

CHAPTER-7

OVERALL FINDINGS AND SUGGESTIONS

CHAPTER-VII

SUMMARY, CONCLUSION AND SUGGESTIONS

7.1 SUMMARY:

The present chapter is an outlined of the previous chapters and is an attempt to capture the total picture of the people living in char land of Assam which is recurrently fall under flood every year and affected by river erosion frequently. The socio-economic condition of the households is trying to measure in terms of their income and consumption expenditure, assets and liabilities, housing status, availability of safe drinking water, source of energy use, toilet facility, use of radio, television, telephone, literacy rate and health problems.

Erosion of the river banks in India have become recurrent event and creates enormous problem for the people as well as the Government. Presently a large number of townships, villages, human dwellings, trade centre etc. are under the threat of bank erosion. The impact of erosion is unbearable and non-recoverable and cause permanent loss to human being. Hence it is suggested to adopt scientific approach for erosion control on priority.

Flood and erosion are a natural phenomenon. Rivers especially the mighty Brahmaputra and its tributaries erodes vast areas of land every year in Assam. It is well known fact that in rural areas of Assam more than 70 percent of the population is depends on agriculture for their livelihood. Agriculture or cultivation requires fertile land which erodes by the river every year. People displaced due to erosion become more and more in recent years. The occupational structure, income, living standard of the people of the agrarian society hamper greatly due to the continuous river bank erosion especially of the agricultural land. It stands as a challenge for the people as well as the Government for the resettlement of

displaced people. As the char area is peculiar in its nature and in its geographic position the impact of flood and erosion fall on the people basically live in *Char areas* in the district.

Chapter I has encompassed the research problem, its objectives, rationality and background, scope, significance and limitations of the study. An introduction to the river Brahmaputra and Char areas of Assam have been made. A review of relevant literature on the issue in brief is analysed. Review of literature is categorised into three groups viz. review on flood and erosion, immigration and inhabitation and society of char area. It may, however, be mentioned here is that the analysis of the problem is sometimes hampered due to the non-availability of adequate data at desired level.

Chapter II deals with the data base and methodology of the study. This study has been conducted in Char Areas of Dhubri district in Assam. The area covered by char areas in Dhubri district is 998 sq. km. The percentage of population in char areas of Dhubri district is 42.1 of the total population of the district and density of population are 690.6 per sq km.

For collection of data char villages are divided into four categories viz. char villages located at near of towns, far distant from town, surrounded by river water and attached with mainland. Four villages are selected at random from each category of villages. Then from each village thirty households are selected at random to construct the sample for collection of data. This has constituted a sample of 480 numbers of households.

A structured questionnaire was used to collect primary data from the household included in the sample. Along with primary data secondary information has also been used in the study. After gathering data were analysed with statistical tools.

The statistical methods like Averages and Percentages have been used to measure various attributes. Methods like the ANOVA and the Chi Square have been used to measure

the sample variation and validating the hypothesis of the study. The Coefficient of Correlation is used to measure the relationship among the attributes. In order to quantify the socio-economic variables like Income, Education, Occupation etc. the Kuppuswami's Socio Economic Scale have been used.

Chapter III describes a brief history of people and land tenure system of char area as it appears significant for the socio economic and socio-political condition of the state as well as the district of Dhubri. *Char area* is a peculiar geographic feature of Assam. Those vast tracts of land found in and on the bank of river like Brahmaputra are known as '*Char Areas*'.

Initially these areas were waste land and used for the purpose of cow feeding and other such secondary utility purpose till the last part of 19th century. It was the British Government of India who took initiative for settlement of farmers from then East Bengal through the middle class like *Zamindar, Jotedar, Talukdar* etc. Immigration into char area took place for various reasons and among them most important reasons were long lasting suppression by Zamindars in East Bengal, unequal density of population in adjacent districts, convenient land tenure system in Assam, colonial sponsorship etc.

As per Survey report, 2003 by the Director of 'Char Areas Development, Assam' there are 2251 numbers of char villages in Assam. There are 24,90,397 population and 4,34,754 households living in char areas which constitute 12% of the total population of the state. The cultivable land are about 2,42,277 hectares i.e., 2.98 percent of the state.

Chapter IV deals with the issues like flood, erosion and displacement. In Assam, during the period of 1954 to 2007 total of 4,25,932 hectares of land had been eroded and there on displaced more than 8 lakh households in different parts of the state. The severity of problem of erosion is more acute in lower parts than other parts of the state. The Dhubri district is considered as most affected district in Assam. Only in South Salmara Revenue

Circle of the district, out of total 201 villages 107 villages have been completely washed away in erosion since 1962. The devastating flood that begins in 1980's took three historical trading centres viz. *Fakirganj, South Salmara and Sukchar* of the district for ever from the map of Assam. In 1989, the South Salmara towns become the target of Brahmaputra and in 1991-92, all institutions, offices, business firms etc are destroyed and transferred to another place.

