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Survival Strategies of The Displaced People of River Bank Erosion: A Study of Shariatpur District

Hossain, Md. Mosharof

University of Rajshahi

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Ph.D. Dissertation

Researcher

Md. Mosharof Hossain

Department of Social Work
University of Rajshahi
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Md. Mosharof Hossain

Session: 2009-2010

Supervisor

Professor Md. Abu Bakr Siddique Bhuiya
Professor
Department of Social Work
University of Rajshahi

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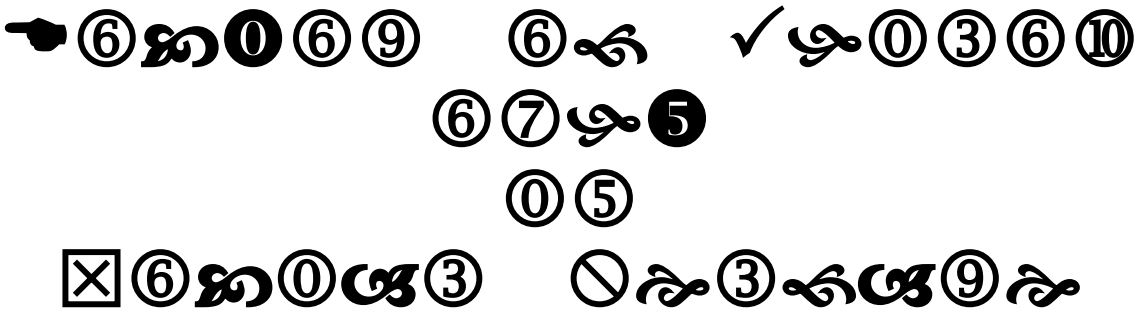
A Dissertation

Submitted to the Department of Social Work, University of Rajshahi in Partial Fulfilment of the Requirements for the Degree of



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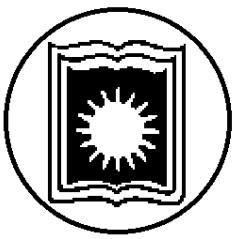

Department of Social Work
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Rajshahi, Bangladesh

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প্রফেসর মু. আবু বকর সিদ্দিক ভূঁইয়া
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Professor Md. Abu Bakr Siddique Bhuiya
Department of Social Work
University of Rajshahi
Rajshahi – 6205, **Bangladesh**
Cell : 01715 – 137775

Certificate of the Supervisor

This is to certify that the dissertation entitled **"SURVIVAL STRATEGIES OF THE DISPLACED PEOPLE OF RIVER BANK EROSION: A STUDY OF SHARIATPUR DISTRICT"** is an original work submitted by Md. Mosharof Hossain, a Ph.D. Fellow of the Department of Social Work, University of Rajshahi, Bangladesh. The findings and views expressed in this dissertation are the outcomes of the research work done by him. He has conducted the study and submitted the dissertation under my direct supervision and guidance. This dissertation has not been submitted anywhere else for any degree or diploma and it is not a conjoint work of the author.

It may be mentioned that I have gone through the draft and original version of the thesis. I am pleased to allow him to submit it to the proper authority as partial Fulfilment of the requirements for the award of the degree of Doctor of Philosophy in Social Welfare.

Md. Abu Bakr Siddique Bhuiya

Professor & Supervisor
Department of Social Work
University of Rajshahi, Bangladesh

Declaration by the Researcher

I hereby declare that the dissertation entitled **"SURVIVAL STRATEGIES OF THE DISPLACED PEOPLE OF RIVER BANK EROSION: A STUDY OF SHARIATPUR DISTRICT"** has been prepared by me. It is an original work done by me under the direct supervision and guidance of my honourable supervisor. I am fully responsible for all comments, statements and opinions made by me in this dissertation. The entire dissertation or any part of it has not been submitted to any institution for publication or in pursuing any degree or diploma, whatsoever.

Md. Mosharof Hossain
Ph.D. Fellow
Department of Social Work
University of Rajshahi, Bangladesh

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Md. Mosharof Hossain

Abstract

Riverbank erosion is one of the destructive natural disasters in the riverine Bangladesh. River erosion often destroys cultivable lands, dislocates human settlements, damages the growing crops, massively disrupts road-linkages and communication infrastructure in the riparian track of the country. It is one of the most unpredictable and critical type of disasters that depend upon the quantity of rainfall, soil structure, river morphology, topography of river.

