

Livelihood Diversification of *Jhumias* of Manipur: A Constraint Analysis

Punitha P¹, Jitendra Chauhan², Ram Singh³ and R.J. Singh⁴

1. Scientist (Agril. Ext.), ICAR-RC for NEH Region, Manipur Centre, Imphal, 2. Professor (Agril. Ext.),
3. Professor (Agril. Eco.), 4. Assistant Professor (Agril. Ext.), School of Social Sciences,
College of Post-Graduate Studies, (CAU, Imphal), Umiam, Meghalaya.

Corresponding author e-mail: puniashok@gmail.com

Paper Received on October 01, 2017, Accepted on November 29, 2017 and Published Online on December 22, 2017

ABSTRACT

Jhum is a type of farming system practiced predominantly by tribal farmers of North East India. The farmers who practice such type of farming system are called as *Jhumias*. Therefore, prioritising the constraint in diversification of livelihood as perceived by farmers is inevitable. To identify the constraints, 80 respondents from Watershed Development Project in Shifting Cultivation Area and 160 respondents from Non-Watershed Development Project in Shifting Cultivation Area were selected. The Garrett ranking technique was used to prioritise the constraints. Lack of market access, Lack of transport subsidy for the products, Lack of proper road and absence of small scale enterprises were the infrastructural constraint followed by lack of savings, lack of good market price of the produce, unavailability of credit due to common property resources, lack of water resources in winter months were the resource and economic constraints expressed by *Jhumias*. Primary activities not leaving enough time to pursue diversification strategies, inadequate experience in expected livelihood, lack of role entrepreneur in my village, fear of taking risk were the social constraints followed by less high yielding varieties in *Jhum* land, lack of organic weed control method were the constraints highlighted by *Jhumias*. Common market place for cluster of villages, transport subsidy for agricultural commodities, creating and showcasing role model and successful entrepreneur, developing high yielding varieties for *Jhum*, popularising weed control strategies were the strategies recommended to alleviate constraints to diversify livelihood so that pressure on *Jhum* and forest resources will reduce in future.

Key words: Watershed; Shifting cultivation; Livelihood; Diversification; Constraint;

Jhum is a predominant practice carried out by tribal farmers of North East India. Manipur is one of the seven states in North Eastern India which has Imphal as its capital. The state lies at a latitude of 23° 83'N to 25° 68'N and longitude of 93°03'E to 94°78'E. The total area covered by the state is 22,327 km². Out of the total area, 20,089 km² is occupied by hills and only 2238 km² is occupied by valley. Manipur has a population of 2721756. Of this total, 58.9 per cent lives in valley and the remaining 41.1 per cent lives in hill districts (Wikipedia, 2017).

The shifting or *Jhum* cultivation is a land use system in which certain piece of the land which belong to the village were cultivated by slashing of trees, burning of the slashed trees followed by cultivation of crops for

an year followed by abandoning the cultivated land for a period of 10 to 15 years in olden days which in recent years got reduced to average fallow period of 10 years as found in the present study. This type of farming system was practised by the tribal farmers in North East India. The farmers who practise such type of shifting cultivation were called as *Jhumias*. The total estimated area under the shifting cultivation in India is 0.9 million ha which includes both current *Jhum* (53%) and abandon *Jhum* (47%). The North Eastern Region occupies 83 per cent of the total shifting cultivation in India (GoI, 2011). Of the total schedule tribe rural population of Manipur, *Jhumias* contribute 36.46 per cent (GoM, 2015). Hence, there are sizable numbers of people who depend on *Jhum* for their livelihood in Manipur.