Char areas neighbouring the Dhubri town are unluckier than any other parts in Assam. Char villages like *Kalsabhanga, Marowar Char, Chalbanda, Chenikhowa, Majerchar, Cholakura, Bondihana* etc lost their existence due to continuous erosion since 1990. Chars located on the north bank of the district were frequently erodes and thrown up again and again in the last 20 years. For instance, *Birsing, Airmari, Aminerchar, Katiaralga, Moinakandi, Bonsirchar, Khedaimari, Porarchar, Pocharchar, Muhrirchar, Muthkhowa, Nilokhia, Montirchar, Moshlabari, Takimari, Patamari, Sostharghat* etc. are peep boo frequently.

Table 4.12 shows that thousands of households of hundreds of villages were displaced due to erosion of Brahmaputra only. Every year thousands of people living in char areas loss their livelihood due to flood and erosion. Revenue Department of the Government recorded that in 1994, land area was affected by erosion was 6,116 hectares in Brahmaputra Valley. Another important information is that the average annual damage has been over Rs 124 crores and average annual erosion rate has been 8,000 hectares of land, since 1954 (Sheikh 2000). Brahmaputra is causing a large-scale destruction on its bank whatever may be the site. Char area of Assam is very backward by its nature and location. Hence, the severity of destruction by flood and erosion of Brahmaputra are also found to be much devastating.

According to the report of the Internal Displacement Monitoring Centre, in the year 2009, at least 16.7 million people were found displaced due to the natural disasters like flood, storm etc. out of the total people effected by disaster 16 percent were displaced. In this very year, 15.2 million people which are 91 percent of the total were displaced due to climate related disaster like flood and storms. Of the world's total displaced people 14.9 million people i.e. 87 percent of the total was from Asia.

In Assam, flood recognised as a disaster but the erosion is not (Dasgupta). Displacement due to flood is a temporary and is for two or three months in a year for the victims. When flood affects the villagers, they went to some safe and secured place where they can protect themselves from the flood. During flood time Government and Non-Government Organisations (NGOs) come forward and open some rehabilitation camps for those victims. After the flood is over, villagers back their home and the problem of displacement disappeared.

But the unlike the flood, erosion is different type of disaster or calamities. Erosion takes away all assets, livestock, homestead and agricultural land. For the farmers agricultural land carries much more value as it gives them the means of livelihood. Once erosion taken place households lost all everything they have. Therefore, erosion affects heavily on the socio economic and socio-political life of the erosion induced displaced households. Although they lost everything of them, in government record they did not recognise as displaced people. Again, the Revenue Department of the Government fails to estimate the extent of erosion of char areas and displacement thereon as because of the fact that there is no record of land of char areas. Most of the land under char areas is recorded as khas land.

Chapter V present an account of the measures and initiatives adopted at Government level to control flood and erosion in Assam. The Government adopted National Flood policy

in 1954 and only since then the flood and erosion management measures started in Assam. Accordingly, a huge network of flood embankments was erected all over the state of Assam as immediate and short-term measures under the "food for work" programme. Under this programme total length covered by embankment has been increased from 211 km in 1954 to 4465.19 km in 2006. The National Flood Policy included measures like anti erosion and river training works that mostly comprise of bank revetments, construction of stone spurs, boulder deflectors, timber dampeners, R.C.C. porcupines and other pro-siltation devices.

During flood seasons there arises several emergencies and mostly of them taken care of by using some temporary measures like providing dowel bund with empty cement bags, back filling with bamboo support, bamboo porcupines, breach closing works, bamboo cribs etc. All the above measures provided reasonable protection to about 16.50 lakh hectares of area which was almost 50% of the total flood prone area of the state.

In our country, the erosion control measures are commonly known as river training works. River training may include one or the combination of more than one measure. It is the actual situations and problems in the affected area that decide the works to be adopted. As embankment, guide bank etc. have no direct protection against erosion; alternative measures to control erosion are to be taken into consideration. Spurs are the most effective and widely used measures for river erosion control and flow diversion.

