GENDER ROLE IN THE LIVELIHOOD ACTIVITIES OF SHIFTING CULTIVATION IN MIZORAM: A CASE STUDY OF CHAWNGTLAI VILLAGE

A Dissertation submitted in partial fulfillment for the award of the degree of Master of philosophy in Economics

By

AGNES LALREMRUATI

To

DEPARTMENT OF ECONOMICS

MIZORAM UNIVERSITY

TANHRIL-796004

2016

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MZU/M.Phil./281 of 22.04.2016

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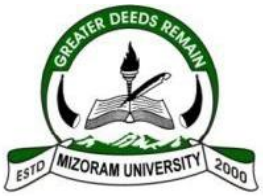

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CERTIFICATE

This is to certify that Agnes Lalremruati has carried out the research embodied in the present dissertation entitled "**Gender Role in the Livelihood Activities of Shifting Cultivation in Mizoram: A Case Study of Chawngtlai Village**" submitted in partial fulfillment of the requirement for the award of the Degree of Master of Philosophy in Economics, a full time student in the Department of Economics, Mizoram University during the Academic year 2015-2016. This dissertation has not previously formed the basis for the award of any Degree.

This dissertation is an independent work of the candidate but for the guidance provided by me.

(Dr. JAMES L.T THANGA)

Supervisor

Date: ……..

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DECEMBER, 2016

DECLARATION

I, Agnes Lalremruati, hereby declare that the dissertation **"Gender Role in the Livelihood Activities of Shifting Cultivation in Mizoram: A Case Study of Chawngtlai Village"** being the title of the dissertation submitted by me for the Degree of Master of Philosophy in Economics is a record of research work done by me during the academic year 2015-2016 and that the dissertation has not formed the basis for the award of any Degree, Diploma, Fellowship, or other similar title.

This is being submitted to the Mizoram University for the Degree of Master of Philosophy in Economics.

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IV

ACKNOWLEDGEMENT

This acknowledgement is not merely a formal thank you note; it is the best way I could attempt to convey my sincere gratitude and respect for those who have been indispensable in completing this Dissertation.

First and foremost I am grateful to the Almighty God for the kind blessings which helped me to carry out the work without any difficulty.

A special word of appreciation and thanks to my guide Dr. James L.T Thanga, for instilling confidence in me, his inspirational words, invaluable comments and criticism on my issues helped me a lot. I am proud to be a student of this Department and grateful to work under his guidance. I will always be indebted to him for constantly rendering timely advice and sparing valuable time as and when required.

I would also like to thank my Family, who provided me monetary help and moral support, with which I carried out this research.

(AGNES LALREMRUATI)

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LIST OF ABBREVIATIONS

UNDP	United Nations Development Programme
NGO	Non Governmental organisation
NSSO	National Sample Survey Organisation
FAO	Food and Agriculture Organisation
BPL	Below Poverty Line
APL	Above Poverty Line
AAY	Antyodaya AnnaYojana

CHAPTER - I

INTRODUCTION

Chapter-1

INTRODUCTION

1.1. Introduction

Agriculture is the back bone of many developing countries in which women account for more than half of the work force by participating in different activities, either directly or indirectly. Women play an important role in agriculture, undertaking a wide range of activities relating to food production, planting, weeding, harvesting, processing, and marketing as well as tending livestock and beyond farming, they are involved in land and water management: most often they are collectors of water, firewood and fodder. The gender division of labor varies from one society and culture to another, and within each culture external circumstances influence the level of activity (Nigist, 2004). However, except in few most developed countries, women's efforts are not yet realized by society. They are involved in over half of the farm activities in many developing countries, bear most of responsibilities for household food security and contribute to household well being through their income generating activities (Etenesh, 2005).

Shifting cultivation is an agricultural system in which plots of land are cultivated temporarily, then abandoned and allowed to revert to their natural vegetation while the cultivator moves on to another plot. According to FAO convention shifting cultivation refers to "a system in which relatively short periods of continuous cultivation are followed by relatively long periods of fallow". Wikipedia defines it as "the process where a forested area is cleared, burnt, and cultivated, then left abandoned to allow natural re-

growth before beginning again". Trees and bushes are cleared by slashing, and the remaining vegetation is burnt. The ashes add potash to the soil. The sequences of major activities under shifting cultivation are as follows:

- Selecting a forest patch and clear fell the vegetation normally in December and January, selecting forest path is mainly done by men.
- Burning of the vegetation. Small, cut-trunks portion and roots are normally not removed. The herbs, shrubs and twigs and branches (slashed vegetation) are burnt in February and March, here both men and women participated.
- Sowing of seeds, by dibbling, generally of cereals, vegetables and oil seeds in April–May, mostly sowing of seeds are done by women, this may be due to greater potential that woman has.
- Continuing cultivation for a year or two.
- Abandoning the cultivated site and shifting to other forest sites
- Returning to the former site, and once again practice shifting cultivation on it.

1.2. Gender Role in the System of Shifting Cultivation

Agriculture has been the backbone of the Indian economy and it will continue to remain so for a long time. It has to support almost 17 per cent of world population from 2.3 per cent of world geographical area and 4.2 per cent of world's water resources. The economic reforms, initiated in the country during the early 1990s, have put the economy on a higher growth trajectory. The workforce engaged in agriculture in the year 1980-81 and 2006-07 witnessed a very small decline; from 60.5 percent to 52 percent. India has an estimated 180 million hectares of farmland with 140 million of which are planted and continuously cultivated. The traditional agriculture is still dominant as many farmers depend on livestock in crop production, for manure as fertilizers, and the use of animal powered ploughs.

The women have significant contribution in the Indian agricultural practice and they constituted around half of the total workforce. According to 2011 Census, the percentage of women in rural areas who depend on agriculture for their livelihood is as high as 84 percent. At the same time, 33 percent and 47 percent of women workforce are cultivators and agricultural laborers respectively. Meanwhile, the data do not account for work in livestock, fisheries and various other ancillary forms of food production in the country.

According to Human Development Report (2009), 94 percent of female agricultural labor force in crops cultivation was in cereal production, while 1.4 percent worked in vegetable production, and 3.72 percent were engaged in fruits, nuts, beverages,

and spice crops. Women's participation rate in the agricultural sectors is about 47 percent in tea plantations, 46.84 percent in cotton cultivation, 45.43 percent growing oil seeds and 39.13 percent in vegetable production. While these crops require labor-intensive work, the work is considered quite unskilled. Women also heavily participated in ancillary agricultural activities. According to the Food and Agriculture Organization, Indian women represented a share of 21 percent and 24 percent of all fishers and fish farmers, respectively.

1.3. Practice of Shifting Cultivation in Mizoram

Mizoram is a hilly terrain lying in the easternmost corner of India, with a geographical area of 21,087 sq. km. out of which 5,509 sq. km is Reserved Forest Area which account to 26.23 % of the area. The broken hills run from North to South. The altitude ranges from 21 meters at Tlabung to 2,175 meters at Phawngpui (Blue Mountain). There are innumerable rivers, streams, brooks and waterfalls, which flow to the brim in monsoon. Mizoram enjoys a pleasant climate and the temperature ranges from 8oC to 34oC. The climate is characterized by monsoon rains from May to October, winter from December to the end of February, and summer without rainfall, except few showers, from first part of March to the end of April. The annual rainfall ranging from 2,000 -2,500mm is fairly heavy. The average annual rainfall was 2,546 mm; it is also unevenly distributed and the intensity at times is so high that it causes landslides and landslips. During monsoon period, heavy rainfall occurs, and the humidity is fairly high,

with an approximate of 60%. The rivers are in spate and landslides disrupt the road communication. The hill slopes in Mizoram is much steeper as compared to other hill states in the North East, thereby causing constraints to cultivation of crops.

The tropical forest of Mizoram abounds in a wide variety of flora and fauna. The thick bamboo grooves strewn with wild plantains dominate the lower altitude slowly giving way to dense woods festooned with creepers and vines as the hills rise higher. The physiographic of Mizoram can be broadly divided into Hills, Valleys and Flat lands. Hills consisting of high hills (above 1,300m above MSL), medium hills (between 500m to 1,300m above MSL) and low hills (below 500m above MSL).

Agriculture is the mainstay of the people of Mizoram. About 70% of the people depend on Agriculture. Important crops grown are paddy, ginger, banana, pineapple, sugarcane, coffee and vegetables. There are no major industries in the state but about 3087 small scale and cottage industries of which bakery, tailoring, knitting, handloom, furniture, rice mill are common. There are 89,454 cultivator families within the State, which means 57.85 % of the population is cultivators.

Agriculture occupies a prominent place in the economy of Mizoram. As per the Economic Classification of Workers in 2011 Census, about 55 percent of the total workers are engaged in the agriculture and allied sector. In the absence of adequate development in other sectors such as agro-based industries and other industries, it continues to be the main occupation of the people till today. Shifting cultivation (Jhumming) continues to be the prevalent method of cultivation. Though the Mizo

society is patriarchal and male dominant, women are actively participating in the economic activities, mainly in agriculture. The genders' role in various activities of agriculture in the state can be observed from Table 1.1.

Table 1.1: Gender Distribution of Agricultural Workers in Mizoram, 2011

Categories	No. of Persons			Percent		
	Male	Female	Total	Male	Female	Total
Total Workers	290740	195965	486705	59.74	40.26	100
Main Workers	263305	151725	415030	63.44	36.56	100
Main Cultivators	121598	80916	202514	60.04	39.96	100
Main Agri Labourers	16601	9863	26464	62.73	37.27	100
Marginal Cultivators	7884	19205	27089	29.10	70.90	100
Marg. Agri. Labourers	5887	9436	15323	38.42	61.58	100

Source: Primary Abstract of Population Census, 2011

The classification of workers according to Population Census 2011 shows significant contribution of women in the various livelihood activities of agriculture in Mizoram. On the average, 40.26 percent of the total workforce is constituted by female and 36.56 percent of the total main workers are female. It is notable that the female workforce constituted highest portion in case of marginal cultivators (70.90 percent) followed marginal agricultural laborer (61.58 percent). At the same time, 39.96 percent of the workforce who are accounted as main cultivator, mostly shifting cultivation, was constituted by female. It is thus clear that female members of the society have contributed significant percentage in the agricultural activities in Mizoram in addition to their usual domestic responsibilities.

1.4. Livelihood Activities under Shifting Cultivation in Mizoram

Though an agricultural state, the primitive method of shifting cultivation known as 'jhuming' is still practiced in Mizoram. Jhuming is called 'the slash and burn method' of cultivation for crop production. In the pre-independence days the jhum cycle was 15 years, whereas at present it has narrowed down to 5-10 years. Due to the ever-increasing population with no simultaneous increase in the available land it has become impossible to have a long cycle. Jhum is cut for the ensuing year and the following year it has to be abandoned and fresh areas are cut for the next year's cultivation. In jhum only annual and seasonal crops are raised as it is shifted every year.

Till the grouping of the villages in 1967, each village had a village-reserved forest of about 2/3 kilometers in diameter around it for protection from fire, collection of building materials and fuels etc. The area beyond this was open for jhuming. The average jhum land is estimated at 1 to 3 hectares. For preparation of jhum the natural vegetation in the demarcated areas-trees, bamboos, shrubs and weeds are cleared by cutting, usually with the help of axes and daos. Tree trunks and bamboo clumps are cut as low as possible, almost to the ground level so as to ensure the consummate burning of the felled tree trunks, bamboos, twigs and leaves. In the past it was calculated that 10-12 men-days were sufficient to cut one acre (0.40 hectares) of tree forests and 6-8 men days for bamboo forests.

While men folks are the main force to cut thick forests for jhuming, womenfolk are also not spared, especially the widows as circumstances compelled them. The successive jhum activity consists of cutting and felling of trees, bamboos etc., burning, dribbling of paddy seeds, weedings, harvesting, threshing and transportation to the villages. Jhum cutting starts in the early part of September and is completed in mid-November in the eastern and southern belts of Mizoram, while it is done from early January to the end of February in the North and North West. Different timings are observed in view of the relative duration required for drying of the felled trees and bamboos. Being cooler in climate, the eastern and southern belt requires longer periods for exposure to the sun to dry for complete burning.

The burning of Jhum normally takes place before 15th March, when the felled trees, branches, twigs, bamboos and leaves remain dry. These days, broad guidelines are issued by the Local Administration Department of the State Government fixing a deadline for burning jhum, which is normally fixed at the 15th March, well before the onset of South West monsoon rains, which may cause the process of Jhum burning abortive. The order of the Local Administration Department is carried out by the Village Councils in the entire Mizoram. The timing is decided by the movement of clouds and downpour of rain. The critical point is that there should be no rain just before burning.