The present issues and challenges in the shifting cultivation practice is that as the population is increasing, the demand for land get increased in turn reduce the fallow period to two to three years which had an impact on soil and ecological problem (NAAS,2016). Further, *Jhumias* not only depend on *Jhum* but also on forest resources for extraction of timber and non-timber based resources. The depending on non-farm and off-farm resources act as a risk aversion strategy to overcome stress and shocks. Hence, the *Jhumias* had to be encouraged on farm resources with emphasis to diversify more crops in homestead land, improve livestock based activities and agriculture based non-farm and off-farm strategies as a need of the hour so that the pressure on *Jhum* and forest resources will be reduced. To diversify the livelihood of *Jhumias* there is a need to document the constraints faced by *Jhumias* in order to minimise their constraints and thereby to improve the livelihood of *Jhumias*. The various constraints *Saha and Bahal (2012)* in his study of West Bengal community revealed that lack of marketing facilities for the product, absence of storage infrastructure, lack of improved technology and skills, inadequate or no experience for new occupation, lack of business start-up budget were the constraints faced by the farmers in livelihood diversification. To improve the livelihood of *Jhumias*, it is necessary to prioritise the constraints so that the impeding constraints could be rectified by suitable policy measures. Hence, the objective of the study was to prioritise the constraints faced by *Jhumias* for livelihood diversification.

METHODOLOGY

Out of five hill districts of Manipur, three districts viz., Ukhrol, Tamenglong and Senapati were randomly selected. In WDPSA implemented areas, Chakumei and Taphou Naga villages from Mao-Maram block of Senapati district; Mailiang and Tusom village of Phungyar block of Ukhrol district; Taodaijang and Thangal village from Nungba block of Tamenglong district were randomly selected. From the above selected villages eighty respondents were selected randomly. In WDPSA non implemented areas, Kayinu and Kalinamei village from Mao-Maram block of Senapati district; Khasom Khullen and Leirum Khullen village of Khasom Khullen block of Ukhrol district; Ijeirong, Puichi and Haochang village of Tamenglong

block were randomly selected. From the above villages 160 samples were selected proportionately through simple random sampling method. The factors regarding the constraints faced by the farmers in livelihood diversification were collected from literature and group discussion with shifting cultivators. The pretested structured interview schedule were used to elicit information from the respondents. Hence, 240 samples combining 80 from WDPSA implemented areas and 160 samples from Non-WDPSA implemented areas were selected and interviewed. The constraints were broadly divided into infrastructural, resource and economic, social and technological constraints. The respondents were asked to rank these constraints as perceived by the respondents. The Garrett ranking procedures were deployed in prioritising the constraints. Garrett's formula for converting ranks into percent is-

$$\text{Percent position} = 100 \left(R_{ij} - \frac{0.5}{N_j} \right)$$

Where,

R_{ij} - Rank given for i^{th} constraint by the j^{th} individual

N_j - Number of constraint ranked by j^{th} individual

The per cent position of each rank will be converted into scores referring to the table given by *Garrett and Woods worth (1969)*. For each factors, the scores of individual respondents was added together and divided by the total number of the respondents for whom scores will be added. These mean scores for all the constraints were arranged in descending order and highest mean scores were accorded first rank thereby the constraints were ranked and prioritised.

RESULTS AND DISCUSSION

Infrastructural constraints : The Table 1 revealed that lack of market access was the first constraint reported from both WDPSA and Non-WDPSA. The market play an important role for the farmers to sell their agriculture based products. Market access was very important as it determine the income diversification of a family. This was supported by the study of *Sarah (2012)* who stated that those farmers who had market access like transport accessibility, ability to sell farm products in the market showed positive and significant influence at 1 per cent level on income diversification. The constraint might be supported by the following figures in the study. It was found that 26.8 per cent of

the respondents in the Non-WDPSCA revealed that the distance to market was between 61 to 75 km and further 44.50 per cent of the farmers expressed that the distance were between 16 to 30 km. This market was used by the respondents family members to sell surplus vegetables. In WDPSCA, 67 per cent of the respondents revealed that the distance to market was between 15 and 30 km whereas 32.50 per cent of the respondents revealed that the distance to market was 16 to 30 km also 30 per cent of the respondents revealed that the distance to market were between 61 to 75 km. The above data showed that distance to market was considerably high in the study area. This might be the reason for ranking as the first constraint.

