*. *Ajiiche inu* farmers responded that growing squash is worth because it can be grown creeping all around the house and shed of animals. Therefore, every household grow squash at the backyard gardens. Tender leaves, fruit and root of squash can be consumed and sold as well. Beneficial crops identified by *Chobonghomei* and *Taphou Pfosemei* villages are: green peas as its price can soar upto ₹ 50/- per Kg; tomarillo as it bears maximum fruit; chilly as it can be dried; leek and garlic as it can be stored for a longer period of time. But the production is limited by dependent factors like land; rain; labour; fertilizers; chemicals, etc. Moreover, because of the need to produce food crop for household consumption, most of them could sell only when a surplus is harvested. Horticulture has been identified as very profitable by *Pfosemei* village. But large production for horticulture by every farmer is also held back by the same factors mentioned. Furthermore, sole cultivation of horticulture has not been possible because horticulture takes atleast 2 years to bear fruits and they cannot afford with no production when waiting for the horticulture to reach the stage of harvest. For majority of the respondents, horticulture is generally limited to small backyard gardens. Respondents from *Chakumei*, *Ekhra inu Kajii* (Makhan Khullen); *Ekhra inu Kothu* (New Makhan); are of opinion that tree beans have been the most profitable crop. According to Chakho, a respondent who grow tree beans, *“when*

*the big trees bear good fruits, the harvest can be plentiful. The fruits from a single tree can be sold upto ₹ 30, 000/- in a year*". Nevertheless it can bear fruits only after several years (atleast 10 years) of plantation. Moreover, due to serious unknown plant disease, most of the trees die very often prematurely. Since agricultural fields are far off from the residential place, they are often targeted by thieves, Because of all the risks involved and other reasons mentioned, farmers have responded that producing only profitable crops has not been possible. Some farmers are of opinion that due to prohibition to sell ganja, they cannot produce though it can be beneficial.

#### **h) Rearing Practices of Animals**

Most households rear local fowls than any other kind of livestock. They are generally let to wander freely around the houses. Some households rear broiler and a better breed chicken known as coiler chicken in a special pen. Yet only very few household make money from the fowl rearing because they are mostly eaten at home. Other animals except dog and cat are reared in a pigsty/shed. Buffalo is reared for draught as well as meat. Cat is reared specially to keep away the rats and dogs to keep a vigil as well as meat. Pig, goat and cow are reared for household consumption as well as income. Yet, profitable local businesses are uncommon and systematic animal husbandry is yet to be an integral part of farming. They give little time for the development of livestock and consider livestock care mostly as a morning and evening job. Therefore, though cash crops and livestock remain the source of income, for those households whose domestication of animals or crop farming does not exceed beyond subsistence level get engaged in labour work to meet the need for money. Earlier, everyone had sufficient land and production that is why the need for commercial farming did not arise. But, today, situation necessitates a shift from subsistence farming to commercial farming. Yet, certain factors remain stumbling block: fowls die very often; there is lack of space to rear livestock or capital; time, etc. Therefore, their production always remains limited with no scope to increase the income.

Hence, due to defective pattern of agriculture and farm techniques, farmers end up engaging in less profitable activities which hamper their economic conditions.

## 6.6: Marketing, Storage and Processing of Farmers' Produce

Marketing of agricultural products form an important part of the family's income. Figure-6.1 shows that out of 300 households, 227 households (75.7%) sell vegetables and fruits though the quantity varies from household to household.

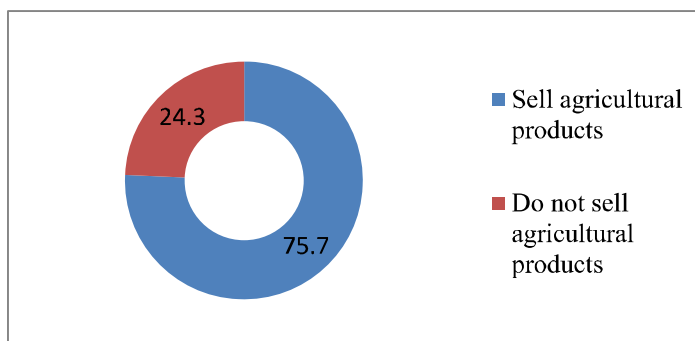


Fig.6.1: No. of respondents selling agricultural products

Some sell when a surplus is harvested, some are compelled to sell to defray the cost of education of their children but only few items like potato are produced with the sole intention of selling. Table-6.9 shows the method of selling agricultural products.

**Table-6.9: Method of Selling Agricultural Products**

<i>Method of selling agricultural product</i>	<i>No. of respondents</i>	<i>%</i>
Sell directly to the customer	22	9.7
Sell through the middlemen	205	90.3
Total	227	100

Lack of storage, processing, inappropriate packaging and imperfection in the marketing system of agricultural products affect the economic growth of the farmers which they produce. We see at Table-6.9 that 9.6% sell directly to the customers. Those farmers include village like Robve Solephe which are remote from market. Even if they produce surplus, transportation becomes a major setback. So, they carry the products in the basket and sell by going around to the neighboring villages in Nagaland from house to house offering their crops to buy. There is no transportation facility or even if available, transportation costs higher than the price of the items. Others include villages neighboring National Highway like *Pfonemei*, *Chakumei*, *Ethufiime*, etc. who sell at a roadside stand. Most of the farmers i.e 90.3 % sell their products through middlemen without knowing the actual market price. For example, crops like peas, beans, tomatoes, potatoes, that the middlemen buy in the village for 15-20 rupees per Kg reach Kohima market at 30-40 rupees per Kg. A bunch of mustard leave or cabbage bought at 5 rupees in the villages can soar to 15 rupees after taken to Kohima market which is a distance of 32 kms. During 2011-2012, a

cucumber weighing around half a kilogram is sold in the village at the rate of ₹ 5/-. The same cucumber if taken to Kohima town is sold at ₹15/-. Farmers can receive higher prices of agricultural products if they can directly sell to the customers by capturing middle charge. However, since most of them are small producers, they find it more convenient selling to the middlemen. Moreover, selling directly to the customers require time, travel to the neighboring towns and a communicable language in English, Nagamese or Manipuri which all farmers may not feel comfortable with. Thus, selling to the middlemen is an easy way of selling but does not make money as much as selling directly to the customer.

All the agricultural products in Mao are seasonal. So, the rate of crops consequently falls during peak season and rises considerably high during the off season. For instance, a kilogram of tomato that cost 10 rupees in season can shoot up to 40 rupees in off season which is three times more expensive. The erratic prices of seasonal and perishable products which have become a routine can be greatly controlled if simple technical support is provided. Because, any loss of crops is the loss of farmers' income. It has also been observed that the earliest and the last production of seasonal fruits and vegetables fetch much better price than the ones that are harvested during season in plenty. But the supply is not as much as the demand. Such market demand points to the need of more production of the earliest and last crops. Besides, resources for food processing and storage facilities can be an important outlet for the farmers. Crops like plum, peach, squash and even forests produce like fig, gooseberry, wild apple, etc. are available in abundant that a huge amount go waste due to lack of market demand or lack of storage or processing facilities. Other produce like honey can be taken as another example. Its price ranges between ₹500 - 1,000/- per liter which is much higher than the standardised and branded market honey like Dabur. Therefore, simple improvements in the existing processing techniques can be a source of encouragement for apiary. Table-6.10 shows the manner of selling crops by the respondents.

**Table-6.10: Manner of Selling Crops**

<i>Manner of selling crops</i>	<i>No. of respondents</i>	<i>%</i>
Sell immediately after harvest	224	98.7
Store/process to sell in off season	3	1.3
Total	227	100

It is said that most vegetables have a shelf life of 24-48 hours only. Therefore, with no means of prolonging the freshness, 98.7% of the respondents sell their products immediately after harvest and only three respondents store the products especially leek in a traditional manner to sell in off season (See photo 2). It is not processed but has to be kept dried and away from water by exposing in the open and airy place. It has been reported that upto 50% or even more profits can be obtained from the sale of such crops in off season with very high demand. Other plausible way of storing is either to dry or ferment. Therefore, it is an irony that 161 (i.e 70.9%) out of 227 who sell their seasonal products have to buy the same products from outside at much higher rate during off season. That is how improper marketing channel has been identified as one of the factors affecting the farmers in Mao.

### 6.7: Labour and Working Condition

Labour and working condition affect the socio-economic conditions of farmers as labour is inseparably linked with agriculture. Irrespective of the size of family, most households i.e 191 (63.7%) have only 2 members who are fully engaged in agriculture that is usually the mother and the father and some school drop outs if any. Children in school help the parents after the school hours and during week-ends or during summer and winter vacation.