Spurs like Impermeable spurs are generally used for diverting the flow away from the bank along a desired course. These spurs are very effective for shore line protection but very costly. The permeable spurs require only temporary or semi-permanent construction and can be made of brushwood, trees, and bamboos, wooden and concrete piles. This spur can be made of locally available materials and hence cheap. Permeable spurs are found to be useful in erosion control process. The main the object of permeable spurs are:

1. To divert the threatening of a bank,
2. To close down a flow channel,
3. To affect sediment deposits on lower chars.

Due to the need of huge finance and technology erosion control measures in Assam are mainly executed by Government departments. Government has adopted its measure to control erosion through spurs, tripod and porcupine. Tripod and spurs are traditionally used method to close a shallow stream channel in a braided river. Porcupine is made of both bamboo and concrete to protect bank erosion by diverting the flow of water current. Another technique of erosion control is Gully method. Like char areas where soil is very loose and gullies are easily formed by rain water. During high flood a gully may lead to the formation of a flow of new channel.

In Assam, there are some NGO's have also taken initiatives to protect erosion. Voluntary Initiative for Community Empowerment (VOICE) an NGO of Morigaon district has done Char Stabilisation Work in 2004, 2005 and 2006. Their first step was to Survey and site identification which is an important aspect as it requires deep understanding of the river line areas. This involved very frequent visit to the river and understand the current from the upstream and pattern of erosions. Next, the plastic granny bags are filled till 3/4th part and tied up with locally available jute rope and placed in the river bed carefully under the supervision of local experts.

Char area witnessed a century old human settlement started during colonial period. Char area abundant the economy of Assam in various way particularly by agriculture. But the unfortunate reality is that information regarding char area and its society isn't available (Chakravorty, 2012). The char area is one among the remote and backward regions within the state. For the aim of development of this area Government took an initiative adopting 'Char

Areas Development Programme' in 1983. 'Directorate of Char Areas Development' was the nodal authority to execute the programme. Since 1998, a replacement department 'Welfare of Minorities Development' was created and every one schemes of development on chars are taken under the department. Government undertook various schemes to develop the socio-economic condition of char people. Schemes of the govt included training to unemployed youth for self-employment, supply of beverage, providing sports materials, agricultural tool like hand-pump, shallow machine etc.

To assess the socio-economic condition of char people, the authority undertaken two survey. the primary survey was wiped out 1992-92 and other in 2002-03. These two surveys are the idea of data about the char area in Assam. the number of chars is rises from 2089 to 2251 during 10 years of two surveys. The district of Dhubri (480) remain on the highest of the list in respect of the amount of char villages. Decadal rate of growth of population found 55.6% which was much high than the state average 18.9% during 1991-2001. Population living in char area constitute 9.4% of the state population. But the acreage covered under chars is merely 4% of the state's area. thanks to high rate of growth density is far high i.e., 690 per sq. km. The state density is merely 340 per sq.km. Declining of the cultivable land is a stimulating fact about char area. thanks to erosion and other factors, cultivable land is declined from 70% to 67% during 1991-2001.

Mass level illiteracy is found common. the speed of literacy is increased at a really nominal rate during the amount of two surveys and it had been 14.9% to 19.3%. In some districts char area's literacy found declining. It had been as due to the frequent migration of migration to other places. Due to the miserable condition of all element determined the socio-economic condition, are depressing in chars and hence poverty is found to common among

the char dwellers. Number of individuals living below poverty level is increasing. It was 48.8% in 1991-92 and 67.8% in 2001-02 where the state average is declining and was 36%.

For removal of poverty in the country, Government has adopted various measures since fifth five-year plan. Among all programmes Small Farmer's Development Agency (SFDA), Marginal Farmer's and Agricultural Labourers' Development Agency (MFAL), Drought Prone Areas Programme (DPAP), Foods for Work Programme (FWP) was introduced for benefiting the rural poor. Later on, Integrated Rural Development Programme (IRDP), National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP) were introduced. In 1989, NREP and RLEGP were merged into a single wage employment programme under Jawahar Rozgar Yojana (JRY). The objective of this programme is to assist poor families in developing skills and inputs to overcome their poverty. Other programmes like TRYSEM (1979), Employment Assurance Scheme (EAS), Prime Minister's Rozgar Yojana (PMRY) in 1993-94, Prime Minister's Integrated Urban Poverty Eradication Programme (PMUPEP) in 1995-96 and National Social Assistance Programme in 1995 has been introduced. Employments generating schemes implemented in the state of Assam were the Training of Rural Youth for Self-employment (TRYSEM), National Rural Employment Programme (NREP), Jawahar Rozgar Yojana (JRY), Prime Minister's Rozgar Yojana (PMRY), Employment Assurance Scheme (EAS), Swarnjayanti Gram Swarozgar Yojana (SGSY) etc but the people living in char areas got a little benefit of these government schemes.

The **Chapter VI** accounts for various impacts of flood and erosion on the char dwellers. Flood and erosion of mighty river Brahmaputra causes havoc in Assam is more acute than anywhere in India. In earlier time, flood was considered as blessing than a problem because it deposited fertile soil in the agricultural field every year which helps the farmers.