Absence of small scale enterprises and the lack of transport subsidy for the products were the second major constraint reported by WDPSCA implemented areas and Non-WDPSCA implemented areas respectively. Similar findings were reported in the study of *Bhattacharjee (2016)* that poor transportation facility found to be major constraint in livelihood diversification. Hitherto, in the vicinity of the study villages there were no small scale enterprises for the farmers to go for any value addition of the agriculture product. Further, the harvested product does not fetch high income due to huge transportation cost involved in marketing the product. Hence transport subsidy of agriculture products will be of great help to the farmers. This might be the reason for ranking as a second constraints. Lack of proper road were the third constraint reported by the farmers. This was because of the fact that in villages like Leirum Khullen at Ukhrul district, the road was inaccessible during rainy days. These constraints as observed in this study were also reported by *Saha and Bahal (2012)*.

Resource and economic constraints : Table 2 reveal the resources and economic constraints in livelihood diversification. Lack of savings were the first constraint revealed by the farmers from both WDPSCA and Non-WDPSCA. The source of farm and non-farm income for the farmers in the study area were from *Jhum*, homestead land, timber and non-timber based forest products *viz.*, collecting wild mushroom, bamboo shoots, broom grass, growing sugantra mantri *etc.* The off-farm income the *Jhumias* catering to the livelihood were wage labourer, NREGA worker, carpenter and service jobs like teacher and sepyo. Hence, those people who

Table 1. Infrastructural constraints in livelihood diversification

| Constraints | GMS ¹ | Rank | GMS ² | Rank |
|------------------------------------|------------------|------|------------------|------|
| Lack of market access | 73.18 | I | 72.56 | I |
| Lack of transport subsidy | 68.75 | III | 71.81 | II |
| Lack of value addition unit | 67.04 | IV | 54.98 | VI |
| Lack of proper road | 61.70 | V | 69.46 | III |
| Lack of power supply | 60.00 | VI | 59.46 | V |
| Absence of small scale enterprises | 69.25 | II | 60.70 | IV |

Garrett mean score for WDPSCA (N=80) =GMS¹

Garrett mean score for Non-WDPSCA (N=160) = GMS²

Table 2. Resource and economic constraints in livelihood diversification

| Constraints | GMS ¹ | Rank | GMS ² | Rank |
|---|------------------|------|------------------|------|
| Insufficient natural resources (especially water scarcity during winter months) | 65.04 | III | 64.96 | IV |
| Lack of individual property for capital building | 55.81 | V | 67.84 | V |
| Lack of individual ownership of land | 47.49 | VI | 39.89 | VI |
| Lack of savings | 71.44 | I | 73.05 | I |
| Unavailability of credit due to common property land resources | 64.86 | IV | 65.26 | III |
| Lack of good market price of the produce | 67.23 | 2 | 72.48 | II |

were depending on non-remunerative off-farm work left little room for the farmers to go for any savings. Hence there were no seed money left for the farmers to invest on any livelihood diversification activity. The literature revealed that savings in kind were the most prevalent form among the poor people in North-Eastern Region (*Moulick, 2008*). The study of *Ahmed and Gordoncillo (2015)*, *Mailumo and Okeke (2016)* and *Nasai et al. (2010)* supported that amount of credit significantly influence the livelihood diversification at 1 per cent level.

Lack of good market price of the produce were the second major constraint revealed by the farmers of both the areas. Third and fourth constraint were insufficient natural resources especially water resources in winter months in both WDPSCA and Non-WDPSCA respectively. The farmers from both the valley and hill areas were dependent on rainfall for agriculture. During winter months due to lack of proper water storage

structures farmers were left with no water for irrigating the land. It could be noted here that even in WDPSCA implemented villages, farmers felt water scarcity. This might be due to less importance given to water storage structures in certain areas of WDPSCA implemented areas and the beneficiaries were benefitted from other development activities like poultry and piggery development. Hence, water harvesting structures like Jalkund from ICAR-RC for NEH region should be recommended to farmers which has a capacity of 6000 to 30,000 litres of water. The utilisation of stored water from the Jalkund of 30,000 litres capacity demonstrated that tomato-pig, tomato-poultry, tomato-duck-fish will give a benefit-cost ratio of 1.67, 1.71 for egg; 1.43 for meat and 1.51 respectively (Saha *et al.*, 2007).