**Table-6.11: Size of the Mao Family with Number of Family Members Fully Engaged in Agriculture**

Size of the family	No. of family members fully engaged in agriculture						
	1	2	3	4	5	6	7
1 to 3	40	36	7	0	0	0	0
4 to 6	13	88	15	5	1	0	0
7 to 9	4	59	12	2	0	1	1
10 & above	2	8	4	1	1	0	0
Total	59	191	38	8	2	1	1

#### a) Working Hours and Days

Every Mao farmer is engaged in the agricultural fields everyday throughout the year except during celebration of festivals and on restricted working days like Sunday, death of a villager, severe genna taboos, 14<sup>th</sup> August, Mao martyrs' day or when they have to bask paddy in the sun or when unwell. For every one month, they are engaged in agriculture for 20-26 days. They usually go to the field right after their morning meal and return home just before dusk. 60% of the respondents work for around 8 hours in a day including the time spent walking to and return



from the fields. From around 8-9 am to 4-5 pm they are engaged in cultivation though sometimes it is slightly lesser in some case and more in other. During paddy transplantation season, the total time of working would be not less than 13 hours in a day. In the morning, they wait for the dawn to go to the field and work till dusk that they can see to work. Many sleep in the hut of the agricultural fields which all indicates their endurance to hard work. On the other hand, 40% of the respondents are engaged in cultivation for around 6 hours in a day though for some it is sometimes slightly lesser or more. This is because their paddy fields are nearer to the village while some do not need to engage much time in the fields because they have no/less land to cultivate or because of their engagement in other occupation. Thus, it can be said that Mao farmers are employed in productive activities of cultivation but none of the respondents put in the same labour for livestock production.

**b) *Ava Kocho* (Reciprocal Labour System) and Inter-Village Labour Exchange**

To help self while helping others, Mao farmers get involved in a social system called *ava kocho*. *Ava kocho* is a reciprocal system of helping each other where on a certain day a group of farmers (2 to 13 members of only men or women or mixed) goes to the field of a friend /relative/neighbor and the next day, to other person's field which continues till the rotation covers all the members' fields. Such practices are very eventful for farmers. And as every member gets the benefits of the group labour by turn, it is also a source of great help especially for widows or small family members who could carry out the difficult task (like reparation of terrace slide) with the help of the group members. Survey report indicates that 86.6% of the respondents involve in *avakocho* almost all throughout the timing operation of heavy work season which means that the traditional ties of cultivation practice amongst the Mao is still not loosened. Besides *ava kocho* – the reciprocal system of helping each other, some villages of Mao neighboring Poumai tribe have a practice of helping farmers called inter-village labour exchange. It is a practice of helping farmers of another village by a group of youth from one village. This practice is done during weeding period of paddy. Such systems are a source of great social life while giving enthusiastic spirit to constantly work and develop good relations among individuals. To enliven the working spirit, members enjoy singing songs of cultivation and to maintain good health, good food and drinks are lavishly served on such working days.

### c) Co-operative Cultivation

Co-operative cultivation is a practice of cultivation wherein farmers voluntarily come together to collectively cultivate land which may be owned by the members or get it leased in for joint management. Besides working together, they pool resources for plantation or for paying the land rent. The produce from the land is shared or the sale from earnings is divided among them. This type of cultivation is mostly practiced amongst relatives and friends. The prevalence of such practice is not as much as the practice of *ava kochoas* the survey findings indicate that only 3% of the respondents are engaged in such practice.

### d) *Chokhroh Kasa* ( a social system in which free labour of the village people is requested by a family)

Lokho (1991) defines *Chokhroh Kasa* as a system in which a family requests for labour of others to work for him, while he has prepared to feed them for the day. The request cannot be denied and if not more atleast a person from family would go to work. The work may be to plough the terraced fields or to make an embankment or to dig a canal to bring water to the terraced fields. However, many throw open such a system of work for the prestige attached with it. *Chokhroh Kasa* formed an important part of socio-economic life of Mao farmers. In those days and even today paddy fields are carved out with the sole physical strength of man in digging and carrying the soil and stones out of the field area by *Chokhroh Kasa*. In a single day the number of men and women altogether involved in carrying, in carving and cutting down a slope of a landscape to form a paddy field consists of about a thousand men and women put together and sometimes more or less as the workforce singing and chanting attuned to the movement of the hands with hoes and mattocks. Besides, every member of the village is customarily obliged to participate in the event with well prepared delicacies which are usually shared among those sitting together at the time of heavy refreshment during the mid-day recess time. Every household especially the relatives and friends customarily contribute the best of rice beer which used to be prepared with a lot of care and attention as announcement of the name of the particular rice beer owner used to be made to the public while serving the particular brand of rice beer thereby, making the particular event a day of abundance with food and drinks. At the same time, the owner of the public event also takes much care selecting experienced people in the preparation of the huge amount of rice beer to feed the

whole village including invitees, friends and relatives from far and near. Over and above the rice beer, the owner of the event feed with various items of meat and fish to the participants. And during certain part of the event athletic activity such as long jump and shot-put competition used to be held.

The event looks impressive and gorgeous not simply by the great number of participation. But the more impressive aspect of the events were the thrilling experience to the ears by the mass singing and chanting which were well regulated like a massive army in full array marching with the song of victory. Another beautiful aspect of the event used to be cautiousness from getting drunk. As it being a great social event, getting drunk on such special occasion used to be considered as a poor man taking the chance of the abundance of drinks as if having nothing to drink and eat at home. Every one used to be aware of the social stigma of alcoholism, gluttony and hunger. Every household used to own enough paddy fields and every member of the family big or small used to work according to his or her capability. Being poor in the village used to be a social stigma hated by the community. Therefore, nobody, in those days was found to be too poor in the society. Everybody, every family was a working class and there was not too high and not too low family in the society in those days. And to repeat over it, there was no tenant and no land-lord among the Mao community in those days and till today.

### **6.8: Natural Factors**

Besides hilly difficult terrain, natural factor in the form of disaster has been identified as one of the factors affecting low productivity of agriculture in recent years. We find that 44% of the farmers (Figure 5.3 in chapter 5) entirely depend on agriculture for food and income. They cultivate on scarce and fragmented land predominantly primitive and exclusively depended on rainfall rather than irrigation systems. Therefore, paddy fields cannot be cultivated whenever there is a lack of sufficient rainfall during the paddy transplantation season. Insufficient rainfall leads to a deficit of soil moisture. It reduces yields and quality of other crops or leads to crops failure. Out of the paddy cultivators of 280 respondents, 120 respondents i.e. 42.9% have reported to have kept part their paddy fields fallowed during the last 5 years (2008-2012). The reasons as stated by them at Table-6.12 shows that 86.6% could not cultivate due to insufficient water. Paddy fields are sometimes left to remain fallow

whenever the monsoon comes late or rainfall is deficit as monsoon is the only lifeline of agriculture. Mao area as a whole has a susceptibility to landslides (See Map 6.2). Because of landslides and mudslides, 7.5% reportedly could not cultivate their paddy fields.

**Table-6.12: Paddy Fields Kept Fallowed During 2008-2012**

<i>Paddy field fallowed during 2008-2012</i>	<i>No. of respondents</i>
Insufficient water	104 (86.6%)
Landslides and mudslides	9(7.5%)
Other reasons	7 (5.9%)
Total	120 (100%)

