

Physical Environment and Diversified Rural Livelihoods in Tripura- A Case Study of West Tripura District

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ABSTRACT

The present paper is an investigation to explore the rapport between physical environment and the livelihood patterns of the habitants on the roots of primary data gathered from the household's survey through structured interview schedule method in the rural areas of West Tripura district, Tripura, India. The physical condition of this area is dynamic and keeps changing with the intervention of cultural groups. Climate of the study area is typified by sub-tropical monsoon type and South – West Monsoon provides huge rainfall. Generally, the natural vegetation of the state falls under tropical wet evergreen with lush green (75%) forests due to the touch of the urbanization. The undulating uplands and lowlands and floodplains are used for agricultural activities and rubber plantation. The irrigation facilities are good in the rural areas of the study area. River system provides water for the agricultural and other allied activities. The numerable wetlands facilitate the rural people to practice fishing and soil provides to build brick industry in the study area. The other livelihood patterns are also reflecting their culture and their adaptation with the physical environment as culture is largely depended upon the environment. The calm and pleasurable climate help the people to earn good amount of money for their bread and butter and with that money, they are slightly changing their lifestyle and quality of life.

Key words: Physical environment, Livelihood, Habitats, Agriculture, Plantation, Climate

Introduction

There has been a rapid proliferation of livelihoods research during the last decade especially in the second half of the 1990s (Murray, 2002; P-3). Livelihoods perspectives start with how different people in different places live (Scoones, 2009; P-172). A livelihood encompasses income, both cash and in kind, as well as the social institutions (kin, family, compound, village and so on), gender relations, and property rights required to support and to sustain a given standard of living (Ellis, 2007; P- 4). Rural people do not live according to meetings, work plans, or agreements on flip-charts. Their priorities are to build secure livelihoods, by investing their time and the resources around them in whichever ways are most likely to meet household needs and preferences. The way they decide which activities to combine are complex, vary enormously across households, and change over time (Ashley and LaFranchi, 1997). Livelihood is more than just income [Lipton and Maxwell, 1992]. Income refers to the cash earnings of the household plus payments in kind that can be valued at market prices. The cash earnings components of income include items like crop or livestock sales, wages, rents, and remittances (Ellis, 2007; P- 4). The livelihood approach seeks to elaborate on more than just income strategies. It seeks to gain an understanding of resource access, use, and allocation and on the way in which individuals and householders transform resources into livelihoods (Thomsen and Frederiksen, 2001). The term livelihood attempts to capture not just what people do but the resources that provide them with the capability to build a satisfactory living, the risk factors that they must consider in managing their resources (Ellis and Freeman, 2005; P- 2). Natural resources (NRs) and their contribution to livelihoods have been widely explored within the rural context. Ellis (2000) defines natural capital as the land, water and biological resources that are utilized by people to generate a means of survival. Both Ellis (2000: 32) and Carney (1998: 7) state that natural capital is sometimes referred to as ‘environmental resources’, with the components thought of as jointly comprising ‘the environment’. Both emphasize that natural capital is not static, and that it can comprise both renewable and non-renewable resources (Slate and Twyman, 2003). Livelihoods to reflect the links between ‘Poverty and Environment’ to survive physically and socially, households have to be involved in activities. These activities are strongly influenced by environmental factors and the natural resources base, but to a large extent are also determined by a host of socio-economic factors including the culture and value systems, technology, the knowledge base, institutions etc. The livelihood systems that exist in an area

reflect three important components: natural resources/environment assets, historical/cultural integrity and knowledge base which has to be dynamic. A few people have begun or intend to meet the challenges imposed by environment and livelihood. The reactions are based on lessons from their own experience and expectation. Most people view solving the environmental problems in the context of improving their livelihood and consequently the quality of their life (Mascarenhas, 2000).

