A STUDY ON THE SOCIO-ECONOMIC CONDITIONS OF JHUMIAS IN SERCHHIP DISTRICT, MIZORAM

(A DISSERTATION SUBMITTED FOR THE AWARD OF THE DEGREE OF MASTER OF PHILOSOPHY IN ECONOMICS)

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CERTIFICATE

This is to certificate that the dissertation entitled, **'A Study On The Socio-Economic Conditions Of Jhumias In Serchhip District, Mizoram'** submitted by Malsawmchhunga Ralte has been written under my guidance. This dissertation is the result of his investigation into the subject sited above and was never submitted to any other University for any research degree.

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DECLARATION

I, Malsawmchhunga Ralte, hereby declared that the subject matter of this dissertation entitled **'A Study on the Socio-Economic Conditions of Jhumias in Serchhip District, Mizoram'** is the record of work done by me. To the best of my knowledge and believe the contents of the dissertation is not based on any work done by other scholars for the degree of M.Phil or else and that this dissertation has not been submitted by me or any other for research degree in any other University/Institutions.

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

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1.1. INTRODUCTION

The history of shifting cultivation is as old as the history of agriculture itself. The origin of shifting cultivation can be traced back to about 800 BC in the Neolithic period based on archaeological evidences and radio carbon dating which witnessed the remarkable and revolutionary change in man's mode of production of food as he became food producer from hunter and gatherer. In the prehistoric time, shifting cultivation was practiced using fire stone, axes and hoes and while in the present day, the cultivators use digging sticks, iron tools, iron digging sticks, daon, hoe and knives.

Shifting cultivation, also known as jhum cultivation is the earliest means of soil utilization practiced in the tropical rain forests and bush areas of Central Africa, Central America and South East Asia. It is also the earliest form of cultivation practiced in the states of north eastern hill region of India. Even in the state of Mizoram, jhum cultivation has been practiced throughout the state from a very long time back. This shifting cultivation is given a local name in different countries such as "Lading" in Southeast Asia, "Milpa" in Central America, "Chitemene or Tavy" in Africa and "Chena" in Sri Lanka. In Inda, it is given as Dhya, Penda, Bewar, Nevad, Jhum, Podu, Khandad and Kumri are some of the local terms for swidden agriculture.

Jhumias are the cultivators who used land for the practice of farming in the hilly areas. They are mostly living in rural areas where jhum cultivation can be regarded as the major source of their income due to smaller amount of

alternative sources of income. Considering their sole source of income, the financial condition of jhumias fully depends on the success of jhum cultivation. When production increases, jhumias become profitable and could get much of income and vice versa. Generally, jhumias are the weaker section in the mizo society because of low income from jhum, even though they have been practicing farming since many years ago. As a matter of fact, a jhumia could often merely manage his family and live in a subsistence level. The problems of jhumias can be reflected on the absence of government intervention in regard to marketing and price policy. Besides, Jhumias alone cannot be disposed of their surplus products with a better price and remained under the control of the intermediaries.

The term *Socio-economic conditions* refers to an individual's level of income, wealth, education and prestige. In every society, there are many people who are living with different ideas, jobs and diverse perspectives are residing with each other. In fact, people living in the community have distinct life styles according to their level of income and educational attainment. People who have higher educational qualification can get white collar job or some other profitable occupation which could give them higher level of income. Consequently, those people who get higher income would have a higher standard of living and could provide their family with better modern life tools. Besides these, they could easily participate in the society according to their will. On the other hand,

people who do not attain higher educational qualification could not have higher source of income and seek any convenient tasks for their survival. Hence, they could not participate regularly in the society and need to look after their family by each of their time.

Cropping pattern is a dynamic concept as it changes over space and time. It is the proportion of area under various crops at a point of time. The cropping patterns of a region are closely influenced by the geo-climatic, socio-cultural, economic, historical and political factors. The physical environment (physio-graphic, climate, soil and water) controls the limit on the growth and distribution of plants and animals. The crop statistics published by the government are used to denote the cropping patterns. The role of man in the cultivation of certain crops in a region is also quite important. Man, by his technological advancement can improve the physical limits.

Operational holding refers to the number of acres of land that are actually under cultivation. The success or failure of the jhumias is decided by the size of operational holding. Capital is also another important factor for the development of agriculture. Farmer needs to purchase seeds, fertilizers and pesticides. If farmer have much capital, he would be in a position to buy these requisites without much difficulty. But fortunately most of the cultivators do not have this purchasing capacity, as most of them happen to be small and marginal, living in age old indebtedness and poverty.

1.2. SIGNIFICANCE OF THE STUDY

Jhum cultivation is an integral part of the socio-cultural life of the Mizo and it occupies an important place among the Mizo society since time immemorial. The Mizo tribes are immature and do not have much sources of income which will support their life. Considering the state economy, there is no other sectors which can absorb a huge percentage of working population other than agriculture sector. According to 2011 census, 55 percent to 60 percent of the state's working population was annually employed on agriculture.

According to 2011 census in regard to Serchhip district, out of the total population 70 percent (i.e. 45,113) lives in rural areas who are predominantly farmers and their main occupation is farming. Those farmers who have been practicing jhum cultivation can be considered as the backward classes in terms of income. In fact, people who are living in rural areas does not have much alternative occupations other than agricultural activities especially jhum cultivation. But, this type of cultivation could not offer a handsome return even though the farmer would gave more efforts to his farming. The main predicament of jhumias and this sector is the old type of farming practices, lack of infrastructure and insufficient modern technology. Besides, emergence of intermediary is another critical obstacle of jhumias. As a matter of these, many of the rural households have been practicing jhum cultivation even though it was not profitable. Therefore, we need to find out the solution and it is necessarily to develop this sector due to more than half of the population are involved.

1.3. STUDY AREA

Serchhip is one of the districts in the state of Mizoram and it is 112 km away from the state capital, Aizawl. It came into existence on 15 September 1998 and the total geographical area of Serchhip district is 1421.60 sq km which account for 6.74 percent of the total geographic area of the state. According to 2011 census, 70 percent of the district populations are living in rural areas mainly of farmers and they usually practice shifting cultivation in a wide area. Therefore, it is sufficient to represent the socio-economic conditions of jhumias and has been chosen for the study area.

According to census of 2011, there are 43 villages in the district and it is divided into three RD block. The three RD block in the district plays a crucial role for the development of each village across the district. Like all the villages are inhabitant by the mizo, the people usually carry on traditional farming system from our ancestor for earning livelihood. As a result of this, each of the selected villages can be reliable for representing the socio-economic conditions of jhumias. Mostly, all the agriculturists in the district especially in rural areas practiced jhum cultivation in a convenience manner for their survival. Besides, it is a way of life among the mizo society. Thus, they serve for the rural economy even though it was not totally profitable while majority of the population were involved.

1.4. OBJECTIVES

(a) To identify the socio-economic profiles of the Jhumias in Serchhip District.

(b) To examine whether Jhum cultivation is a sustainable type of cultivation.

1.5. RESEARCH QUESTIONS

(a) Does cropping pattern of jhumias mainly determine their socio-economic condition?

(b) Does population pressure have adverse effects on Jhumia's land holding?

1.6. METHODOLOGY

Sources of Data: The study is based on both Primary and Secondary data. The primary data was collected using questionnaires developed by the investigator and distributed among the cultivators directly involved in jhum cultivation. Data were also collected through interview.

Secondary data have also collected from both published and unpublished sources like Books, Magazines, Journals, Government Publication and other e-resources for collecting necessary information.

Tools: Collected data from different sources were analyses using statistical tools like mean, percentage, etc.

Population and Sample:

Population: For this study, the population includes all the villages in the district. There are 43 villages in Serchhip district.

Sample: Out of the total population, 10 villages were selected as sample, from these selected villages 88 households were randomly selected for final observation. The sample selection is done by using simple random sampling method.

1.7. CHAPTERIZATION

Chapter I : Introduction.

Chapter II : Review of Literature.

Chapter III : Overview of Shifting Cultivation.

Chapter IV : An Analysis on the Performance of Jhumias and their Socio-Economic Conditions.

Chapter V : Major Findings, Suggestions and Conclusion.

2.1. INTRODUCTION

The history of Indian economy shows that India is a backward country and agriculture sector plays a vital role in maintaining livelihood, especially in rural areas. Majority of the people are engaged in agriculture and demand more land for cultivation. Due to population pressure, there is high land – man ratio and this affects the land holding system which adversely affects the agricultural production.

Even today, the Indian agriculture is not satisfactory in terms of production and income in which effective land system and backward infrastructure play an important role. Land is the most important factor which makes cultivation possible and provides opportunities to more than half of the population. Without land, nothing can be produced and lack of infrastructure impedes the development of Indian agriculture. Again, use of primitive tools check the progress of farmers and agriculture sector as a whole. Agriculture is demographically the broadest economic sector and plays a significant role in the overall socio – economic fabric of India. Accordingly, several research papers and studies could be seen in these areas.

Das (1962) indicated that agricultural economy is a major source for the livelihood of rural families and also plays an important role for the expansion of Jhumias families. Under shifting cultivation, as the size of holding depends upon the number of labour who can work on it, labour is the only asset of the

family. If there is more labour supply from the family, they can cultivate a large area of land for jhuming.