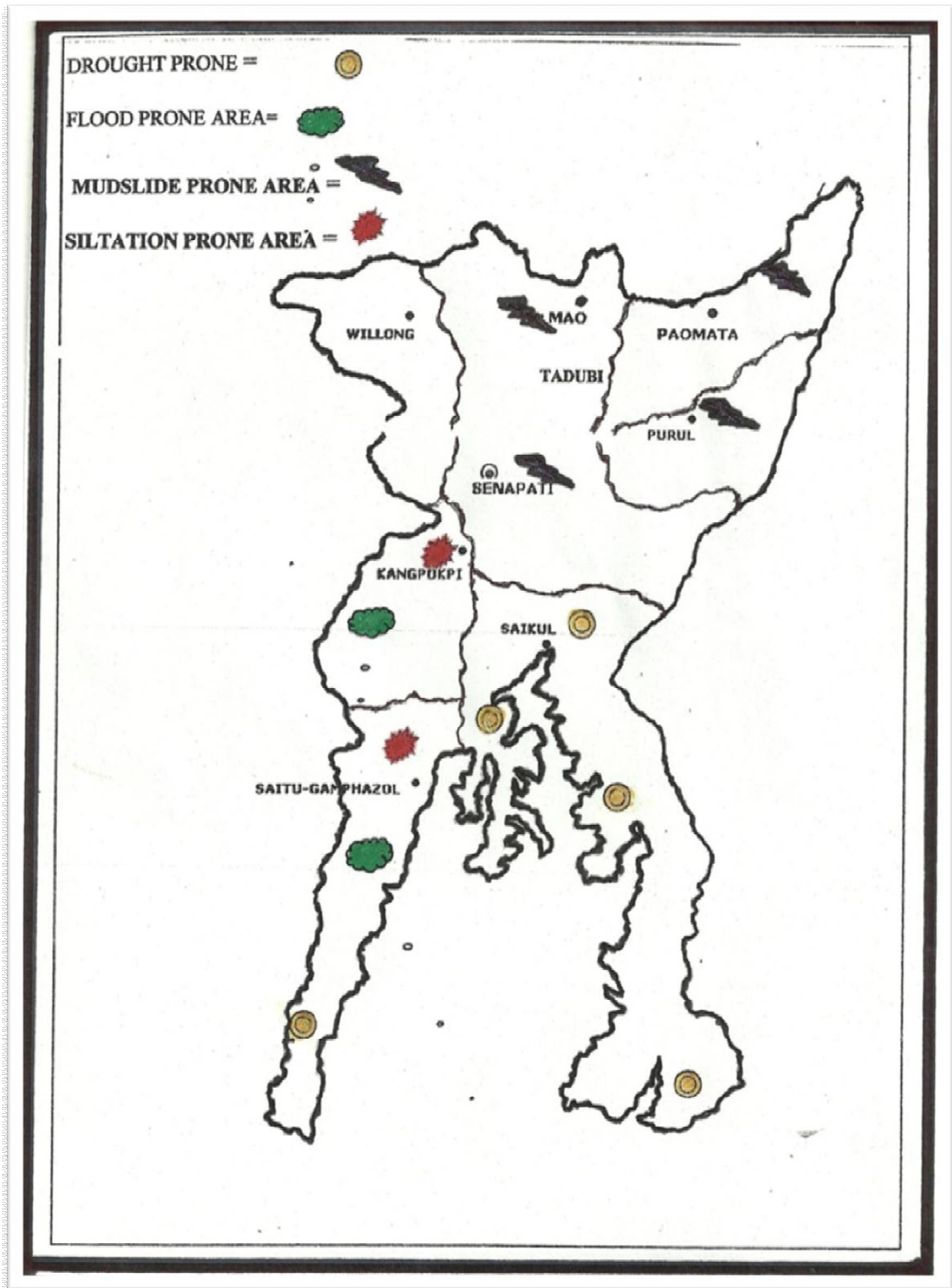
Das, Ghosh, Choudhury, Patel, Munda, Ngachan & Pulakabha in their study on “Climate Change in Northeast India: Recent Facts and Events –Worryfor Agricultural Management” highlight how the North-East region of India is expected to be highly prone to the consequences to climate change because of its geo-ecological fragility, strategic location vis-à-vis the eastern Himalayan landscape and international borders, its trans-boundary river basins and its inherent socio-economic instabilities. The worst Deficit Rainfall Recorded as revealed in their studies was in 2009 (upto end July). Manipur, Nagaland, Meghalaya of North-Eastern States witnessed severe meteorological drought. Till July 20, 2009 Manipur recorded 67 % rainfall deficiency followed by Nagaland (-63), Meghalaya (-56), Assam (-34) (ISPRS Archives XXXVIII-8/W3 Workshop Proceedings: Impact of Climate Change on Agriculture, p-34). The deficit rainfall in the study area during 2012-2013 had caused maximum damage to the crops as shown at Table-6.13.

**Table-6.13: Extent of Crop Damaged by Deficit Rainfall During 2012-2013 in Senapati**

<i>Sl. No.</i>	<i>Crops damaged</i>	<i>%</i>
1.	Vegetables	50% reduction in yield
2.	Fruits	70%
3.	Root crops	50%
4.	Plantation of cutting grapes	100% mortality
5.	Sub-tropical fruit crop plantation	50%
6.	Temperate fruit plantation	40%
7.	Established orchards	10%

Source: Department of Horticulture and Soil Conservation, Senapati

**Map-6.3: A Sketch Map of Senapati District Indicating Mao Area as a Mudslide Prone Area**



Source: Department of Agriculture, Senapati

## 6.9: Cultural Factors

Agriculture, being the predominant occupation of Mao since time immemorial, all their festivals, genna taboos and other rituals are associated with agricultural activity. They form an important part of farmers' lives and have a bearing on the socio-economic lives of farmers. Major festivals and genna taboos of the Mao have been described below in brief.

### a) Festivals of Mao

In a year, Mao people celebrate four major festivals. Terraced rice cultivation being their main source of livelihood and occupation, interestingly, all these major festivals are great societal events and are celebrated according to the timing operation of terraced rice cultivation. They are: *Chiithuni*; *Chijjiini*; *Saleni*; and *Onuni*.

- i. *Chiithuni*: A five day festival celebrated in joy of a good harvest (25<sup>th</sup> to 29<sup>th</sup> January according to Mao calendar). It is the first festival of the year. During this occasion, people lavishly feast-rite together with brewed rice beer and meat. Naga bread is baked with the paddy newly harvested. Various types of traditional games and sports like *kaka kakacho* for female and *dziithe kada* for male used to be played during festivals.
- ii. *Chijjiini*: A one day festival commemorating the arrival of the paddy seedlings transplantation season of the year (27<sup>th</sup> June according to Mao calendar). This festival is celebrated with good food so as to preserve good health for successful paddy seedlings transplantation. In case of scanty rain, people also pray for rain on this day.
- iii. *Saleni*: A five day post seed sowing festival celebrated (on 28<sup>th</sup> July to 2<sup>nd</sup> August according to Mao calendar) marking the end of paddy transplantation season. This festival provides the farmers with an occasion for recreation and entertainment after 1-2 months from most stressful work. Celebrations like climbing mountain *ojiipfoki mateva kapra* and purification celebration such *macha kozii*, *alekocho* are done during this festival. It is a taboo to harvest paddy that is sown after *saleni*. From such festival all the farmers get enthusiastic spirit to complete plantation in time.

- iv. *Onuni*: A one day festival celebrated during the growing season of the paddy plants (28<sup>th</sup> September according to Mao calendar). During this event, people pray for the healthy growth of paddy plants and a good harvest.

Today most Mao farmers may not know the meaning of the festivals except the older generation. But festivals continue to remain as the most awaited moments for farmers and are celebrated with full vigor. During festivals, animals are slaughtered. Special dishes are prepared. Farmers take rest from working in the fields. They sing, dance and make merry with their family, relatives, friends and village people. From celebration of festivals, farmers also get to know the timing operation of agriculture and get motivated to work hard in time.

#### **b) Monthly Gennas Taboos**

There are total 15 major taboos of Mao, many of which have a close relationship with agriculture and natural resources. In olden days, taboos were strictly observed by prohibiting oneself from doing any kind of cultivation work while sacrifices to god were performed meticulously because people feared that if ignored, they would be punished with illness, death or failure of crops or other misfortune might fall on them. But in the present generation, people are devoid of taboos as understood from the respondents' view that none of them strictly observed any taboo or make sacrifice in an animistic manner. But announcement is still made by the village headman or elders which help the farmers understand the commencing of agricultural season. Major taboos are:

- i. *Oramani*: To free the villagers from all kinds of sicknesses, deaths, accidents and other misfortunes. This taboo is observed on 3<sup>rd</sup> of every month (Mao Calendar)
- ii. *Tokhomani*: To bless the villagers with wealth especially through cattles and other animals.
- iii. *Pforeshiimani*: To bless the whole village with contentment of food, and free them from gluttony and health problem caused by food and also to bless them with food to sustain them. Jungle fruits are forbidden to eat on this day.

- iv. *Omikazhiimani*: This taboo is observed to keep them safe from any kind of accidental burning of house or people. In case, any house of a Mao is burnt, the whole villages of Mao observe a taboo. It is said that *Liyai* village (a village of Poumai tribe – another Naga tribe) is the only village that still burns the same fire which they carried with them during their fore fathers' departure from Makhel. And there was a time when the fire of Mao people was extinguished and Mao people got fire again from *Liyai* village that is why even if a house in *Liyai* village (Poumai Naga tribe) is burnt, this taboo is observed by the whole villages of Mao.
- v. *Khehrukashiimani*: To protect the houses, trees and bamboos from wind and storm.
- vi. *Piriimani*: To preserve the paddy fields and other possessions from destruction of hailstone.
- vii. *Ochiikoziimani*: To dispel from barren and gloomy season so as to awaken them with good nature and life full growth.
- viii. *Ojiikathimani*: January to April is a dry season. Paddy cannot grow with such dry season. Therefore, in supplication to god for rain to freshen up the dry land for the proper growth of paddy, this taboo is observed in April.
- ix. *Okheshiimani*: To preserve the paddy and other valuable possessions from damage of rats and other pests and animals. On this day, it is restricted to kill any kind of living animal.
- x. *Dziikhomani*: This taboo is observed in June in prayer for rain for paddy cultivation.
- xi. *Omopra kohomani*: For a speedy, good and abundant growth of paddy.
- xii. *Osiirakosomani*: For the good growth of millet - *osiitho* as in olden days millet - *osiitho* was one of the staple food of Mao.
- xiii. *Ochiikazhiimani*: This taboo is observed in September in petition of good weather (bright sunny weather) for successful harvest.
- xiv. *Molukosiimani*: To protect the people and their assets from the devastation of earthquake. Though this taboo is observed in



December, it is also observed as and when earthquake occurs during any day of the year.