Studies on physical environment and livelihood patterns

Livelihood perspectives have central to rural development thinking and practice in the past decade. Their conceptual roots have shaped the way they have emerged. This will enhance the capacity of livelihoods perspectives to address key lacunae of knowledge, politics, scale and dynamics of livelihood. These relate to locales (rural or urban livelihoods), occupations (farming, pastoral or fishing livelihoods), social difference (gendered, age-defined livelihoods), directions (livelihood pathways, trajectories), dynamic patterns (sustainable or resilient livelihoods) and many more (Scoones, 2009). A livelihood also includes access to, and benefits derived from, social and public services provided by the state such as education, health services, roads, water supplies and so on (Lipton and van der Gaag, 1993; Blackwood and Lynch, 1994). The term livelihood attempts to capture not just what people do but the resources that provide them with the capability to build a satisfactory living, the risk factors that they must consider in managing their resources (Ellis and Freeman, 2005; Pp- 2). Economy of Tripura is basically agrarian. About 50.83 percent of its population depends on agriculture for livelihood. The contribution of agriculture and allied activities to the Gross State Domestic Product (GSDP) is about 22 percent in the terminal year of 11th Plan in 2011-12. The land available for cultivation is relatively restricted. Terrain and forest cover are such that only 27 percent of geographical area is cultivable (Economic Review of Tripura, 2010-11). Environmental change has traditionally resulted in regular displacements of large numbers of people; for example, river erosion, particularly along the channels and tributaries of the Brahmaputra in Assam and Bangladesh (McDowell and Haan, De, 2000). There are numerous initial determinants of livelihood strategy. Many livelihoods are largely pre-determined by accident of birth. Gender as socially defined is also a pervasive ascriptive determinant of livelihood activities. Livelihoods are being largely determined by the social, economic and ecological environment in which they find themselves (Chambers and Conway, 1991). NRs have largely been regarded as land for agriculture, water

for service provision (irrigation, sanitation), and more recently trees for amenity provision in parks or homesteads. However, if we think of natural resources as the components of natural capital, Ellis (2000) defines natural capital as the land, water and biological resources that are utilized by people to generate a means of survival. Both Ellis (2000: 32) and Carney (1998: 7) state that natural capital is sometimes referred to as 'environmental resources', with the components thought of as jointly comprising 'the environment'. Both emphasized that natural capital is not static, and that it can comprise both renewable and non-renewable resources. In rural areas the decentralization of resource control and management has promised more efficient, equitable and sustainable resource use, though there are debates on what types of institutional arrangements are most appropriate (Hobley and Shah, 1996).

Area, people and method

The study has been carried out in the rural areas of the West Tripura district in Tripura, India through structured interview schedule method and observation method to acquire quantitative and qualitative data and information regarding the interaction between physical environment and livelihood patterns of the people in rural areas. West Tripura is located at 23⁰16' N to 24⁰14' N latitudes and 91⁰09' E to 91⁰47' E longitudes. The total geographical area of the district is 3544 km². The study area is blessed with numerous rivers and their tributaries. The topography also provides diversified condition for rural people to practice their livelihood. The Out of total population in this district, 72% of population lives in the rural areas. The density of the population is also very high (576 persons/ km²). Random sampling method was adopted to investigate the present study and to explore the relationship between physical environment and livelihood patterns of the people of rural areas in the West Tripura district, Tripura. One statistical technique has used to show the percentage of people engaged in a particular livelihood pattern graphically.

Physical environment of the study area

The state of Tripura, with a geographical area of 10491.69 km² is predominantly hilly (60%) & accounts for 0.32% of total geographical area of the country. Tripura is surrounded on three sides by a deltaic basin of Bangladesh. The state is situated between 22⁰34' N to 24⁰30'N latitude and 90⁰22'E to 92⁰28'E longitude with tropic of cancer passing through it. The State is situated in the south-western extremity of North-East region of the country. It shares border (1001 km in perimeter) with Bangladesh, Assam and Mizoram. The physiography of west Tripura can be

divided into following geomorphic zones such as the Piedmont Slopes, undulating uplands and lowlands (Tilla and Lunga) and floodplains. The 'Tilla' lands are the low ridges with highlands and gently sloping along the plains and between the two low ridges there is always a flat surface which is usually met with a floodplain. This flat surface is called 'Lunga'. Topographically, West Tripura is dominated by piedmont plains and valleys. The general slope is from west to east direction. Floodplains are covered the maximum portion of the west Tripura district. The western section of this state is plain and it is dotted with isolated hillocks. West Tripura is called 'Tripura plain' and it is built up by the aggradations and degradation activities of hill streams of river Haora, Gomati, Khowai and Burigang or Burima. Most of the rivers formed dendritic drainage pattern, which indicates that they are flowing through the youthful stage. Climate of the study area (West Tripura District) is typified by sub-tropical monsoon type. The rain bearing South - West Monsoon wind comes in this state in the middle of May and continues up to the end of September. Storms and thunderstorms are occurred in Pre - Monsoon Season. The average annual rainfall of the study area is very high (2718 mm) and maximum rainfall occurs during Monsoon Season (from May to September). The mean monthly maximum temperature is about 30⁰C and the mean monthly minimum temperature is about 20⁰C. Recently, the temperature has changed drastically, mean annual maximum temperature 35⁰C and mean annual minimum temperature is 10.5⁰C. On 1st May, 1960, the highest maximum temperature recorded at Agartala was 42.2⁰C and the lowest minimum temperature recorded at Agartala was 3.3⁰C. The hottest months of the year start from the end of the March and continue till September (Summer Season and Rainy Season). November, December, January and up to middle of February, are the coldest months (Winter Season). Humidity is generally high throughout the year. In the summer season, the relative humidity lies in between 50% - 70%, whereas during monsoon season it increases over 85%. Winds are generally light in summer but strong wind blows for short period in association with thunderstorm. During the south-west monsoon season wind blows from southerly to south-easterly direction. The soils of West Tripura have been classified into three different types namely Hill Soils (40.2%), Flat-topped hills and tilla Soils (30.2%) and Alluvial and Flood plains Soils (29.6%) come under the total geographical area of the West Tripura District. The texture of the soils ranges from Sandy clay loamy to Sandy loamy. Generally, the natural vegetation of the state falls under tropical wet evergreen forest. West Tripura district also reflects lush green (75%) over view but no more than the other districts of Tripura. It is mainly