In his studies to the “Crisis Facing Jhumias in Tripura”, Gupta (1966) assumed that jhumias only produced enough rice to get livelihood at a subsistence level in a year. They are not interested in surplus products and the families do not want to increase their consumption level and remain in the maintenance of their life. Besides that jhumias neglected savings. The main reason for this problem is that jhumias do not have good warehousing for their surplus products and faced hardship to sole out their products at a remunerative price. Savings is also discouraged by reluctance of jhumias investment in agricultural products. This lack of investment is due to the fact that jhum cultivation is mostly practiced on yearly basis and shifted to another field in the next year. Therefore, the jhumias family has no incentive to invest in the land on account of the current jhuming system.

Saha (1968) finds that under jhum cultivation, the area of land used by farmers is highly dependent on the size of family. Availability of labour and land has a strong relationship in jhum cultivation. Generally, intercropping system is the most practiced method used by the jhumias. Cereals like Paddy, Maize and Millets are cultivated along with cash crops like Cotton and Mesta and diverse fruits, vegetables and spices. Jhum field is a source and supplier of all family requirements of Corn, fruits, vegetables, spices and foods which are mostly important for livelihood of jhumias. Only few items are purchased by jhumias from outside jhum field and their economy is thus at a subsistence level.

Nobody offers labour for hire on this agriculture system of jhum while each able-bodied person can look after his own jhum field.

Majumder (1976) states that shifting cultivation has led to soil erosion, deforestation and consequent ecological imbalances. He also revealed that low productivity, absence of agricultural surplus and primitive techniques of production are the real images of jhum cultivation.

Dasgupta (1986) described the poor economic condition of tribal jhumias in Tripura. He shows that increasing population among jhumias is the main factor which reduced the amount of land available for jhuming. Besides this, limited opportunities to earn income either from jhum or other sources are the biggest factors which put the jhumias in a badly economic condition. Thus, he suggested that intervention of government is a necessary condition for the upliftment of the economy of jhumias, and the plight of jhumias may be somewhat reduced.

Ninan (1992) in his study on economics of shifting cultivation, argued that shifting cultivation destroys environment and degrades forests and it must be necessary to be abandoned for the benefit of the people. Regular and continuous practices of jhum cultivation causes air pollution, soil erosion, demolish valuable forests and deprive people of the benefits of the forest produce. But in this farming system, a proper seedbed is necessary for better achievements and this could be possible through with the help of fire. Destruction of weeds and improvement of tilth can be easily done if the cutting

forests are highly burned. He also mentioned that if the population density remains low, there can be more of land for cultivation and this could help in jhum cycles. Long period of jhum cycle provides better regeneration of land and adequate income to the farmer.

Ramakrishnan et.al. (1992) described that Jhum is a way of life for the tribal community and a major source for earning income, which plays a crucial role for the development of the rural areas especially in the absence of other job opportunities. Jhum cultivation is practiced in hilly areas where soil fertility is ensured through forest regrowth. In order to sustain soil fertility, there is no effective strategies and better management which therefore, result in less production among the jhumias.

Das (1993) in his study on Agricultural Marketing argued that agriculture has not yet developed as a commercial enterprise, even though bulk of the people in the region used to practice jhuming and the economy of North Eastern Region is primarily agriculture based. The main problem of agriculture sector is use of primitive method for cultivation. For maintaining adequate food grains to feed the growing rural and urban population, system of cultivation should be updated and cover with a modern technologies.

For improving rural economy, it is necessary to develop various facilities like proper market yards, selling booths, go-downs, storage facilities for grading, testing laboratory, resting place for farmers and their bullocks. Besides that, the most important one is regulated market which provides more security to the

jhumias in case of any circumstances. To achieve the above, finance may be required to a great extent. Thus, Commercial banks and Agricultural Finance Corporation and Co-operative Banks are in a position for the success of this sector.

Agnihotri (1993) states that agricultural sector was given a high priority, but there is no much progress till today. And, especially, North-East Region is a hilly area; because of this it is difficult to use modern technology for improving land productivity. Besides, indebtedness among the jhumias block the progress of agriculture and immediate attention is needed. Most of the farmers are poor due to frequent floods, drought and irregular rainfall, and necessary actions like crop insurance, credit and subsidies are required and should be made easily available. Not only these, timely and adequate supply of inputs should be organized.

Goswami et.al. (1993) mentioned that North-Eastern Region covered an area of 25.5 million hectare. Out of this, 6 million hectare is available for cultivation and it is regarded as 24 percent of the total area. Generally, 0.5 to 2 hectares is an average size of land holding in the region and it is too small for better performance. In case of rainfall, North-East Region is characterized by high rainfall and humidity with an annual rainfall varies from 1200 to 5000 mm. Agriculture has a strong potential in the whole region with the support of climatic condition and rainfall. As a result of this, there is any chance of success for all crops and plants in the region. Also, there is a chance of

developing agro-based industries in the region. Besides, potentialities of animal and fisheries are vast in the north-east region.

On the other side, agriculture has peculiar problems in the region which can retard the agricultural improvement. Factors which can hamper the development of agriculture are lack of irrigation, marketing facilities, transport and communication as well as the old system of jhum cultivation still prevailing today.

Dey (1993) states that the tribal dominated areas of North-East India were practically in darkness during the British period and also even for some years after independence. The economy of the region was mainly driven by agriculture than most of the states of the country. There is a lot of improvement in agricultural development, but it could not find perfection in this way as it could not change productivity. Wide practice of shifting cultivation required huge labour force but prevalence of archaic tools and implements hamper the productivity in the region. In this agriculture system, not only adult persons are involved but also children are taking part. Hence, the productivity must obviously be low.

Land operating system can be regarded as the major backwardness of agriculture in the region. The land system in the hilly areas are not permanent, they changed or shifted to another plot of land after one cultivation period is over. By this system of cultivation, Banks and other financial institutions could not grant loans to tribal cultivators.

Mahajan (1993) indicated that agriculture in Mizoram could not have development as a result of the traditional system of cultivation. Old customs and practices in agriculture are the main hindrances which are on the way of modernizing agriculture. Besides, the ownership pattern of land is unfavourable till today and it adversely affects the agricultural labourers. Habitually, land is owned by village community and no individual has permanent ownership, this result to the farmers not fully submitted and give less efforts into their cultivation for further improvement. In Mizoram, usually land is distributed to the farmer by the village council according to their will for farming on annual basis. Therefore, the community ownership of land has been another constraint in agricultural development in the North-East Region especially in Mizoram.

Insufficient marketing is another major snag to agricultural development in the region. As is well known, marketing is a way of achieving on any other economic activity, for agriculture as well. But, in the absence of marketing avenues, farmers would basically produce for their family needs and moreover, they might raise small extra output which could be exchanged to meet their other basic needs.

Borah (1993) mentioned that more than 70 percent of total land of North-East region is covered by hills. Shifting cultivation is commonly practiced in the hilly areas of the region other than the tiny river valleys. In every part of the world, shifting cultivation is usually practiced in hilly areas and also regarded as an age-old crude method of crop production, but not profitable till today.

Notwithstanding this, majority of the hill tribes of the region are now shifting cultivators.

Under shifting cultivation, jhumias requires a large area of land in order to have more production, but the supply of land is limited due to different factors. Labour is the only variable factor which can determine the size of holding for cultivation. If more working force can supply from a family, there can be a larger area for jhum cultivation. Small farms are usually considered as uneconomic holdings. So, agricultural development suffers in the region. Besides, everybody agrees that shifting cultivation is not only unprofitable for the practicing families, but also it leads to ecological imbalance, soil erosion and soil degradation, loss of valuable forest products and flooding in the river valleys down below. Again, ever increasing population pressure even in the hilly areas of North-Eastern India leads to shortening of jhum cycle to even 2-3 years. Because of these, agricultural production in the hilly regions suffers adverse affect on the economic life of the people concerned.

Bora (1993) indicates that the land and climatic condition of the region are good for agricultural activities, but there is no evidence to the development of agriculture. Nowadays, agriculture sector can be regarded as the most backward sector by the result of its less production and low productivity. Due to deficiency in the production of food grains and non-food grains, the region needs to import these items from other surplus regions. As is well known that most of the North-East region is hilly area, this could lead to a system of shifting cultivation among the cultivators. Not only productivity is low but also

utilization of modern method of agricultural production is absent. Besides, it also leads to disturbances in maintaining ecological balance in the region.

The region has been suffering from various problems and constraints which impede the agricultural development. Among the various problems, institutional problem is regarded as the main issue which tremendously affects the performance of agriculture. Existence of intermediaries, insecurity of tenure, failure in regulation of rents, increased number of fragmentation of land holdings, etc are the prime causes stand by on the way of agricultural development in the region. Besides, the hilly areas suffer from lack of transportation.

Neog et.al. (1993) mentioned that in order to have smooth economic progress, a significant level of the population must perform the essential roles productively so that there is less unemployment and dependency load. To fulfill such functions, maintenance of congenial social order is pre-requisite. Transformation of agriculture is a must for better production and necessary for generation of employment opportunities. But, credit has a high degree for the success of the advancement of agriculture.

Saikia (1993) mentioned that agriculture is the major and basic occupation of the people of Naga. According to Naga custom, land is a free gift of god and is not owned by government. They used land for building house and cultivation for food according to their needs. But, there is lack of communication across the state due to hilly areas and this adversely affect the all round development

of the state. Sometimes roads are constructed on the different hills to connect the places, but it was difficult to make roads across the areas on account of the lofty mountain and deep valley. By the reason of this, many areas are not connected and it is difficult to approach such areas. Many jhum fields are not connected by road and jhumias have to walk on bare foot for miles to reach their fields. These roads are sometimes small, narrow or sometimes constructed by outing stones which is fit to keep one single step only. Besides, the cultivators are usually ignorant about the development of agriculture due to lack of exposure to outside world and training.