- xv. *Phehrimani*: To purify the villagers from sicknesses, misfortunes and other impurities. (Impurities here refer to a conceived woman whose husband/foetus father is not known. According to Mao custom, it is a taboo to get pregnant before marriage. Therefore, at the onset of war, hunting or any kind of village tournament, it is announced to everyone that, if there is any such pregnant woman in the village, she should immediately move in the father of the foetus house because it is believed that unless such village purification is done, no animal can be killed during hunting, village people get killed in war, players from the village lose the game or hunters get hurt or meet with accidental misfortunes. This taboo is observed only during spring season).

Besides the above mentioned monthly gennas taboos, there are other common observation and important days. Since, Mao people of different villages are from the same ancestral group, they had the same beliefs and performed the same rituals in olden days. Therefore, in olden days, such cultural functions played an important role in uniting social relations of the Mao people as all the villages used to observe on the same day in accordance with the announcement used to be made by the *Pfosepfo Movuo* (the main head of all the Mao villages). Today, different village of Mao have different day of observation and does not affect the people as it was in the past. Paul Lokho writes that the advent of Christianity together with the impact of western culture has substantially influenced the Mao culture. However, Christianity was not only the agent of change. “When the Japanese invaded Burma and India during the Second World War, the Naga hills became a battle ground. Soldiers of various races passed through, lived, fought and died among the Nagas. Thus, new people, new weapons, new attire, new food and above all new idea were introduced to all the Nagas and when the war came to an end, they could not go back to the old secluded life” (the illustrated encyclopedia of mankind. Vol.II. P.1425 as cited in Lokho, 1991).

It was a belief that if the taboos were not strictly observed god’s wrath would fall on them in the occurrences of crops being damaged by pests/insects

or in the form of drought or flood. Therefore, taboos were strictly observed. Such belief barred them from engaging in the agricultural fields for several days in a year. Due to such propaganda, the importance on the adoption of pesticides and insecticides might have also been accepted much later by the Mao farmers.

#### **6.10: Other Cultural Beliefs and Practices**

Certain cultural belief of Mao hampers the economic growth of poor people. The practice of the Mao people to dispose of the corpse is by burial. Together with the corpse, materials and other belongings of the person are buried. Materials are put in the graveyard with a belief that it might be of use to them in the other world. This is because, Mao people believed in the life after dead. They believed that in the land of the dead, men and women carried on their own way of life; they did cultivation, hunting and all that people here on earth do (Daniel, 2008, p.63). Materials put in the grave have been shown at Box 6.2. Probably due to such practice, traditional ornaments could not be preserved. Original spear, war shield, water shield, shells, armllets, earrings, etc. have become extinct. Besides, in early days, on the death of anybody, there used to be killing of cows and pigs in the house of the death to distribute to those who come to mourn called *opra*. The number of cows killed depends on the condition of the family (Ashuli, 1970s). The practice of *opra* has been replaced with serving of tea, snacks, rice beer or meal to those who come to mourn, dig the grave or sleep at the house of the mourners. Till today, a corpse is buried with all the personal possessions of the person including (dao, spade, ornaments, etc.). By fulfilling such belief, a lot of output is gone. Whatever a person might have earned in a life time are also wasted in that manner.

### Box-6.2: Materials Put in the Grave

<i>Materials put in the grave for man</i>
<ol style="list-style-type: none"><li>1. <i>Ilokaka</i> – bow (1)</li><li>2. <i>Ingho</i> – spear (2)</li><li>3. <i>Irii</i>- war shield (1)</li><li>4. <i>Tose</i> (for those who wore)</li><li>5. <i>Oha</i>-1gourd put in <i>khalero</i> (bamboo basket)</li><li>6. <i>Khalero</i> – With two branches of a tree <i>liitosii noko</i> in a bamboo basket</li><li>7. <i>Mikhebvii</i> – smoking pipe for those who smoked</li><li>8. Cloths and other things used by him. Family members can put more if they wish to.</li></ol>
<i>Materials put in the grave for woman</i>
<ol style="list-style-type: none"><li>1. <i>Shobvii</i> – a small bamboo basket tied around the waist to put in fish, snails, crabs and other aquatic insects in the fields. (1)</li><li>2. <i>Phapriirei</i> – (1)</li><li>3. <i>Oshikosii</i> – walking stick</li><li>4. <i>Kodzii</i> – water shield</li><li>5. <i>Lomii</i> – spinning instrument (1)</li><li>6. <i>Oha</i> – gourd (1) in <i>khalero</i> – a bamboo basket</li><li>7. Cloths, ornaments and other things used by her. Family members can put more if they wish to.</li></ol>

Source: Saleo. N (2008), *Ememei Kohrii Ko* (Mao Naga Culture), p.243.

Note: Slight interpretation from Mao to English made by the researcher

### 6.11: Other Social Factors

Certain identified social factors affecting the socio-economic conditions of farmers have been summarised as follows:

#### a) Literacy and Education

Education is an important determinant for all further progress. For an agrarian society like Mao, education is a basic condition for the progress and development of individual as well as society. Mao people, who till then depended on subsistence farming, have been able to explore beyond agriculture and bring about economic transformation with their acquired skills from education. Education provides a major substitute to get employment in different sectors. Today, a very good number of Mao people are well settled in the cities with prosperous job normally out of their parents' occupation in farming. Education is also seen as a driving force for a community development. Mentioned may be made that the efforts made by some educated Mao people to introduce Mao official language in educational institutions in Manipur upto matriculation level can be said as an important impact of education received by the Mao people. Till then, besides English as first language, they had to learn Manipuri, a foreign language as second

language which was of less importance to them. With education came the value of knowing and preserving their own identity, culture, history and so on. Therefore, education has been understood as one of the important indicators for social and economic growth. However, it is regrettable that many of the older generation farmers were illiterate. The details of educational level of the respondents and their family members have been mentioned in Chapetr-5.

The impact of literacy on the Mao people can be understood in the light of their participation in social life and other economic activities. With their acquired knowledge and simple communication skills they are more advantageous to avail benefits from the government by approaching the officials. Likewise, they are also in a better position to acquire more scientific information by attending training, or by the way of mass media or printed materials. To their advantage, they can maintain a written record of suitable plantation season or the profit out of the produce or other notable experiences of behavior of the climate of different cropping season. With these assumptions, the study is intended to know whether educational level of the head of the household is effective in improving the total income of the family; production of cash crops; usage of chemical fertilizers; and whether it has any significance with the wasteful expenditure of the household. This has been done by applying the **Pearson's chi-squared test** ( $\chi^2$ ). The Chi-Square test is used when trying to find a relationship between two nominal or ordinal variables. To calculate Chi-Square, a cross-tabulation is obtained from SPSS which shows the frequencies of joint occurrences between two variables as shown at Table-6.14, Table-6.15, Table-6.16 and Table-6.17.

**(i) Educational Level of the Head of the Household and the Monthly Income of the Family**

Table-6.14 shows the relationship between educational level of the head of the household and income of the family.

**Table-6.14: Cross Tabulation of the Literacy/Educational Level of the Head of the Household and the Monthly Income of the Family**

<i>Income (in ₹)</i>	<i>Illiterate</i>	<i>Below Secondary</i>	<i>Sec &amp; HS</i>	<i>Graduation &amp; above</i>	<i>Total No. of respondents</i>
Upto 3000	66 (50.8%) (44.9%)	38(29.2%) (43.7%)	24(18.4%) (42.9%)	2(1.6%) (20%)	130 (100%)
3000-6000	34 (46%) (23.1%)	23 (31%) (26.4%)	13 (17.6%) (23.2%)	4 (5.4%) (40%)	74(100%)
6000-9000	18 (43.9%) 12.2%)	13 (31.8%) (15%)	7 (17%) (12.6%)	3 (7.3%) (30%)	41(100%)
9000-12000	12 (54.5%) (8.2%)	3 (13.6%) (3.4%)	7 (31.9%) (12.5%)	0 (0%) (0%)	22(100%)
12000-15000	6 (75%) (4.1%)	0 (0%) (0%)	2 (25%) (3.5%)	0 (0%) (0%)	8(100%)
15000 & above	11 (44%) (7.5%)	10 (40%) (11.5%)	3 (12%) (5.3%)	1 (4%) (10%)	25(100%)
Total	147 (100%)	87 (100%)	56 (100%)	10 (100%)	300 (100%) (100%)