Unavailability of credit due to common property resources was one of the major constraint faced by the farmers. In the study area, no formal institution like banks were accessed for credit by farmers. Respondents revealed that in WDPSCA implemented villages, 80 per cent of the respondents access credit through informal sources. 17.5 per cent access credit sometimes from village headman, 51.3 per cent access credit sometimes from Self Help Group (SHG) and 26 per cent of the respondents often took credit from kins and relatives, 50 per cent sometimes took from kins and relatives and 20 per cent access credit sometimes from natural resource management group promoted by North East Regional Community Resource Management project (NERCORMP) whereas, in Non-WDPSCA, 73 per cent of the respondent access credit from informal sources, of which, 17.5 per cent access credit sometimes from SHG, 7.5 and 34 per cent of the respondents access credit often and sometimes respectively from kins/relatives. 38.8 per cent access credit sometimes from friends. The district head quarters had banking facility. Hence, the farmers in the remote areas were unable to access and the present study revealed that the average distance to district headquarter found to be 117 km. These results clearly showed that the reason for meeting the credit requirements through informal sources.

Social constraints: The primary livelihood activities not leaving enough time to pursue livelihood diversification strategies and lack of role model entrepreneur in my village were the first constraint reported from WDPSCA and Non-WDPSCA (Table.3). This constraint as expressed by farmers of WDPSCA were

Table 3. Social constraints in livelihood diversification

| Constraints | GMS ¹ | Rank | GMS ² | Rank |
|--|------------------|------|------------------|------|
| Inadequate experience in expected livelihood | 66.99 | II | 70.81 | II |
| Primary livelihood activities not leaving enough time to pursue diversification strategies | 68.50 | I | 59.08 | IV |
| Lack of role model entrepreneur in my village | 66.61 | III | 71.18 | I |
| Lack of family encouragement to venture in new income generation activity | 65.00 | IV | 57.54 | V |
| Feeling shy in doing new work | 44.84 | VI | 48.16 | VI |
| Fear of taking risk | 62.19 | V | 60.18 | III |

also reported by Ajani and Igbokwe (2014) and Saha and Bahal (2012). *Jhum* cultivation was the major livelihood activity pursued by farmers in the study area. This activity is a community driven activity in which the calendar of operations of the *Jhum* cycle were decided collectively and implemented by the *Jhum* farmers. The slashing of the *Jhum* land, burning of the slashed areas and other operations which is distant from the residential area made *Jhum* farmers left little time to pursue other livelihood activity. The average distance from the home to *Jhum* field was 3 km and the average time to walk to reach *Jhum* field was 55 minutes as expressed by respondents in Non-WDPSCA whereas in WDPSCA, the average distance was 4.2 km and the average time to walk to reach *Jhum* field was 59 minutes. Hence, reaching *Jhum* field itself took lot of their time. This might be the reason for listing as a first constraint.

It was found that fruit orchard development, agro-forestry development were the livelihood choice expressed by the farmers (Punitha *et al.*, 2016). Hitherto, farmers did not have experience in expected livelihood of agro-forestry development, fruit orchard development, mushroom cultivation etc. It was also found that service related jobs, NREGA work, wage labourer, weaving, vegetable vendors were the off-farm work in the study area. This might be the reason for ranking as the second constraint. The fear of taking risk and lack of role model entrepreneur was the third constraint. Similar findings of lack of risk bearing ability was reported in the study of Bhattacharjee (2016). The findings contradicts the findings of Dutta (2016) who reported that lifestyle pressure on alcoholism, social spending were the social constraints expressed in the study.