But after 1950, the river once identified as the life process and culture of people become to be considered as menace.

Social aspect of char dweller is seriously suffering from flood and erosion. After displacement, char people compelled to migrate from chars to other places. But they're not welcome by the people where they migrate. This unwillingness of mainland people on char people results in various sorts of discriminations. The common discrimination is found within the labour market where they're paid lesser wage as compare to the market rate. Sometimes they were driven out from the development site or work place by pro-nationalist groups. alongside this discrimination of wage, they're assaulted and harassed physically by these pro-active groups. This has resulted a unpeaceful environment of labor also as financial condition of labours hampered. The mainstream media and organisation never show any sympathy to the char migrants. They termed and labelled them as illegal immigrants or Bangladeshi inflators. They never undergo the basis of displacement and migration of char people. A suspicious environment is active among mainstream and char people. this is often as due to the shortage of data on the part of the people of the mainland. Deviation of nature, behaviour, language and religion of the char dwellers are mainly liable for such suspicion.

The devastating flood and erosion have changed the demographic composition of the char areas. The census data reveals that there were a considerable portion of scheduled caste and backward caste people belong to Hindu in char area. They were engaged in various occupations like fishing, blacksmith, small business, different craftsmen etc including agriculture. Due to continuous erosion and loss of their business establishment along with other reasons they shifted themselves from char areas and settled nearby towns and other permanent places. In Bhogdahar there were 98 out of 1017 people and in Dighaltari-II, 81 out of 1003 people were belonged to Hindu (Census, 1961). Again Dighaltari-I was a witness of

150 people belong to Hindu out of 1601 (Census, 1971). But in census report, 2011 found that the entire populations living in char villages of the district are belong to Muslim community. Thus, it is found that the demographic composition of the char areas has changed due to recurring flood and continuous erosion taking place every year. Another interesting characteristic of char area is the frequent migration and fluctuation of size of population of a particular village. That is continuous increase of the size of population of a particular village is a rare picture. The census data since 1951 to 2011 has also support the fact. Thus, we may say that although the rate of growth of population in char area is so high but the size of the population of a particular village may or may not increase over period of time. For both shelter and livelihood frequent migration is to be seen as a common among char areas. In the course of study, it is found that 55.4% of households have migrated from somewhere. Among these household, 89.8% household were migrated due to erosion of their original habitat village. Only 10.2 % have been reported to have migrated due to other factors like for the search of better living.

The impact of erosion is also visible on the size of the family in char dwellers. Few decades before, Joint family was the tradition in char areas. A joint or undivided family is a large family where more than one generation lives together in a common house. In recent days the tradition of joint family becomes unpopular due to several factors including erosion. There found a close relationship between the education level and size of families. The chi square test leads to accept the alternative proposition that the education level of the head of the household plays a vital role to determine the size the family. Near the village to town or permanent mainland, the number of joint families declines. The correlation coefficient between these two variables (i.e., distance of char from town etc and number of Joint families) is found as high as $r = 0.92$. This implies that higher the communication with urban or semi urban area the number of nuclear families in char area in increases.

The people of char areas are victims of poverty, illiteracy and high population growth. These factors are related to each other. After displacement they are confronted with two options before them, one is to migrate to nearby towns/cities and two inhabit new char, natural habitations. People in the char areas live their lives in an environment of uncertainty, illiteracy, poverty and inadequate basic infrastructure. Their socio-economic life is subjugated to a vicious circle of poverty and underdevelopment.

In table 6.5, it is found that 85.6 % of the household living below the poverty line and only 14.3 % households found to be of the above the line. It is found that there is a close relation between Illiteracy and Occupation. The correlation coefficient between illiteracy and occupation like agriculture or labour is found as $r = 0.91$ which implies a high degree of correlation. This is as because that illiterate people are unskilled and could not engage themselves in modern sector like business etc. Again, there found a close dependency among occupation and poverty. The chi square test applied to judge whether there is any dependency among occupation and poverty is or not. The result of the test from collected data shows that there is a direct dependency of poverty upon occupation. Occupation like agriculture and labour could not provide them a sufficient income so as they can afford a better life. So, the under developed and temporary nature of agriculture and labour like occupation are not in a position to uplift them from poverty line.