Dutta (1993) indicated that a number of unfavourable factors like increasing fragmentation land holdings, primitive cultivation, and lack of technology, lack of irrigation, low crop intensity and low productivity are the reasons of slow space of agriculture development. Besides the above factors, lack of institutional finance is no less important for agriculture development in the state. Delay in issuing loan is another problem faced by the members. Although the loan application for the short-term and medium term are collected in time, due to official delay loan is issued after the need for the same is over. As a result of this, the loan cannot be used productively, it is utilized for consumption purposes and this makes repayment of the loan more difficult.

Education is also another constraint that is on the way to development of jhumias. Due to low level of educational attainment, jhumias were found unacquainted with the credit programmed and its benefits. Thus, due to these prevailing constraints in the agriculture credit system in the state, the farmers

particularly the small and marginal farmers, found no ways to develop their agriculture.

Hazarika (1993) mentioned that mass communication is a must for a radical change to farmer outlook in order to have better production. Television can directly put the farmers in touch with proper technology. Discussions and dialogues in TV and Radio can make farmers aware to the need for their development like, irrigation facilities, transport and communication, supply system of inputs as well as problems of loan availability. Nowadays, there is much progress in technology which make easy to know about different things within a few minutes, so advance in technology along with revival of media bring a healthy environment for the development of agriculture.

Chatterjee (1993) indicated that agriculture is the backbone of Tripura. Majority of tribal population of Tripura practiced shifting cultivation for their livelihood. Since time immemorial, jhum cultivation has deepest roots in the socio-economic life of different tribes and hence there is no common scheme which is suitable for dealing with the problem.

Samanta (1993) states that traditional method of cultivation and uses of outdated technologies are the two factors which hold up agriculture development in the north-eastern region. In modern times, there is huge technological change and innovation due to human development in different fields. As a result of this, if we want to increase the rate of adoption of agricultural innovations among farmers, the technology must be appropriate or

relevant to target group of farmers and consumers. Therefore, development of appropriate technologies should be the main plank of rural development strategy in the north-eastern region of India.

Bhagabati et.al. (1993) assumed for agriculture development, Land is the most important factors among them all which determine the availability of other factors. The size of landholding is the key factor which may affect the types of holding: small farming and large farming. Under small scale farming, the size of landholding is small and there cannot be used of modern technology which further leads to low level of production. As opposed to small-scale farming, large scale farming is one in which there is a higher proportion of land and capital for productive use. In large scale farming, there can be taken large scale production which further leads to low level of overheads costs. It is, therefore, held that large farms are more economic and conducive to greater efficiency than the small-sized ones. Besides, the size and number of agricultural plots are determined by the degree of fragmentation of holding resulting from the law of inheritance and the frequent transfer of land. Generally, the fragments are scattered with varying distance from the peasant's home. The cultivation of small and fragmented landholdings is also unfavourable when looked from the perspective of time spent in transit and transit-related activities. Right from the preparation of a plot for cultivation to the time of harvesting and carrying the harvests home, a peasant has to traverse to his fields several times. Thus, while cultivating the distance plots, the peasant has to spend much of his labour, energy and time in transit only.

Agarwal (1996) identified that low food price have been favoured by the poor due to spending of their large part of income on food. As a result of this, the increased price of food grains under the public distribution system and reduction in fertilizer subsidies led to high cost of output and rise in consumer price index for agricultural labourers. Agriculture and allied activities is the mainstay of the north-eastern economy. But, the present practices of slush and burn cultivation in the hills and single crop traditional agriculture in the plains will not lead the region anywhere. Shifting cultivation only leads to degradation of national resources like forest, soil, water and thus destabilizing the ecology. Poor level of input base and infrastructure, uneconomic holdings, absence of marketing facilities and lack of agricultural credit have kept agriculture as a subsistence sector and unremunerated to be taken up as a commercial venture. Also, the rural people and the hill people do not possess high sophisticated skill and technical know-how. They are still endowed with primitive technologies.

New technologies, seeds, fertilizers, etc are fast becoming expensive. The traditional and time-tested methods do not provide the required competitive edge. Therefore, under the current discouraging experiences improvement in agricultural production and making it competitive seems to be an uphill task. Commercially profitable agriculture has remained a distant dream in the tribal areas. Agriculture innovations have increased the costs of inputs and investment making small holding as unviable. Also, land tenure system is responsible for slow growth in agriculture.

Sen (2003) finds that all restrictions should be removed which stand on the movement of food items both within and outside the country. Absence of transportations leads to backwardness of agriculture sector especially in terms of selling agriculture products outside the country. When some comparatively cheaper agriculture items start entering the region, the same product of these items due to high cost structure start to decline in that region. On the basis of the above consideration, the agriculture of North – Eastern region deserves a special focus. This region has a very weak and irregular transportation link with the rest of the country. During rainy season this region often remains cut-off from the mainland. Also, power crisis poses a serious obstacle in the way of any development venture and capital attraction in the region. Beside weak transportation and power supply, the other infrastructures necessary for any region to face competition are lying at a very low level in comparison to all India average.

Ahmed (2003) states that there is insufficiency of agriculture modernity in the north eastern region and hence it adversely effect in their production. Besides this, the north eastern region has diverse climatic conditions which give unequal rainfall across the region. Due to insufficient and irregular rainfall, jhumias could not get sufficient return from their jhum field and this further leads to low income which has affected the economic development of the region.

Goswami (2003) indicated that majority of the people in the north eastern region involves in agriculture and it is regarded as the main occupation for them. About 80 percent of region's farmers are small and marginal. Being a poor farmer, they could not use fertilizers and better technology to increase their productivity. As a result of this, all the farmers are fully depend on subsistence nature and could not face competition from external competitors. Therefore, farmer needs protection from the government before they become mature.

Ghosh (2003) argued that the reason of low income among the farmer in the north eastern region is associated with land utilization. Due to fully depending on rainfall, farmers in the region used to cultivate only on rainy season whereas in the dry season, there is no agricultural activities and farmers remain out of work. Therefore, it is clear that agriculture activities in the region is seasonal in nature and is not carried uniformly throughout the year.

Dey et.al. (2003) states that farmers in the north eastern region do not use certified seeds and usually practiced traditional method of cultivation, which is worthless for commercialization of agriculture. By this traditional method of cultivation, farmer does not get much handsome return and need to seek financial assistance either from relative or moneylender for continuing and maintaining their cultivation.

Bhattacharjee (2003) mentioned that the rural economy of north eastern region was fully depending on peasant farming. The farming system should be modernized and commercialized which could lead to increasing the farmer production as well as income. The researcher also said that as a geographical region, north east India has much diversity. Therefore, every different parts of the region need specific treatment so as to acquire better production. Besides, he also indicated that withdrawal of subsidies and liberalization of trade may place the Indian farmer in comparative disadvantages.

Das (2006) argued that modernization of traditional system of jhum cultivation is a must for building up development of the socio-economic conditions of jhumias. Thus, introducing new scientific method could improve agriculture productivity and enhance jhumias income so as to keep away from subsistence living.

Barik et.al. (2008) states that jhum cultivation is regarded as forest cycle in northeast India. By the practice of forest cycle, the plot of land changes every year and jhumias production vary according to the land which they cultivated.

Kalamkar (2008) indicated that north eastern states are among the most backward in the country and agriculture development is much below its potential. Even though green revolution has been arising in many parts of India, north eastern states could not have fully benefit from it due to geographical isolation and hilly areas. Besides, lack of modern technology retarded the development of agriculture in the region.

Subhasis et.al. (2008) claimed that shifting cultivation still prevailing in the north eastern region and is predominated by subsistence farming. Even though it is unfavorable, jhumias continue to practice subsistence farming due to fear of risk taking. Even if the poor farmers have seen the opportunities, they do not want to shift to another farming system which could gift higher return.

Roy (2008) revealed that lack of irrigation, low lying areas and poor extension service were regarded as the major problems which hindered the increasing agricultural productivity in the state of Assam. According to him, temporary land holding, usually one year was also the reason of less production. Thus, government intervention is necessary for improving the existing land laws.

Borah et.al. (2008) mentioned the existence of agricultural marketing in the north eastern region which was in a somewhat bad condition. Even though it was setup marketing, there was no agriculture marketing which had equipped with modern facilities partly due to the fact that these, 'middleman' came into agriculture sector and has been playing a vital role in the disposal of agriculture products for jhumias. Consequently, the farmers' income remains low whereas middlemen's income increases.

Rahman et.al. (2011) said that jhum cultivation has been widespread which contributes forest loss and was regarded as the main cause of land degradation in the eastern part of Bangladesh. According to them, traditional used of land exacerbated the poverty of jhumias, and also absence of modern technology placed jhum cultivation insecure and instable among the jhumias. Besides

these, low educational level instigated to continue unprofitable of jhum cultivation.

Dhillon (2013) argued that technology helps to enhance productivity. According to him, small size of holding impeded the use of modern technology and hampered agricultural development. Besides these, lack of knowledge about new techniques, methods of production, hybrid seeds and supply of efficient agricultural inputs are regarded as the reasons of low productivity.

3.1. INTRODUCTION

Indian agriculture has beyond memory, a long and old history which begins with Indus valley civilization. It started around 9000 BCE as a result of early cultivation of plants, crops and domestication of animals.