Table 4. Technological constraints in livelihood diversification

| Constraints | GMS ¹ | Rank | GMS ² | Rank |
|--|------------------|------|------------------|------|
| Lack of organic weed control method in <i>Jhum</i> field | 61.63 | II | 66.15 | II |
| Less high yielding varieties for <i>Jhum</i> land | 66.15 | I | 66.27 | I |
| Lack of access to ext. service | 60.92 | III | 59.14 | III |

Technological constraints : The Table 4 reveal the technological constraints faced by farmers in diversification of livelihood. Both the WDPSCA and Non-WDPSCA ranked all the three constraints similarly. Lack of high yielding varieties for *Jhum* land were the major constraint portrayed by the respondents. Rice were one of the major crop grown by the respondents for meeting the food requirement and they were stored in graneries near to their house for meeting the rice requirement for a whole year. It was found that the varieties which *Jhumias* used by the respondents were of local variety and also rice were the staple food crop for the *Jhumias*. Farmers also expressed that the productivity of rice in *Jhum* land was reduced compared to their ancestral time. Hence high yielding variety found importance in *Jhum* areas to increase the productivity of rice in their *Jhum* land. This might be the reason for ranking as the first constraint. Similarly other high yielding varieties of horticultural crops especially fruits and vegetables suitable to the location should be identified, prioritised and disseminated to the *Jhumias*. Further, ICAR and CAU has released many rice varieties for lowland condition. But there were not many high yielding varieties for the upland condition. Secondly, there were lack of organic weed control method for the *Jhum* field. This makes farmers to spend lot of time doing manually to remove the weeds. This involves not only drudgery for the farmers but also wastage of productive time of *Jhumias*.

CONCLUSION

Lack of market access, lack of transport subsidy for the products, lack of proper road, absence of small scale enterprises were the infrastructural constraint followed by lack of savings, lack of good market price of the produce, unavailability of credit due to common property resources, lack of water resources in winter months were the resource and economic constraints expressed by *Jhumias*. Primary activities not leaving

enough time to pursue diversification strategies, inadequate experience in expected livelihood, lack of role entrepreneur in my village, fear of taking risk were the social constraints followed by less high yielding varieties in *Jhum* land, lack of organic weed control method were the constraints highlighted by *Jhumias*. All the stakeholders hitherto who were working for *Jhumias* and those who will work for *Jhumias* should take appropriate measures to minimise constraints in livelihood diversification of *Jhumias* so that farmers feel ease in diversifying to farm and agriculture based non-farm and off-farm based livelihood activity in order to reduce the pressure on forest and *Jhum* resources.

Strategies for diversifying livelihood : The constraints of WDPSCA and Non-WDPSCA were not much different except in few constraints. Hence the common strategies were devised on alleviating constraints for both the areas. The state government need to identify a common market place for cluster of villagers based on the participatory identification of market place by villagers with different stakeholders to increase the farm based activities. The commodities which has to be transported to Imphal or district headquarters should be given appropriate transport subsidy to motivate farmers who were in remote locality and to yield remunerative price for the commodities.

The informal institution were already present in the study area which has to be made more dynamic and vibrant through awareness creation by institution like NABARD and other line departments and Krishi Vigyan Kendra so that more savings will help in turn give more credit to the village members which might induce farmers to pursue livelihood diversification activity. Further, banks should help farmers to access credit through formal institution in the remote locality. The credit institution like NABARD and other line departments should popularise some of the options like Joint Liability Groups (JLGs), farmers clubs and famers producers organisation to overcome the constraints of unavailability of credit due to common property land resources.

As found in the study, lack of role model entrepreneur in the village on other agriculture related off-farm was found less exhibited in the study area. In this place, suitable livelihood options based on the interest and the availability of the resources should be motivated by ICAR, CAU, line departments and other stakeholders who were working for the farmers and should create

one or two successful entrepreneur in the cluster of villages. Successful entrepreneurs in other districts or nearby states from hilly areas should also be showcased to the farmers to build confidence among the farmers to take up livelihood activity of their choice. Hence, farmers need to be trained through state departments or through respected KVK in each district or from ICAR and CAU on the livelihood diversification choices.