After burning the plots of land are called ‘Kangvar’ as white potash appears on the surface. The next step is to remove the left over ballies and unburnt debris lying on the plot by stacking and re-burning it known as ‘Mangkhawh’. Thus, the plot of land is

prepared and ready for sowing. Sowing of paddy seeds is done by dibbling with the help of a small hand hoe at appropriate intervals. Mixed cropping is practised in jhum cultivation. The spacing from crop to crop is decided on the spot by thumb rule.

The Mizo traditional paddy seed sowing is done together with the neighbours following the system of 'Lawmruai', which means joining hands to sow seeds so as to finish in a few days time. Ten to twelve persons can approximately sow paddy seeds in one-acre plot in a day. The traditional Mizo farmer usually go by the date of 'Good Friday' for sowing paddy seeds, as it always coincides with the full moon night around which it was found that the insect pests are keeping lull and inactive. There are seeds to be sown before and after the first shower of monsoon rain. Single multiple cropping is practiced in jhum and double cropping is not prevalent for want of sufficient moisture for the second crop. This has necessitated a search for a system of cropping twice a year, which would involve different varieties of seeds requiring lesser quantity of moisture.

Usually three to four weeding that is, clearing of the undergrowth of weeds are done in one year from the time of sowing the paddy seeds to harvesting. By this process all the noxious weeds are removed with the help of small hand hoes by the womenfolk and curved daos by the men. The first weeding is done after a month of dibbling paddy seeds which is sometime in the first part of May. Second weeding is done in June, third in July/August and last weeding in early part of September. The weeds, which harbour harmful insects should be removed by hand and stacked in a safe place. While cutting off the weeds the soil around paddy tillers should be mulched to preserve moisture. Care

should be taken not to injure the crop during weeding operations. Weeds interfering with the young crops should be pulled out by hand scrupulously with the roots intact.

With winter setting in comes the harvesting season in late November and December. The paddy ears have ripened with full-grown grains. During the harvest season, if the Jhum is far from the village all the grownups would move to the jhum for work. Two or more families camp together from one plot to another. They rise at dawn to work and come back to the jhum huts at dusk to retire. Harvesting is normally done by cutting the paddy with the dao or sickle. The yield is calculated at about 9 -15 quintals of paddy per acre (0.40 hectare). While cutting the ears is thrown into the cone shaped baskets weaved from bamboo (em-pai), which is strapped onto a person's back. The paddy is carried home in two or more stages by storing in successive temporary huts called 'Chhekin'. On occasions when the location of the jhums are too far from the village, a subsidiary jhum called 'Leipui' is resorted to near the village where the principal subsidiary food crops like maize, arum, sweet potato and other vegetables of daily necessity are grown. The rice grains collected from the plot are heaped up in one place, from which it is transported with a larger bamboo basket called 'tlam', by the stronger men-folk to the jhum hut for threshing. There are two ways of threshing paddy among the Mizo, one is on the growing land 'Hruih' where the paddy grain is removed from the stalk either by beating with a stick or by beating the paddy stalk bundle themselves, after the sheaves are left to dry in the fields for some days. Another is a structure in open space 'Fasuar'. The 'Fasuar' is a platform made of bamboo with rough

bamboo mat flooring with provisions that the paddy grains can pass down, six to eight feet high, for the purpose of separating the grains from the ear/straws. This is done by stamping over it with the swift movement of the feet till the grains are separated from the straw. The grains drop and fall onto the floor beneath in a pyramidal shape, the lightweight husk is blown away by the wind and the grain gets collected underneath, while the chopped husk and straw are thrown beyond the thrashing floor. From the threshing floor the collected grains are measured in tins (empty kerosene oil tin) and stored in a temporary round shaped barn - 'zem' made of bamboo. This temporary storage is for onward transportation to their homes.

There is a sequence of activities for shifting cultivation. The major activities are site selection, jungle clearance, burning of jhum field, clearing of bush, sowing or plantation of crops, weeding, harvesting, transportation, and storing of the grain. Table 1.2 presents a summary of livelihood activities under shifting cultivation in Mizoram.

Table 1.2: Summary of Major Livelihood Activities under Shifting Cultivation

SN	Activity	Period	Description
1	**Site Preparation**		• The village council called a village meeting named '*Vangtlang Inkhawm*' to decide on the areas to be distributed for jhum cultivation the next year. Once the areas are decided, it was divided into a number of plots sufficient for all the households, and each plots was divided to these households normally by drawing of lots. • This is followed by clearing of forest. • When all the felled trees were fully dried, it would be burned. All the leftover of tree branches, etc after burning would be again cleared, the activity is called '*Mangkhawh*'
	Site Selection	September-October	
	Forest Clearance	January – February	
	Burning of jhum field & Clearing of leftovers (Mangkhawh)	March	
2	**Sowing or Plantation**	March – April	• Immediately after burning, sowing of seeds like maize, chilies, vegetables, cucumber, watermelon, etc were started, normally by female members. • This is followed by sowing of main crops like paddy and ginger.
3	**Weeding**		• Weeding takes place in a phased manner of well-ordered stages. • There are three stages, namely *hnuhpui, hnuhnau* and *pawhchhiat*. • Weeding is hard, back-aching and time consuming work since the hot and hmut climate is quite favourable to the growth of foliage.
	Hnuhpui	May-June	
	Hnuhnau	June - July	
	Pawhchhiat	August-September	
4	**Harvesting, transportation & storing**	October – December	• Harvesting of main crops mainly starts from the latter part of October till the end of November. • Once harvesting is done, the grains were stored in makeshift store room, called *Chhek in.* After this, it is transported to the village normally in the month of December and January the next year.

1.5. Significance of the Study

Women account around half of the total population and their contribution in securing their family consumption demand is of great importance. But the society gave them less attention. In most agriculture schemes, plots are allocated on the assumption that men are the main farmers, decision-makers and providers. As a result, plots are only allocated to men, and it is assumed that women will contribute to farming through their husbands or male relatives. Historically, men have controlled land through patrilineages, and therefore land is still substantially in their control (Goheen cited in Davison, 1988).

The customary practice allows men to own land, while women may only own crops and not fields. However, women often cultivate land that belongs to their husbands or other male relatives. Women are the providers of their families' basic diet in most rural cultures. Men are reluctant to admit that their wives, mothers and daughters do most of the agricultural work, and as such, women's significant contribution to food production is under-acknowledged and their scope for decision-making is limited. Despite carrying substantial rural responsibility, women have generally been ignored by development officials and planners (UNDP, 1980).

Therefore, this study aimed at uncovering the role of women in agriculture, especially in shifting cultivation and how they fill the gap of food production in the family. The output of the study could be significant for decision makers in providing valuable information with regard to the role of women in agriculture, other activities and work load, and hence formulate gender sensitive development projects. The study will enable women to understand their role in fostering agricultural development through their effective participation. And finally it creates awareness among the society and outsiders on the role played by women and give due respect to their contribution, this study aspires to help fill this gap.

Women usually have limited accesses to resources and opportunities and their productivity remains low relative to their potential. Due to lack of awareness in our society women's role has not been recognized (Lynda, 1991) noted that we live in a society in which there is substantial level of gender inequality. The inequality in the

provision of education reflects the deep rooted tradition and values within the ideological, political, economical and socio cultural structure of societies (Kasente, cited in Takele, 2008). In terms of ownership of property, the women in this country have no equal right as men. In addition, the dominance of men in various income generating activities affects highly the economic empowerment of women. The purpose of this study was therefore to evaluate the activities of rural women and their participation in agricultural production to fulfill the food security of their family.

1.6. Scope of the Study

The study was conducted at Chawngtlai Village. The village is situated in the high hills of the North-East Corner of Mizoram comes under Champhai district is a small village having 325 houses (2011 census). The study was carried out among the villagers. The respondents were selected among the households within the village from the families where in shifting cultivation is practiced. 50 respondents were selected out of 325 households in the village. The classification depended on land size, agro climate, population density, farming system of the people in the village, location. In the selection of these respondents some important features were taken into consideration.

1.7. Objectives of the Study

The overall objective of the study is to understand the role of women and their participation in agricultural practice of shifting cultivation, and to find out if their participation in agriculture enhances their livelihoods. The specific objectives are:

1. To examine the current status of women's participation in the livelihood system of shifting cultivation in Mizoram
2. To estimate the contribution of women in various activities under shifting cultivation like forest clearance, sowing of seeds, harvesting of crops, weeding, etc.
3. To examine status of women in the decision making for various activities under shifting cultivation.

1.8. Hypotheses

To have firm and logical conclusion in our study, the following hypotheses are tested:

1. Women play a more significant role than men in the livelihood activities of shifting cultivation.
2. *Male members of the family dominate female on decisions making on activities under shifting cultivation.*

1.9. Methodology

The study was based on primary data and secondary data. Primary data was collected by conducting sample survey using simple random sampling method. Firstly, the list of households who adopted shifting cultivation as main activities in the village was prepared in consultation with the Village Councils. Secondly, sample households were selected from the list. Finally, the required information was collected using schedule questionnaires. At the same time, secondary data was also obtained from various official publications like Census, Directorate of Economics & Statistics, and other government departments. Required information was also generated from various sources like journals, articles, academic literature, and unpublished records of individuals and NGOs.

To suit the need of the study and to prove the research hypotheses, the collected primary and secondary data was analyzed using various statistical tools, viz. percent, mean, standard deviations, and suitable diagram. To prove our research hypotheses, t-statistic and z-statistic were conducted to test the average and proportional differences respectively.

1.10. Description of Study Area

This study attempted to analyze the roles of women in the livelihood activities of shifting cultivation in Mizoram with reference to Chawngtlai village. The village is situated in the high hills of the North-East Corner of Mizoram comes under Champhai

district is a small village having 325 houses (2011 census), endowed with, hilly terrains, meandering streams, rich wealth of flora and fauna and many more to choose from. The population of the village, according to the census 2011, is at 1638. Table 1.3 presents the basic socio-economic conditions of the village as per 2011 Census.

Table-1.3. : Socio-Economic Profiles of Chawngtlai Village, 2011

	Numbers			Percent		
Categories	Male	Female	Total	Male	Female	Total
Total Population	847	791	1638	51.71	48.29	100
Literacy*	678	619	1297	80.05	78.26	79.18
Total Workforce	507	460	967	59.86	58.15	59.04
Main Workers**	500	450	950	98.62	97.83	98.24
Main Cultivators**	473	435	908	93.29	94.57	93.90

Source: Primary Abstract of Population Census, 2011

*Percentage of literates per persons (male and female) are calculated

**Workers as a percentage of total workforce

The village relies heavily on agriculture which is the backbone of their livelihood and 93.90 percent of them derive their livelihoods from shifting cultivation (cultivators). Interestingly, participation of female workers on shifting cultivation as a percentage of total workers (94.57 percent) is more than participation of male workers (93.29 percent) on shifting cultivation.

Table- 1.4: General Classification of Workers in Chawngtlai Village, Mizoram

	No of Persons			Percentage		
Categories	M	F	Total	M	F	Total
Main Workers	500	450	950	52.63	47.37	100
Marginal Workers	7	10	17	41.18	58.82	100
Main Agricultural labourers	1	1	2	50	50	100
Marginal agricultural Labourers	1	2	3	33.33	66.67	100
Total Workers	507	460	967	52.43	47.57	100
Non Workers	340	331	671	50.67	49.33	100

Source: Primary Abstract of Population Census, 2011

Table-1.5: General Classification of Cultivators in Chawngtlai Village, Mizoram

	No of Persons			Percentage		
Categories	M	F	Total	M	F	Total
Main Cultivators	473	435	908	52.09	47.91	100
Marginal Cultivators	3	3	6	50	50	100
Main Agricultural labourers	1	1	2	50	50	100
Marginal agricultural Labourers	1	2	3	33.33	66.67	100
Total Workers	507	460	967	52.43	47.57	100
Non Workers	340	331	671	50.67	49.33	100

Source: Primary Abstract of Population Census, 2011

Most of the populations of working age group in Chawngtlai are engage in agriculture since it is their main occupation and their source of livelihood, agriculture plays a very important role in this village. The above figure shows that there are 950 main workers in Chawngtlai Village out of which 500 are male and 450 are female. Also there are 17 marginal workers out of which there are 10 male and female, there are very few people of marginal workers this may be due to most of the workers have owned their land to cultivate in order to sustain their basic needs. In Chawngtlai Village there are also main agricultural labourers just two both female and male . And also there are three

Marginal agricultural labourers one female and two male. In the village there are 967 total workers out of which there are 507 male workers and 460 female workers. Here we can see that women also play a very important role in agriculture. Among the population there are also 671 total non workers, 340 male and 331 female.