Agriculture was in a hopeless and deplorable condition before India's first five year plan. Money-lending's existed heavily and this controlled farmers due to their heavy debt. Due to the small and scattered land holdings, the productivity level was less which further enabled them to used machinery equipment. As a result of less production, farmers did not have sufficient income to buy proper equipments, good seeds and chemical manures. Lack of knowledge and illiteracy were another condition that they lack in order to use modern equipment. Most of the farmers, except certain few, totally depend on rainfall and upon the vagaries of monsoon. Due to all these, the productivity of land as well as of labor had been declining and gradually became one of the lowest in the world. Even though nearly 70 percent of our working populations were engaged in cultivation, we still had to depend on imports of food grains due to less production within the country.

3.2. PRESENT STATUS OF INDIAN AGRICULTURE

As of other developing countries, agriculture is the key pillar of the Indian economy. As per the 2nd advised estimates by the Central Statistics Office (CSO), the share of agriculture and allied sectors (including agriculture, livestock, forestry and fishery) is estimated to be 17.3 percent of the Gross

Value Added (GVA) during 2016-17 at 2011-2 prices. Over 58 percent of the rural household depends on agriculture as their principal means of livelihood. Agriculture not only provides food security but also employment opportunities to the vast majority of the rural population.

In India, agriculture alone cannot support the livelihood of all the agricultural labor due to the distribution of farm holdings which is largely dominated by small and marginal farmers. Due to high density of population, many of the farmers cannot hold large area of land for cultivation. Small landholdings of less than 1 ha coupled with low prices of farm produce means that farmers are unable to support themselves through agriculture alone.

Land and water contribute as the two major resources in agriculture and play a crucial role for the success and development of the Indian agriculture sector. Unfortunately, Indian farmers often lack both these resources. According to the Socio – Economic and Caste Census 2011, about 30 percent of rural household are landless and derive a major part of their income from manual and casual labor. According to 2010-11 agriculture census, there are 138.35 million (13.8 Crore) operational land holdings in India. The average size of operational holding in India is 1.15 ha. 85.01% operational land holdings in India are marginal holdings (below 2.00 ha). There are 14.29% semi-medium and 3.7% large holdings. Growing population pressure means that land fragmentation is also increasing. Under the conditions of severe scarcity of land, it is difficult for a farmer to find livelihood to earn income. It is almost impossible under

current circumstances to bring more land under cultivation with an increase in population.

Water, being an important factor for agriculture, is a critical resource for the success of agriculture. Of the 160 million hectares of cultivated land in India, about 39 million hectare can be irrigated by groundwater wells and an additional 22 million hectares by irrigation canals. In 2010, only about 35 % of agricultural land in India was reliably irrigated. About 2/3rd cultivated land in India is dependent on monsoons. As a result, scarcity or lack of adequate water supply increases cropping failure and it is vulnerable to the farmers.

Not only the problems of scarcity of Land and water increase in input prices, but also the constant output prices of agricultural products worsen the situation of cultivators. Since a large number of cultivators are small and marginal landholders, they cannot receive a handsome return from their land and eventually become the bearer of highly input prices with a constant less amount of output prices. When agricultural products arrives in the market with prices that are already too low, it means that farmers do not make sufficient profit, which in turned their survival. Since it is unable or difficult to increase the area of agriculture land and the amount of irrigation water at the present situation, the only way of increasing the profitability of agricultural products is to get higher prices in the marketplace.

Besides being the source of livelihood and the largest employer, agriculture sector also play a critical role for the non-agriculture sector especially in terms

of supplying raw materials. Industries based on raw materials from agricultural products fully depend on agriculture sectors and the success of their performance is highly kept on agriculture sectors. Even though introduction of green revolution along with availability of technology has helped to increase total production of major crops in India, lack of irrigation facility and inefficient government policies has led to distress in the sector.

Even in the present situation, majority of the cultivated area is dependent on the yearly rainfall. As a result, there is an increasing case of crop failure and farmer suicide in the recent years. According to the National Crime Records Bureau of India in 2014, recently there were over 5650 farmers committed suicide every year. The farmer suicide rate in India has ranged between 1.4 and 1.8 per 100,000 total populations, over a 10 year period through 2005. On the other hand, lack of effective policy for the minimum support price has also emerged as one of the major problem and led farmers into difficult situation in case of selling their products at less prices. If they do not sale the products with fewer prices, they would not have any return and their products would simply rot away. Also majority of the agricultural dependent rural population having a small land holding have the marginal productivity as close to zero. Therefore, lack of credit, soil erosion, lack of agriculture marketing inadequate storage facility and lack of proper mechanism are some of the major challenges faced by the agricultural sector in India.

It is the duty of the government to take strong policies at every level to boost the productivity of the agriculture sector. At the same time, the welfare of the

small and marginalized farmers should also be taken into consideration. The Indian farmers who are not rich enough to buy advanced machinery to get higher yields must be given easy access of credit facilities. In India, illiteracy of farmers and lack of technical knowledge stand as the main hindrance for progress. Traditional means of manual labor and use of oxen further adds to the backwardness of agriculture sector. Thus, Government must take responsibility to give training and awareness in various ways for the upliftment of farmers.

The word 'middleman' is an important term which plays a vital role in agriculture sector. Naturally middlemen are the ones involved in any kind of business where a government does not take any measures for the development of those who are in that realm. Even though they play a critical role for the farmers in order to have good conditions in term of sell-out their product, they usually neglected the benefit of agriculture labor and seek only for their benefit. Due to this middleman, farmer does not get the real benefit for his efforts which he is entitled to. As a result of this insufficiency in agricultural sector, growing disparity in urban and rural life has been driven many rural youths to city causing unemployment problem in cities and increases strain on resources like household, amenities like hospitals, schools.

3.3. AGRICULTURE IN THE NORTH – EAST INDIA

The north – eastern part of India covers about 0.26 million km^2 of hills valley and plateau and is ethically and culturally very distinct from the rest of the

country. Presently the region comprises eight Indian states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura and shares their borders with international countries like China, Nepal, Bhutan, Myanmar and Bangladesh. Unlike the mainland, the people in this area are of different tribes, mostly the Tibeto-Mongoloids who have migrated into the region from the neighboring countries, speaking a variety of languages of Mon-Kher and Tibeto- Burman origin. The north-eastern hills occupy about 70 percent of the total land area, and shifting cultivation is the main occupational engagement.

The region mostly have a monsoon climate with heavy to very heavy rains, confined within four summer months from June to September and climate ranges from sub – tropical at lower elevations to sub – temperate in the hills. June is the rainiest month and derives its main source from the southwest monsoon. Even though there are three seasons in the area - winter, summer and rainy season, the rainy season as in the rest of India coincides with the summer months. There is a contrastive climatic difference between the valleys and the mountainous region. While the summer temperatures in the plains vary between 30^0C and 33^0C, the hilly areas have a mean summer temperature of around 20^0C with a mean minimum of 15^0C. The southwest summer monsoon contributes about 90% of the rain and receives 2,000-3,000 mm of rain during the monsoon period from May to September. The brief dry summer accompanied by strong wind are experienced usually during March and April.

The region can be broadly divided into two - the plains and the hills. Almost two-third of the total area of the land can be regarded as hilly and the rest under the plains comprising Assam, Manipur valley, Tripura and parts of Meghalaya. The region is well known for its combination of very high rainfall and very high humidity. All these factors account for the varied nature of agriculture within the region.

The geographical conditions of plains and hills must be kept in mind while thinking about the cultivation practices in northeastern region. While settled cultivation is mostly practiced in the plains, shifting cultivation along with terrace farming is widely practiced in the hills. The system of operational land holding is not stable under jhum cultivation; in fact, it is rotational system of field rather than rotation of crops. Jhumias shift their jhum land after the completion of their occupancy and left their fallow lands for around 10 to 16 years to regain their fertility. However, with the increase in demographic and economic pressure, the fallow period had shrunken to 2- 5 years, affecting the productivity adversely.

The soils found in the north – eastern hills are oxisol (red, mixed red and yellow) or laterosol (comprising laterite and lateritic types) or ultisol (mountain brown), having an acidity with average pH ranging from 4 to 5.5. The soils found on the hilly areas are sandy loam, derived from metamorphic rocks and are low in phosphorus and potassium. The steep slopes of 30 – 40 angles makes

the soil susceptible to intense run – off and leaching losses and also because of volatilization during slash and burn operations related to jhum makes the Nitrogen availability is uncertain in this area.

In north-eastern region, there have been over 100 linguistically and culturally different tribes, and has made Northeast India as one of the most culturally diverse regions of the world. Even though each tribal community has their unique way of living, all the tribes practice jhuming and the land is owned by the community. The village headman or the village council distributed land amongst the jhumias family in accordance with the number of members in the family within the village demarcated area. The duration of land holding varies among the different tribes, while some tribes own the allotted land as long as jhum is executed by them, other tribes may practice jhum land for one working year.

The procedures of jhum cultivation are closely interlinked with socio-cultural practice and religious beliefs. Besides being the main source of livelihood for most tribes of north-eastern hills, shifting cultivation also has high cultural importance among the people of northeast. The extent of area under shifting cultivation is maximum in Nagaland, followed by Mizoram and Manipur. Indeed, many social anthropologists believe that jhuming is somehow connected with the way of life of the tribal's, thereby could cause social disruptions if drastic changes in agricultural technology are introduced.