Fear of taking risk were also one of the major constraint addressed by the farmers. Farmers should be advised to take up small scale activity and found success the farmers should improve the business to overcome the risk constraint. Further, with regard to technological constraint, as perceived by the farmers, high yielding varieties suitable for the upland particularly for *Jhum* land should be taken up by the research institutes.

REFERENCES

- Ahmed, M.T. and Gordoncillo, P.U. (2015). Factors affecting rural livelihood diversification in rice-based areas of Bangladesh. M.sc Thesis. University of the Philippines, Phillipines.
- Ajani, E.N., and Igbokwe, E.M.(2014). Constraints to occupational diversification among rural women in anambra state, *Nigeria. J. Agric. Ext.* **18** (2): 27-36.
- Bhattacharjee, S. (2016). A micro-level study on dimensions of emerging livelihood pattern of rural tribal youth in Tripura. Ph.D thesis. Central Agricultural University.
- Dutta, S. (2016). Problems and prospects of livelihood diversification among the mising and sonowal kachari rural tribes in Dibrugarh district of Assam. www.nird.org.in/nird_docs/srsc/srsc261016-8.pdf. Accessed 16 December 2016.
- FAO and World Bank. (2001). Farming systems and poverty-improving farmers livelihoods in a changing world. www.fao.org/3/a-ac349e.pdf. Accessed 14 March 2017.
- Garrett, H.E. and R.S. Woodsworth. (1969). Statistics in psychology and education. Vakils, Feffer and Simons Pvt. Ltd., Bombay. p-329.
- GoM. (2015). District wise number of jhumia household and number of population engaged in jhuming cultivation. Department of Agriculture. Government of Manipur, Imphal.
- Mailumo, S.S. and Okeke, A.K.I.(2016). Livelihood diversification for food security by farmers in Toro local government area, bauchi state, Nigeria. *J. Adv. in Social Sci. Humanities*, **2** (2):25-29.
- Moullick (2008). Understanding and responding to the savings behaviour of low income people in North Eastern Region of India. www.microsave.net Accessed 10 March 2017.
- Nasai, D.H.; Atala, T.K.; Akpoko, J.G.; Kudi, T.M. and Sani, H. (2010). Analysis of factors influencing livelihood diversification among rural farmers in Giwa local government area of Kaduna state, Nigeria. *Intl. J. Sci. and Nature*. **1**(2): 161-165.
- NASC (2016). Policy paper No.83 issues and challenges in shifting cultivation and its relevance in the present context. NAAS, New Delhi. www.naasindia.org. Accessed 3 March, 2017.
- Punitha, P.; Pandey, D.K.; Feroz, S.M.; Singh, R.J.; Ram, D; Singh, N.O.; Jyothi, SSP.; Monika, A. (2016). Socioeconomic condition profile and perceived livelihood diversification choice of Jhumias of Manipur in North East India. *Progressive Res. - An Intl. J.* **11**(VI): 4314-4319, Special issue.
- Saha, B. and Bahal, R. (2012). Constraints impeding livelihood diversification of farmers in West Bengal. *Indian Res. J. Ext. Edu.*, **12** (2): 59-63.
- Saha, R.; Ghosh, P.K.; Mishra, V.K. and Bujarbaruah (2007). Low-cost micro-rainwater harvesting technology (Jalkund) for new livelihood of rural hill farmers. *Curr. Sci.* **92** (9): 1258- 1265.
- Sarah A. (2012). Determinants of rural household income diversification in Senegal and Kenya. http://www.sfer.asso.fr/content/download/4234/35346/version/1/file/e2_alobo.pdf. Accessed 1 Feb 2017.
- GoI.(2011). Wasteland atlas of India. Department of Land resources. New Delhi. dolr.nic.in/dolr/wasteland_atlas.asp. Accessed 28 August 2015.
- Wikipedia (2017). Manipur-Wikipedia. <https://en.wikipedia.org/wiki/Manipur>. Accessed 28 February 2017.