Table 1.5 shows that there are 908 main cultivators in Chawngtlai Village out of which 473 are male and 435 are female. Also there are 6 marginal cultivators out of which there are 3 male and 3 female, there are very few people of marginal cultivators this may be due to most of the cultivators have owned their land to cultivate in order to sustain their basic needs. In Chawngtlai Village there are also main agricultural labourers just two both female and male. And also there are three Marginal agricultural labourers one female and two male. In the village there are 967 total cultivators out of which there are 507 male cultivators and 460 female cultivators. Here we can see that women also play a very important role in agriculture. Among the population there are also 671 total non cultivators, 340 male and 331 female. Thus, it would be an interesting academic exercise to conduct systematic study on the roles of female workers in the day to day activities of shifting cultivation in this village.

1.11. Scheme of Chapterisation

The study is organised in five chapters as follows:

Chapter 1: Introduction

Chapter 2: Literature review

Chapter 3: Gender Dimensions of Agriculture in Mizoram

Chapter 4: Gender Role in Agricultural Activities: An Analysis

Chapter 5: Summary of findings and conclusions

Bibliography

Chapter-2

LITERATURE REVIEW

Chapter-2

REVIEW OF LITERATURE

This chapter aims to review literature on Gender Roles in the Livelihood Activities under Shifting Cultivation. Emphasis will be on access to and control of productive resources and benefits from agricultural production and relevant services. Furthermore, women's participation in decision making will also be reviewed. The section also explores the global responses towards addressing gender inequalities, the literature on women's participation in agriculture, and irrigated agriculture, gender and water access, and division of labour are reviewed.

Historically, agriculture was under the control of men, even in situations where women did most of the work (Goody and Buckley, 1973). It has been evidenced that women play a more significant role in agriculture than men (Williams, 1994; Mutangadura, 2004 and Bastidas, 1999). Over the past 20 years, significant changes in women's roles in food production have occurred (Booth and Protais, 2000).

Chayal, Dhaka, and Suwalka (2010) in their study of the analysis of role performed by women in agriculture in India found that there is greater involvement of women in various agricultural operations. They concluded that policy intervention could enhance women participation in actual farm work to as high as 70 percent. In addition, they found landholding, age, and family income greatly influence women participation in

agriculture and recommended for effective policy intervention in order to boost women socio – economic structure.

Also, Butt, et al. (2010) conducted a study on the role of rural women in agricultural development and their constraints: a case study in Depalpur, Okara-Pakistan; found women playing crucial role in food security and stability of rural areas due to keeping crop production, livestock production as well as cottage industry alive. They also found women having incomplete access to farm input/resources, agricultural extension education services, and newest technical knowledge and information sources. They recommended that serious attention be given to eliminating constraints faced by women because they hold the backbone of agricultural development and food security in many part of the world.

In many African countries, rural women produce 80 percent of total food production (Majake, no date; Staudt, 1988 and Ikdahl et al., 2005) and they account for 60 percent of overall agriculture production (Chana Majake, no date and Staudt, 1988). This was also supported by Agarwal (cited in Jackson, 2003), who noted the higher value outputs produced on women's fields in Burkino Faso. According to Schroeder (1996), in Gambia women who were engaged in communal gardens along the Gambia River Basin have been doing well as compared to their husbands. However, women's absence from their homes while working in their gardens was widely criticized, but this has changed over time and women gardeners were praised by their husbands for generating a greater benefit than the peanut crop men. In Gambia, male peanut crop was the primary source of

income for many years. According to Mtshali (2002), in KwaZulu-Natal, women have had to take on more responsibilities for agriculture due to social changes such as male migration and children being less available because of attending school. This suggests that women's predominance in agriculture is due to men's migration, and therefore women are compelled to expand their role in farming out of necessity.

Despite carrying substantial rural responsibility, women have been generally ignored by the planners (UNDP, 1980). For example, in her study A Plot of One's Own, in Dakiri Irrigation Scheme in Burkina Faso, Zwarteveen (1996) states that the allocation of irrigated plots to women is often resisted by policy makers and project planners, who assume that women do not produce as much as men. However, the study conducted in Dakiri has rejected the assumption and revealed that almost 60 percent of the respondents think that there is no difference in agricultural production performance between men and women.

Agarwal (cited in Jackson, 2003) argued that in many cases rural women are demanding land rights, but acknowledges that there are some instances where women have not identified this as a priority. She further indicates that production inefficiency is associated with tenure insecurity and women with land rights and control of produce would be motivated to put greater effort and investment into the land. Agarwal encouraged a view that a voiced concern is a sufficient indicator of needs and preferences and an adequate basis for social policy. Moreover, Agarwal is of the opinion that it is wrong to assume that men's need for land is the same as women's because women's

access to labour and to cash or other resources to mobilise labour are more important than access to land. Goheen (cited in Davison, 1988) points out that land remains substantially in control of men through patrilineages, and as a result, women cannot own land but they often have secure usufruct rights. When women have equal access to resources as men, their maize output per acre surpasses that of men (Staudt, 1988).

A study done in Dakiri Irrigation Scheme shows that women are more confident in irrigated agriculture when plots are registered in their names, knowing that they benefit more under this condition (Zwarteveen,1996). A study done at Tshiombo Irrigation Scheme shows that during the early years of the scheme, almost all the land was allocated to male household heads, however this later changed and women were then allocated plots in their own right (Lahiff, 2000). Schreiner and van Koppen (2001) argue that if women could be given land rights, productivity would increase.

According to Gorman (2006), gender roles and relations are of particular importance in the process of livelihood decision making. He further explains decision making as the conscious choosing among alternative courses of action. Furthermore, he indicates that persons with access to or control over certain resources may have greater influence and control in decision making.

Meer & Parhiar (2005) has investigated in his research article entitled "Understanding Poverty in Rural Sindh" that rural women do all on farm/off farm works. Her day begins from pre-dawn with crushing. Their traditional role of housekeeping has been extended to collect firewood, fodder, and working on farms. Owing to social

taboos, ignorance, financial constraints, inadequate education facilities, and non-availability of lady teachers in rural girls‟, schools have not opened the doors of literacy for them. Agriculture-dependent rural people have struggled to improve their economic conditions. On the contrary, shortage of water, dry spell cycles, decrease in cultivable area due to soil deterioration, extension of towns and villages, contraction of infrastructure, rising cost of inputs, non- availability of high yield quality varieties seeds to small farmers, un-checked population growth, etc, have together adversely affected the lives of rural people.

Zar Quresh (2005) has mentioned in his paper "Role of Rural Women" that role of women in agriculture sector is as important as men, therefore, women should educate themselves in agricultural. He also highlights the importance of education to rural female and proposed to educate women in floriculture and food preservation.

Alam SM (2006) has pointed out in his article entitled "Production Hazards, Marketing Risks" mentioned that majority of women is self-employed and work in dangerous environments. Their daily tasks includes keeping and caring for the livestock at farms. They grow grains, cotton, fibers, fruit, and vegetables. The crop farmer plants, tills, fertilize, sprays, harvests, packs and stores the product. The livestock farmer feeds and cares for animals, while the horticulture farmers produce ornamental plants and nursery products. The per capita income of the millions of agricultural workers is less than half a dollar per day. These workers are deprived of basic human needs like health, food, education, clean water, and shelter. In addition, their women are frequently tortured

by the landlords and their thugs. Farmers, particularly women, face a high degree of economic, legal, and institutional uncertainties when investing in their land and other resources. Successful implementation of such programs stem from in the motivation and attitude of individual farmers and newly instituted government policies to providing incentives to farmers to manage their natural resources efficiently and in a sustainable way.

The study conducted in Peru among Cajamarcan women shows their greater role in decisions over product disposition than in the other facets of agricultural decision-making (Deere, 1992). However, Machete et al. (2004) argue that women's participation in decision-making has been limited. Contrary to this, various authors (Van Koppen, 2002, and Safilios-Rothschild and Namara, 2005), state that women more often become the decision-makers in formerly male-managed fields due to men's growing migration to urban labour markets which are highly gender-segregated. A study done in the Volta region of Ghana found that men and women had equal rights to choose the types of crops to grow.

Different writers have described women's empowerment in various ways but all point towards one direction which is the assumption of power or ability by women to address their needs. For instance, Longwe & Clark (1994) perceives it as a means to overcome barriers to women's equality with men especially in patriarchal societies. For instance, Safilios Rothschild (1985) attributed women's invisibility in agriculture to patriarchal values that rigidly sustains powerful male supremancy. According to Mayoux

(2000) women assuming the ability to identify their aspirations and strategies for change besides gaining skills and resources to achieve these aspirations constitutes their empowerment. In addition, women's empowerment is viewed as a process that increases women's choices or ability to makes choices about their life and the environment they live in (Allendorf, 2007; Mehira, 1997; Kabeer, 1999).

In line with women's empowerment in agriculture is control over decision making on land use which according to Allendorf (2007) is the main source of livelihoods as well as power and status. Mutangadura (2004) emphasised the importance of land to women's economic empowerment. This is the case especially in countries that depend on agriculture for their livelihood . Allendorf noted that access to and control over land continues to be a major setback for women farmers which limit their ability to effectively practice sustainable agricultural development. The increase in value of land which has resulted into market oriented farming has put women at a disadvantage as men challenge women's rights to land even in matrilineal societies (Gray & Kevane, 1999). Women might sometimes lose access even to the land provided to them for food production (Lastarria-Cornhiel, 2006). Men have tended to dominate in making decisions about what to grow since societies are constructed in such a way that they control economic activities in the household (Squire, 2003).

The World Bank has promoted several initiatives towards women's emancipation from the structures that marginalise them. One such initiative is the Gender Action Plan which focuses on integrating women as ultimate clients into agricultural projects to

enhance supply responses in times of crises (World Bank, 2010). The initiative achieves this by among other things promotes women's access to factors of production like land, agricultural inputs and finance. Positive trends have been reported by Buvinic (2010) that there have been significant improvements in land productivity in the Ethiopian rural land certification project. The project was promoting joint land titles between men and women which increased women's power on decision making. The World Bank recognises that strongly held beliefs that influence people's attitudes and behaviours related to gender identity needs more time to change. The Beijing platform for action in 1995 adopted gender mainstreaming as a global strategy to achieve gender equality (United Nations, 2002). This strategy was established on the basis of ensuring effective achievement of development goals through integrating gender perspectives in the development process.

In most societies men's roles in agricultural activities is understood to be directed and clear. However women's role in agriculture is not clearly recognized. Hence a clear picture of women's of participation in agriculture is needed. Although these is increasing that women are involved in the world agriculture until recently have been difficult to gain a clear picture of where, and under what circumstance women particular in the farm work (Annable,1986). Although the micro studies documenting the importance of women's roles have arisen steadily national statistics have to undercount women's agricultural labor, due to their definition of agricultural activities in their intervening producer.

Women play important roles to help their family in particular and their community in general in sewing their food demand, in the world. But the most surprising thing is that the community has not significantly under stood the effort that they exert in the last several years. Woman are involved in agricultural and rural development representing more than half of the labor required to produce food consumed in developing countries (Etenesh, 2005). One problem here is reaching at common understanding as to how female farmers are perceived in society; observations indicate that a female farmer is commonly perceived as a co-farmer as marginal players in agricultural development particularly by those individuals with significant influence is research, extension and development positions (Tsehai, 1991).

Garba (2004) observed that the processes through which men and women participate in activities generate inequalities. These socio – political and economic costs are significant and these inequalities need to be addressed for meaningful transformation of human society. But the role played by Women in agriculture and in rural societies is fundamental to agricultural development in sub-Saharan Africa. The Technical Centre for Agriculture and rural cooperation (CTA, 1993) reported that women in Africa make up more than one-third of the work force.

From Mahabub and Manik (2004), nature and impact of women's participation in economic activities in rural Bangladesh – insights from household surveys found that women working hours in economic activities were low due to their substantial involvement in non-economic household works as only 6 percent of the women worked

for more than six hours a day in economic activities: livestock rearing and homestead gardening and cottage industries, which are significantly higher than that of men while men have allocated more time to non-agricultural activities in which earnings are higher as a result influence women's participation in agricultural activities and recommended that the women empowerment and their economic participation in the labor force are extremely depended on their education and outward mobility in an established liberal society.