Out of the total respondents of 300, 130 respondents (i.e. 43.3%) belong to the lowest income category group (BPL) of below ₹3,000 per month. 74 respondents (24.7%) are in the income group of ₹3,000-6,000/-. And only 25 (8.3%) are in the income group of above ₹15,000/- per month. Out of 300, 245 (i.e 81.7%) are in the income group of upto ₹ 9,000/- per month. And out of 147 illiterate respondents, 118 (80.2%) have income of upto ₹ 9,000/- per month. While remaining 29 (19.8%) are in the income group of above ₹9,000/- per month. Therefore, the relationship between the educational level of the head of the household and their family income is not clear. The same has been supported by the statistical test namely Pearson Chi Square test. The Chi-Square value of 15.288 (fifteen degrees of freedom) is not statistically significant according to the results obtained. From this finding, it can be interpreted that, this is because education of the head of the household is not only the factor to improve the income of the family because there are also other factors (see Chapter-6 for details). Respondents are all marginal farmers. Head of the family is literate or educated does not necessarily mean that he/she can earn more money. Whereas, a family with an illiterate head of the household could have a better income due to factors like: his engagement in labour work; endurance in hard work to produce cash crops however traditional. Or out of his occupation in farming, his children

might have received good education which has enabled them to get a good job in government or other sectors which has definitely improved the income of the family. Therefore, education is not the only determining factor in improving the income of the Mao farmers.

**(ii) Educational Level of the Head of the Household and Production of Cash Crops**

Cross tabulation of the relationship between educational level of the head of the household with the production of cash crops per month (in ₹) is shown at Table-6.15.

**Table-6.15: Cross Tabulation of the Literacy/Educational Level of the Head of the Household and Production of Cash Crops**

<i>Production of cash crops (in ₹)</i>	<i>Illiterate</i>	<i>Below Secondary</i>	<i>Sec &amp; HS</i>	<i>Graduation &amp; above</i>	<i>Total No. of respondents</i>
Nil	37(50.7%) (25.1%)	22(30.1%) (25.2%)	12 (16.4%) (21.4%)	2 (2.8%) (20%)	73 (100%)
Upto 1000	80(48.8%) (54.4%)	46(28%) (52.9%)	32(19.5%) (57.1%)	6(3.7%) (60%)	164 (100%)
1000-2000	14(48.2%) (9.6%)	10(34.5%) (11.5%)	4(13.8%) (7.1%)	1(3.5%) (10%)	29 (100%)
2000-3000	15(48.4%) (10.2%)	9(29%) (10.4%)	6(19.4%) (10.8%)	1(3.2%) (10%)	31 (100%)
3000&above	1(33.3%) (0.7%)	0(0%) (0%)	2(66.7%) (3.6%)	0(0%) (0%)	3 (100%)
Total	147 (100%)	87 (100%)	56 (100%)	10 (100%)	300 (100%)

Table-6.15 shows that out of 147 illiterate respondents, 25.1% are not engaged in cash crop production, 54.4% though engaged in cash crop production, but are getting a meager income of upto ₹ 1,000/- per month. There is no clear relationship between educational level of the head of the household and the production of cash crops. This has been also supported with the result obtained from the Chi Square test. The Chi-Square value of 6.022 (twelve degrees of freedom) is not statistically significant according to the results obtained. The reasons of such may be because educational system does not essentially give importance to creation of skills, entrepreneurship or self employment for production of cash crops. Therefore, educated farmers are also not in a better position to produce cash crops. Secondly, all the farmers whether literate or

illiterate are subsistence farmers. Only little surplus from subsistence farming is used for commercialization. Thirdly, an educated farmer may not have a dignity of labour in producing cash crops. His/her educational status also becomes a question of prestige to merchandise crops. Rather it is the regularity in the production of crops which make a farmer skilled or specialised in the production of crops. Lastly, less production of cash crops can be also due to lack of other factors like land, sophisticated/modern technologies, etc. (Detail factors have been mentioned in Chapter- 6).

### (iii) Educational Level of the Head of the Household and the Use of Chemical Fertilizers

Cross tabulation of the relationship between educational level of the head of the household and the use of chemical fertilizers by the respondents is shown at Table-6.16.

**Table-6.16: Cross Tabulation of the Literacy/Educational Level of the Head of the Household and the Use of Chemical Fertilizers**

<i>Use of Chemical Fertilizers</i>	<i>Illiterate</i>	<i>Below Secondary</i>	<i>Sec &amp; HS</i>	<i>Graduation &amp; above</i>	<i>Total No. of respondents</i>
For paddy only	10(45.4%) (6.9%)	7(31.9%) (8%)	4(18.1%) (7.1%)	1(4.6%) (10%)	22(100%)
For vegetables only	39(42.9%) (26.6%)	32 (35.1%) (36.8%)	14(15.4%) (25%)	6 (6.6%) (60%)	91(100%)
For both paddy and vegetables	27(56.2%) (18.3%)	10(20.9%) (11.5%)	9(18.8%) (16.1%)	2(4.1%) (20%)	48(100%)
Not at all	71(51%) (48.2%)	38(27.3%) (43.7%)	29(20.9%) (51.8%)	1(0.8%) (10%)	139(100%)
Total	147 (100%)	87 (100%)	56 (100%)	10 (100%)	300(100%) (100%)

From Table-6.16, it is found that out of 147 illiterates, 71 (48.2%) do not use any kind of chemical fertilizers at all. Even 43.7% of the respondents belonging to the secondary education (87) and 51.8% of the respondents having upto higher secondary degree (56) are also not using chemical fertilizers at all. Hence, the association between the educational level of the head of the family and the use of chemical fertilizer is not significant. The finding has also been supported from the result obtained from the Chi Square test. The Chi-Square value of 10.719 (nine degrees of freedom) is not statistically significant according to the results obtained. This may be due to the fact that Mao farmers as a whole use very

limited chemical fertilizers. Secondly, production of crops by Mao farmers is mainly used for self consumption and not for marketable purpose. They do not encourage the use of chemical fertilizers due to risk factors involved. It is a general practice among all the Mao farmers that chemical fertilizers are used only if the particular crop is intended for sale. Some farmers prefer organic farming and some farmers lack money to purchase chemical fertilizers.

**(iv) Educational Level of the Head of Household and Wasteful Expenditure**

Table-6.17 shows the cross tabulation of the relationship between educational level of the head of the household with the expenditure made by the family on wasteful items per month (*in ₹*).

**Table-6.17: Cross Tabulation of Literacy/Educational Level of the Head of the Household and Wasteful Expenditure**

<i>Wasteful expenditure (in ₹)</i>	<i>Illiterate</i>	<i>Below Secondary</i>	<i>Sec &amp; HS</i>	<i>Graduation &amp; above</i>	<i>Total No. of respondents</i>
Nil	85(56%) (57.9%)	36(23.6%) (41.3%)	24(15.8%) (42.9%)	7(4.6%) (70%)	152 (100%)
Upto 300	39(42.9%) (26.6%)	33(36.2%) (38%)	16(17.6%) (28.6%)	3(3.3%) (30%)	91(100%)
300-600	21(42.9%) (14.2%)	14(28.6%) (16.1%)	14(28.5%) (25%)	0(0%) (0%)	49 (100%)
600 & above	2(25%) (1.3%)	4(50%) (4.6%)	2(25%) (3.5%)	0(0%) (0%)	8(100%)
Total	147 (100%)	87 (100%)	56 (100%)	10 (100%)	300(100%) (100%)

Educational level of the head of the household does not show a significant relationship with the wasteful expenditure of the household. The Chi-Square value of 13.977 (nine degrees of freedom) is not statistically significant according to the results obtained. It may also be mentioned that the social system of Mao Naga tribe is such that the use of tobacco among both the men and women is not a culturally unaccepted norm. As a closed society, there are also other customary social obligations on wasteful expenditure items especially during festivals.

Therefore, it is seen from the Table-6.14, Table-6.15, Table-6.16 and Table-6.17 that there is no significant relationship between the educational level



of the head of the household with the income of the family, production of cash crops, use of chemical fertilizers and wasteful expenditures. This is because there are other determining factors affecting the income of the household, production of cash crops, use of chemical fertilizers and expenditure on wasteful items and not just education ( for details see Chapter 6).