In case of occupation, a serious change has taken place in char areas in Assam during last three or four decades. High growth of population and erosion cause increasing pressure ashore day after day. As farmer char dweller felt proud. there have been only a touch portion of population depending upon nonagricultural occupation in populated area. The senior inhabitant was expressed their grievance major portion of cultivable fertile land has been either washed away by the river erosion or covered by sand by flood. Thus, the flood and

erosion cause both loss of agricultural land and fertility. Again, available cultivable lands are getting used for homestead. On the opposite hand, growth of population was at a high rate. in order that agriculture becomes insufficient to feed the population. Having no alternative, people of chars are compelled to maneuver in towns and cities in search of job. They engage themselves as thela puller, rickshaw puller, areal and another sort of labour. The change in occupation of the study area is shown within the table 6.6. it's reveals that only 35.0 percent of the household remain within the occupation of agriculture. About 52.7 percent people become landless and hence depend on the occupation of labour. Household earn livelihood from aside from agriculture and labour is 12.5 percent. Service in Government and non-Government sector provides livelihood to only 3.9 percent of individuals within the char areas. So, it's found that there has been taken place a drastic change in respect of occupation of the people within the char areas thanks to erosion.

Education is the backbone of a society. In Assam, the literacy rate is recorded 88.8 percent where male literacy is 91.8 percent and female literacy is 85.7 percent (Census, 2011). On literacy rate the Dhubri district lagging behind the state rate. As per census, 2011, the literacy rate in the district is 81.3percent. The male literacy is 86.3 percent and the female literacy recorded as 77.1 percent. Char areas in Assam is a backward region in respect of education. It is after the 1970's modern schools were established in the area. The literacy rate among the people of char area of Dhubri is much low (14.0 percent) as compared to the state rate of literacy 88.8 percent.

Table 6.7 shows that children of 89.3 percent of household have enrolled their name in schools and till now 10.6 percent household have deprived off enrolment of their children into any schools. Among the enrolled children, children of 10.9 percent household remain out of the coverage of modern education as they enrolled in charity funded religious educational

institutions. Dropped out rate is also abnormally found high among char dwellers. Acute poverty, frequent migration, insufficient road communication, lack of awareness, lack of school, irregular schooling etc are main hindrance of education in char area.

The health care facilities of chars are said to absent. They have no awareness on health care and show an ignorant attitude on this purpose. People walk on bare foot, use river water to drink and other purposes and stay very unclean and unhygienic. The public health service condition is found to be a pathetic one. There exists few Primary Health Centre but located too far from the villages under it. Status of child care and women health is also running in traditional way. Reported that 92.2% of child birth are happened at home in chars.

Early marriage and unopposed polygamy are normal and such practices are mainly responsible for high rate of birth and hence growth of population in char area. Birth control measures are not popular and not available also.

Land is an important asset in char area as in any rural economy. The socio-economic condition of dwellers is mostly depending upon the size of holdings. The patterns of land holdings are found to be very unequal among the tillers in char areas. As the survey conveyed for the purpose (Table 6.8) reveals that 62.0 percent of the households owned no land for agriculture and among these 24.16 percent house have no land at all. Only 38.0 percent fortunate household of char area has their own land for cultivation purpose. Among the land owner household 19.5 percent has land range from 0.5 to 2.0 Bigha only, 12.5 percent possesses 1.0 to 5.0 Bighas of land. Only 5.8 percent dwellers are lucky enough to possess more than 5.0 Bighas of land. The main reasons of low holding of land and unequal distribution are found as-

- Recurring flood destroys land use for agriculture.
- Divesting erosion decline the area of char land.

- Growth of population at high rate.
- Fragmentation of land among the successor and
- Indebtedness of the farmers.

Use of Durable consumer good improves the standard of living. Urban household lives an improved life than rural counterpart as because they use more comfort items. Poor people remain busy with their minimum necessities and hence use of durable and comfort items is less. Char area of Assam is economically backward as recurring flood and erosion has breaks down the backbone of the economy. They live a miserable life. Only 7.5 percent of the household owned a bike and 19.3 percent owned a bicycle as a modern tool for transport. For the purpose of communication, 76.8 percent of the household use mobile phone. There found very few families those have more than one mobile phone in their families. Radio and Television are found in 3.1 percent and 11.2 percent of the household respectively. No families were found keeping and read newspaper of any language.

Uses of energy for lightening and cooking purposes are found very low and traditional among the household of erosion affected char area. The Table 6.12 depicts the information that the purpose of lightening 26.8 percent household uses kerosene, 13.5 percent uses electricity and 59.5 percent are use solar energy. Again, in the course of study it is found that 81.4 percent of the household are use traditional fuel like wood, leaves etc for the purpose of their cooking. Only 18.5 percent of household and mostly of them are near town chars are uses LPG Gas as their cooking fuel.