The present study entitled "SURVIVAL STRATEGIES OF THE DISPLACED PEOPLE OF RIVER BANK EROSION: A STUDY OF SHARIATPUR DISTRICT" has been conducted to assess the losses and miseries caused by the river bank erosion, find out the effects of erosion on livelihood and to explore the survival and coping strategies adopted by the displaced people of the study area. The study was conducted in two villages of Naria upazila named Chondipur and Charjujira under the district of Shariatpur, Bangladesh. There were 334 displaced families in these two villages who resettled their household after being displaced by the river erosion. Out of those displaced households 50 household from Chondipur and 50 households from Charjujira were chosen on random basis as sample population for the study. Data were collected from both primary and secondary sources to fulfill the objectives of the study. Primary data were collected through semi-structured questionnaire from households of the study areas.

Findings of the study revealed that on an average, 280 acre land and 240 house hold of the study area were eroded per year during the period between 2009-2013. It is also

found that during this period the rate of damage in 2011 and 2012 was higher than previous years and it was highest in the year 2013. It was an indication of increased erosion rate. The main reason of such variation was because of climate change induced intensifying rainfall pattern and unplanned interventions.

It was found in this study that most of the respondents (44%) are illiterate. 2% of the respondents can read and write their name. 24% have completed primary education and 18% have completed their junior school certificate course. Only 2% have completed SSC and 2% have completed higher secondary level. 8% have completed higher education out of which 4% graduate and 4% Masters Degree.

Data shows that out of the total respondents highest 23% have chosen small business as their profession like shop kipper, seasonal seller of vegetables, fruits, sugarcane, green coconut hawkers etc. followed by day labor 16%, farmer 14%, Rickshaw pooler 11%, carpenter 5% Masson 4%, motor boat driver 4%, non Govt. job 4%, tailor3%, fisherman 2%, stock business 2%, teacher 2%, butcher 1%, Govt. employee 1% and working abroad 1% and 7% remaining unemployed.

Monthly average Income of the respondent BDT 12158 of which BDT 10500 from principal occupation BDT 1150 from subsidiary occupation and BDT: 508 from incidental sources. Principal occupation was the only source of income of most of the people of the study area. However, some people have scope to earn from other sources like seasonal business, private tuition, auto driving, fishing, brokering etc. Only a few respondents have some assets like land, auto rickshaw, trollar, fishing boat etc.

After displacement monthly income of the respondents decreased by BDT: 3000.00 from main occupation, BDT: 850.00 from subsidiary occupation and BDT: 828.00 form incidental resources. Average monthly income of the displaced families decreased by BDT: 4678.00.

Respondent families spend BDT 9650 for food and cloth, BDT 1200 for education of their children, 1175 for treatment and medicine and 2077 for other purpose. However, before displacement their expenditure for food, clothing and treatment was relatively low such as BDT 6500 to BDT 950. One the other hand expenditure for education, recreation and for other social involvement reduced significantly after being displaced.

Monthly average income of the respondent household was BDT 12158.00 and monthly expenditure was BDT: 14102.00 which is bigger than income by BDT 1741 that means monthly average deficit of the respondent house hold is BDT: 1944.00.

There were no landless families among the respondents before displacement however, 67% of them became landless after displacement. Rest 18% holding their remaining land and 15% respondents purchased small piece of land after displacement for resettlement (see Table 6.1). Only 3% respondent was the owner of marginal land before displacement which increased to 27% after displacement. Land holing up to two acres was 31% before displacement which decreased to 6% only. 66% of the respondents were the owner of 3 and above acre of land however none was found in

that category after displacement. It is also found that 40% of the respondent families lost their solvency after displacement out of which 26% became insolvent and rest 14% went under poverty line.

Displaced families have undertaken different indigenous strategies for overcoming their misery and for survival. 45% of the respondent adapted to new occupation for maintaining their livelihood. 13% sold their various assets and livestock for fulfilling their basic needs. 11% of the respondent received help from relatives, 10% have taken loan from NGO. 8% of the respondent families engaged their young members in work before completion of education. 7% spent money from saving, 5% have taken loan from schedule banks and 1% went abroad for bringing solvency in their family.

