



# Livelihood Pattern of Riverine Areas of Dibrugarh District and its Prospects of Livelihood Diversification

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## ABSTRACT

**Background:** Diversification is a continuous adaptive process whereby household add new ctivities maintain existing one or drop others, thereby maintaining diverse and changing make greater contribution to general livelihood portfolios. Livelihood in rural areas is very erratic and risk hidden. The land-based livelihood of small and marginal farmers is becoming unsustainable in recent times due to continuous flood and decrease in availability of arable land. Diversification activities make greater contribution ta key strategy by which people try to improve the generate cash incomes for poor households and it is a key strategy by which people try to improve their wellbeing.

**Methods:** Based on the primary and secondary data, Barbarua Development Block is finally selected for the study. In the block itself three nos Missing community dominated villages and three nos Scheduled Caste dominated villages are selected for the study. Through random sampling, 10 households of each diverse socio economic background are selected from each village. Semi structured schedules are prepared for interviewing the villagers, local village head (Gaon Burah), school teacher, unemployed youth, agricultural labour, landless people and women.

**Result:** As the entire survey area is inundated by flood water in every year, a part from farm activities various income generating activities carried out under livelihood diversification. Some households end upon multiple activities. A common pattern is for every poor and the comprehensive well-off households to have most diverse livelihood. Farm income accounts for 54.0 per cent of the total household income coming from off farm activities. It is also revealed that 44 per cent households prefer livelihood diversification due to limited agricultural income. About 22 per cent reported that the availability of non-farm activities encouraged them to adopt non farm activities. Managing livelihood has always been a critical factor or challenge among the poor in everywhere.

**Key words:** Activities, Diversification, Farm, Flood, Livelihood.

## INTRODUCTION

The Dibrugarh district is situated in the north eastern corner of Upper Brahmaputra Valley zone and is one of the most vulnerable districts in terms of flood. The Dibrugarh district covers an area of 3381 sq KM. The Brahmaputra river is flowing through the district. The Brahmaputra River also known as the Yarlung Tsangpo in Tibet, the Siang/Dihang river in Arunachal Pradesh and Dilao in Assam is a trans-boundary river which flows through Tibet, China, India and Bangladesh. The Brahmaputra basin is one of the largest river basins in the Dibrugarh district. The Dibrugarh district with its vast network of rivers such as the Brahmaputra, Dihing, Sessa, Dibru and Majjan canal is prone to natural disasters like flood and erosion which has a negative impact on overall development of the district. Almost every year three to four waves of flood ravage the flood prone areas of the district. The average annual loss due to flood in Dibrugarh district in the tone of Rs 20 crores. The flood problem of the district is further is aggravated due to flash floods by the rivers flowing down from neighbouring states like Arunachal Pradesh as well as neighbouring countries like Bhutan and China. All the rivers collect a tremendous amount of silt and raise the level of river beds. Therefore, it becomes impossible for the main channel to cope with the vast volume of water received during the rainy season. The main important cause for frequent occurrence of flood in

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this region is the extremely dynamic monsoon rainfall regime and the unique physiographic setting. Apart from this, tributaries feed the river in addition to melting glaciers during summer months. As a result, the river naturally overflows during the period. Further, deforestation has aggravated flood and erosion in Assam. The Brahmaputra basin receives an average annual rainfall of about 1500 mm, whereas the rainfall is barely 400 mm in the Tibet region. Thus, the bulk of the flood flows are generated within the watershed areas of India, while the Yarlung Tsangpo mainly conveys the snowmelt streamflow mostly from the Himalayan glaciers.

Agricultural growth is important to support the higher growth path aspired by any agriculturally dominant district like Dibrugarh. The demand pressure on agricultural

commodities increases with the growth of population and increase in per capita income. However, sustainability of agriculture is determined by the sustainable use of natural resources-land, water and agricultural biodiversity. Frequent floods every year have been destroying standing crops, creating water logging, soil erosion and affecting large crop areas and thus threatening the sustainability of the drive towards higher productivity and production of various crop in the state. As per the information collected from the Directorate of Agriculture, Government of Assam, the total 25,000 farm families affected and nearly 18,500-hectare crop area submerged and affected the probable loss depends upon number of flood occurrence in a particular year.

The land-based livelihood activities of small and marginal farmers are becoming unsuitable in recent times in flood prone areas. Due to inadequate income from farm activities to support family's need, rural population are forced to look an alternative means of supplementing their livelihood. Diversification activities make greater contribution to generate cash incomes for poor households and it is a key strategy by which people try to improve their wellbeing. The study attempts to analyse the existing livelihood pattern of riverine areas of Dibrugarh district and problems and scope of diversification of livelihood activities of the rural farmers/people. Variables determining the livelihood diversification activities of the communities to be identified during the study.

### Objective

The main objectives of this paper are:

1. To identify the pattern of rural livelihood in riverine areas and scope of livelihood diversification.
2. To examine critically the prospect of livelihood diversification strategy in the identified areas along with the problems of diversification.