A study by Smith-Sreen and Smith-Sreen (1991), through interviews conducted with women dairy farmers in Bihar, Nadu and Gujarat in India found dairying as an important development programme for alleviating rural poverty. From their findings, income is viewed by Women as only one of many factors identified in their assessment of the value of owning dairy cattle. Dung provides much needed fertilizer for farmland and income derived from dairying is regular as opposed to seasonal from other agricultural sources. Also, the nutritional status of the family improved from the constant supply of milk, while the sale of calves provide important economic asset in improving women socio-economic status in the society – ability to assist others. The elevated women engaged in encouraging other women to apply for loans to acquire animals to develop self reliance and self confidence so that they could become capital sufficient. The study recommended the need for training women in animal health care, nutrition, and bookkeeping in order to improve their dairy management efficiency.

Illo (1988) in his book titled Women's Roles and Gender Differences in Development: Cases for Planners in Asia which studies the impact of large scale development projects on women citing the case of Aslong Irrigation Project (AIP) that aimed to increase food production, employment, and the standard of living for the people in the region observed that over 90 percent of the initial participants were male but when the designation and theme changed to "household", women's participation increased substantially. He revealed that during the progress of the project, women were found to be facing double burden of domestic duties with increased agricultural labour which prevented them from participating in the evaluation process due to time constraints.

Kishor, et al. (1999) in their study of the Role of Rural Women in Decision Making Process in Agriculture in Chikum and Igabi Local Government Areas of Kaduna State through the use of double stage random sampling technique with the application of simple descriptive statistics and the ordered probit methods of analyses discovered that the socio-economic characteristics of women farmers significantly affect their decision making in agriculture. The study also discovered three categories of women farmers as primary farmers (involved in the production aspect), secondary farmers (involved in the processing), and tertiary farmers (involved in rendering services: marketing, conveying, etc). They concluded that women farmers are heavily involved in agriculture in Nigeria and the level of their participation in farm management decision making are quite low attributable to their age, education, land tenancy, and the wealth status. Majority of the women interviewed were however found not to be formally educated and are of the low

income group. Their study thus recommended policy interventions to enhance women access to basic farm inputs including finance in order to boost their participation in agriculture and its various decision making processes.

Thelma, Alamgir, and Manik (2004), changing women's roles in homestead management: mainstreaming women in rural agriculture and development of Bangladesh; used qualitative and descriptive statistics for data collection and analysis observed that the dominant view perceived women as mere housewives which should be replaced by the recognition that their roles in production and their contributions to family income are crucial for improving the livelihoods of the household. The study concluded that women empowered through equal access as men in training and extension programs such as seed management and other improved methods of rice cultivation influenced agricultural production with about 10 percent more than as men. They recommended commitment to gender equality, additional technical/expertise in favour of women; and strong monitoring and evaluation mechanism be devised in order to ensure that targeted women benefit from various development efforts.

Gender equality is generally used to describe a situation: a society at a given time can be considered more or less gender equal. It is common to distinguish between two dimensions of equality: Equality in outcomes and equality in opportunities. Equality in outcomes means that women and men enjoy the same standard of living, degree of autonomy, status and other socially valued goods Roemer (1998). Equality in opportunities means that men and women have equal access to agricultural inputs,

education, borrowing, election to legislative assemblies, labour market careers etc. Terms such as a "level playing field" are often used to describe a situation with equal opportunities.

Women work in agriculture as farmers on their own account, as unpaid workers on family farms and as paid or unpaid labourers on other farms and agricultural enterprises (Ahmed and Maitra, 2010). Women are involved in both crop and livestock production at subsistence and commercial levels. They produce food and cash crops and manage mixed agricultural operations often involving crops, livestock and fish farming and are considered as part of the agricultural labour force (FAO, 2011). Also, FAO (2011) found that women comprise an average of 43 percent of the agricultural labour force of developing countries. The female share of the agricultural labour force ranges from about 20 percent in Latin America to almost 50 percent in Eastern and Southeastern Asia and sub-Saharan Africa.

Within pastoralist and mixed farming systems, livestock play an important role in supporting women and in improving their financial situation and women are heavily engaged in the sector. An estimated two-thirds of poor livestock keepers, totaling approximately 400 million people, are women (Thornton et al., 2002). They share responsibility with men and children for the care of animals, and particular species and types of activity are more associated with women than men. For example, women often have a prominent role in managing poultry (FAO, 1998; Guèye, 2000; Tung, 2005) and dairy animals (Okali and Mims, 1998; Tangka, Jabbar and Shapiro, 2000) and in caring

for other animals that are housed and fed within the homestead. When tasks are divided, men are more likely to be involved in constructing housing and the herding of grazing animals, and in marketing products if women's mobility is constrained. The influence of women is strong in the use of eggs, milk and poultry meat for home consumption and they often have control over marketing these products and the income derived from them. Perhaps for this reason, poultry and small-scale dairy projects have been popular investments for development projects that aim to improve the lot of rural women (FAO, 2011).

In some countries, small-scale pig production is also dominated by women. Female-headed households are as successful as male-headed households in generating income from their animals, although they tend to own smaller numbers of animals, probably because of labour constraints. Livestock ownership is particularly attractive to women in societies where access to land is restricted to men (Bravo-Baumann, 2000). Pastoralist and small-scale mixed-farming systems continue to be important in meeting the needs of rural consumers, the demands of growing urban populations are increasingly supplied with meat, milk and eggs from intensive commercial systems. This has implications for the engagement of women in the livestock sector because of the different roles, responsibilities and access to resources that are evident within different scales of production system and at different points on the production and marketing chain (FAO, 2011).

It has been demonstrated in this chapter that globally most societies have put women in subordinate position in relation to men. Different authors reveal that women play a major role in agriculture, despite being undermined, and that they account for more than 50 percent of agriculture production overall in many countries. Historically, agriculture was under the control of men even though women did most of work. The sexual division of labour created boundaries according to sex and in many societies men's role is clearing the land for cultivation whilst women are the ones who cultivate the crops. Furthermore, global initiatives towards enhancing women's empowerment have been presented in the chapter. From the above reviews, the role and contribution of women participation in agriculture have been analyzed as well as their participation in other activities such as economic activities. This thesis is set to fill this gap by investigation the role and impact of women participation in shifting cultivation in Chawngtlai. Concepts such as gender equality, empowerment, and participation are distinguished in relation to agricultural activities so as to give succinct insight into the meaning of women participation in agriculture.

CHAPTER-3

GENDER DIMENSIONS OF AGRICULTURE IN MIZORAM

Chapter-3

GENDER DIMENSIONS OF AGRICULTURE

3.1. Introduction

Women are the backbone of the development of rural and national economies. They comprise 43 percent of the world's agricultural labor force, which rises to 70 percent in some countries. In Africa, 80 percent of the agricultural production comes from small farmers, who are mostly rural women. Women comprise the largest percentage of the workforce in the agricultural sector, but do not have access and control over all land and productive resources (*Saquina Mucavele, MuGeDe), "Women, Gender and Development, Republic of Mozambique - Southern Africa". 19th October 2012.* Here, gender refers to the relation that exists between women and men no matter what form the relation takes. According to Moore (2001:78), gender is 'the way society expects people to behave on the basis of their physical difference'. Moreover, the other scholars Estegenet, Fanaye and Hirut (1999) state that, gender describes all the socially given attributes, roles and activities connected to being a male or female.

In many societies people think that there are different kinds of activities performed which are assigned to men and women. Some tasks are exclusively left to women and others to men (Moore, 2001). Gender role among agriculturalists has its own long history. Scholars indicated that women were originally in charge of gathering food and since they spent much of their time at home, they came to know means of planting their own food.

Though women were considered to have started cultivation, through time, the situation has been changed and it became the duty of men. However, the role and the contribution of both male and female, in the agricultural activities, is not necessarily the same in all parts of the country. In addition assisting their husband in various agricultural activities as soil preparation, manuring, weeding, harvesting, etc, women also spend their time in breeding of livestock (Frank, 1999).

In spite of their active participation in agricultural production activities, women get little value due to their lower position in the society where men are considered as the producer (Hanna, 1990). In some cases, both women and men are equally considered as producers and have equal position and value in both agricultural production and decision making (Tadele, 1994).

In India, agriculture remains the main occupation and around 70 per cent of the population is engaged in it. Many women in developing countries are occupied in agriculture. Like other low income countries where women contribute 60-80 percent of agricultural activities, in India around 70 percent of the labour in farming activities was contributed by women according to the record of Registrar General of India in 2011. Swaminathan *("Gender Issues in Agriculture", 30th December 2005.)* the famous agricultural scientist describes that it was woman who first domesticated crop plants and thereby initiated the art and science of farming. While men went out hunting in search of food, women started gathering seeds from the native flora and began cultivating those of interest from the point of view of food, feed, fodder, fibre and fuel. Women have played

and continue to play a key role in the conservation of basic life support systems such as land, water, flora and fauna. They have protected the health of the soil through organic recycling and promoted crop security through the maintenance of varietal diversity and genetic resistance.

3.2. Gender Roles in Agricultural Activities in India: Overview

Agriculture has been the backbone of the Indian economy and it will continue to remain so for a long time. It has to support almost 17 per cent of world population from 2.3 per cent of world geographical area and 4.2 per cent of world's water resources. The economic reforms, initiated in the country during the early 1990s, have put the economy on a higher growth trajectory. The workforce engaged in agriculture in the year 1980-81 and 2006-07 witnessed a very small decline; from 60.5 percent to 52 percent. India has an estimated 180 million hectares of farmland with 140 million of which are planted and continuously cultivated. The traditional agriculture is still dominant as many farmers depend on livestock in crop production, for manure as fertilizers, and the use of animal powered ploughs.

Women usually spend more hours in farms than men in agricultural activities. Women make essential contribution not only to the agriculture but also to household expenditure and protection of children's welfare. Table 3.1 presents the roles of women in various agricultural activities as per the record of Registrar General of India. The major livelihood activities here are (i) land preparation, (ii) seed cleaning and sowing,

(iii) inter cultivation activities, and (iv) harvesting, reaping, winnowing, drying, cleaning and storage (post-harvest activities).

Table -3.1: Share of Farm Women in Agricultural Operations

Sl. No	Activities	Involvement (Percentage)
1	Land preparation	32
2	Seed cleaning and sowing	80
3	Inter cultivation activities	86
4	Harvesting reaping, winnowing, drying, cleaning and storage	84
	Average contribution	70.5

Source: Registrar General of India, New Delhi, 2011

Table 3.1 shows extremely higher contribution of women in the various agricultural activities in India that on the average they constitute 70.5 percent of the total labour in agriculture. The activity where the contribution of women is highest is interring cultivation, i.e. cultivation implies that diversification of different crops sown in the same field, where they contribute 86 percent of farm manpower. This is followed by harvesting and post-harvesting activities (84 percent), while it is lowest for land preparation (32 percent). It is understood that land preparation work is by nature male friendly, so relatively lower female role is being observed. The observations here points to the fact that women are the main workers in Indian agriculture.

Much of these agricultural works are by nature physically demanding, involving long periods of standing, stooping, bending, and carrying out repetitive movements in

awkward body positions. Even when technological change has brought about a reduction in the physical drudgery of agricultural work, it has introduced new risks, notably associated with the use of sophisticated machinery and the intensive use of chemicals often without appropriate safety measures, information and training. The table shows the varying demand for agricultural women labour in India according to the seasons according of different activities. To enhance the above information, the various indicators of women's participation in agricultural livelihood activities are presented in Table 3.2.

Table – 3.2: Statistics indicating the contribution of Women in Agricultural Livelihoods in India

1	Total Women Population (2011)	494.83 million
2	Total Women Workers (2011)	127.05 million
3	Total Women Main Workers (2011)	72.65 million
4	Total Women Marginal Workers (2011)	54.40 million
5	Total Women Owner Cultivators (2011)	41.30 million
6	Total Women Agriculture Wage Workers (2011)	50.09 million
7	Total Women Household Industry Workers (2011)	08.08 million
8	Total Women Other Workers (2011)	27.57 million
9	Total Women in Organized Sector (2001)	04.80 million
10	Total Women in Livestock, Forestry, Fishing, Hunting, Plantation, Orchards and activities (1991)	01.32 million

Source: Population Census of India 2011

Table 3.2 shows Statistics about Women in India, which shows that there are millions of women who are engaged in agricultural activities for their livelihood. Another important source of data is Census of India (2011), according to which there are nearly 127 million cultivators, 107.5 million agricultural labourers and 6 million other farm workers engaged in livestock, forestry and plantations. Of the total agricultural labourers, 38.0 per cent were female and 61.9 percent male workers. Also among livestock, forestry and plantation workers, 78.3 percent were male workers and 21.7 percent were female

workers. About 99.2 percent of agricultural workers were reported to be unorganized and unprotected.