Banks and Insurance are two basic financial institutions of modern society. A moderate transaction could not operate without any banking system. Banks are the institution where public can deposit their saving, borrows funds for their any need whether it is domestic, commercial and so on. Like banks, insurance provide both insurance and savings to

its customers. Char areas are lacking both banking and insurance facilities. In our study it is found that 71.9 percent of household have no bank accounts in their name. Only 28.1 percent of household reported as they have their own bank account. Most of the accounts are recently opened for the purpose to avail the old age pension and house for homeless. Again, it is found that most of the accounts are operative only based on the government contributions. Again, in case of insurance, only 3.7 percent of household reported to have any kind of insurance policies in their families. Indebtedness is a feature of a backward society which exists among char dwellers. Of the total 52.5 percent household have their debt with their relatives, friends and *Mahajans*. Though the majority of the people are in indebtedness, but they could not avail banking loan facility as there exist no banking branch in char areas. Post office banking service is also rare to be found in service. Lack of bank branch, lack of land document, reluctant attitude of bank, lack of awareness, existence of middle man etc are found to be main problems.

7.2 STATISTICAL RESULTS:

In order to validate the hypothesis of the study some statistical tool like ANOVA, Chi square and Regression Analysis has been used. To test the **1st hypothesis** i.e., the flood and erosion does not have any impact on the socio-economic condition of the people of the char dwellers, ANOVA tool is used. In the variation among rows, the table value of F at 5% level of significance for $v_1=3$ and $v_2=15$ is 3.287 and the calculated F value is 0.196. Since the calculated value is less than the table value, hence the hypothesis is accepted. That is the difference of the impact of flood and erosion on the socio-economic condition among different char villages are not significant.

Again, in the variation among columns, the table value of F at 5% level of significance for $v_1=5$ and $v_2=15$ is 2.9012 and the calculated F value is 13.3469. Since the

calculated value is more than the table value, hence the hypothesis is rejected. That is the difference of the impact of changes of variables like education, occupation, employment, poverty and land holding on socio economic condition of the people is significant.

For the **2nd hypothesis** i.e., the erosion does not change the occupational structure of char dwellers of the District, the calculated chi square value (13.96) found greater than the table value (5.99) at 5% level of significance; hence the null hypothesis is rejected and accepted the alternative hypothesis that occupation of the char dwellers is changed due to flood and erosion.

For justification of the **3rd hypothesis** i.e., Education of the Head of the family has no influence on the size of the household, the calculated chi square value (69.77) found greater than the table value (5.99) at 5% level of significance; hence the null hypothesis is rejected and accepted the alternative hypothesis that the education levels of the head of the household influence the size of the family.

The **4th hypothesis** i.e., Education of the family head has no impact on the income level of the household is rejected by the chi square test. The calculated chi square value (223.32) is found much greater than the table value (5.99), hence the hypothesis is rejected and accepted the alternative hypothesis that the income of the household depends upon the education level of the head of the household.

The **5th hypothesis** i.e., Occupation of the Head of the family not determines the Poverty of the Household. The calculated chi square value (214.72) is found much greater than the table value (7.81), hence the hypothesis is rejected and the alternative hypothesis is accepted which implies that the poverty of the household is depends upon the types of occupation.

7.3 MAJOR FINDINGS:

Flood and erosion are a never-failing friend of the people living in char areas of Assam. Flood occurred every year without fail along with bank erosion. Although people are got habituate to cohabit with flood and erosion, but impact of it on the people is remarkable.

Major findings of this study can be summarising as:

1. **Cropping pattern** of the char dwellers changed. The traditional crops viz. paddy, jute, oilseeds and vegetables etc. found less productive and replaced by modern paddy like IR-8, Chinese paddy etc. One interesting fact has been found is that some traditional crops like *Kaun*, *Cheena*, *Gom*, *Pera*, *Shon-ghati*, *Mitha Aloo* etc have disappeared from the scene. These crops vanished completely from the agricultural field. No farmer is now interested to cultivate these crops.
2. **Occupation** of majority of char dwellers has been found to be changed due to flood and erosion. For high growth of population and continuous decreasing of agricultural land people compel to start search new venture for their livelihood. At present only 35.0 percent of the household have the occupation of agriculture and following that 48.5 percent people are basically landless and hence depend upon the occupation of labour. Only 12.5 percent of people are taken up small trade and commerce as their occupation. Service in Government and non-Government sector provides livelihood to only 3.9 percent of people in the char areas. So, it is found that there has been taken place a drastic change in respect of occupation of the people in the char areas due to erosion.
3. **Agricultural production and agro based industries** in char areas greatly hampered due to flood and erosion occurred every year. Flood carries sand in its water and covered the

farming land. There are many of such examples that once a field was very fertile become waste land just after the flood. Again, due to change of the fertility condition both the cropping pattern and quantity of production also changed. Land once used for the production of jute or paddy is now not fit for those crops. Farmer tries to cultivate alternative crops there. The quantity and quality of production also got hampered. Agro based industry is an important feature of an agrarian society. Before the erosion has occurred in char areas especially before 1970's, all char villages were self-sufficient in every respect. It is after that period, river bank erosion is occurred at large scale. As erosion takes away the land and shelter of the people, the agro-based industries got destroyed. Artisans, after losing their land and shelter, flee to nearby established villages or towns. Due lack of own land in the villages and temporary nature of char lands, no new industries taken place. Only few rice mills were found in char areas those were run with diesel or other type of oil. Erosion destroys the transport and communication system of the char areas. It is only the char areas which have not electricity facilities. The government department is unable to build a line to supply electricity to these char areas. Due to absence of electricity supply in char areas no industry grown up.