It is learned from the people who had some savings somehow could manage their initial problems during the natural disaster. But the poor peasants had to seek help and assistance from their neighbors and relatives. Government and NGO help reached the villages quite late. Only 1% family received Corrugated Iron (CI) sheet for constructing their house from GO and 4% from NGO. 2% households received cash money from GO and 12% from NGO. 18 of the respondent received rice from GO and 12% received from NGO. 1% of the respondent received deep tube well from GO and 1% from NGO. 2% received shallow tube-well from GO to and 2% from NGO. 4% of the respondent received sanitary latrine from GO and 5% from NGO.

Most of the victims were not willing to receive relief; they wanted full recovery of their losses. They expected necessary support and cooperation from government to

cope with the adverse situation and to get rid threat of further damage.

100% percents of the respondents wanted permanent dam and effective protection of the river bank, 67% respondents demanded allocation of khas land, 58% asked for bank loan without interest, 53% desired to complete study of their children, 46% asked for trained rescue team for saving the lives and properties. 42% demanded well planed and proper resettlement of the displaces, 32% claimed for employment opportunity in home and abroad and 23%, made their appeal to excuse their previous bank loans.

The marginalized people not only lost property but also experienced socioeconomic deprivation through displacement. Because of the dynamic character of the braided channelled river and the failure of structural measures, the sufferings of the people continued. Long-term policies and strategies should be taken to cope up with bank erosion taking into account the social and institutional adjustment measures. Land reallocation assurance may be the appropriate strategy to cope up with such disaster. In addition, a flood plain zone is essential to lessen the vulnerability of riverbank erosion. Adequate intervention of the concern Government agencies are needed to protect the lives and properties. More attention is to be given for rehabilitating the displaced families.

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Acronyms

ASA	:	Association of Social Advancement
BARD	:	Bangladesh Academy for Rural Development
BBC	:	British Broadcasting Corporation
BBS	:	Bangladesh Bureau of Statistics
BCS	:	Bangladesh Civil Service
BDT	:	Bangladeshi Taka
BIDS	:	Bangladesh Institute of Development Studies
BMD	:	Bangladesh Meteorological Department
BRRI	:	Bangladesh River Research Institute
BWDB	:	Bangladesh Water Development Board
CCDMC	:	City Corporation Disaster Management Committee
CEGIS	:	Center for Environmental and Geographic Information Services
CEGIS	:	Centre for Environmental and Geographic Information Service
CPP	:	Cyclone Preparedness Programme
CPPIB	:	Cyclone Preparedness Program Implementation Board
CSDDW	:	Committee for Speedy Dissemination of Disaster Related Warning
DDMC	:	District Disaster Management Committee
DFID	:	Department for international development
DMB	:	Disaster Management Bureau
DMTATF	:	Disaster Management Training and Public Awareness Building Task Force
DRRDMI	:	Disaster Risk Reduction and Disaster Management Institutions
EPAC	:	Earthquake Preparedness and Awareness Committee
ESCAP	:	Economic and Social Commission for Asia and the Pacific
ESCWA	:	Economic and Social Committee for Western Asia
FFWC	:	Flood Forecasting and Warning Center

FFYP	:	First Five Year Plan
FPOCG	:	Focal Point Operation Coordination Group of Disaster Management
GBI	:	Global Burden of Disease
GOB	:	Government of Bangladesh
IBS	:	Institute of Bangladesh Studies
IFAD	:	International Fund for Agricultural Development
IFRCS	:	International Federation of Red Cross and Red Crescent Society
ILO	:	International Labour Organization
IMDMCC	:	Inter-Ministerial Disaster Management Co-ordination Committee
ISWR	:	Institute of Social Welfare and Research
IWM	:	Institute for Water Modeling
MOU	:	Memorandum of Understanding
MSE	:	Microsoft Excel
NASW	:	National Association of Social Workers
NDMAC	:	National Disaster Management Advisory Committee
NDMC	:	National Disaster Management Council
NGO	:	Non-Government Organization
NGOCC	:	NGO Coordination Committee on Disaster Management
NPDRR	:	National Platform for Disaster Risk Reduction
NUSA	:	Nariaq Unnayan Somity
OECD	:	Organization for the Economic Cooperation and Development
PDMC	:	Pourashava Disaster Management Committee
Ph.D	:	Doctor of Philosophy
RBE	:	River Bank Erosion
SDO		Society for Environment and Development Observer
SDS		Shariatpur Development Society
SME	:	Small and Medium Enterprises