The women have significant contribution in the Indian agricultural practice and they constituted around half of the total workforce. According to 2011 Census, the percentage of women in rural areas who depend on agriculture for their livelihood is as high as 84 percent. At the same time, 33 percent and 47 percent of women workforce are cultivators and agricultural laborers respectively. Meanwhile, the data do not account for work in livestock, fisheries and various other ancillary forms of food production in the country.

According to Human Development Report (2009), 94 percent of female agricultural labor force in crops cultivation was in cereal production, while 1.4 percent worked in vegetable production, and 3.72 percent were engaged in fruits, nuts, beverages, and spice crops. Women's participation rate in the agricultural sectors is about 47 percent in tea plantations, 46.84 percent in cotton cultivation, 45.43 percent growing oil seeds and 39.13 percent in vegetable production. While these crops require labor-intensive work, the work is considered quite unskilled. Women also heavily participated in ancillary agricultural activities. According to the Food and Agriculture Organization, Indian women represented a share of 21 percent and 24 percent of all fishers and fish farmers, respectively.

According to 55th of National Sample Survey (NSSO, 2001), agricultural labour households constitute nearly 32.2 percent of the total rural households. The self-

employed in agriculture account for 32.7 per cent of the total rural households. In fact, the proportion of agricultural labour households increased from 30.3 per cent in 1993-94 to 32.2 percent in 1999-2000. While that of cultivating (self employed) households declined from 37.8 percent in 1993-94 to 32.7 per cent in 1999-2000. The proportion of female-headed households increased from 9.7 per cent in 1993-94 to 10.4 percent in 1999- 2000. Nearly 62.6 per cent of the rural households belonged to less than Rs. 470 monthly per capita expenditure class. Nearly 4.6 percent rural households reported that none in the family was (4) having any work, 27.7 per cent reported that only one male member was, usually working, while 27.8 households indicated that one male and one female member were usually employed. 22.8 percent female households reported that none of their person was usually employed and 39.6 percent mentioned that only one female member was usually working. The NSSO data further revealed that 7.2 percent of the rural households did not possess any land and 51 percent households possessed less than 0.4 hectare. About 19.1 percent household possessed between 0.41 and 1 hectare and 11.5 percent between 1.01 and 2 hectare. Only 11.2 percent possessed land above 2 hectare. Thus by and large Indian farming is dominated by small and marginal farmers. In fact, the proportion of rural households not possessing any land or which possessed less than 0.4 hectare land was quite high in the states of Bihar, Goa, Maharashtra, Sikkim and Tamil Nadu. Also the proportion of agriculture labour households was quite high in some of these states. It was 38 percent in Bihar, 41.7 percent in Maharashtra and Karnataka and 45.2 percent in Tamil Nadu.

Another important source of data is Census of India (2001), according to which there are nearly 127 million cultivators, 107.5 million agricultural labourers and 6 million other farm workers engaged in livestock, forestry and plantations. Of the total agricultural labourers, 38.0 per cent were female and 61.9 percent male workers. Also among livestock, forestry and plantation workers, 78.3 percent were male workers and 21.7 percent were female workers. About 99.2 percent of agricultural workers were reported to be unorganized and unprotected.

3.3. Female Work Participation in Mizoram

To have general idea on the status of female work participation in Mizoram, trends for gender distribution of work participation as observed in different Censuses is presented in Table 3.3. It can be observed that the female work participation rate in Mizoram has revolved around 40 percent since 1981, while the all India average is 25.51 percent as per the latest census. It is thus, clear that the female work participation in Mizoram is significantly higher than the all India average.

Table 3.3: Gender Distribution of Work Participation Rates

Years	India		Mizoram	
	Male	Female	Male	Female
1971	52.50	19.69	-	-
1981	51.09	19.08	56.04	43.06
1991	51.08	22.05	55.18	44.82
2001	68.40	31.59	56.29	43.70
2011	74.49	25.51	59.74	40.26

Source: Census of India Reports, 1971-2011

Table 3.4 presents the trend on the gender composition of main workers, marginal workers and non-workers in Mizoram since 1971. The percentage contribution of female workers on the total main workers decreased from 42.05 percent in 1971 to 36.56 percent in 2011. Similarly, female marginal workers decreased consistently from 69.77 percent in 1981 to 61.72 percent in 2011. However, the contribution of female marginal workers is significantly higher than that of their male counterparts throughout the period. At the same time, the percentage of female on non-workers has increased from 54.10 percent in 1971 to 56.66 percent in 2011. The trends being observed in this table indicate withdrawal of female workforce from main economic activity in Mizoram over time.

Table 3.4: Gender Composition of Main Workers, Marginal and Non-Workers

Percent

Year	Main Workers		Marginal Workers		Non-Workers	
	Male	Female	Male	Female	Male	Female
1971	57.95	42.05	--	--	45.90	54.10
1981	62.90	37.10	30.23	69.77	45.32	54.68
1991	61.32	38.68	32.68	67.32	46.99	53.01
2001	62.20	37.80	35.89	64.11	46.53	53.47
2011	63.44	36.56	38.28	61.72	43.34	56.66

Source: Directorate of Census Operation, Mizoram

3.5. Contribution of Female Workforce on Agriculture in Mizoram

Agriculture occupies a prominent place in the economy of Mizoram. As per the Economic Classification of Workers in 2011 Census, about 55 percent of the total workers are engaged in the agriculture and allied sector. In the absence of adequate development in other sectors such as agro-based industries and other industries, it continues to be the main occupation of the people till today. Shifting cultivation (Jhumming) continues to be the prevalent method of cultivation. Though the Mizo society is patriarchal and male dominant, women are actively participating in the economic activities, mainly in agriculture. The women participation in various agricultural activities as observed in Population Census 2011 is presented in Table 3.5.

Table-3.5: Gender Distribution of Agricultural Workers in Mizoram, 2011

	No. of Persons			Percent		
Categories	Male	Female	Total	Male	Female	Total
Total Workers	290740	195965	486705	59.74	40.26	100
Main Workers	263305	151725	415030	63.44	36.56	100
Main Cultivators	121598	80916	202514	60.04	39.96	100
Main Agri Labourers	16601	9863	26464	62.73	37.27	100
Marginal Cultivators	7884	19205	27089	29.10	70.90	100
Marg. Agri. Labourers	5887	9436	15323	38.42	61.58	100

Source: Primary Abstract of Population Census, 2011

Table 3.5 shows significant contribution of women in the various livelihood activities of agriculture in Mizoram. On the average, 40.26 percent of the total workforce

is constituted by female and 36.56 percent of the total main workers are female. It is notable that the female workforce constituted highest portion in case of marginal cultivators (70.90 percent) followed marginal agricultural laborer (61.58 percent). At the same time, 39.96 percent of the workforce who are accounted as main cultivator, mostly shifting cultivation, was constituted by female. It is thus clear that female members of the society have contributed significant percentage in the agricultural activities in Mizoram in addition to their usual domestic responsibilities.

Table 3.6 presents the gender distribution of persons across the economic classification of activities as per the latest census among the different districts of Mizoram. It can be observed that among all the Districts of Mizoram Aizawl has the highest number of main Cultivators both male and female (36249), where as Saiha has lowest number of main Cultivators (7064). We can see that Lunglei has highest number of Marginal cultivators (10677) and Serchhip has lowest number of Marginal cultivators (1054) among all the Districts. Meanwhile, Lunglei has highest number of total cultivators (45439).

It may be noted that the Census classification of 'cultivators' includes all agricultural activities, excluding plantation, mostly cultivation and harvesting of annual crops. Considering the hill terrain of Mizoram where wet rice cultivation or terrace cultivation or other settled crops cannot be undertaken in majority of the cases, the persons involved in cultivation should be accounted for by shifting cultivation. Thus, 'cultivators' and shifting cultivators are synonymous in most cases in Mizoram. Since the

total number of cultivators is found to be highest in Lunglei district, while the total population is highest in Aizawl district, it can be concluded that shifting cultivation is extensively practice in Lunglei district.

It is of academic importance to examine the contribution of female work force in the cultivation activities, i.e. the number of female cultivators. It can be observed from Table 3.6 that on an average 43.61 percent of the total cultivators was constituted by female members of the society in 2011, while a district wise analysis shows that the percentage of female cultivators is highest in Serchhip District (46.39 percent) and it is lowest in Kolasib district (38.85 percent). At the same time, female workers constituted 39.96 percent of the main cultivators, while among the different districts it range from 34.34 percent in Kolasib district to 45.09 percent in Serchhip district.

Table 3.6: General Distribution of Cultivators in Mizoram - District Wise

District	Main Cultivators			Marginal Cultivators			Total Cultivators**		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
No. of Persons									
Mamit	16765	10172	26937	302	1430	1732	17067	11602	28669
Kolasib	10164	5316	15480	838	1674	2512	11002	6990	17992
Aizawl	20959	15290	36249	784	2233	3017	21743	17523	39266
Champhai	20080	15788	35868	782	1686	2468	20862	17474	38336
Serchhip	11394	9356	20750	295	759	1054	11689	10115	21804
Lunglei	21713	13049	34762	3039	7638	10677	24752	20687	45439
Lawngtlai	16143	9261	25404	975	2810	3785	17118	12071	29189
Saiha	4380	2684	7064	869	975	1844	5249	3659	8908
MIZORAM	121598	80916	202514	7884	19205	27089	129482	100121	229603
Percentage from the Total Cultivators									
Mamit	62.24	37.76	93.96	17.44	82.56	6.04	59.53	40.47	100
Kolasib	65.66	34.34	86.04	33.36	66.64	13.96	61.15	38.85	100
Aizawl	57.82	42.18	92.32	25.99	74.01	7.68	55.37	44.63	100
Champhai	55.98	44.02	93.56	31.69	68.31	6.44	54.42	45.58	100
Serchhip	54.91	45.09	95.17	27.99	72.01	4.83	53.61	46.39	100
Lunglei	62.46	37.54	76.5	28.46	71.54	23.5	54.47	45.53	100
Lawngtlai	63.55	36.45	87.03	25.76	74.24	12.97	58.65	41.35	100
Saiha	62	38	79.3	47.13	52.87	20.7	58.92	41.08	100
MIZORAM	60.04	39.96	88.2	29.1	70.9	11.8	56.39	43.61	100

Source: Primary Abstract of Population Census, 2011. **Gender- divide is used for percentage

It is interesting to observe the dominance of female workers among the 'marginal cultivators' in Mizoram. More than 70 percent of the marginal cultivators are constituted by female workers. Among the different districts, the female marginal worker percentage is lowest in Saiha district (52.87 percent) and highest in case of Mamit district (82.56 percent). It is worth noting that female members usually have to take responsibility of household works and animal rearing activities, etc in addition to their normal cultivation activities, they can be simply put under marginal cultivators. A clear conclusion that can

be drawn from Table 3.4 is that female members of the society in Mizoram have significant contribution in the various activities of shifting cultivation.

Table 3.7 presents the trends on the sex (gender) composition of workforce on cultivation (cultivators) and agricultural labourers during the last 40 years in Mizoram. In fact the term 'cultivators' is used to mean those who are involved in the agricultural activities, excluding those who are doing plantation works. Excepting few families who are engaged in wet rice cultivation, cultivators can be more or less taken as persons engaged in shifting cultivation. Thus, Table 3.7 is a clear indication on the contribution of female members of the society in shifting cultivation, and those who are working in agriculture as labourers.

It can be observed from Table 3.7 that the number of cultivators in Mizoram has consistently increased from 126652 in 1971 to 178101 in 1991 and 229603 in 2011. The number of female cultivators has also increased consistently from 61481 in 1971 to 83223 in 1991 and 100121 in 2011. The increase in the number of cultivator by more than 81 percent during this period is significantly less than the increase population during this period. The population has increased by almost 3 times from 332390 in 1971 to 1097206 in 2011. The trend clearly suggests gradual withdrawal of families from shifting cultivation (or agriculture in general sector) to other means of livelihood in Mizoram during this period. An alarming trend is the increasing number of agricultural labourers by more than 70 times from a mere 558 in 1971 to 41787 in 2011. The number of female agricultural labourers has also increased significantly from 173 to 19299 during this

period. It may be reasonable to argue that the problem of landlessness has become one of the social issues in the State, which, if not check with some policy intervention, can end in conflict in agricultural land relation in the future.