#### **b) Social biasness towards farming**

The social status of Mao people in the past depended on individual's ability to work hard so as to produce enough food grains to provide feast of merit. They lived the most virtuous kind of living by working hard in the fields. Vedayi (1997) emphasised the values of Naga forefathers. Their fore-fathers taught to "Lose not the hard working spirit for we are not beggars; nature provides you everything to feed your stomach and to have shelter if you hold your dao (knife) and (hoe) spade" (as cited in Debnath, 2010, p.15). Today, given a different environment, the dignified occupation has begun to be understood by most respondents as a forced occupation having no other choice. It is seen as an unprofitable occupation meant for the uneducated, unskilled, unemployed and for the poor section of the society. The structure of farming by nature itself is tedious. To sustain themselves, farmers work very hard for long hours. Rain or heat does not deter them from work lest it will lead them to poverty. Even then, it does not assure them a decent standard of living. Therefore, unless the farmer has some supplementary source of income, remuneration from farming alone is extremely difficult to live up with the additional pressure of modern standard: education; mobile phone; western style and other thrills in the present life style. Hence given an opportunity, most respondents are interested to look for off-farm opportunities with a hope of better income. That is also the reason why, for many parents, having experienced the challenging farming life, the mere fact of giving education to the children is to raise career aspirations or let them escape from agriculture as education is considered as the key route to non-farming occupations. For many, education means jobs of high return so as to break the poverty chain and obtain genteel mode of living. Small children in school are warned of being engaging them in farming if at all they do not perform well in their studies knowing that a large number of educated unemployed youth, school leavers or those repeated failures have been driven back to farming as they have no other way to make a living. And

as farmers get mostly confined in agricultural activities, they have limited means to explore life beyond agriculture. It rather leaves them behind the average standard of people. Therefore, farming as an occupation has a very low social and economic status in the minds of several people. Unfavorable perception of farming is altogether perceived as an outcome of failed aspirations.

Such situation throws a considerable light on the need to lift the status of farming which is the lifeblood of everyone. Emphasis can be made for the farmers to aspire for more profitable and interesting venture. Examples: Traditional skills could be revived for better prospects. Development orientation on vocational training, exposure visit, market chain, agro-based industries, processing unit, skills upgradation and other possible means that farmers can invest and live by it. It is necessary to get farmers participated in insurance, credit policies, loan facilities, farmers' co-operatives; animal husbandry where labour absorption is less. It is time to encourage and address the issues of farming and to recognise their crucial roles in sustaining all forms of life. No matter what Mao people do or where they reside away from home, they yearn for the best food at home: local chicken, local pork, local rice, local vegetables and other local produce which all come from the hard labour and care of farmers.

**c) Lack of Promotion and Improvement in Traditional Items**

The economy of the Mao Naga which was seen in the light of non-monetary aspects has been transformed into monetary values. Today, they depend income from their marketable agricultural outputs simultaneously they buy items which they do not produce. As much as they need to procure the items that they do not produce, their marketable agricultural outputs must follow. But, when the need to procure surpasses their capacity to produce especially when they have to procure the items which they themselves used to produce, it affects their economic growth. Traditional means of livelihood have started to grind down. For instance, today, in all the households, traditional household materials such as wooden plates and spoons; jars hewn out of bamboo or dried gourd for drinking water/brewed rice beer; earthen pots for cooking, carrying water and storage have been replaced with steel, aluminum and plastic items. Likewise, Mao people have varieties of shawls, costumes and ornaments with different designs and patterns. They have not been promoted but improved only in designs. So, cloths which Mao people weave are specially worn mostly during occasions. For most of their cloths, they depend on

imported items. The Nagas are fond of music. They have different types of traditional musical instruments such as the log drum, the bamboo flute, the cup violin, trumpet, buffalo horn, etc. to be played according to the season. They have not been ignored but youngsters have mostly adopted modern guitar, piano, drum, etc. Indigenous games, sports and entertainment have been substituted with TV, modern games and sports.

#### **d) Civil Disturbances and Law & Order Problem**

Manipur has been one of the most volatile states in the country since the independence itself. Different communities live in Manipur. And within different communities, there are different separatist armed groups. Conflicts against each other's community arise. One of the worst ever violent conflict happened in the history of Manipur was between the Kukis and the Nagas in the 1990s. The nature of conflict was inhuman and the loss of humans was irreparable. Property damaged in the villages was huge. The situation aggravated poverty for thousands of people including many Mao farmers residing or owing land in Kangpokpi neighboring the Kukis as they had to run away abandoning their houses and fields to save their lives. Consequently, unemployed youth joined underground groups. Resources of other young farmers especially men had to be used as vigilant thus taking away a large pool of labour besides, keeping a large amount of land bare without being cultivated or forcefully sold at much cheaper rate. It escalated in the deprivation of many farmers. During the fieldwork, the researcher had come across a man whose parents got separated during Naga-Kuki war as his father was a Kuki and his mother a Naga. There were also respondents who took rehabilitation at Taphou Pudunamei village due to Naga-Kuki war.

Insecurity exists due to break down of Law & Order situation. Recent major incident was on 6<sup>th</sup> May 2010. It occurred when the Mao people staged a protest rally against Government of Manipur for resisting the home coming of Th. Muivah to Manipur. The subsequent firing by Police Commando and IRB of the Government of Manipur resulted in the killing of two young innocent Mao boys (Neli Chakho Mao, 20, BA 2nd yr, St. Joseph College, Bangalore and Mr. Daikho Loshou Mao, 20, BA 2nd yr, St. Joseph College, Jakhama) and injuring many at Mao Gate.

Continuous indefinite ban/economic blockade of many days are regular phenomenon in the state. The year 2011 witnessed the longest ever economic

blockade in Manipur with the state remaining crippling for 123 days even as another 20 days have been wasted on account of bandhs (“2011 witnesses 123 days blockade, 20 days bandh, ” 2011) Such general disturbances badly affect the public service delivery systems of the poor and other normal life of the farmers because anything that is exported from Mao is the sole product of the farmers.

### **6.12: Government Policy for Mao Farmers**

Mao farmers are proficient in growing varieties of fruits and vegetables. Of late, government has also recognised the efficiency of the Mao farmers. A Regional Potato Farm has been established at Mao. It is the first sponsored scheme from North-Eastern Council (NEC), Shillong owned by Manipur state. The farm targets to supply potato seeds to the whole of North-Eastern Region. There was also an initiative to grow tea leaves in the region. During the early 2000, Exotic Juice Ltd was set up by Good Samaritan Social Service Association with support from the Small Farmers’ Agri-Business Consortium (SFAC), New Delhi together with loans from Union Ministry of Food Processing and Industries, North-East Financial Institution, and Export Import Bank. The latest equipment and machines of the processing plant were acquired from Kolkata based Bertuzzi Company in collaboration with Mumbai based Pennwalt Ltd. The equipments include bulk aseptic packaging and concentrator with aroma recovery technology. The Plant had the capacity to process 2 tonnes per hour which was the first of its kind in North-Eastern States. It generated more than 60 employment and encouraged farmers not only from the Mao region but farmers from Churachandpur and Ukhrul districts of Manipur and Wokha, Mokokchung, Phek and Kohima districts of Nagaland also started supplying raw materials. It shared partnership with SFAC and NEDFI, Food Processing, GOI, National Horticulture Board, Banks, etc. The product was sold from 2004 not only in the local markets but also exported to foreign countries like South Africa, UAE and other Middle East countries. The benefit from the products was reported to be huge. However the factory had stopped processing since last 4-5 years reportedly due to widespread destruction of the fruit plants by a serious unknown plant disease.

We find the details of government policy for the farmers in chapter 7 of the study. It is important to note that in the first place, government resources for the farmers are not non-existent with number of staff in the offices but efficiency remains a question. According to the information obtained from the directorate of agriculture,

Imphal, Manipur, District Agriculture Office Senapati, Horticulture & Soil Conservation and Allied Sectors, there is no available record of budget outlay for agricultural development for Senapati district. Therefore, when budget allocation is not known, it is difficult to measure the output as well. Secondly, the existing government policies have not significantly improved the conditions of farmers due to lack of government efforts in addressing the problems of the farmers, inappropriate policy and poor implementation.

**a) Lack of Government Efforts in Addressing the Problems of Farmers**

The overall study on the role of government indicates a very low level of awareness about the government programmes. There has been no initiative on the part of the Government to spread awareness. According to the opinion obtained from the respondents in the villages, news on the radio in local language is the best source to give them awareness about government programmes as they can have access to it and disseminate among themselves as well. While the villagers have resigned to the fact that the state had utterly failed to judiciously implement the welfare scheme on the other hand, beneficiaries seemed to have reconciled to the meager benefits and entitlements they have so far received as it is indicative from the general opinion of the respondents that ‘something is better than nothing’.