SPARRSO	:	Space Research and Remote Sensing Organization
SSC	:	Secondary School Certificate
SWM	:	Social Welfare Ministry
TV	:	Television
UDMC	:	Union Disaster Management Committee
UN	:	United Nations
UZDMC	:	Upazila Disaster Management Committee
VGD	:	Vulnerable Group Development
VGF	:	Vulnerable Group Feeding
WATSAN	:	Water and Sanitation
WHO	:	World Health Organization

Glossary

Kacha	: Mud made establishment (House, Latrine, Road etc.).
Madrasha	: An Islamic Educational Institution.
Masjid	: Place of worship where the Muslims offer prayers.
Mondir	: Place of worship where the Hindus offer prayers.
Naria	: Name of place, a unit of administration of Shariatpur district.
Pacca	: It means to build anything by brick or with bitumen & stone
Patna	: Local term used for temporary shelter of the erosion victims
Shariatpur	: A district under Dhaka Division of Bangladesh.
Union Parishad	: The lowest tier of the local government in Bangladesh.
Unnayan Onnesson	: Name of a Voluntary Organization
Upazilla	: The lowest unit of administration in Bangladesh.

CHAPTER ONE : BACKGROUND AND OBJECTIVES OF THE STUDY

1.1 Introduction and Statement of the problem:

Now-a-days global warming and environmental disaster issues have become a worldwide concern. From this point of view, Bangladesh has been considered as one of the vulnerable countries of the world. People of this country have to face various natural disasters every year like flood, tornado and river erosion. A large number of people are being environmental refugees every year due to environmental disasters. River bank erosion is one of the silent disasters in Bangladesh.

Every year about one million people become homeless due to the erosion of country's two largest rivers - the Jamuna and the Padma. (Mark Dummett, 2009). International Federation of Red Cross and Red Crescent Society (IFRCS) have identified the river erosion as one of the biggest concerns of Bangladesh. According to them, river erosion causes much more destruction than any other natural disasters. However, very few people are concerned of it. The complexity of this issue is needed to be informed to the people through mass media communication. This is a slow but silent disaster. (Bob Makenro 2000). In a recent study, the DFID has identified the river erosion as one of the topmost disasters from the point of losses. About one million people are affected by the river bank erosion and flood. Flood inundates nine thousand hectares of land every year. (World Disaster Report 2010)

Bangladesh being predominantly a riverine country, has 250 rivers, big and small, with a stretch of 2400 kilometers bank line. The country is a living delta formed of alluvial soil, which is very prone to erosion with any degree of river water movement. 283 locations as well as 85 towns and growth centers are being affected by river bank

erosion almost every year. Besides, another 1200 kilometers of bank line has been identified as vulnerable to erosion.

About half of the victims of river bank erosion cannot easily find out a new settlement due to poverty and resource constraints. They are to live a floating life. At this moment, there are more or less 4.0 million homeless people in the country. In most cases, such floating families live on public land such as khas lands, embankments, abandoned railway trucks, slopes of highways etc. Through migration, many of them increase the concentration of people in the urban slums. (IRIN 2009)

Photo 1.1 Bholar Basti, a water-logged slum in Dhaka city, accommodates more than 30,000 people, most of whom were displaced by river erosion (Photo: Shamsuddin Ahmed/IRIN)

Geography and Environmental Science Department of Jahangirnagar University presented a chart of the losses of river erosion between 1996 to 2000, which is given below

Table 1.1 Chart of the losses of river erosion between 1996 and 2000

Year	Affected Areas	Affected Population
1996	71680 Acres	10103635
1997	7756 Acres	173090
1998	41519 Acres	321000
1999	227755 Acres	899275
2000	219310 Acres	415870

(Source: Md. Salim & Others, Climate Change & River Erosion in Bangladesh. Cost Position Papers 5)

1.2 Objectives of the Study

Along with other objectives, the major objectives of the present study are as follows;

1. To assess the losses and miseries caused by the river bank erosion in Bangladesh in general and study area in particular.
2. To understand the present socio economic conditions of the displaced people of the study area.
3. To explore the survival and coping strategies adopted by the displaced people of the study area.
4. To recommend in formulating necessary policies and programs for improving the condition of displaced people in matter of their rehabilitation.