The earlier time long cycle of jhuming which range between 15-20 years due to availability of land and less population pressure has now come down to an average of 3-5 years. In north-eastern India, the average size of a jhum plot varies from 1.0-2.5 ha.

In north-eastern region, where agriculture is the dominant economic activity and main source of earning livelihood, nearly 57.4 percent of the workers are cultivators, of which 9.4 percent are agricultural laborers and 7.8 percent depend on allied occupations, making the total approximately two-third of workers engaged in agriculture and its allied areas. Agriculture, with a high percentage share of 45-58 in state domestic products of different constituents of the region, can be regarded as the most important economic activity of the region. Despite its high share of contribution in the Gross State Domestic Product (GDSP), it is also the most backward sector dominated by the age-old practice of slash and burn or shifting cultivation particularly in the hills.

The development of agriculture in the north-eastern region was also negligible so far before India got independence. However in the present day, every state has a well organized department of agriculture which is very useful for the development of agriculture sector. Established since 1972, a large number of measures have been taken by the North Eastern Council to sustain and develop agriculture in the region. A number of developments have been taken especially to develop infrastructure facilities such as communication, seed

farms, livestock breeding farms, fodder farms, fishery farms, manpower training programmed and research in evolving new techniques and variety of seeds suitable to this agriculture zone. There has been gradual increase in the investment in agriculture and allied sectors since the first five year plan.

The traditional outlook of the farming community somehow account for the unsatisfactory rate of growth in this sector. The tradition-bound and the concept of local consumption-oriented agricultural operations are still prevalent over a wide area among the average farmer. The average farmer lacks the initiation and expose to take new and modern techniques.

Regarding the population pressure on land, the average size of holding is quite small considering the overall land-man ratio which is relatively high in the region. The average size of land holding is only 1.5 ha. in the region. There have been very little diversification of employment opportunities for the rural and the hill people because of the growth of population and slow pace of development of the secondary sectors. Thereby, most of the farmers in the region below the threshold level of production providing little opportunity to efficient use of some of the resources with cost effectiveness. The achievement in maximum resource use efficiency is very much determined by the size of holding. The size of farms stands as a variable since the farmers on smaller farm are usually disadvantages in the access to the research institutions, credit etc.

3.4. PRESENT CONDITION OF MIZORAM

Mizoram is amongst the seven sister states in the northeastern part of India and gained its statehood in 20th February, 1987. As per 2011 census, the total population was 10,91,014 and was the second least populous state in the country with a total geographical area of 21,087 km^2 and had 91 percent covered forest. The service sector mainly drives the state economy with a contribution of 61.4 percent to the Gross State Domestic Product (GSDP) during 2014-15 as per the Mizoram Economic survey 2015-16. Also, 21.10 percent was shared by Industrial sector.

According to the Economic Survey of Mizoram 2015-16, the primary sector comprising agriculture and allied activities contributed 17.5 percent (2014-15) to the GSDP. Although this sector contributed the least amongst the three major sectors to the state economy, it absorbed 60 percent of the total population and still the major provider of livelihood among the population.

Jhuming, WRC and terraced cultivation are the main methods of cultivation. The rural cultivators usually grow various kinds of crops like rice, pulses, maize and oilseeds as their biggest source of livelihood. Various kinds of fruits and vegetables such as pineapple, orange, mangoes, lemons, carrot, lady's finger, ginger, cabbage and pea are also grown in Mizoram.

According to 2015-16 Economic Survey (*Mizoram*), the total area under jhum cultivation constituted an area of 28,562 hectare and a number of 68,433 jhumias families were involved in jhum cultivation during the period of 2010-

11. But, as a result of the implementation of New Land Use Policy (NLUP), the total Jhum area as recorded during 2014-15 is 20,064 hectare which shows that the decrease in Jhum area for the last five years is about 29.75 percent. In the same time, the total number of Jhumias families also declined from 88,433 during 2010-11 to 60,338 during 2014-15 which accounts for about 11.83 percent decrease during the last five years. Finally, the significant reduction in Jhum area is mainly due to the implementation of oil palm development programme, sugarcane cultivation programme, RKVY, NLUP and RAD.

3.5. CONCLUSION

Strengthening of agricultural methods and technology will not only help in upliftment of the farmers but also benefit the larger section of the rural poor who are directly engaged in agriculture or indirectly linked with agriculture as consumers. Efficient way of production, stabilized prices, higher income from agricultural products would create a more conjugative environment in the development of the country's economy as a whole and of rural population in particular.

One of the most important components of the much needed reforms is not only implementation of the policy in time but also simultaneous supervisions, reviews and evaluations of the impact of the policies and taking immediate steps to rectify the negative impacts if caused by any of the policies. Inter

sectoral linkages and organization of the agricultural sector needs to be taken up. Sustainability is another key issue to be considered.

Empowerment of the small and marginal farmers through education, reforms and development will ensure a better, efficient and strengthening Indian agriculture. Motivating new models in production and marketing, along with creating awareness and imparting education to small farmers will help in development of the sector and more importantly improving the economic status of poor farmers.

The action plan to strengthen India agriculture needs to be on domestic reforms through reduction of government intervention in the market economy. Instead it is important that they playing major role as evaluator and implementation of the policies, increased investment and prioritizing the area to invest. Parallel action plans in this direction are needed in research to increase productivity and irrigation and water management

4.1. INTRODUCTION

Serchhip District is one of the eight districts of Mizoram. The district covered an area of 1421.60 sq km. As per 2011 census, it has highest literacy rate in India, and is the second least populous district of Mizoram, after Siaha. Majority of the population in the district is engaged in agricultural pursuits.

The socio-economic conditions of jhumias in the district were studied and analyzed using various descriptive statistics. The data were collected by using structure questionnaires from a randomly selected village's viz., *E. Lungdar, Leng, N.Mualcheng, Khawlailung, Chekawn, N.Vanlaiphai, Keitum, Bungtlang, Chhiahtlang and Chhingchhip* of the district.

The field survey reveals that the socio – economic conditions of jhumias is not satisfactory. The status of jhumias in every village is lower as compared to those who are not engaged in jhum cultivation. The jhumias does not have enough resources, especially in terms of money which are very useful in their daily life. Under jhum Cultivation, the jhumias worked in their respective field during the working season. When the working season under shifting cultivation is over, the cultivators were shifted to somewhere to seek employment opportunities. This is the system which they have usually practiced in Serchhip district, as well as in the entire Mizoram.

Regarding agriculture production, there is no fruitful outcome even if the jhumias perform heavily in their field. There is disproportion of working and production under jhum cultivation. The jhumias usually do not receive a

handsome price from their products due to lack of good market. Also, lack of finance and marketing are the biggest problem which is faced by jhumias.

4.2. BASIC PROFILES OF JHUMIAS

The conditions of jhumias were perused through different scales. Here are some parameters which indicated the shape of cultivators who are engaged in jhum cultivation.

(i) EDUCATION:

The following table 4.2 shows the level of educational attainment of jhumias.

Table 4.2(i): Educational Level

LEVEL	NO. OF RESPONDENTS
Illiterate	Nil
Literate	88
Under Matric	69
Post Matric	3
Graduate	4
Post - Graduate	Nil

Source: Field Survey, 2017.

The above table exposed the jhumias in Serchhip district does not get higher education. From the data we have collected, most of the jhumias were under matriculation. This indicate that the jhumias were not in a good conditions for

seeking jobs other than agriculture sector and forced to live on the culture of jhuming. Serchhip district has the highest literacy percentage in Mizoram which is 97.91 per cent (2011 census). However, the people are still more engaged in agricultural pursuits, especially in Shifting cultivation.

(ii) FAMILY STATUS:

The family status of jhumias were measured in three ways, so it can be seen from the following table 4.2(ii)

Table 4.2(ii): Family Status

LEVEL	NO. OF HOUSEHOLD	PERCENTAGE
Above Poverty Line (APL)	34	38.63
Below Poverty Line (BPL)	47	53.40
Antyodaya Anna Yojana (AAY)	7	7.95

Source: Field Survey, 2017.

On the basis of table 4.2(ii), it is clearly to see that the jhumias family is the weaker section in a society. As we have seen from the data, out of 88 jhumias, nearly 53.40 per cent are living under below poverty line and 7.95 per cent also live in antyodaya anna yojana level while only 38.63 per cent are living above poverty line. The study revealed that people who are involved under jhum cultivation are treated as economically backward and they are not in a position to have better living condition.

(iii) HOUSING STATUS:

We used five different scales of measurement in order to have the housing status of jhumias. Here are some statistical facts relating to the housing status of jhumias.

Table 4.2 (iii) (a): Housing Status

HOUSING STATUS	NO. OF HOUSEHOLD
Owned	87
Rented	1

Table 4.2 (iii) (b): Housing Types

HOUSING TYPES	NO. OF HOUSEHOLD
Katcha	57
Semi – Pucca	16
Pucca	15

Source: Field Survey, 2017.

The above table 4.2(iii) (a) clearly indicates the housing status of jhumias. From the table we have seen, there is only one rented house while 87 household lived in their own house. This shows that the jhumias have their own house to live excluding one jhumias. Besides that we have also seen the types of their houses in the table 4.2 (iii) (b) i.e., Katcha, Semi Pucca and Pucca. Table 4.2 (iii) (b) states that 57 jhumias are living in Katcha House (Assam type) which are made of wood, titles and tin/iron sheet. And, 16 jhumias are

living in Semi Pucca (semi concrete) house which are made of wood, titles, iron sheet and used cement work in some part. Finally, 15 jhumias are living in Pucca (fully concrete) house. It is a strong house which is made up of wood, bricks, cement, iron rods and steel. As we have seen from the research investigation, the jhumias are not in bad conditions in terms of housing.