Table 3.7: Gender Composition of Cultivators and Agricultural Labourers in Mizoram during last 5 decades

	Cultivators			Agricultural Labourers		
Year	Male	Female	Total	Male	Female	Total
No. of Persons						
1971	65171	61481	126652	385	173	558
1981	79556	65989	145545	3465	1653	5118
1991	94878	83223	178101	6181	3346	9527
2001	113014	89861	202875	6710	4130	10840
2011	129482	100121	229603	22488	19299	41787
Percent						
1971	51.46	48.54	100	69.00	31.00	100
1981	54.66	45.34	100	67.70	32.30	100
1991	53.27	46.73	100	64.88	35.12	100
2001	55.71	44.29	100	61.90	38.10	100
2011	56.39	43.61	100	53.82	46.18	100

Source: Directorate of Census Operation, Mizoram

The percentage contribution of male and female in the total number of cultivators showed that the share of female workers declined from 48.54 percent in 1971 to 46.73 percent in 1991 and 43.61 percent in 2011. So, the roles played by female workers in cultivation have declined gradually over time with the increasing roles of male workers. However, the decreasing share of female workers to the cultivators is accounted for by its increasing share in the total number of agricultural labourers. The percentage of female agricultural labourers consistently increased from 31 percent in 1971 to 35.12 percent in

1991 and 46.18 percent in 2011. Thus, there is an increasing tendency of females working outside their own field for wage employment over time.

3.7. Concluding Remarks

Women workers are the main agricultural workforce. However, they are not yet given enough room in the field of decision making in agriculture and ownership of land in most of the developing nations. In India, like other developing countries, female work participation is very low at 25.51 in 2011. In comparison to the national average, the situation is much better in Mizoram where the female work participation rate is more than 40. As per the record of Population Census 2011, more than half of the non-workers in Mizoram are constituted by female, and they also constitute around 61 percent of the marginal workers, while 36.56 percent of the main workers are female. The situation suggests the active female work participation in Mizoram, though their contribution on marginal work force is significantly high.

A district wise analysis showed that the district which has highest educational attainment in terms of literacy (i.e. Serchhip) has the highest percentage of female contribution in the cultivation, while Saiha and Lawngtlai district which have below the average literacy level in the state are among the bottom three in terms of female cultivators. A reasonable assumption that can be made is that gender role in cultivation is directly related to the level of education. Another significant observation is that the

increasing trend of female contribution on agricultural labourers. This may be construed as alarming trend taking into account their security in work place and the responsibility of household activities they have to undertake. Of the major farming activities, the involvements of female workers are highest in case of inter cropping activities (sowing of different seeds in the field), and harvesting and post harvest management, while it is lowest for land preparation including forest clearance.

CHAPTER-4

GENDER ROLE IN AGRICULTURAL ACTIVITIES: AN ANALYSIS

Chapter-4

GENDER CONTRIBUTIONS IN THE ACTIVITIES OF SHIFTING CULTIVATION IN MIZORAM

4.1. Introduction

Agriculture is the back bone of many developing countries in which women account for more than half of the work force by participating in different activities, either directly or indirectly. Women play important roles in agriculture, undertaking a wide range of activities relating to food production, planting, weeding, harvesting, processing, and marketing as well as tending livestock and beyond farming, they are involved in land and water management: most often they are collectors of water, firewood and fodder. The gender division of labor varies from one society and culture to another, and within each culture external circumstances influence the level of activity (Nigist, 2004). However, except in few most developed countries, women's efforts are not yet realized by society. They are involved in over half of the farm activities in many developing countries, bear most of responsibilities for household food security and contribute to household well being through their income generating activities (Etenesh, 2005).

Historically, the Mizo were agriculturists even before they migrated from the Far East to the Lushai Hills during the 18th Century. The only form of farming known to them was shifting cultivation which formed the major activity of the Mizo economic life, and

this is retained even today. Both men and women are involved in the various activities under shifting cultivation like sowing of seeds, weeding, harvesting, storing, etc. In the early days, contribution of female members used to be relatively higher in sowing and weeding works as menfolks were frequently going on hunting expedition (Thangchungnunga, 1993). Female contribution is apparently significantly even today. This chapter attempts to study the roles played by female members of the households in various activities under shifting cultivation in Mizoram taking the case of Chawngtlai Village in Champhai District. This study is restricted only to the families who are actively involved in the shifting cultivation.

The rest of the chapter is organised in six major sections namely, basic status of the families, livelihood situations, contributions of female work force in various activities, decision making, etc.

4.2. Basic Status of the Families

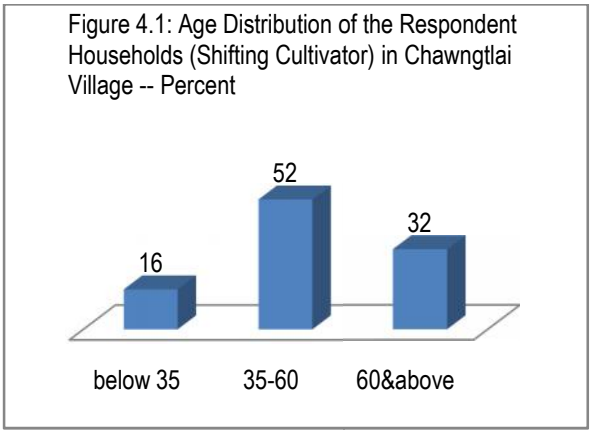
Table 4.1 presents the basic status of the sample households. The study observed favourable living status of the jhumia families in the study area, i.e. Chawngtlai Village, Champhai District of Mizoram. It is observed that 94 percent of the families lived in owned house, while 6 percent are in rented house. The analysis of the housing structures shows that 88 percent are semi-pucca structures, while 12 percent are pucca structures. At the same time, 92 percent of the sample households are Above Poverty Line (APL) families, while only 8 percent are Below Poverty Line (BPL) families. It may be noted

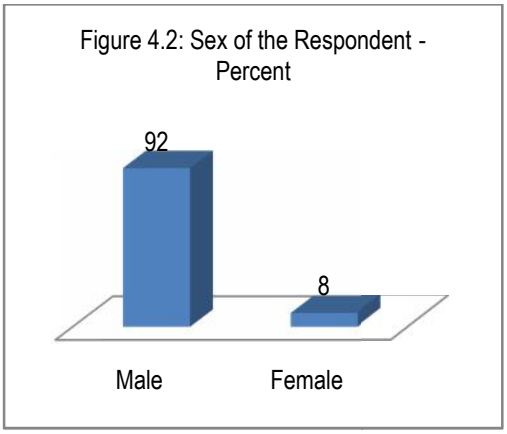
that there is no BPL families in this village (Chawngtlai) as per criteria laid down by the latest BPL Census conducted in 2016. The observation presented in Table 4.1 is in line with the result of BPL Census. However, as the BPL census has elimination rule based on ownership of household assets, the possibility of asset rich, but income poor households among the sample cannot be ruled out.

Table 4.1: Basic Living Status of the Families

Sl. No	Particulars	Number of Families	Percent
1	**Living House**		
	Owned	47	94.00
	Rented	3	6.00
	Total	50	100
2	**Structure of Living House**		
	Pucca	6	12.00
	Semi-Pucca	44	88.00
	Total	50	100
3	**Poverty Status**		
	APL	46	92.00
	BPL	4	8.00
	Total	50	100

Source: Field Survey, September-October 2016





The age-sex profiles of the cultivators (jhum cultivators) covered in the study are presented in Figure 4.1 and Figure 4.2. As much as 92 percent of the respondent households are male headed, while another 8 percent were female headed households. At the same time, majority of the household heads are in the age group of 35-60 years (52 percent), and 32 percent are above 60 years, while another 16 percent are below 35 years.

4.3. Sources of Income

The collected quantitative data indicated that the average annual income of all jhum households covered in the survey turned out to be Rs.1,35,030, which is approximately Rs.11252 per month and Rs.2250 per capita per month for a family of 5 members. A closer look of the various income sources showed that agriculture and allied activities remains the main contributors of household annual income. The average annual income earned by the families from agriculture and allied activities turned out to be Rs.50590, which is 36.4 percent of the total income. This is followed by salary and wage labour which contribute 17.8 percent and 16.7 percent of the total annual income respectively. It may be noted that Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is implemented in the village. So, it is expected the contribution of this scheme would significantly raised households income from wage labour.

Table 4.2: Total Average Annual Income of the Families from Various Sources

Income Sources	Income (Rs)	Percent
Agriculture & Allied	50590	36.4
Livestock/Dairy	17400	12.5
Family Business	23060	16.6
Wage Labour	23120	16.7
Salary	24660	17.8
Total	135030	100.0

Source: Field Survey, September-October 2016

A worth noting result observed from Table 4.2 is the significant contribution of livestock or animal rearing because most of the activities for livestock rearing is undertaken by female members of the households. An estimated average income of Rs.17400 was earned by the families from selling of animal, which is quite substantial to be counted as alternative sources of livelihoods.

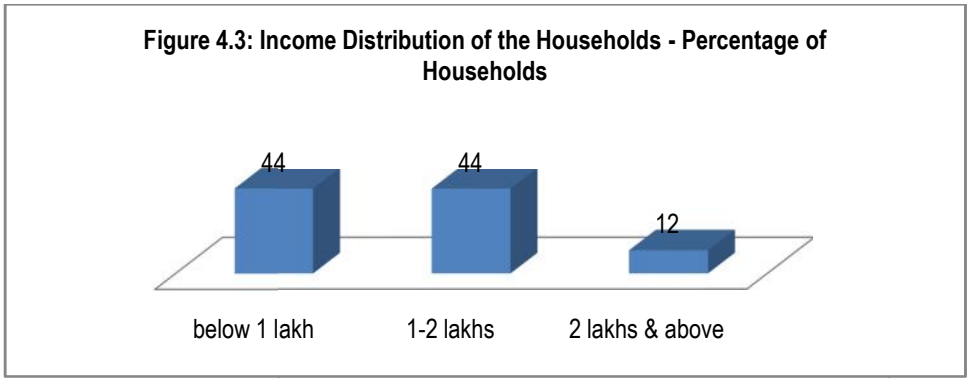
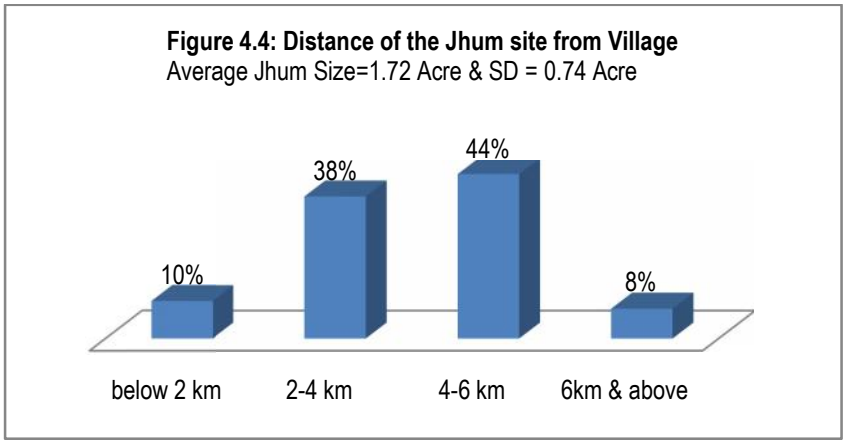


Figure 4.3 presents the income distribution of the cultivators. Though the average annual income of the households turned out to be more than Rs.1.3 lakhs, this figure shows that a substantial number of 44 percent has annual income less than Rs.1 lakh, at

the same time, another 44 percent and 12 percent have income of Rs.1-2 lakhs and Rs.2 lakhs and above respectively.

4.4. Details of Cultivated Jhum Land

It is observed from Figure 4.4 that the average jhum size of the families is approximately two acre (i.e. 1.72 Acre) with a standard deviation of 0.74 Acre. This suggest that majority of the cultivated jhum land in the study area is in the range of 1 acre to 4 acres. So, it can be concluded that the practice of shifting cultivation is widely prevalent in the area its intensity in terms of area per family is quite low. In addition, the examination of the distance show that majority of the families have to travel more than 8 kms every day to and fro their jhum land. It is observed that the distance of the jhum land for 52 percent of the families is more than 4 kms.