1.3 Rationale of the Study

The environmental disaster like riverbank erosion is not a new phenomenon in Bangladesh. It is estimated that about one million riparian people are being displaced by this disaster annually. The riverbank erosion displacees usually take curative rather than preventive strategies for adapting to their hazardous riverine environment in their

own way. Their strategies for curative measures are embodied in low-level technological capacity. They usually tend to follow curative measures but none of those are adequate and effective for their permanent settlement.

In absence of Government policies and strategies the displacees are forced to formulate various indigenous strategies in adapting to the unsafe riparian environment due to the lack of organizational support. It is disappointing to note that the land dislocation and population displacement due to riverbank erosion in Bangladesh have received no specific attention either by social scientists or by government (Zaman, M.Q. and R.E. Wiest 1985)

River bank erosion is one of the major causes of rural- urban migration. Most of the floating people and slum dwellers of Dhaka city are of environmental refugees – specially displaced by river bank erosion. River bank erosion has been identified as a silent tsunami in Bangladesh by environmental specialists. So, there is an great demand for giving proper attention to the people who have lost their lands and shelters. For attaining expected social advancement, to gain economic development, to alleviate poverty and to achieve sustainable development government should give proper attention to those people who are displaced by river bank erosion. This study will help understanding the livelihood strategies of the victims of river bank erosion in general and the displacees of Shariatpur district in particular.

1.4 Literature Review

Review of Literature is an important part of research work because a comprehensive understanding can be obtained from the previous research works done in the relevant fields. Simultaneously, if any research work would not have done on the present area, the review can reveal the gaps on the concerned area of interest. The core aim of this study is to focus on the struggle and strategies adopted by the displaced people to survive. Only few research works have been done earlier in this area of interest. There are certain works, which are closely or distantly related to this particular area of research. These are as follows;

Karim, A. H. M. Zehadul (2014)

A. H. M. Zehadul Karim conducted a study on "Flood and Riverbank Erosion Displacees: Their Indigenous Survival Strategies in Two Coastal Villages in Bangladesh". He mentioned that due to riverbank erosion and flood, the victims need to adapt with the changing environmental conditions, and consequently they need to adopt many socio-political, economic and cultural strategies in order to survive in the face of the plethora of problems. The displacees try to take control over their environment through their multi-dimensional adaptation strategies. This paper thus identified the indigenous strategies and mechanisms which the displaces usually adopt to cope up with the catastrophic effects of flood and erosion in the coastal areas of Bangladesh

Uddin, A.F.M Azim and **Basak, Jayanta Kumar (2012):**

Another study was done by **A**.F.M Azim Uddin and Jayanta Kumar Basak entitled "Effects of Riverbank Erosion on Livelihood" in the area of Lalcamar Village of Sundarganj Upazila of Gaibandha District and Bishurigacha and Old Meghai village of Kazipur Upazila of Sirajganj District. The findings revealed that respondents of poor income group have less opportunity in spending money on food, educational expense and health care facilities. A vast majority of them were in the income group of 3001- 4000 BDT. who spend 1501- 2000 BDT for food consumption, which is inadequate for a large family. Apart from this, when disaster strikes, their income level drops down in a substantial amount that forces them to take food once in a day. A vast majority of respondents (40.9 percent in both the areas) pay only 301-500 BDT for health care facilities. Moreover, during the period when bank erosion strikes, they face enormous problems.

Islam M. S. Et, Al, (2012):

A joint work of M. S. Islam, T. Hasan, M. S. I. R. Chowdhury, M. H. Rahaman and T. R. Tusher Department of Environmental Science and Resource Management, Mawlana Bhashani Science and Technology University, Tangail-1902, Bangladesh was conducted a research entitled "Coping Techniques of Local People during Flood and River Erosion in Char Areas of Bangladesh". They pointed out that floods and riverbank erosion in the deltaic region are not a small problem. The study found that flood and erosion have a disastrous impact on socio-economic condition as well as on the environment. The study was done in two char villages located in the middle of the country of Bangladesh. The people faced the river erosion by means of a wide range

of practices. In the study it was revealed that the most of houses were built by CI sheet, bamboo and thatch. People adopted multiple techniques in reducing loss and in shifting their life and properties from flood and riverbank erosion. Finally, the study concluded that although flood and river erosion in Bangladesh always create socio-economic and health related hazards and environmental and infrastructural problems but government takes little or no attention to solve the problem once for all.