(iv) ASSETS:

Besides the above parameters, here is the one which are very useful for finding the real profiles of jhumias. Let us see the assets of jhumias from the given table:

Table 4.2(iv): Assets of Jhumias

ASSETS	NO. OF HOUSEHOLD	PERCENTAGE
Gas Connection	86	97.72
Electric Connection	88	100
Mobile Phone	83	94
Television	75	85.22
Computer Set	13	14.77
Laptop	5	5.68
Refrigerator	57	64.77
Washing Machine	40	45.45
Two Wheeler	39	44.31
Four Wheeler	10	11.36

Source: Field Survey, 2017.

The above table indicates that 86 (97.72%) jhumias, out of 88 (100%) jhumias have Gas connection for domestic uses while only 2 (2.27%) jhumias do not have such facility. Availability of electric connection is satisfactory among the jhumias and all the jhumias can avail power supply for their multipurpose uses. Among the 88 jhumias, 83(94%) jhumias can use mobile phone for daily use. Out of 88 jhumias, 75 (85.22%) can obtain television. 14 (14.77%) and 5 (5.68%) jhumias could have both computer set and laptop. Refrigerator occupies 57 (64.77%) and washing machine 40 (45.45%) of jhumias out of the total number of 88. A jhumias who can posses two wheelers and four wheelers are 39 (44.31%) and 10 (11.36%).

Regarding the assets of jhumias as shown in the above table, the basic needs of every household i.e., gas & electric connection are possessed by almost all, which are 97.72 per cent and 100 per cent respectively. This shows that no one is discriminated from having his basic needs if he can afford to bear necessary expenditure. As regard to other assets of the jhumias, we can clearly identify that the assets which they can obtain largely depends on the level of their income.

4.3. INCOME PATTERN

Income is the most single important element which expresses the actual condition of jhumias. A successful person can earned more revenue and have a better living condition. Thus, income of jhumias can be seen from the following table:

Table 4.3: Income Pattern

MONTHLY INCOME (in rupees)	NO. OF HOUSEHOLD	PERCENTAGE
1000 – 5,000	38	43.19
5,000 – 10,000	22	25
10,000 – 15,000	8	9.09
15,000 – 20,000	3	3.40
20,000 – 25,000	4	4.55
25,000 – 30,000	3	3.40
35,000 – 35,000	2	2.28
35,000 – 40,000	8	9.09

Source: Field Survey, 2017.

On the basis of table 4.3, there are eight different ranges of income which shows the income of jhumias during 2011-2016. Each row indicates the year between 2011-2016 and we take the combine average of their income and put in the same line.

The above table 4.3 exhibits that there are different income group among the jhumias. As we know that in the range of Rs 1,000-5,000, there are 38 (43.19%) jhumias who possess the lower income group. And, there are 22 (25%) jhumias who occupy the income range of Rs. 5,000-10,000. Income of eight (9.09%) jhumias is kept on between Rs. 10,000-15,000. Three (3.40%) jhumias earned an income between Rs. 15,000-20,000 during the whole study period. Likewise, four (4.54%) jhumias stay on the income level of Rs. 20,000-

25,000. Again, three (3.40%) jhumias live with an income range of Rs. 25,000-30,000. In the second highest, there are only two (2.27%) jhumias whose income are on between Rs. 30,000-35,000. Lastly, at the highest income group, there are only 8 (9.09%) jhumias who earned an income with a range between Rs. 35,000-40,000.

From the survey result, a large part of jhumias have lower income and only a few people get higher income from jhum cultivation. Usually those who earned lesser income still practice jhum as the only source of income and sometimes they perform a convenient daily labour. In the mean time jhumias who get higher income do not fully depend on jhuming, usually they carry out some other duty to have additional income.

From the collected data, the mean income of jhumias can be seen as under:

$$x = \frac{\sum fm}{\sum f} = \frac{9,69,000}{88} = \text{Rs. } 11,011.36$$

Mean = Rs. 11,011.36

4.4. EXPENDITURE PATTERN

Expenditure reveals the system of spending money. In this research work, we have five different types of expenditure head which we hope to express the actual consumption level of jhumias. Also, we covered six years (2011-2016) to investigate for this study. This includes expenditure on basic needs like foods, medical and education. Other household expenses like cloths, cosmetic etc. Let us briefly highlight expenditure according to the different heads.

(i) Expenditure on Foods

The following table shows the expenditure on foods by jhumias household;

Table 4.4(i): Expenditure on Foods

MONTHLY EXPENDITURE (in rupees)	NO. OF HOUSEHOLD	PERCENTAGE
1,000 – 2,000	35	39.78
2,000 – 3,000	28	31.81
3,000 – 4,000	12	13.64
4,000 – 5,000	3	3.40
5,000 – 6,000	10	11.37

Source: Field survey, 2017.

The above table 4.4(i) indicates the overall expenditure of jhumias on foods by monthly bases during the survey periods. In view of the table, there are 35 (39.78%) household who spend an amount of Rs 1,000-2,000 per month for foods. There are 28 (31.81%) household who spend Rs. 2,000-3,000 on foods by monthly. Again, 12 (13.64%) household and 3 (3.40%) household spend Rs. 3,000 -4,000 and Rs. 4,000-5,000 for buying foods per month. Lastly, there are 10 (11.37%) household who spend Rs. 5,000-6,000 for buying foods are recorded as the highest expenditure on foods among the jhumias family during the survey period.

(ii) Expenditure on Medical

Expenditure on medical is also important as expenditure on foods in order to maintain physical health. The following table shows the expenditure of jhumias on medical

Table 4.4(ii): Expenditure on Medical

MONTHLY EXPENDITURE (in rupees)	NO. OF HOUSEHOLD	PERCENTAGE
0 – 1,000	29	33.72
1,000 – 2,000	41	47.68
2,000 – 3,000	7	8.14
3,000 – 4,000	5	5.81
4,000 – 5,000	-	-
5,000 – 6,000	4	4.65

Source: Field Survey, 2017

On the basis of table 4.4(ii), there are 86 correspondents out of 88 jhumias in terms of medical expenditure. As shown in the table, there are 29 (33.72%) household who spend below Rs 1,000 per month occupying the second highest position in terms of a number of jhumias. Likewise, 41 (47.86%) household who spend between Rs. 1,000-2,000 for monthly expenditure on medical take up the highest position among 86 jhumias. Again, seven (8.14%) and five (5.81%) household uses Rs 2,000-3,000 and Rs 3,000-4,000 for monthly expenditure on medical purposes. Once and for all, there are four (4.65%)

household who spend money between Rs 5,000-6,000 in case of medical purpose are treated as the highest amount of money spending on medical.

(iii) Expenditure on Education

Education is the most important factor which can uplift the standard of living of human being. Without education, nobody could attain achievement in different ways of life; and human resource will remain undeveloped. The expenditure of Jhumias on education is shown in the following table:

Table 4.4 (iii): Expenditure on Education

MONTHLY EXPENDITURE (in rupees)	NO. OF HOUSEHLOD	PERCENTAGE
0 – 1,000	25	33.79
1,000 – 2,000	15	20.28
2,000 – 3,000	14	18.91
3,000 – 4,000	8	10.81
4,000 – 5,000	3	4.05
5,000 – 6,000	9	12.16

Source: Field Survey, 2017

Data given in table 4.4(iii) reveals that out of 88 families, there are 74 Jhumias who chains their families with education. As a survey result, 14 out of 88 jhumias households are left out from education.

Table 4.4(iii) depicts that expenditure of jhumias household in terms of education. At the lowest, 25 (33.79%) household spend less than Rs. 1,000 for

educational purposes by monthly. The expenditure between Rs. 1,000-2,000 and Rs. 2,000-3,000, there are 15 (20.28%) and 14 (18.91%) household during the study period. Also, eight (10.81%) households are engaged on education with the expenditure of Rs. 3,000-4,000 per month. Again, three (4.05%) households are enlisted on educational purposes with the expenditure of Rs. 4,000-5,000 in time of the study period. Finally, at the top, there are nine (12.16%) households who spend an amount of Rs. 5,000-6,000 on account of education.

(iv) Expenditure on Clothing and Cosmetic

Clothing and cosmetic are also important to human life and plays a vital role on the appearance of people. Thus, the expenditure figure are shown as given table

Table 4.4(iv): Expenditure on Clothing and Cosmetic

MONTHLY EXPENDITURE (in rupees)	NO. OF HOUSEHOLD	PERCENTAGE
0 – 1,000	34	38.63
1,000 – 2,000	30	34.10
2,000 – 3,000	19	21.59
3,000 – 4,000	1	1.14
4,000 – 5,000	3	3.40
5,000 – 6,000	1	1.14

Source: Field Survey, 2017

Table 4.4(iv) clearly denotes that household of jhumias does not spend a large portion of their income on clothing and cosmetic. As indicates in the above table, below Rs. 1,000 there are 34 (38.63%) household who spend money on cloths and cosmetic respectively and they occupied maximum number. Also, 30 (34.10%) household spend between Rs. 1,000-2,000 for monthly expenditure on cloths and cosmetic as well. Again, 19 (21.59%) household uses Rs 2,000-3,000 and only one household spend Rs 3,000-4,000 against clothing and cosmetic per month. Lastly, three (3.40%) household and only one (1.14%) household out of 88 household spend Rs. 4,000-5,000 and Rs 5,000-6,000 in respect of clothing and cosmetic respectively per month during the survey period.