### Research questions

The study intend to answer the following research questions

1. Does livelihood diversification improve the livelihood status of the rural community?
2. What are the inherent and emerging constraints in relation to livelihood diversification?

### Literature review

The literature review on the topic offers ample scope for a critical and retrospective examination of the work done on diversification of crops and other related enterprises. Hence, because of conspicuous lack of research studies and inadequate empirical evidences regarding diversification and other aspects of rural economy, it is extremely important to examine the extent of diversification of rural economy; secondly, its effect on income consumption and poverty; thirdly, its constraints and last but not the least its determinants at micro level.

Acharya *et al.* (2011) analyzed the economics of crop diversification in Karnataka. By collecting secondary data for a period of 26 years from 1982-83 to 2007-08, the nature

and extent of crop diversification in the state of Karnataka has been analyzed by them using composite entropy index (CEI) and multiple linear regression model. The results revealed that almost all diversification of rural economy is considered necessary to lessen the burden on agriculture in the face of mounting population pressure, to reap the scale economies arising out of complementary and supplementary enterprises or inter-enterprises growth linkages, boost the employment opportunities' for rural masses and so on. It is also essential for strengthening the income and consumption base of rural poor and overall development of any region.

Agarwal (2004) conducted a study in the Coimbatore district of Tamil Nadu on land holdings of big, small and marginal categories and revealed, as expected, that the increase in aggregate net income was higher under irrigated conditions than in dry land farms, as higher-value crops could be grown in garden land farms due to irrigation facilities. A comparison of the performance efficiency under two conditions, garden land and dry land, had confirmed the hypothesis that inclusion of dairy and other allied activities in the farming system enhances farming efficiency in terms of input-output ratio and reduction in risk.

Ahlawat *et al.* (1977) suggested integration of crop production with rearing of high-yielding milch animals as one of the measures to solve the problem of seasonal income, under employment, high risk and uncertainty associated with crop farming on small farms.

Bains (1968) in his study in the Union Territory of Delhi emphasized that small land holding with abundant labour leads to its low productivity. He also mentioned that appropriate crop combination, crop varieties and fertilizer with adequate irrigation will cause a phenomenal increase in production.

Deoghare *et al.* (1990) highlighted the utility and usefulness of mixed farming on small farms by taking crops, dairy and/or poultry enterprises into the orbit of farming system. The combined enterprises had shown their potential in raising the net farm income to steer them out of the clutches of poverty as well as in generating more employment opportunities for the so far underutilized farm labour, whether bullock operated or tractor operative.

Gupta and Tiwari (1985) concluded that large and wealthier farms of Allahabad district of Uttar Pradesh were relatively less diversified and tenancy was observed to discourage diversification and family size did not affect the level of crop diversification.

## MATERIALS AND METHODS

The Barbaruah Development Block of West Dibrugarh Revenue Circle is purposively selected as most of the villages under this block are flood prone during the period from May to October in a year. These villages are submerged by the river Brahmaputra, Dihing and Sessa during rainy seasons. The flood water damage the winter paddy, summer vegetables and bao paddy along with wash way the livestock

of the farmers. Based on the primary and secondary data, Barbarua Development Block is finally selected for the study. In the block itself three nos Missing community dominated villages and three nos Scheduled Caste dominated villages are selected for the study. Through random sampling, 10 households of each diverse socio economic background are selected from each village. Semi structured schedules are prepared for interviewing the villagers, local village head (Gaon Burah), school teacher, unemployed youth, agricultural labour, landless people and women. The villagers are interviewed to understand their perception towards the present source of livelihood. The household schedule include demographic profile, educational status, occupation, income aspects, land holding pattern, cropping pattern, source of livelihood, migration pattern, factors affecting the income generation, diversity of livelihood portfolio, skill development, market accessibility *etc.*

## RESULTS AND DISCUSSION

In the study six livelihood diversification strategies are identified. These include i) farm only (ii) off farm only (iii) non-farm only (iv) on farm plus off farm (v) off farm plus non farm and (vi) on farm plus off farm plus nonfarm. The age, gender, qualification, land size of the household, income invariability affect the diversification of livelihood strategies.

### Demographic pattern of the household

The demographic pattern of the households head is presented in Table 1.

It is found that 37 per cent of the households head lies in the age group 40-50 years. This shows that majority of households are active and economically viable. This age group of people are interested to venture in non-agricultural activities and involved in livelihood diversification along with the age group of 30-40 years. Gender is the integral determinant of the rural livelihood. It seems that 80% of the household head in the study area are male. They provide decision regarding the participation in livelihood diversification.

The average size of the households is found at 6(six). It helps in joint decision regarding participation in livelihood diversification. More the size of the households required income is more. Large household having more income generation activities than a smaller household. Large households due to their limited land holding, they have to diversify their livelihood activities.

### Socio-economic status

I. Educational status of households head are presented in Table 2.

Most of the household heads studied up to high school level (70%). However 30% respondents are under graduate and above.