Rahman, M. A. and Rahman, M. M. (2011):

Works of Mohammad Arifur Rahman and Md. Munsur Rahman on the topic "Impact of Livelihood Practices of The Char Dweller's Economic Condition in Riverine Chars: A case Studies in Bangladesh." The study attempted to understand the livelihood patterns and survival strategies of the displacees. The study was conducted on char Konabari of Rajapur union under Belkuchi Upazila of Sirajgonj district and Dakshin Boro-char of Eklashpur union under Uttar Matlab, Chandpur district. The study revealed that about 215 households live in the Char Konabari of which about 60 % people are engaged in handloom activities as labour, which became their main source of income. Agriculture was the second highest and about 20% people were engaged in other activities. Among the agricultural farmers, 50% had their own land and rests of them were landless. About 4% people were engaged in petty business and rest of the people were engaged as day laborer like van driver and boatmen. About 586 households live in Dakshin Boro-char of which about 60% and 30% people were agricultural farmer and fishermen respectively. On-farm activities were dominant in Dakshin Boro-char. Most of the farmers hads their own land as well as they also cultivate khas (Govt.) land. The rest of the people were engaged in day labor

activities, petty business and boat men. The daily per capita income was about US$ 0.54.

Uddin M. N and Rahman, M. M (2011)

Mohammad Nazim Uddin and Md. Munsur Rahman in their study entitled "Socio - Economic Impact of Erosion along the Right Bank of the Jamuna River in Bangladesh" mentioned that the erosion has a great impact on the livelihood of riparian population, agriculture, and environment. Different types of vulnerabilities were created due to river erosion. Family relation and social bondage broke down, and the social status be lowered. Therefore, appropriate measures should be adopted in reducing the socio-economic impact, they suggested.

Islam M, Fakrul, and Rashid, A.N.M. Bazlur (2011)

Md. Fakrul Islam a Professor of Department of Social Work, University of Rajshahi, Bangladesh conducted a research along with ANM Bazlur Rashid. On "Riverbank Erosion Displacees in Bangladesh: Need for Institutional Response and Policy Intervention" According to them displacees of riverbank erosion fail to draw attention successfully of the appropriate authorities. Riverbank erosion and displacees do not get media coverage as like the victims of other disasters. As a result, a silent catastrophe affects to these unfortunate group. Moreover, there is no specific policy or program for the riverbank erosion displacees neither in government or in non-government sectors.

Field level experience shows that most of them move to different administrative offices for getting relief. Because, the officials of their original area fail to assist them

and the officials of resettled area have limited scope to help them as they are not the victims of their administrative area. The consequence is that, these environmental refugees become more vulnerable to survive.

Barnett, Jonand and Webber, Michael (2010)

In their working paper discussed the relief and rehabilitation programs of Bangladesh government relating to "Accommodating Migration to Promote Adaptation to Climate Change". This paper discussed the policy of the government in the field of help and rehabilitation of the displaces of the natural disasters.

Government of the People's Republic of Bangladesh (2010)

In the report of National Plan for Disaster Management 2010-2015, Disaster Management Bureau, Disaster, Management & Relief Division (April 2010) mentioned that about 1(one) million people and about 10,000 hectares of land is eroded by river erosion every year in Bangladesh (NWMP, 2001). Kurigram, Gaibandha, Jamalpur, Bogra, Sirajganj, Tangail, Pabna and Manikganj districts fall under erosion prone area along Jamuna and Padma River. Other districts are Rajbari, Faridpur, Dhaka, Munshiganj, **Shariatpur** and Chandpur. A recent study of CEGIS (2005) shows that bank erosion along Padma River during 1973 – 2004 was 29,390 hectares and along Jamuna River during 1973 – 2004, 87,790 hectares.