(v) Expenditure on other household expenses

Other household expenses refer to those expenditures which are not included in the foresaid. It includes expenditures which are of great importance in the daily life of the household like electric bill, water bill and television bill and so on.

Table 4.4 (v): Expenditure on other household expenses

MONTHLY EXPENDITURE (in rupees)	NO. OF HOUSEHOLD	PERCENTAGE
0 – 1,000	29	32.95
1,000 – 2,000	30	34.10
2,000 – 3,000	17	19.31
3,000 – 4,000	7	7.96

4,000 – 5,000	3	3.40
5,000 – 6,000	2	2.28

Source: Field survey, 2017

Table 4.4 (v) indicates the expenditure on other household expenses. In view of the above table, 30 (34.10%) household occupied expenditure between Rs 1,000-2,000 and stay at the top during the survey period. In the second position, we have seen that there are 29 (32.95%) household who spend below Rs. 1,000 per month. Out of 88 household, 17 (19.31%) household remain in the level of Rs. 2,000-3,000 while seven (7.96%) household be presented in Rs 3,000-4,000 by monthly. The survey result expresses that only three (3.40%) household are spending between Rs. 4,000-5,000. Finally, at the highest level of monthly expenditure on other household expenses, there are only two (2.28%) households which spend an amount of Rs 5,000-6,000 per month.

4.5. CROPPING SYSTEM AND AREA OF CULTIVATION

Like the jhumias in other parts of Mizoram, most of the jhumias in Serchhip district usually follow multiple or mixed cropping instead of single cropping. Under mixed cropping, jhumias habitually cultivate crops like rice, ginger, chilli, sugarcane, banana, different kind of vegetables and so on.

The quantity of production is highly dependent on the area of land under cultivation. The following table 4.5 reveals the area of jhum cultivation.

Table 4.5: Area of Cultivation

AREA (TIN/ACRE)	NO. OF HOUSEHOLD	PERCENTAGE
1	41	46.59
2	26	29.53
3	11	12.5
4	5	5.69
5	5	5.69

Source: Field Survey, 2017.

As we expressed data in the above table 4.5, nearly two third of jhumias were remained in one tin/acre area of land under jhum cultivation. Again in terms of figure, 41 (46.59%) jhumias have been practiced jhuming under the area of one ha. Secondly, there are 26 (29.53%) jhumias who were under the area of two acre in terms of jhum culture. Thirdly, 11 (12.5%) jhumias have been practiced jhum agronomy under the area of three acre during the survey period i.e., 2011-2016. Lastly, there were five (5.69%) jhumias and again five (5.69%) jhumias who usually practiced jhuming under the area of four and five acre during 2011-2016. The average size of holding is calculated by means of arithmetic mean ($\overline{x} = \frac{\in fm}{\in f}$) which shows that average size of holding is 1.94 acre or 2 acres approximately.

4.6. MAJOR CROP GROWN

The following table 4.6 signifies the major crop grown of jhumias. Information was taken to identify the performance of jhumias.

Table 4.6: Production Pattern

CROP	NO. OF HOUSEHOLD	PERCENTAGE
Rice	32	36.37
Ginger	44	50
Others	12	13.63

Source: Field Survey, 2017

Generally around the world, jhumias cultivates different type of crops in their agricultural land. Here in Serchhip district also, jhumias used to grow a different variety of crops in order to maintain livelihood and earning revenue. Table 4.6 clearly indicates two specific crops (rice and ginger) and others which were grown by jhumias in the district.

Out of 88 jhumias, 44 (50%) jhumias used to produce ginger as their main cultivation. Likewise, 32 (36.37%) jhumias grows rice as their main cropping in the survey area. Among the jhumias who cultivated ginger occupied the highest position in terms of participation and followed by rice cultivators. Besides, jhumias other than the foresaid use to cultivate a small variety of crops in their jhum field with a participation rate of 12 (13.63%) jhumias.

4.7. RELATIONSHIP BETWEEN LEVEL OF EDUCATION AND INCOME

Education is the single most important factor which makes the way for the development of mankind. In most cases those who attained higher education practiced handsome occupation and earned higher income. The following table indicates the educational level and income of jhumias.

Table 4.7 (i): Level of Education and Income

Level of education	No. of Respondent	Level of Income (Monthly) in Rupees							
		1,000 - 5,000	5,000 – 10,000	10,000 – 15,000	15,000 – 20,000	20,000 – 25,000	25,000 – 30,000	30,000 – 35,000	35,000 – 40,000
Illiterate	Nil	-	-	-	-	-	-	-	-
Literate	12	6	-	-	-	1	-	1	4
Under Matric	69	34	16	9	2	4	1	-	3
Post Matric	3	1	1	-	-	-	1	-	-
Graduate	4	1	2	-	-	1	-	-	-
Post - Graduate	Nil	-	-	-	-	-	-	-	-

Source: Field Survey, 2017

Table 4.7 (ii): Level of Education and Income in Percentage

Level of Education	No. of Respondent	Level of Income (Monthly) in Percentage							
		1,000 – 5,000	5,000 – 10,000	10,000 - 15,000	15,000 – 20,000	20,000 – 25,000	25,000 – 30,000	30,000 – 35,000	35,000 – 40,000
Illiterate	Nil	-	-	-	-	-	-	-	-
Literate	12	50	-	-	-	8.33	-	8.33	33.33
Under Matric	69	49.27	23.18	13.04	2.89	5.79	1.44	-	4.34
Post – Matric	3	33.33	33.33	-	-	-	33.33	-	-
Graduate	4	25	50	-	-	25	-	-	-
Post - Graduate	Nil	-	-	-	-	-	-	-	-

Source: Field Survey, 2017.

The above table clearly shows that the educational level of jhumias and their income level. As shown in the table, we classified educational level into six groups like illiterate, literate, under-matric, post-matric, graduate and post-graduate. No jhumias were marked in the group of illiterate and post-graduate and this expressed that there is no illiterate among the jhumias and again there is no post – graduate among the jhumias.

Based on the data which were mentioned in the above table extend that the education and income level of jhumias. As we seen in table 4.7, there are 12 (13.63%) jhumias who can only read and write among the total jhumias as of field survey result. Out of 12 literate jhumias, six (50%) jhumias monthly income is between Rs 1,000-5,000. One (16.66%) jhumias get between Rs.

20,000-25,000 and again another one (16.66%) jhumias also earned an income of Rs. 20,000-25,000 per month. On an income range of Rs. 35,000-40,000, there are four (33.33%) jhumias which their regarded as their monthly income.

Under-matric level as shown in the above table, we saw that there are 69 (78.40%) jhumias out of 88 jhumias who attained their education till matriculation. Among them there are 34 (49.27%) jhumias whose monthly level of income was between Rs. 1,000-5,000. Out of 69 jhumias, again there are 16 (23.18%) jhumias who received an income between Rs. 5,000-10,000 by monthly. Nine (13.04%) jhumias out of 69 jhumias are stayed on an income range of Rs 10,000-15,000 per month. Again two (2.89%) and four (5.79%) jhumias among 69 jhumias were remained on the income level per month between Rs 15,000-20,000 and Rs 20,000-25,000 respectively. Only one (1.44%) jhumias was presented on an income level between Rs. 25,000-30,000 per month. Among the jhumias who attained education till matriculation, only three (33.33%) jhumias could get an income level between Rs. 35,000 – 40,000 monthly.

Under post-matric level as on the above table, there are only three (3.40%) jhumias who had attained their educational level till this stage among the 88 jhumias from the field survey. Out of three jhumias, one (33.33%) jhumias get an income level of Rs 1,000-5,000 per month. Again, one (33.33%) jhumias remained on an income level between Rs. 5,000-10,000 by monthly. In accordance with the survey result, only one (33.33%) jhumias out of three

jhumias who stayed on post- matric level get an income between Rs. 25,000-30,000 per month.

In Graduate level, there are only four (4.54%) jhumias out of 88 jhumias as a result of field survey. Among the graduated jhumias only one (25%) jhumias out of four jhumias who get their monthly income between Rs. 1,000-5,000. And, two (50%) jhumias out of four jhumias presented on an income level between Rs. 5,000-10,000 by monthly. Lastly, again only one (25%) jhumias among the four jhumias received Rs. 20,000-25,000 per month for his income.

The above clarification shows that the educational level and income level of jhumias do not have significant relationship. In other words, the correlation between educational level and income is negative or their educational levels do not have any desirable effects on the level of income. Thus, education cannot be regarded as the main factor which make the jhumias to earned more revenue from jhum cultivation.

4.8. VIABILITY OF JHUM CULTIVATION

The following table reveals that jhum cultivation is a viable or non-viable.

Table 4.8: Viability of Jhum

VIABILITY	NO. OF JHUMIAS	PERCENTAGE
Viable	31	35.22
Non-Viable	47	64.77

Source: Field Survey, 2017.

Table 4.8 denotes that Jhuming is not good for cultivators who are engaged in shifting cultivation. From the above table, 47 (64.77%) jhumias respondents opined that jhum cultivation is not a viable source of livelihood. Usually they perform jhuming as a way of life even if it does not provide sufficient return. Likewise, they spend more time on jhum due to lack of other field to earn revenue. As we see from the field survey, low productivity is the main problem which leads to non – viability of jhum cultivation. jhumias could not receive a handsome return from jhum cultivation. Even if they spend the whole of their working hour in their jhum field, there is no additional revenue from their production. Longer gestation period is also a big problem for jhumias who are economically weaker section and fully dependent on jhum cultivation. In the same way, land condition decides the success or failure of jhumias.