due to the touch of the urbanization around the capital town (Agartala). Today about 52% of the area is now under thick vegetal cover and 50.9% of the total area of Tripura lying under forest covers.

Livelihood patterns in rural areas

A livelihood is considered to consist of the assets, activities and entitlements that enable people to make a living (Singh et al 1994, cited in Mugisha, 2005:27). Livelihood portrays the standard of living and their quality of life as well. When a person practices a certain type of occupation, that occupation mainly reflects his/ her economic condition (income). The economic condition reflects one's household condition, schooling of his/ her children, social status etc. in one sentence, one's whole life as well as his/ her family depends upon his/ her livelihood. Among the surveyed households, 12.67% of households were engaged as agricultural laborers means the persons those are worked in someone's land on the basis of wage; 18.67% of households were farmers means the person himself/ herself practices agricultural works in his/ her own land; 9.33% of households were daily laborers means they do all kind of works on daily basis like mason, carpenter, plumber; 11.33% of households were household workers as their activities are only do households works; 8% of households were rubber plantation laborers as rubber is a cash crop and mainly they work in the rubber plantation areas; 6% of households were vegetables venders as their main work is buy and sell vegetables; 4% of households were traditional workers means they practice their works to make traditional things; 4.67% of households were fishermen means catching fish is their main livelihood; 5.33% of households were engaged as an artisan; 8.67% of households were brick industry laborers means they work in the brick industries by wages on weekly basis; 4.67% of households were petty businessmen signifies that they have small shops which help them in their existence and remaining 6.67% of households were driver means they help the local people in transportation and travelling. These diversified livelihood patterns were seen in time of survey in the rural areas of West Tripura district.