All households covered in the study adopt intercropping (cultivation of more than one crop simultaneously in the same jhum land). The major crops being grown are paddy

(rice) and ginger, while subsidiary crops are maize, yam, sesamum, mustard, chilli, capsicum, brinjal, etc. It is reported that 68 percent of the households have cultivated ginger as main crops during last year, while 58 percent of them reported to have cultivated rice as one of the main crops. One thing that is clear from the field study is the large scale cultivation ginger, which is basically meant for commercial purposes. This can also be interpreted as the situation where the practice of shifting cultivation has become commercialized in nature.

4.5. Analysis of Gender Contributions in Shifting Cultivation

To have clear view on the role of female members of the farm households in the various activities of cultivation, the average number of man days used by both males and females were calculated across the various activities. At the same time, their average share in percentage term is also worked out. The result is presented in Table 4.3.

Table 4.3: Gender Contribution in Various Activities under Shifting Cultivation

Major Activities	Ave. No. of Man days			Percentage of Man days		
	Male	Female	Total	Male	Female	Total
Jungle Clearance	1.6	0.84	2.44	65.57	34.43	100
Burning of Agricultural Land	1	-	1	100	-	100
Removing the bush	1.18	1.04	2.22	53.15	46.85	100
Sowing of Vegetable Seeds	0.12	0.30	0.42	28.57	71.43	100
Sowing of Main Crops	19.74	17.54	37.28	52.95	47.05	100
Weeding	50.24	49.3	99.54	50.47	49.53	100
Harvesting Vegetables	0.64	1.74	2.38	26.89	73.11	100
Harvesting Main Crops	23.18	21.58	44.76	51.79	48.21	100
Storing of Main Crops	10.96	8.92	19.88	55.13	44.87	100
Total	109	101	210	55.13	44.87	100

Source: Field Survey, Sept-Oct, 2016

Table 4.3 shows that, on an average, 210 mandays are required for completion of the entire works of shifting cultivation in a year. Of the total average man days of 210 used in the jhum land throughout the years, it is observed that 55.13 percent was contributed by male members, while another 44.87 percent are female. The distribution being observed here is in line with the observations of FAO, which showed that 40 percent of economically active population in agriculture is women.

The household participation in agricultural activities in Jungle clearance is 65.6 percent for male and 34.4 percent for female, mostly this activity is done by man, female are also sometimes participated in this activity to support their husband. In Burning of agricultural land the participation rate of male is 100 percent here female do not participated, following the order of Village Council all the male members from each family came together and this activity of burning of agricultural land is done in one day

in the mid of march. The next activity is Removing the bushes here the participation rate of male is 53.2 percent and 46.8 percent for female; this activity is mainly done by both male and female. Sowing of vegetable seeds is usually done on the following day of removing of bushes the participation rate of male is 28.6 percent and 71.4 percent of female, this activity is mainly done by the female member in the family, male members involve in this activity only in those family where there is the absence of female.

Sowing of main crops is one of the most important activity among all the activities, and there is more or less equal participation of male and female, the role played by both male and female are equally important the participation rate of male is 53.0 percent and 47 percent for female, the following activity is weeding here the participation rate of male is 50.5 percent and 49.5 percent for female, this activity is also very much important there is both the participation of male and female, weeding is usually done three times in a year in the month of July, August and then September.

Harvesting of vegetable is usually started in the month of July and last till they finished with the main crops harvesting, the participation rate of male is 26.9 percent and 73.1 percent is for female, the participation rate of male is very high as compare with the participation rate of male. The next activity is harvesting of main crops, the participation rate of male is 51.8 percent and 48.2 percent is for female. And the last activity is Storing of crops; here the participation rate of male is higher than female which is 55.1 percent for male and 44.9 percent for female. From all of the activities which is shown in the above we can clearly said that the participation of female is also important as male, as

there is no activity which is done without female except in burning of agricultural land, in some of the activities female participation rate is higher than male participation rate in the activities like sowing of vegetable seeds and harvesting of vegetables and in some activities there is equal participation rate of male and female, with this we can conclude that female play an important role in agriculture and the work done by them are equally important as man and it cannot be neglected and the work done by them should also be counted.

Having analysed percentage contribution of male and female members of the family in the various livelihood activities of shifting cultivation, it is considered necessary to test the significance of their difference. To undertake this, t-test for difference of means between, i.e between average number of man days spent by male and female, is adopted. The result of the analysis is presented in Table 4.4.

Table 4.4: Paired T-Test for Gender contribution in Various Activities under Shifting Cultivation

Major Activities	Mean (M)	Mean (F)	Total	t-statistic	Sig.
Jungle Clearance	1.6	0.84	2.44	1.694*	0.097
Burning of Agricultural Land	1	-	1	--	--
Removing the bush	1.18	1.04	2.22	1.85*	0.07
Sowing of Vegetable Seeds	0.12	0.30	0.42	-1.69*	0.10
Sowing of Main Crops	19.74	17.54	37.28	2.04**	0.047
Weeding	50.24	49.3	99.54	0.297	0.768
Harvesting Vegetables	0.64	1.74	2.38	-1.856*	0.069
Harvesting Main Crops	23.18	21.58	44.76	1.294	0.202
Storing of Main Crops	10.96	8.92	19.88	2.426**	0.019
Total	109	101	210	1.16	0.252

Source: Field Survey, Sept-Oct, 2016

*significant at 10% level, and ** significant at 5% level.

As observed in Table 4.4, most of the activities under shifting cultivation in Mizoram are undertaken by both male and female, except for burning of the land. This is a clear indication of the significant roles played by female members in the various activities of shifting cultivation. Table 4.5 also justified that the differences in their contribution are not highly significant in all cases, though there are some activities which shows significance of difference at 10 percent and 5 percent levels.

It is observed from Table 4.5 that there is significant difference between the contributions of male and female members of the families in case of jungle clearance, removing bush, sowing of vegetable seeds, sowing of main crops, harvesting of vegetables, and storing of main crops as the calculated t-statistics for these items are significant at 10 percent. However, the overall contributions or total contribution between the two sexes is not significant. So, we can conclude that there is no significant difference between the total contribution of male and female members on various livelihood activities of shifting cultivation in Mizoram. Based on the analysis presented in Table 4.4, the nature of the activities in terms of their gender friendliness is identified as follows:

Table 4.5: Activity wise gender intensity of shifting cultivation

Sl. No	Livelihood Activities	Gender Intensity	Season
1	Jungle Clearance	Male	January
2	Burning of land	Male	March
3	Removing of Bush	Male	March
4	Sowing of vegetables	Female	March
5	Sowing of main crops	Male	April
6	Weeding	Male and Female	May-August
7	Harvesting of vegetables	Female	July-September
8	Harvesting of main crops	Male and Female	November/February*
9	Storing of main crops	Male	November/February*

*November in case of rice (paddy), and February for ginger

Table 4.5 presents the gender intensity of livelihood activities under shifting cultivation based on the result of the statistical test presented in Table 4.4. It is observed that of the 9 major activities five, namely jungle clearance, burning of land, removing of bush, sowing of main crops, and storing of main crops, are mostly done by male, or male friendly activities. Similarly, activities like sowing of vegetables and harvesting of vegetables are mostly done by female, i.e. they are female friendly activities. At the same time, weeding and harvesting are undertaken by both male and female and their contributions are more or less same. Further, the analysis of working seasons suggests no significant female participation in the livelihood activities of shifting cultivation (jungle clearance, burning of land, removing the bushes) during the period of January to March in a year. However, however, their participation is observed for those who cultivate ginger.

4.6. Decision Making Process:

One of the key indicators of the position of female members of the families in any economic activity is his or her contribution in the decision making process. Attempt is made in this study to examine the status of female members of the families in the decision making on the key activities of shifting cultivation. The indicators of decision making being adopted are selection of jhum sites, selection of jhum size, selection of crops, and selection of time to start works. To test if the male dominates the decision making (or female dominates the decision making), z-test for difference in proportions is adopted under the null hypothesis that they are equal (i.e. P=0.50). The result is presented in Table 4.6.

It is observed from Table 4.6 that in 92 percent of the cases male are responsible for selection of site, while women are responsible in case of only 8 percent of the respondents. This is mainly because of the system which is practice in the village, during the selection of site all the male members from each household came together and only in that family where there are no male members women step out for the selection of site. In the selection of size 72 percent of the respondents said that the decision in selecting the size of the field is decided by the father whereas 16 percent of the respondents decided for the size of their agricultural field, and 12 percent of the respondents said that the selection of size is decided by both male and female.

Table 4.7: Gender Contribution in the Decision Making Process

Decision	No. of Households			% of Households			Z^{++}
	Male	Female	Both	Male	Female	Both	
Jhum Site selection	46	4	0	92	8	0	8.4**
Jhum Size selection	39	11	0	78	22	0	5.6**
Selection of crops	7	9	34	14	18	68	-0.4
Time to Start Work	5	7	38	10	14	76	-0.4

$^{++}$ The value of z-statistic for difference of proportion between male and female
**significant at 5% level

In the selection of crops the decision is made by both male and female in most of the families that is 68 percent of the respondents, and only 14 percent of the respondents said that selection of crops is decided by male and 16 percent for women, these respondents are mainly the household where there is the absent of male or female, and in most of the household of the respondents there is equal responsibilities in decision making for the time to start work,76 percent of the respondents said that the decision for starting of any works in agricultural activities are decided by both male and female in their family, while 10 percent of the respondents for male and 14 percent of the respondents for female. Based on the above facts it would be concluded that in most cases the husband and the wife decides agricultural resources that means there is the participation of both wife and husband in all the issues.

What is surprising from this is that though women are doing a great job in both the triple role (Production, reproduction and community management) yet they do not have the right to make a decision and even their husbands do not consult them on the

allocation of the produce. The Statistics of the United Nations Organisation shows that women do 2/3rd of the available job in the world and earn 1/10th of the income. On other hand, they constitute 2/3rd of the illiterate people of the world and earn less than 1/100th of the world's wealth (Ruth, 1994). Most of the African women have not benefited from investment and trade of Agricultural products because they have limited access to land, credit, transport, etc. Women produce 80 percent of basic food staff but receive less than 10 percent of the credit given to men. Agricultural productivity would have been increased by 20 percent if women have got access to credit (USAID, 2005).

The test statistic for proportional difference is significant for jhum site selection and jhum size selection, while it is insignificant for selection of crops and time to start to work. Thus, it can be concluded that male dominates the decision making in for selection jhum site and its size, while both male and female has equal power in making decision for crops to be cultivated and the time to start any activity.

4.7. Conclusion:

Gender is a crosscutting issue that attracts the attention of development professionals, policy makers and politicians to mention some. It is due the fact that in any development interventions involvement of women has become compulsory. To this end, considering the roles of men and women is very important, and gender roles vary across culture.

In Mizoram where agriculture is the backbone of the economy, the participation of women in the field is very high. It is, however, clear that the roles men and women play in agriculture differs from region to region. Though men are taking the lion's share in agricultural production, the contribution of women has also been an undeniable fact. Among the Mizo, clearing the farming land, removing the bush, tilling, preparing the threshing floor and farm implements are all carried out by men. Other agricultural activities like sowing, weeding, digging and storing to some extent are shared with women. However, weeding is the most common task of women. Women participation in the field of agricultural production does not seem a norm in the area though not strictly forbidden.

There are some livelihood activities of shifting cultivation where male contributions are significantly higher than female contributions. Such activities are jungle clearance, burning of land, removing the bush, and sowing of main crops. At the same time, female contribution is found to be significantly higher in case of sowing and harvesting of vegetables. However, the total contribution in all the activities does not show significant difference between male and female. Thus, the contribution of male and female in the livelihood activities of shifting cultivation is more or less same, or statistically not different. This is against the Hypothesis No.1. Thus, the result of the analysis does not support the hypothesis that "women play a more significant role than men in the livelihood activities of shifting cultivation". Looking at the scenario of

decision making in respect to shifting cultivation, it was found that male have dominated their female counterparts. Thus, the observation supports the study Hypothesis No.2, i.e. *"*Me*n have tended to dominate in making decisions for various activities under shifting cultivation"*.