4. **Education** is a measure the standard of living and it determines the way of living, thinking and job opportunity and so on. Originally char areas is a backward area in respect of education and the yearly occurred flood and erosion has also a negative impact on it. Due to flood for 3 to 5 months and erosion, the place of living of the inhabitants changed frequently for which the education system hampered greatly in char villages. Instead of several government measures 49.5 percent household remain illiterate and 10.6 percent household could not enrol their children in any school. This non enrolment is due to lack of educational institution, geographical barriers and frequent change of residence of the household due to erosion etc. Among the char villages those located on the middle

of the river and far distant from any towns are more backward comparatively than those located near towns and attached with mainland.

- 5. Frequent Migration:** Migration from one place to another due to erosion and flood is indispensable character of char people. Recurrently after every five to ten years most of the weak chars are washed away. People living there become displaced and moved or migrate to another place. In our surveyed population, it is found that 95 percent of households have migrated from somewhere. Among these household, 88.4 percent household were migrated due to erosion of their original habitat village, 3.7 percent household were migrated for flood and only 7.5 percent have been reported to have migrated due to other factors like for the search of better living (Table-6.4).
- 6. Poverty:** It is found that 95.5 percent of the surveyed household living below the poverty line and only 4.5 percent households found to be of the above the line (Table-6.5). Although 89.3 percent of the households has ration cards under the public distribution system (PDS), but they received a very low standard food items from the fair priced shop. Only few food items like rice and atta, sugar and fuel item like kerosene oil were supplied through the ration card. Supply of these items is not regular, for example sugar has been supplied only on the occasion of festival like Idd etc.
- 7. Durable Goods:** The status of a family depends upon the wealth they belong to. More wealth a household belongs treats as richer than others. Wealth may be of durable consumer good, lives stock etc. As most the families or household live below the poverty line, wealth they belong are also found to be very low level. Durable consumer good determines the standard of living of a family. It is found that only 7.5 percent of the household owned a bike in the char areas as a modern tool for transport. 19.3 percent of the household owned a bicycle for their transportation. Remaining major portion of

people still using on foot for go here and there. For the purpose of communication, 76.8 percent of the household use mobile phone. Radio and Television are found in 1.0 percent and 7.9 percent of the household respectively. No families were found that keeps and read newspaper of any language.

8. **Banks and Insurance:** A moderate transaction could not operate without any banking system. Banks are the institution where public can deposit their saving, borrows funds for their any need whether it is domestic, commercial and so on. Like banks, insurance is also another modern tool of modern society. Insurance provide both insurance and savings to its customers. Thus, peoples are benefited from insurance policies if they opted for it. Char areas are lacking both banking and insurance facilities. It is found (Table-6.13) that 71.8 percent of household have no bank accounts in their name. Only 28.2 percent of household reported as they have their own bank account. Most of the accounts are recently opened for the purpose to avail the old age pension and house for homeless. Again, it is found that most of the accounts are operative only based on the government contributions. Deposits into such accounts from the owner's side are near to be nil and almost all accounts opened for the purpose of house becomes inoperative just after the purpose was served. So far as bank loan is concerned, only 1.3 percent household reported to have get loan from any bank and 98.7 percent have no idea about bank's loan.

In regard of insurance, only 3.2 percent of household reported to have any kind of insurance policies in their families. There 96.8 percent household has no relation with any kind of insurance policies (Table-6.13c). Savings is an important component of capital formation of the society. In the char villages, savings behaviour is a utopia. As the study reported that 96.2 percent house has no savings either in banks or in own hands. Only 3.8 percent household reported to have saving at a minimum level. Indebtedness is a feature

of a backward society which exists among char dwellers. As stated in the Table- 6.13(e) among the total 52.5 percent households have their debt with their relatives, friends and Mahajans. Though the majority of the people are in indebtedness, but they could not avail banking loan facility as there exist no banking branch in char areas. Post office banking services are also rare to be found in service.