II. The household livelihood strategies are presented in Table 3.

Occupationally, 30% households have farming as their main occupation. Only 10% households have both on farm and off farm activities. It is observed that mostly scheduled caste households are involved in off farm and non farm

activities such as fishing, fish net marketing, wood cutting in nearby forest *etc.* Educational qualification positively effects the diversification decision as educated family members prefer off farm as well as non farm activities.

III. The classification of household land holding is presented in Table 4.

The operational land holding is more among the Missing community. Most of the Missing households are small and marginal farmers. The number of land less farmers are more

**Table 1:** Demographic pattern of the households head.

Characteristics	Total	Missing	Scheduled caste
Total no of households	60	30	30
<b>Age of household head (Yrs)</b>			
Below 30	4	1	3
30-40	12	9	3
40-50	22	8	14
50-60	12	8	4
60 and above	10	4	6
<b>Gender of the households</b>			
Male (%)	80	82	78
Female (%)	20	18	22

**Table 2:** Educational status of household head.

Characteristics	Total	Missing	Scheduled caste
Total no of households	60	30	30
<b>Educational level of household head</b>			
Never attended school	8	4	4
Primary Education	12	7	5
Up to High school	22	14	8
Up to higher secondary	8	5	3

**Table 3:** Household livelihood strategies.

Characteristics	Total	Missing	Scheduled caste
Total no of households	60	30	30
On farm	18	12	6
Off-farm	6	1	5
Non-farm	16	8	8
On farm+off farm	6	4	2
Off farm+non farm	8	4	4
On farm+off farm+non farm	6	1	5

**Table 4:** Classification of household land holding.

Characteristics	Total	Missing	Scheduled caste
Total no of households	60	30	30
Landless farmer	18	6	12
Small farmer	22	8	14
Marginal farmer	20	16	4
Big farmer	-	-	-

among the scheduled caste community. Their cultivated fields are effected by flood in every year. Therefore, they cannot solely depend upon agricultural production.

### Livestock status

Rearing animals and fowl is also another activity of the Missing and Scheduled Caste Community. Almost every household rear pigs, fowls, cattle for their livelihood. These livestock have good market in and around nearby villages as well as in Dibrugarh town. Women SHGs are also rearing and selling livestock.

### Livelihood diversification

As the entire survey area is inundated by flood water in every year, apart from farm activities, various other income generation activities to be carried out under livelihood diversification. Some households depend upon multiple activities. Every household whether poor or well to do family have diverted livelihood activities. Table 5 indicate the source income of households from different sources. Farm income accounts for 54.0 per cent of the total household income. It include both on farm and nonfarm income generating activities. Only 10 per cent of the total household's income coming from off farm activities. This shows that majority of the farm households in the studying area were engaged in farming activities and nonfarm activities. Apart from these, six households are dependent on off farming activities, four salaried job, eight in fishing, 3 artisans and seven traders.

### Reasons for livelihood diversification

Table 6 revealed that 44 per cent reported limited agricultural income as the first priority for engaging in livelihood diversification. Another 22 per cent respondents reported that the availability of non farm activities as their second most important reason for diversification of activities. Only 14 per cent reported that they want to stay in good condition.

It is observed that during the study, Missing community people are mostly dependent on forest and agricultural activity. Whereas the Scheduled Caste population are mostly

stay in backward areas. They are dependent on fishery related activities.

### Problems of livelihood diversification

Agriculture is the main occupation of the Missing and Scheduled Caste community. But they do not have sufficient land for agricultural activity. In flood season, the farm sector as well as non-farm sector become jeopardise. Repeated crop failure due to successive floods compelled them to migrate for better livelihood. As most of the farmers are small and marginal farmers, they do not have sufficient money to shift high value crop during *rabi* season.

### Prospect of livelihood diversification

1. Mechanisation of agricultural sector for growing more than one crop during *rabi* season.
2. Flow of credit is one of the component which help in diversification of activities such as horticulture, food processing, sericulture, handloom, textile etc. These activities can promote income earning of the farmers.
3. Skill development and training.

## CONCLUSION AND SUMMARY

An individual occupation choice is found to be influenced by several factors such as level of education, assets of the household, land ownership, closeness to the town, household size, agricultural wage. Infrastructure facility as well as demand for non-agricultural products. It is observed that people are engaged in rice cultivation for subsistence only and their income from other crops and non-farm sources. Most of them desire to diversify livelihood for their existence and better living condition.

Managing livelihood need has always been a critical factor or challenge among the poor and marginal farmers in everywhere. Diversification of livelihood in the present scenario has become the key word for better living and prosperity.

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**Table 5:** Source of income of households.

Characteristics	Total	Male	Female
Farming	32	30	2
Off farming	6	5	1
Salaried job	4	4	0
Fishing	8	8	0
Artisans	3	3	0
Petty traders	7	7	0
Total	60	57	3

**Table 6:** Reasons for livelihood diversification in percentage.

Characteristics	Male	Female	Total
Limited agricultural income	44.6	42.4	44.0
Large family	23.0	17.0	20.0
Available non-farm activities	23.0	21.6	22.0
To stay in good condition	17.0	12.0	14.0