Government of the People's Republic of Bangladesh (2010)

Standing Orders on Disaster, Ministry of Food and Disaster Management, Disaster Management Bureau, January 2010 The National Policy on Disaster Management

emphasized a broad based strategies, i.e. risk management, community involvement and non-structural mitigation measures. In Bangladesh there are three bodies for multi-sectoral coordination and collaboration at the national level. a) The National Disaster Management Council (NDMC) headed by the Prime Minister, b) Inter Ministerial Disaster Management Coordination Committee (IMDMCC), headed by the cabinet Minister in charge of the Ministry of Food and Disaster Management (MFDM) and c) National Disaster Management Advisory Committee (NDMAC) with memberships from both public and private sectors. There are committees also in district, upazila and union level following by the directives of national committees.

Rahman, M. R. (2010)

Another study done by M.R. Rahman, Institute of Environmental Science, University of Rajshahi, on "Impact of Riverbank Erosion Hazard in the Jamuna Floodplain areas in Bangladesh" revealed the effects and consequences of hazards faced by the victims of river bank erosion.

Islam, M. Zulfiquar Ali (2009):

Another study was conducted by Dr. M Zulfiquar Ali Islam the than Associate Professor, Department of Sociology, University of Rajshahi on "Indigenous Adaptation Strategies of the Riverbank Erosion Displacees in Bangladesh: It was done on two northwestern villages - Khoksabari of sadar upazila and Natun Meghai of Kazipur upazila under Sirajganj district. A sizeable number of displacees from different adjoining erosion-affected areas of Jamuna basin have settled down in two study villages. The major findings of the study along with other things covered

indigenous strategies which were taken by the victims for their existence. A considerable proportion of the displacees sold their properties at the time of displacement for reducing their losses. 43% displacees of Khoksabari and 33 % of Natun Meghai sold their land. 15% of Khoksabari and 38% of Natun Meghai sold their livestock. 22% also sold their moveable properties including ornaments, bicycle, bullock cart, wooden furniture, corrugated iron sheet, utensils, etc before and after being victims of the circumstances.

Taleb,Md Abu, Et, Al (2009)

Md. Abu Taleb, Md. Humayun Kabir and Md. Muhibbullah, Department of Geography and Environmental Studies, University of Chittagong and Department of Geography and Environment, University of Dhaka. Conducted a study on "Survival Strategies Among Erosion-Induced Displacees at Haimchar Upazila, Chandpur District, Bangladesh". They mentioned that during the last three decades about 35,605 peoples were displaced in the study area due to river bank erosion. Most of the affected people were living on the embankment. The people were worried as to when land would be eroded by the river? These people were affected 3 times during the last three decades. The survival strategies of the affected people were also discussed in this study.

Keya, Mahbuba Kaniz and **Harun, S.M. Rafael (2007) :**

Mahbuba Kaniz Keya and S.M. Rafael Harun conducted a study on "Riverbank Erosion Induced Stress and Coping Strategies of Displaced Women in Bangladesh". The study attempted to identify the ways by which displaced women cope up with

their day to day problems. The results showed that these women use significantly different coping mechanisms compared to the non-displaced ones.

United Nations (2005)

Report of the World Conference on Disaster Reduction has given an idea about the impact and consequences of the victims of environmental disaster over the world. It also discussed the efforts of the international community on their different initiatives taken by the respective Governments, Non-Government and International agencies.

Besides, some other studies were conducted earlier by Bangladesh River Research Institute RRI, Faridpur and Bangladesh Water Development Board. But no elaborate discussions were found to understand the survival strategies of the victims as such. Even no study was done on the life struggle and survival strategies of the displaced people of riverbank erosion of Shariatpur district though it is one of the most affected districts of the country. So, an in-depth study on the survival strategies of the displaced people of river bank erosion along with their coping strategies in the new environment needed to be done. Simultaneously, the contribution of Government and non-government agencies towards alleviating poverty and reducing sufferings of the victims of river bank erosion especially in the district of Shariatpur were also needed to be conducted to underscore the survival strategies of the displaces of river bank erosion of Shariatpur district.