CHAPTER-5

SUMMARY OF FINDINGS AND CONCLUSIONS

SUMMARY OF FINDINGS AND CONCLUSIONS

5.1. Introduction

Agriculture is the mainstay of the people of Mizoram. About 70% of the people depend on Agriculture. Important crops grown are paddy, ginger, banana, pineapple, sugarcane, coffee and vegetables. Agriculture occupies a prominent place in the economy of Mizoram. As per the Economic Classification of Workers in 2011 Census, about 55 percent of the total workers are engaged in the agriculture and allied sector. Shifting cultivation (Jhumming) continues to be the prevalent method of cultivation. Though the Mizo society is patriarchal and male dominant, women are actively participating in the economic activities, mainly in agriculture.

The study was analysed on gender roles in the livelihood activities of shifting cultivation in Mizoram with reference to Chawngtlai village. The village is situated in the high hills of the North-East Corner of Mizoram comes under Champhai district is a small village having 325 houses (2011 census), the distance from Aizawl is 170 km. The population of the village, according to the census 2011, is at 1638. The village relies heavily on agriculture which is the backbone of their livelihood and 93.90 percent of them derive their livelihoods from shifting cultivation (cultivators). Interestingly, participation of female workers on shifting cultivation as a percentage of total workers (94.57 percent) is more than participation of male workers (93.29 percent) on shifting cultivation (2011).

5.2. Major Findings

The major findings of the study are as follows:

1. As per Population Census data, the percentage contribution of female workers on the total main workers in Mizoram has decreased from 42.05 percent in 1971 to 36.56 percent in 2011. Similarly, female marginal workers decreased consistently from 69.77 percent in 1981 to 61.72 percent in 2011. However, the contribution of female marginal workers is significantly higher than that of their male counterparts throughout the period. At the same time, the percentage of female on non-workers has increased from 54.10 percent in 1971 to 56.66 percent in 2011.

2. It was observed that on an average 43.61 percent of the total cultivators was constituted by female members of the society in Mizoram in 2011, while a district wise analysis shows that the percentage of female cultivators is highest in Serchhip District (46.39 percent) and it is lowest in Kolasib district (38.85 percent). At the same time, female workers constituted 39.96 percent of the main cultivators, while among the different districts it range from 34.34 percent in Kolasib district to 45.09 percent in Serchhip district.

3. A field study showed that 94 percent of the families who practice shifting cultivation lived in owned house, while 6 percent are in rented house. The analysis of the housing structure shows that 88 percent are semi-pucca structures, while 12

percent are pucca structures. At the same time, 92 percent of the sample households are Above Poverty Line (APL) families, while only 8 percent are Below Poverty Line (BPL) families. It may be noted that there is no BPL families in this village (Chawngtlai) as per criteria laid down by the latest BPL Census conducted in 2016.

4. As much as 92 percent of the respondent households are male headed, while another 8 percent were female headed households. At the same time, majority of the household heads are in the age group of 35-60 years (52 percent), and 32 percent are above 60 years, while another 16 percent are below 35 years.

5. The collected quantitative data indicated that the average annual income of all jhumia households covered in the survey turned out to be Rs.1,35,030, which is approximately Rs.11252 per month and Rs.2250 per capita per month for a family of 5 members.

6. A closer look of the various income sources showed that agriculture and allied activities remains the main contributors of household annual income. The average annual income earned by the families from agriculture and allied activities turned out to be Rs.50590, which is 36.4 percent of the total income. This is followed by salary and wage labour which contribute 17.8 percent and 16.7 percent of the total annual income respectively. Though the average annual income of the households turned out to be more than Rs.1.3 lakhs, a substantial number of 44 percent has

annual income less than Rs.1 lakh, at the same time, another 44 percent and 12 percent have income of Rs.1-2 lakhs and Rs.2 lakhs and above respectively.

7. Income from livestock or animal rearing has been one of the major income sources of the shifting cultivators. It is interesting to see that most of the activities for livestock rearing are undertaken by female members of the households. An estimated average income of Rs.17400 was earned by the families from selling of animal, which is quite substantial to be counted as alternative sources of livelihoods.

8. The average jhum size of the families is approximately two acre (i.e. 1.72 Acre) with a standard deviation of 0.74 Acre. This suggest that majority of the cultivated jhum land in the study area is in the range of 1 acre to 4 acres. So, it can be concluded that though the practice of shifting cultivation is widely prevalent in the area, its intensity in terms of area per family is quite low. In addition, an examination of the distance show that majority of the families have to travel more than 8 kms every day to their jhum land. It is also observed that the distance of the jhum land for 52 percent of the families is more than 4 kms.

9. All households covered in the study adopted intercropping (cultivation of more than one crop simultaneously in the same jhum land). The major crops being grown are paddy (rice) and ginger, while subsidiary crops are maize, yam, sesamum, mustard, chilli, capsicum, cucumber, watermelon, brinjal, etc. It is

reported that 68 percent of the households have cultivated ginger as main crops during last year, while 58 percent of them reported to have cultivated rice as one of the main crops. One thing that is clear from the field study is the large scale cultivation ginger, which is basically meant for commercial purposes. This can also be interpreted as the situation where the practice of shifting cultivation has become commercialized in nature.

10. On an average, 210 man days are required for completion of the entire works of shifting cultivation in a year. Of the total average man days of 210 used in the jhum land throughout the years, it is observed that 55.13 percent was contributed by male members, while another 44.87 percent are female. The distribution being observed here is in line with the observations of FAO, which showed that 40 percent of economically active population in agriculture is women.

11. The gender intensity of livelihood activities under shifting cultivation based on the result of the statistical test presented that of the 9 major activities five, namely jungle clearance, burning of land, removing of bush, sowing of main crops, and storing of main crops, are mostly done by male, or male friendly activities. Similarly, activities like sowing of vegetables and harvesting of vegetables are mostly done by female, i.e. they are female friendly activities. At the same time, weeding and harvesting are undertaken by both male and female and their contributions are more or less same. Further, the analysis of working seasons suggests no significant female participation in the livelihood activities of shifting

cultivation (jungle clearance, burning of land, removing the bushes) during the period of January to March in a year. However, their participation is observed for those who cultivate ginger.

12. There is significant difference between the contributions of male and female members of the families in case of jungle clearance, removing bush, sowing of vegetable seeds, sowing of main crops, harvesting of vegetables, and storing of main crops as the calculated t-statistics for these items are significant at 10 percent. However, the overall contributions or total contribution between the two sexes is not significant. So, we can conclude that there is no significant difference between the total contribution of male and female members on various livelihood activities of shifting cultivation in Mizoram.

13. In the selection of jhum site 92 percent of the cases male are responsible for it, while women are responsible in only 8 percent of the cases. This is mainly because of the system which is practice in the village, during the selection of site all the male members from each household came together and only in those families where there are no male members women step out for the selection of site. In the selection of jhum size 72 percent of the respondents said that the decision done by the father, whereas 16 percent of the female respondents decided for the size of their agricultural field, and 12 percent of the respondents said that the selection of size is decided by both male and female.

14. The test statistic for proportional difference is significant for jhum site selection and jhum size selection, while it is insignificant for selection of crops and time to start for work. Thus, it can be concluded that male dominates the decision making in for selection jhum site and its size, while both male and female has equal power in making decision for crops to be cultivated and the time to start any activity.

15. The contribution of male and female in the livelihood activities of shifting cultivation is more or less same, or statistically not different. This is against the Hypothesis No.1. Thus, the result of the analysis does not support the hypothesis that "women play a more significant role than men in the livelihood activities of shifting cultivation". Looking at the scenario of decision making in respect to shifting cultivation, it was found that male have dominated their female counterparts. Thus, the observation supports the study Hypothesis No.2, i.e. *"Men have tended to dominate in making decisions for various activities under shifting cultivation"*.

5.3. Conclusions & Recommendations

In Mizoram where agriculture is the backbone of the economy, participation of both male and female are equally important, the contribution of male and female in the livelihood activities of shifting cultivation is more or less same, or statistically not

different women in the field is very high. It is, however, clear that the roles men and women play in agriculture differs from region to region. Among the Mizo, there are some livelihood activities of shifting cultivation where male contributions are significantly higher than female contributions. Such activities are jungle clearance, burning of land, removing the bush, and sowing of main crops. At the same time, female contribution is found to be significantly higher in case of sowing and harvesting of vegetables. However, the total contribution in all the activities does not show significant difference between male and female, the differences between male and female are found only in few cases like, male dominates the decision making in for selection jhum site and its size, while both male and female has equal power in making decision for crops to be cultivated and the time to start any activity.

It may be an academic interest to set out recommendations based on the findings and observations of the study. Thus, it is decided to propose the following recommendations:

i) It is observed that there is no significant difference between the total contribution of male and female in the activities of shifting cultivation. At the same time the average distance of the jhum field is more than 4 kms for more than 52 percent of the households. In view of the heavy burden of household works normally undertaken by the female members, female members are most likely to have faced hardship in the system. It is necessary to study the extent to which the female members experience hardship in maintaining both

households and jhumming activities to chalk out strategy for effective intervention.

ii) In the patriarchal society, it is hard to empower women in the decision making, especially in the economic activity. This is also observed in our study areas. However, it is time to educate the people the advantages that female empowerment could have on the society and the family.

iii) The study observed livestock rearing as one of the main sources of income among the families who practice shifting cultivation. Further, the field observations and interview of knowledgeable persons show that contribution of female members in keeping animal is more than what their male counterpart did. So, encouragement of livestock business which can be undertaken in the vicinity of the house would be an effective livelihood intervention having an unequivocal impact on empowerment of female members while also enhancing family income.

Appendix-I
QUESTIONNAIRE

Code_____
Date_____

Dear Respondents,

I am an M.Phil student of Economics department and currently undertaking a thesis write-up titled: "Gender Role in the Livelihood Activities of Shifting Cultivation in Mizoram: A Case Study of Chawngtlai Village" in partial fulfillment for the award of M.Phil' Degree in Economics.

I will be most grateful if you could sincerely provide responses (answers) to the following questions.

I assure you that all your responses shall be treated as high confidentiality and the results wherefrom shall be used exclusively for academic purposes only.

Yours sincerely
Agnes Lalremruati
(M.Phil 2015-2016)

1. **Name of Household Head_____**

2. **Poverty Status of the Family**

   a) APL b)BPL c)AAY

3. **Dwelling House**

   a) Owned b) rented

4. **Housing Status**

   a) Kutcha b) Semi- pucca c) Pucca

5. Household Member Profile.

No of Members	Sex(1=M:2 =F)	Age(yrs)	Marital Status	Education
1				
2				
3				
4				
5				
6 and above				

6. Household Income.

Household Income during last one year/month:

Source of Income	Income (Rs)		
	Monthly Income	Annual Seasonal Income	Total Annual Income=(1)*12+(2)
a)Agriculture and Allied			
b)Livestock/Dairy			
c)Family business			
d)Wage Labourer			
e)Salary			
f)Others			
Total			

7. Household Expenditure during last one year/month.

Type of Expenditure	Expenditure (Rs)		
	Monthly Expenditure	Annual Seasonal Expenditure	Total Annual Expenditure=(1)*12+(2)
a. Food			
b. Fuel, Water & Electricity			
c. Education			
d. Health (medicine)			
e. Clothing			
f. Housing			
g. others			
Total			

8. Livestock's and Asset Situation.

Livestock: Please tell us number of livestock:

Live stocks	No. Currently available	Income during last year (Rs)
1.Dairy Cattle		
2.Buffalo		
3.Goat		
4.Pig		
5.Poultry		
6.Dog		
7.Others (Specify)		
Total		

9. Details of Shifting Cultivation during last year:

1) The participation rate of male and female in the major activities:

Activities	Seasons	Manpower 1=Male, 2=Female & 3= Both	Total	If code 3		Total
				Male	Female	
a) Lo vah						
b)Lo hal						
c) Mangkhawh						
d) Thlaichi thlak						
e)Buh tuh/sawhthing lin						
f) Hlo thlawh						
g) Thlai seng/Maian sih etc						
h) Buhseng/harvest						
i)Buhchhek						

2) Size…….acre

3) Distance from village……km

4) Use of shifting cultivation……. (Single cropping=1, Mixed cropping=2)

5) Production of Major crops.

Sl. No	Name of crops	Production(Qtl/kg/No)	% of sold	Income(Rs)
1				
2				
3				
4				
5				

6) Decision Making (1=Male, 2=Female, 3=both & 4=others).

a) Site selection ……

b) Size selection ……

c) Selection of crops ……

d) Time to start works ……

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