There have been evidences of how farmers in general remain barred from the exiting benefits. A local newspaper (“Senapati Horti office defunct,”.2012) brings to light that the Senapati District Office of Horticulture and Soil Conservation had been lying almost defunct for the last five years due to occupation by personnel of Manipur Police Wireless District HQ and 4<sup>th</sup> IRB. Singh (2010) also rightly remarks that government officials and the employees are very much reluctant to serve in the hill areas primarily due to absence of civic amenities and good communication. They usually consider their posting in the hills to be a kind of punishment.(p.199) And owing to the poor accessibility even the Gram Sevak and agricultural extension officers hardly visit such remote places for offering guidance to the potentially rich hilly areas (p.179). Due to common practice of coming to the office at 1pm and leaving by 2pm, Social Welfare Minister, A K Mirabai also urged officials to stop coming to office only to collect the salary(“AK Mirabai: Stop coming to office only to take salary”, 2012). Farmers usually end up victims of such accountability and non-accountability

though for whose cause government officials have been paid. Of late, the Mao Students' Union even raised an issue over the frequent transfer of Mao-Tadubi SDO for 5 times in a year ("Revoke transfer of SDO",2011). This is because; SDO holds the post of one of the most important officials for the development that frequent transfer causes disruption in developmental activities in the area. It is understandable that some transfer happens even before the officials get themselves fully familiarised with the needed policy of the area as most of them come from outside. Therefore, it has been known that though some committed officials come with the real interest and intention of serving the people, lacuna in the system becomes a stumbling block. It all portrays lack of government's serious concern towards the development need of the people. Therefore, negligence of the government towards the marginal farmers has been identified as one of the factors affecting the development process of farmers. One does not come across adequate effort of the government to bring about improvement in the methods of agricultural operations nor incentive for higher production or other improvement measures to the respondents at large as we see at Table-7.16 and Table- 7.18 of chapter 7.

#### **b) Inappropriate Policy**

Efforts taken up by the government to help the farmers are very much necessary and resourceful. However, certain measures adopted by the government have been found to be unsuitable. For instance, during 2012, when the state faced severe drought problem, government came up to support the farming community by making available urea bags at Rs 278.80 per bag (against normal rate of Rs 478.80) with additional transport subsidy. But the government's decision had evoked sharp reactions from the farming community as to where to use the subsidised fertilizer when rice fields had been dried ("Manipur hit by drought-like situation", 2012). Similar cases have been found to be common in government's efforts to help the farmers. It does not have a measure to improve crops which farmers have been producing. On the other hand, most farmers do not find the seeds distributed by the government suitable for planting because of its distribution in wrong season or receiving old stock seeds that do not grow; or receiving saplings that get decayed as they are brought from different climatic regions. Hence, if government could adopt suitable measures for the farmers, beneficiaries could be greatly benefitted.

Monitoring and evaluation are an integral part of any developmental programmes. They are particularly important to strengthen the quality of existing programmes by providing feedback how well the programme has been or has not been able to meet the needs of the beneficiaries especially when a programme is innovative and experimental as is the case of most of the programmes implemented in Mao. Thereby identifying strengths and weaknesses, programmes can be adjusted accordingly. However, study from the grass root level infers that monitoring and evaluation of the implemented programmes has been virtually neglected. Due to lack of monitoring and evaluation, recklessness in the implementation of government programmes at the grass roots has never been tackled. Programmes guidelines have seldom been applied at grass root level. Programmes require transparency as they remain unknown to those for whom it is meant. Some farmers wonder why government officials should come all the way to take their photos and their fallowed land/land sliding. As pointed out by them that it just made them hopeful of some subsidy. But, with so much expectation, there would be no further news. In developed countries, governments are increasingly being called upon to demonstrate results. The Public Service Commission (PSC) truly states that it is expected of them to demonstrate that they are making a real difference to the lives of their people and that value for money has been delivered. Citizens are no longer solely interested in the administration of laws but also in the services that are rendered. Critically, they are more than ever interested in outcomes (p.4). One cannot disregard monitoring and evaluation to trace the menace of corruption in the government programmes.

### **c) Poor Implementation**

Programmes formulation according to the need of the people rather government's projection can bring about tremendous impact on the socio-economic conditions of the farmers. Greater details of government programmes have been illustrated in chapter 7. A thorough examination of all the government programmes shows that development strategy has always followed top-down policy rather than down-top policy. Programmes implemented do not blend with the local culture of the people. That is how neither government's target gets fulfilled nor the needs of the people met. Resource endowments of the region within Manipur vary so the same policy cannot be applied for the entire region. But one does not come across separate programmes for the separate region or unique programmes for the more

difficult region. Support system in the form of credit/loan/incentive has never been made available to the farmers of more than 99%. Few NGOs tried to introduce new techniques to farmers such as Aloe Vera plantation by IFAD, Passion Fruit plantation by Good Samaritan, Turmeric plantation by Rural Development Agency, Karong. However, due to their own technical difficulties, they have not been able to sustain.

Tamenglong District of Manipur is the largest producer of orange in Manipur. With an aim to promote and encourage orange cultivators, orange festival is held every year. Hathei Phanit (Chilli festival) is held in Ukhrul. Mango and pineapple festivals are also held to promote cultivators in the valley region. Likewise, more potentialities of other region can be identified to boost the income of farmers. Mao region is ecologically conducive for growing varieties of plums and peach. They are grown in plenty and reap rich fruits. In the villages, farmers may sell the best quality plum at ₹ 10/- per Kg to the middlemen. After taken to the town and cities of few kilometers away from the villages and having passed through stages of middlemen, the price at which the vendors sell the same plum can soar to as high as ₹ 60/- per Kg. Likewise, a small variety of plum sold at Re.1/- per Kg in the villages hardly have any demand. On the contrary, a pickle of 4/5 pieces of such small plum in a pouch imported from Burma costing ₹ 5/- is sold in the villages with good demand. This happens due to lack of supported transport facilities, incompetent agro based industries, inefficient marketing channels, lack of value addition, processing and storage facilities. Similarly, more fruit and vegetables are also sold at rock-bottom prices. It distresses the sales of the farmers. Example of squash sold at Re.1/- per Kg or cabbage sold ₹ 2/- in peak harvest season is common due to oversupply of products. Therefore, a huge amount of gluts are used as fodder for animals or allowed to rot in the field itself because in most cases the output of such products does not even provide as much as the value of carrier load from the field to the market. The occurrence of such perishable crops is widespread. And farmers who sell such products have to purchase the same products later in off season at a higher price. A good policy can prevent such massive losses of farmers due to spoilage, contamination, overlapping in sales and indifferent prices of agricultural products during the peak harvest season.



Besides crops, income of the farmers is positively related to husbandry of poultry, piglings, dairy farming, apiculture, handlooms, handicrafts and even off-farm enterprise. Greater attention to upgrade their skills and technical support enterprises are to be encouraged. Women in the villages are known for their skills in weaving. But due to technical difficulties, commercial weavers are less. Special occasions are held in the villages every now and then such as wedding, different types of conferences both within and outside Mao. During such occasion, everyone is bound to have uniform in traditional attire. It has been observed that in most cases, villagers are incapable to supply a large amount of such demand hence are brought from cities of Imphal and Dimapur. All these situation calls for the need to identify, promote and revive the potentialities of farmers.

Based on the above discussions, it is found that there are physical as well as human factors affecting the socio-economic conditions of Mao farmers. Due to geo-physical conditions, communications is difficult. Owing to mountainous region, fairly a large part of cultivation is done manually. In many fields, farmers cannot take the help of draught animals or power tiller as the agricultural fields are situated in a steep and far off location. Their agricultural production varies due to rainfall variability and incidence of pests and diseases. Their agricultural practices are by and large primitive and since more than 90% of the cultivation is rain fed; their sustainability on agriculture is dependent on nature. Communal ownership of land has been identified as one of the important factors for poor farmers. 45.7% of the respondents cultivate on group land. 13.7% of the respondents are without any individually owned land and with more than 80% of them belonging to marginal holders of scarce and fragmented land, communal ownership of land help the poor farmers to have food security and supplement income from the crops. For the reason that farmers do not have irrigation facilities other than rain water, farmers are much more below the sufficient production of crops whenever there is scanty rainfall. 97.3% of the respondents still use mostly planting materials of traditional varieties by carrying over year after year. Thus, apart from geo-physical conditions, there are other social obstacles such as lack of information about modern agricultural practices also affects the socio-economic conditions of Mao farmers. 46.3% of the respondents have not used any kind of chemical fertilizers, pesticides, insecticides or weed killers which resulted in low production. Proper marketing channel, transport, communication, storage, modern technology and processing facilities for the farmers which can boost the income of the

farmers remain out of reach. 90.3% of the cash crop growers sell their crops through middlemen without really knowing the market price out of which, 98.7% sell immediately after harvest with no means of prolonging the freshness. It is also due to lack of storage or processing facilities that 71% of the respondents who sell their crops have to buy the same crops during off season at a much higher rate as all the crops produced by Mao farmers are seasonal and remain only for a short period. All these factors hamper the potentials of farmers' growth. Further findings indicate that farmers are dearth of capital and other supporting systems. Government resources for the farmers are also very limited though a large part to the solution lies in the appropriate formulation of government policy. Even if they are available, due to improper implementation, the existing government policies have not significantly improved the conditions of Mao farmers. Thus, there are many diversified features in agricultural production affecting the socio-economic conditions of farmers. In short, SWOT analysis of the Mao Naga farmers is given at Box-6.3. The identified factors are applicable to the farmers of other hills areas in Manipur also as they have more or less similar socio-economic conditions affected by natural as well as human factors.