9. Use of Energy: Uses of energy source are found very low and traditional among the household of erosion affected char area. For the purpose of lightening 26.8 percent households use kerosene, 13.5 percent uses electricity and 59.5 percent are use solar energy. The use of kerosene is higher in mostly distant and disjoint chars. Electricity used up more in near town chars. Households from both near town and distant-disjoint char villages are using solar energy as a source of lightening in recent years. Again, 81.4 percent of the household in the erosion affected chars are use traditional fuel like wood, leaves etc for the purpose of their cooking. Only 18.5 percent of household and mostly of them are from near town chars are uses LPG Gas as their cooking fuel.

10. Socio Cultural and Political Impact: Assam is multi-cultural, multi ritual state. There are some caste and creed living in the state for which the other caste or creed knows a little or nothing. People living in the eroded areas become displaced and they move nearby places for shelter. Mostly these people take resorts of state land, reserve forests etc. After migration too, char people face various difficulties. thanks to their own language, culture and religion, suspicion arises among the mainstream people. Mainstream people cannot take them on trust. Lack of data on the part of the mainstream people is additionally liable for such suspicion. supported this suspicious environment, some pro-active organisation and groups are termed them as illegal immigrant and labelled as Bangladeshi inflators (Gorky, 2012). Another discrimination found available

within the labour market where char workers are paid lesser wage compared to the prevailing market rate. Instance also found because the so-called nationalist group driven out labour of chars from their work place without paying them any remuneration. Media and organisation active within the field show no sympathy to those displaced workers. They never undergo the basis causes of displacement and migration of char people from their homeland. As a consequence of the above situation, we see an unbroken distance, mistrust and suspicion among two groups of individuals and it's hampered the wellbeing of the region.

From the above discussion, it's clear that, both extent and impact of river bank erosions are very miserable. Displaced migrants thanks to erosion are at the danger of insecurities in several form. The uncertainties that they face are economic insecurity thanks to unemployment, loss of capital and indebtedness, social insecurity thanks to deprivation of civic rights, health insecurity thanks to lack of basic infrastructure, etc. These insecurities and uncertainties led to deprivation, destitute, and vulnerability of the families suffered from flood and erosion. Normally the bank erosion has always a negative impact on human life. But the human activities also found liable for riverbank erosion. Riverbanks are more fertile land compare to other land and no fertilisers are needed for cultivation. Land on banks area provides better production of crop than upland farms. so as to accumulate more and more production, there found over-cultivation and poor management of cultivated fields (Kaunda and Chapotoka, 2003). of these factors mentioned above, results in riverbank erosion, pollution and fish habit. Therefore, the management of natural resources including riverine resources in poverty prone communities may be a complex matter.

7.4 SUGGESTIONS:

In order to minimise the problem of displacement of the people living char areas in Assam due to flood and erosion, anti-erosion programme like porcupine system or any other scientific measurement should be implemented on preference. As corruption found in various stages in such measures, hence vigilance should be made to check the corruption. Digging the river bed especially of the river Brahmaputra to allow passing huge volume of water through one major channel is a must. Rivers like Brahmaputra may be prepared to use as national and international water ways. It is another point to suggest is that the erosion affected people be declared as internally displaced people (IDP) and certificates should be issued to them as IDPs by the appropriate authority. This will help all those erosions induced displaced people in solving the identity crisis to some extent of the affected people. Moreover, the land and property insurance facilities by the government should be provided to the people residing in river banks.

Our study has discovered a series of loopholes in the development policies of the Government in respect of char areas. Here we provide some suggestions with a hope that these will rectify the past defects and limitations and accordingly will fetch better socio-economic status of this region.

- 1) Socio-economic status of the people living char area is heavily influenced by their traditional activities. A drastic action against their activities may bring social unrest. Awareness through mass campaign, mass literacy and providing alternative incentives in many schemes may solve the problem slowly.
- 2) Control on the growth of population should be first priority of policy makers. High growth of population leads to a bias in favour of marginal worker. Since the state

income share of agriculture sector is continuously falling but the employment share of this sector is not hence, economic status of rural people is gradually worsened. Policies on the population control can directly handle this problem in an effective manner.

- 3) Establishment industry and service sector is almost impossible owing to the ecological constraints. Under this situation the advance agricultural method suit for the region is to be introduced.

7.5 FUTURE SCOPE OF STUDY:

Char area of Brahmaputra is a peculiar characteristic of the geography of Assam. Society, Language, Culture, Economic and social condition etc of char area are found to be different from the mainstream. Char area is suffering from a lot of problems. Among the problems recurring flood and erosion is the major problem. It creates other problems to the char people and pull down the society in a backward state.

This study was an attempt to study the impact of flood and erosion occurred frequently in char area upon the people and society in different angles. But due to several limitation and lack of sufficient information and literature, the aim has not been achieved. This study may open the scope of research to researchers on the people, society and other related aspect of the char area.