Relating to viability of jhum, only 31 (35.22%) jhumias out of 88 jhumias accepted as a viable type of cultivation. Even though they have hardship, they could keep up jhuming as their sole revenue source. As a whole the empirical analysis of the socio-economic conditions of jhumias show that jhum cultivation is not enough to produce the overall requirements of the jhumias. Hence, it may not be considered as a viable type of cultivation.

4.9. PROBLEMS OF JHUMIAS

There are different types of problem which are faced by jhumias on jhum cultivation. Some problems are at the initial stage of cultivation and some are after the harvesting period i.e., disposal of production. The following table shows an assorted setback of jhumias.

Table 4.9: Problems of Jhumias

PROBLEMS	NO. OF JHUMIAS	PERCENTAGE
Infertile Land	13	14.77
Lack of Finance	5	5.68
Insects	11	12.5
Lack of Marketing	47	53.40
Lack of Transportation	12	13.63

Source: Field Survey, 2017.

In view of the above table 4.9, we can clearly envisage that lack of marketing is the main problem of jhumias. From the field survey, 47 (53.40%) out of 88 jhumias talked about marketing is the biggest problem which hindered the way of their success. Existence of deprave quality of marketing pull down the price of agriculture products and give less money to the cultivators. Besides that it loses keenness of the jhumias.

Low fertility of land is the second biggest problem which is faced by jhumias in respect of their cultivation. Land is the most important factor which can affect the overall production of the jhumias. If more fertile land is available for cultivation then there will be more quantity of production. As per the survey result of this research, we found that there are 13 (14.77%) jhumias who are suffering from barren land.

Lack of transportation is also another burden which appears before the jhumias in the way of both jhum field and dissemination of their products. From the survey result, 12 (13.63%) jhumias confront an inadequate transport system. Transportation plays an important role in every sector especially in agriculture sector for those who need to sell their products (perishable goods) immediately. Without good transport system, jhumias could not find where to sell their products at a better price and further leads to sell at a lower price. Jhumias who are live on the existence of good transportation can sellout their products to somewhere at a better price. Thus, there will be less chance of distress sale in that situation.

Lastly, the problem of jhumias also includes insects and lack of finance. As indicates the above table 4.9, there are 11 (12.5%) jhumias who have an insect's problem that can spoil their crops. Also, there are 5 (5.68%) jhumias who does not have sufficient fund to run jhum cultivation properly.

FINDINGS

The major findings of the study are the following:

1. Jhum cultivation is the major occupation of the people living in village.

2. Even though the state government has been trying to stop jhum cultivation through different projects like NLUP etc, the villages are still clinging to jhum cultivation because they do not have well enough alternative occupations. Besides this, jhum cultivation is not only an occupation, but also a way of life which is closely connected with their social life.

3. The size of holding under jhum cultivation is extremely low, the average size of which is 2 acres.

4. Since the products of jhum cultivation are not enough to provide household requirements, the jhumias do not depend on farm practices alone. Almost all of them used to work as daily labourers while some of them are engaged in piggery.

5. Even though literacy percentage is very high, yet the majority of the farmers have an educational level below HSLC. As such, they are in need of proper guidance and training by expert personals.

6. The main problems of Jhumias are absence of good transport system and marketing facilities. As the locations of the farm are usually far from motorable roads, the transport cost is very high. At the same time they cannot sell their

products at reasonable prices due to the absence of government price policy and the interference of intermediaries.

7. As against the general belief that population growth reduce the size of holding, population growth, in the study area does not have significant effect on the size of holding. Other factors like unprofitable farm practices and absence of marketing facilities have reduced the work incentive among the jhumias, thereby resulting in the decreasing size of holding.

SUGGESTIONS

In view of the problems faced by the Jhumias, there are many steps to be taken by the government so as to promote agricultural developments which are given below:

1. Provision of credit facilities to the farmers.

2. Provision of good transport and communication systems.

3. Establishment of regulated markets and provision of warehousing and cold storage facilities.

4. Price policy and price support are necessary so that the farmers should be released from the clutch of intermediaries.

5. A good enough alternative methods of cultivation like settle farming and horticulture farming should be introduced so as to promote mechanized farming system.

CONCLUSION

Through the above findings, it can be said that the socio – economic conditions of jhumias are not good and still they have been practicing jhum as their main occupation in spite of less return from their products. In rural areas, especially jhum cultivation has played a vital role for the upliftment of rural economy because most of the people depending on jhum cultivation. Thus, the success or failure of jhuming can greatly affects the economy of rural areas, exclusively jhumias. From the survey result, 47 (64.77%) out of 88 jhumias did not expect jhum cultivation as a reliable source of livelihood.

Generally, jhumias have been followed mixed cropping under jhum cultivation. They used to grow rice, ginger and other vegetables in order to have revenue and livelihood. But, they do not get good return from their jhum fields due to lack of marketing. Whatever they produced, they need to sale on lower prices and this adversely affects their socio – economic conditions.

Last but not the least, as of the survey result, most of the jhumias do not attained higher education and only 4.54% studied till graduate level. Regarding the disposal system, jhumias mostly faced many problems and they do not know how to sale their products with a better price. In this regard, the government less intervenes even today at every level of jhum cultivation and also in the disposal process. Thus, intervention of government is a must and necessary for the upliftment of jhumias and rural economy.

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QUESTIONNAIRE FOR SOCIO-ECONOMIC CONDITIONS OF JHUMIAS IN SERCHHIP DISTRICT

Please read the questions and tick the answers in the boxes given.

I. PERSONAL DATA

1) Name :

2) Age :

3) Address :

4) Sector : Rural Urban

5) Educational Qualification :

(a) Illiterate :

(b) Literate :

(c) Primary Level :

(d) Middle Level :

(e) High School Level :

(f) Higher Secondary Level :

(g) College Level :

(h) University Level :

6) Family Size :

Male Female Total

7) Family Status :

APL BPL AAY

8) Housing Status :

Katcha Semi Pucca Pucca

9) Ownership of House Status

Own Rent

10) Main Source of Income :

II. ASSETS

1) Ration Card

2) Gas Connection

3) Electric Connection

4) Water Connection

Pond Public Point PHE

5) Mobile Phone

6) Television

7) Computer set

8) Laptop

9)Newspaper

10) Refrigerator

11) Washing Machine

12) Two wheeler

13) Four Wheeler

III. INCOME, EXPENDITURE AND SAVING PATTERN

A. INCOME

Amount Per Month (in Rupees)	Source		Year					
	Main	Other	2011	2012	2013	2014	2015	2016
1000-5000								
5000-10000								
10,000-15,000								
15,000-20,000								
20,000-25,000								
25,000-30,000								
30,000- 35,000								
35,000- above								

B. EXPENDITURE

Expenditure Head	Amount Per Month (in Rupees)	Year					
		2011	2012	2013	2014	2015	2016
Foods	1,000-2,000 2,000-3,000 3,000-4,000 4,000-5,000 5,000- Above						
Medical	1,000-2,000 2,000-3,000 3,000-4,000 4,000-5,000 5,000- Above						
Education	1,000-2,000 2,000-3,000 3,000-4,000 4,000-5,000 5,000- Above						
Other Household Expenses	1,000-2,000 2,000-3,000 3,000-4,000 4,000-5,000 5,000- Above						
Clothing & Cosmetic	1,000-2,000 2,000-3,000 3,000-4,000 4,000-5,000 5,000- Above						
Total							

C. SAVING

Saving Per Month (in Rupees)	Year					
	2011	2012	2013	2014	2015	2016
NIL						
0 – 1,000						
1,000 – 2,000						
2,000 – 3,000						
3,000 – 4,000						
4,000 – 5,000						
5,000 - Above						

IV. LAND HOLDING AND PRODUCTION PATTERN

A. LAND HOLDING

1) Place of Cultivation

(a) Own

(b) Rent

(c) Public

2) Area of Cultivation

3) Number of Jhumias from a Family

Male Female

4) Cropping system

(a) Single

(b) Multiple /Mixed

B.PRODUCTION PATTERN

Year	Crop		Cultivated Area (in Tin/Hac)	No. of Active Labour	Production (in Qtl)
	Main	Alternative			
2011					
2012					
2013					
2014					
2015					
2016					

V. SUSTAINABILITY OF JHUM CULTIVATION

1. How long have you been practice jhum cultivation.

(a) 1-5 years (b) 5-10 years (c) 10-15 years

(d) 15-20 years (e) 20-25 years (f) More than 25 years

2. How many hours you usually spend for jhumming in a day.

(a) 5-10 hours (b) 10-15 hours (c) More than 15 hours.

3. How far is your cultivable land from your house.

(a) Less than 30 minutes (b) 30 minutes – 1 hours

(c) 1 hours – 1.5 hours (d) 2 hours and above

4. Do you believe that jhum cultivation is a realible for living.

Yes OR No. If no,…

(a) Less productive

(b) Longer gestation period

(c) Misproportion of working and production

(d) More depend on Land condition.

5. Problem of Jhumias

(a) Barren Land

(b) Less Labour

(c) Lack of Finance

(d) Insects

(e) Lack of Marketing

(f) Lack of Transportation

6. Suggestions by Jhumias