**Box-6.3: SWOT analysis of Mao farmers**

<p style="text-align: center;"><b><u>Strengths</u></b></p> <ul style="list-style-type: none"> <li>○ Hard working spirit of the farmers</li> <li>○ Skills of the farmers to survive in a difficult hilly terrain</li> <li>○ Communal ownership of land</li> <li>○ Rich socio-cultural life</li> <li>○ Favourable natural climatic conditions</li> <li>○ Production of mixed and multiple cropping</li> </ul>	<p style="text-align: center;"><b><u>Weaknesses</u></b></p> <ul style="list-style-type: none"> <li>○ Small and fragmented land holding of the farmers</li> <li>○ Agriculture is only rain fed</li> <li>○ Mountainous topography</li> <li>○ Traditional methods of cultivation</li> <li>○ Lack of technical know-how and Modern facilities</li> <li>○ Lack of promotion and improvement of traditional skills.</li> </ul>
<p style="text-align: center;"><b><u>Opportunities</u></b></p> <ul style="list-style-type: none"> <li>○ Scope to improve agriculture and practice agroforestry</li> <li>○ Great scope for organic farming</li> <li>○ Good prospect for commercialization of livestock</li> <li>○ Good opportunity for channelization of market</li> <li>○ Probability of reviving traditional skills</li> <li>○ Availability of options to divert occupation from cultivation for better income</li> </ul>	<p style="text-align: center;"><b><u>Threats</u></b></p> <ul style="list-style-type: none"> <li>○ Crop destruction by natural factor</li> <li>○ Poor infrastructure</li> <li>○ Beginning of land renting system</li> <li>○ Practice of shifting cultivation</li> <li>○ Civil disturbances</li> <li>○ Inappropriate crop insurance or other government policies</li> </ul>

## References

1. Ahuja, R. (2001). *Research Methods*. Jaipur: Rawat Publications.
2. 2011 witnesses 123 days blockade, 20 days bandh. (2011, December 31). Hueiyen News Service. Retrieved from <http://e-pao.net/GP.asp?src=20..010112.jan12>.
3. AK Mirabai: Stop coming to office only to take salary 2012). (2012, August 8). Hueiyen Lanpao, p.3.
4. Ashuli, N. (1970s). Hand written diary on History and Origin of Mao Naga in Manipur.
5. Christanty, L. Shifting Cultivation and Tropical Soils: Patterns, Problems, and Possible Improvements from (reprinted) Gerald G. Marten (1986), *Traditional Agriculture in Southeast Asia: A Human Ecology Perspective*. Westview Press (Boulder, Colorado) Retrieved from <http://www.gerrymarten.com/traditional-agriculture/pdfs/Traditional-Agriculture-chapter-11.pdf>.
6. Christina, K. (2006). *Changing Land Relations in an Angami Village* (Unpublished Ph.d thesis). NEHU, Shillong.
7. Daniel, M. (2008). *Socio-Cultural and Religious Life of the Mao Naga Tribe*. New Delhi: Mittal Publications.
8. Das, P.K., Ghosh, B.U. Choudhury, D.P. Patel, G.C. Munda, S.V. Ngachan & Pulakabha C. Climate Change in Northeast India: Recent Facts and Events –Worry for Agricultural Management, ISPRS Archives XXXVIII-8/W3 Workshop Proceedings: Impact of Climate Change on Agriculture, ICAR Research Complex for NEH Region, Meghalaya, India. Retrieved from <http://www.isprs.org/proceedings/xxxviii/8-W3/B1/2-114.pdf>.
9. Debnath, C. (2010). A Collective Journey – Well Being its Destination: Some Reflections in the Context of Naga Society. In J.U. Ahmed (Eds.), *Development Vision of North East India* (pp.3-21). New Delhi: Concept Publishing Company Pvt. Ltd.
10. Kothari, C.R. (2012). *Research Methodology Methods and Techniques*. Delhi: New Age International Publishers.
11. Reports from the Department of Agriculture, Senapati
12. Reports from the Department of Horticulture and Soil Conservation, Senapati
13. Devi, W. R. D. Need for Organic Farming Strategy in Manipur. Department of Life Sciences, Manipur University. Retrieved from [http://manipursfac.com/wp-content/uploads/2011/09/Need-for-Organic-Farming-Strategy-in-Manipur\\_2.pdf](http://manipursfac.com/wp-content/uploads/2011/09/Need-for-Organic-Farming-Strategy-in-Manipur_2.pdf)
14. Fogg, C.D. (1965). Economic and Social Factors Affecting the Development of Smallholder Agriculture in Eastern Nigeria. *Economic Development and Cultural Change*. 13(3). 278-292. Retrieved from <http://www.jstor.org/stable/1152246>. 2012.05.015
15. Jajuo, K. (2013). Traditional Significance of Paddy Cultivation for Mao Naga Farmers in Manipur. *Journal of Business Management & Social Sciences Research (JBM&SSR)*, 2(10), 33-39.
16. Krishi Vigyan Kendra – Sylvan, Hengbung, Senapati District, Manipur (Annual progress Report, 2006-2007).
17. Lokho, P. (1991). *A study on the Customary Laws of the Mao Nagas*. (Unpublished M. Phil thesis). NEHU, Shillong.
18. Lokho, P. (2004). The Mao Nagas. *Ishani*, 1 (1), 3-6.

19. Manipur hit by drought-like situation. (2012, July, 19). The Assam Tribune. Retrieved from <http://www.assamtribune.com/scripts/detailsnew.asp?id=jul1912/oth05>.
20. Masood, A., Nazima, E. & Zamara, B. (2012). Causes Of Low Agricultural Output and Impact on Socio-Economic Status of Farmers: A Case Study of Rural Potohar in Pakistan. *International Journal of Basic And Applied Science*, 1(2), 343-351. Retrieved from [http://insikapub.com/Vol-01/No-02/22IJBAS\(1\)\(2\).pdf](http://insikapub.com/Vol-01/No-02/22IJBAS(1)(2).pdf).
21. Okoedo-Okojie, D. U. & Aphunu, A. (2011). Assessment of Farmers' Attitude towards the Use of Chemical Fertilizers in Northern Agricultural Zone of Delta State, Nigeria. *Archives of Applied Science Research*, 3 (1): 363-369. Retrieved from <http://scholarsresearchlibrary.com/aasr-vol3-iss1/AASR-2011-3-1-363-369.pdf>.
22. Pfoze, N.L., Chhetry, G.K.N., Chanu, L.B., & Devi, A. P. (2010). Indigenous Traditional Cultivation Practices of the Mao Ethnic Tribe Under Senapati District in Manipur. *Assam University Journal of Science & Technology*. 5(1), 105-108.
23. Public Service Commission. (2008). Basic Concepts in Monitoring and Evaluation. Retrieved from <http://www.psc.gov.za/documents/docs/guidelines/PSC%206%20in%20one.pdf>
24. Revoke transfer of SDO. (2011, October 12). The Sangai Express. Retrieved from <http://tse.manipur.us/2011/10/11/sangai-express-news.php%3Fnewsid=9666.html>.
25. Rizvi, S.H.M., & Roy, S. (2012). *Naga Tribes of North East India*. Delhi: B.R. Publishing Corporation.
26. Saleo, N. (2008), *Ememei Kohrii Ko*(Mao Naga Culture), Pfosena Union. (Part of the festivals and taboos gennas mentioned in the chapter has been translated from this book from Mao to English by the author).
27. Senapati Horti office defunct. (2012, August 8). Hueiyen Lanpao, p.3.
28. Singh, H. B. (2010). *Social Geography on Manipur (A Comparative Study of Tribal and Non-Tribal People)*. New Delhi: Rejesh Publications.
29. Sullivan, M. (2007). *Fundamentals of Statistics* (2<sup>nd</sup> ed.). New Jersey: Pearson Prentice Hall.
30. Thandee, D. Socioeconomic Factors and Small-Scale Farmers in Southeast Asia. (Reprinted from Gerald G. Marten (1986), *Traditional Agriculture in Southeast Asia: A Human Ecology Perspective*, Westview Press (Boulder, Colorado). Retrieved from <http://www.gerrymarten.com/traditional-agriculture/pdfs/Traditional-Agriculture-chapter-07.pdf>
31. Yule, G.U., & Kendalli, M.G. (1994). *An Introduction to the Theory of Statistics*. (14<sup>th</sup>ed.). New Delhi: Universal Book Stall.