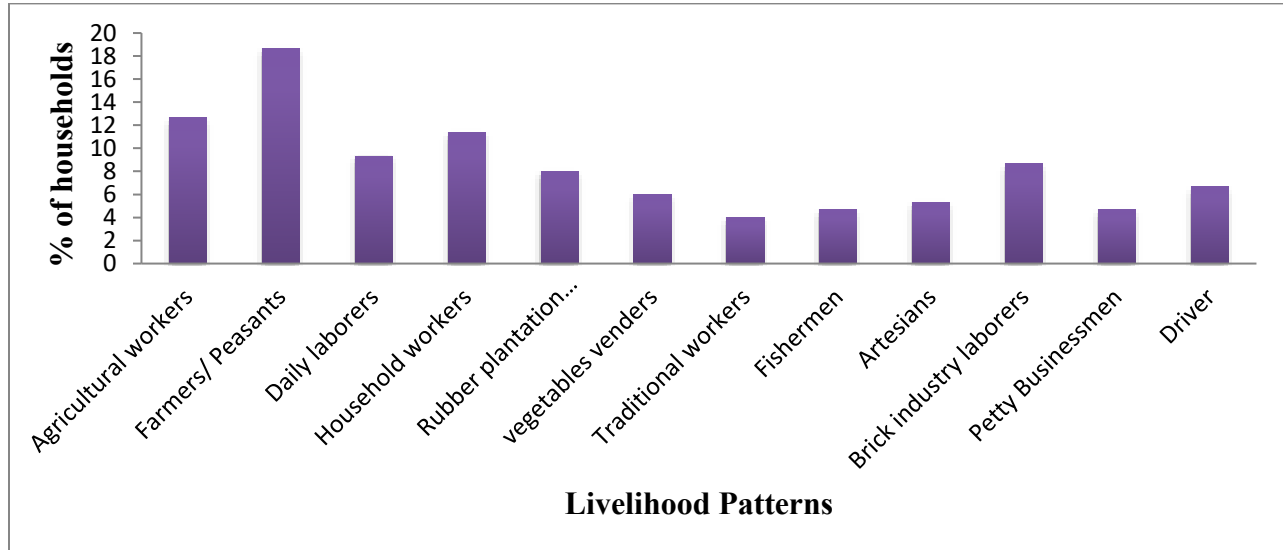


Fig: The rural livelihood patterns in West Tripura district; Source: Primary data, 2016

Interaction between physical environment and livelihoods

The study of relationships between man and environment has always been, in one way or other a focal theme in geographical study. As the man became social, economic and technological man, he broaden his environment by creating his own environment (built environment) through his design and skill to have provision for better food, shelter, access and comfort. Man-environment relationships can be perceived and evaluated in a variety of ways and approaches. According to environmental determinism, man is a product of earth’s surface. This means that the earth mothered him, set his task, directed his thought, strengthens his body to face any kind of problems and at the same time whispered hints to for their solutions. On the other hand, Possibilism attempts to explain man and environment relationship in a different way, taking man as an active agent in environment. It asserts that natural environment provides options, the number of which increases as the knowledge and technology of a cultural group develop. According to Vidal de la Blache, nature sets limits and offers possibilities for Human settlement, but the way man reacts or adjusts to these conditions depends on his own traditional way of life. However, this is not a one-way relationship and approach provide for the exploration of the influence that the human beings have on the physical environment but they also modify the natural environment through their activities. The extensive floodplains of river Haora, Khowai and some parts of river Gomati provided the rural people to practice agricultural activities in the

floodplains as these landscapes are fertile and healthy for agricultural works. The temperature and rainfall also trigger the agricultural activities. These huge floodplains help the farmers to grow various crops/ vegetables and due to the flat and smooth topography, the transportation system is also so good that farmers easily send their goods to the market and sell it in good price. The people, who acquired huge land in the river side, usually practice this activity. Some people are still practicing and holding their own heritage as a traditional worker which shows the relation between their culture and environment. The climate of the study area is so pleasant and satisfying that people can do hard work to earn their bread and butter. Recently, there is radical change in the livelihood pattern of rural people that is they are practicing rubber plantation (cash crop). The environment of this state is suitable for rubber plantation. The undulating tilla and sloppy lands are best for rubber plantation. The rural people are nowadays practicing it, which gave them much money than any other livelihood. The numerable wetlands facilitate the rural people to practice fishing as these wetlands are good for fishing and their condition is also good as the production of fish is also very high from these wetlands. In the rural areas, there are numerous brick industries. These brick industries are built up here because of the availability of soil and water and the pleasant working climate. The sandy clay loamy and sandy loamy soils are ideal to make bricks. In the rural areas, some persons are engaged in pottery industry. As in the summer season, the climate is very hot and rural people used to drink water from the pot made by earthen materials. In these ways, rural people are dependent upon and obey his/ her physical environment.

Conclusion

West Tripura district is the most populous district among eight districts in Tripura. The study area is a rural region in nature and the influence of natural environment is much more than urban region. The environment provides various options to the habitats and it is the man who decided to practice which kind of activity as a livelihood. The physical environment of the study area is such that people living in the rural areas are engaged in diversified livelihoods. The floodplains of the study area offer agricultural and other allied activities. Paddy is the only crop is grown in this area and during dry and cool seasons; they kept their lands as a fallow land or produce vegetables. Water (Moisture) is a crucial factor for any kind of agricultural activities. The problem of shortage of water is solved by the irrigational practices. Apart from the rainfall,

people usually access ground water for agricultural activities through dug wells, pump sets. Tilla and hilly parts of the study area are best for rubber plantation and people are engaged in the activity in large number. Govt. of Tripura also encourages rural people to practice this activity. The persons those who don't have any piece of land, they are engaged in other activities as a livelihood. The fishermen are also getting benefit from the wetlands to practice fishing as a livelihood. The soil of the study area is so good and fine that it provides to build brick industry, which is an important industry in the present modern society. The other livelihood patterns are also reflecting their culture and their adaptation with the physical environment as culture is largely depended upon the environment. The calm and pleasurable climate help the people to earn good amount of money and with that money, they are slightly changing their lifestyle and quality of life. So, livelihood tells us the economic condition of the household and their standard of living.

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