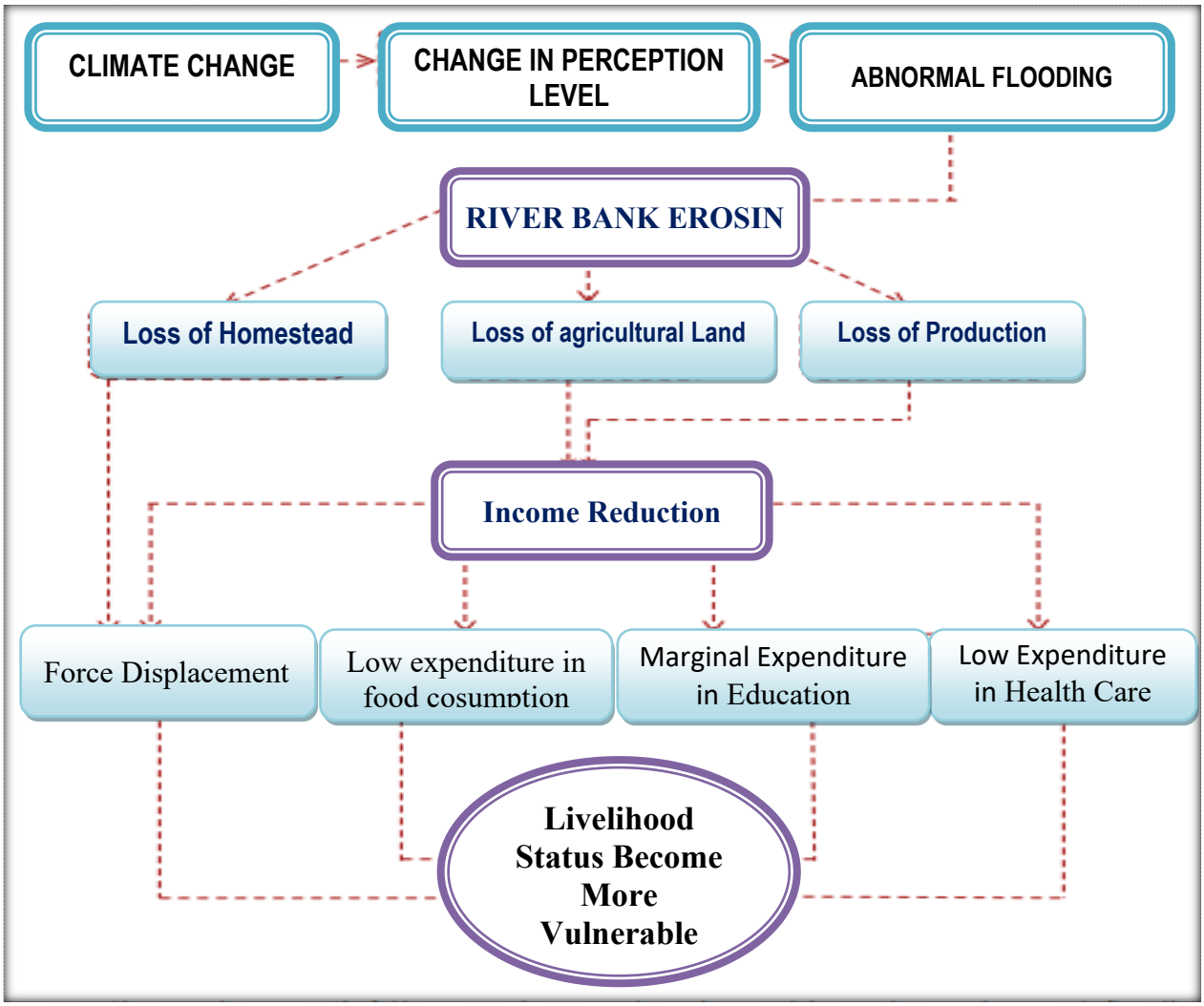
1.5 Conceptual Framework

Bangladesh is one of the worst affected countries in the world due to climate change. Rise of sea level, incessant rainfall, abnormal flood, frequent and intense tropical cyclones, drought, riverbank erosion, heat and cold waves are recurrent phenomenon which affect the lives and livelihoods of the seventh largest populous country in the world. Due to climate change, rainfall pattern is ever changing and it causes abnormal flood. Such flooding in addition to increased flow of river water from the upper catchment countries help increasing the intensity of riverbank erosion. Riverbank erosion creates enormous stress on the people who reside alongside riverbanks by losing their homestead, agricultural lands etc.

The cumulative effects of such losses create income loss for which they fail to provide expenditure in food, education, and health care. People of Bangladesh are so poor that force them to maintain a poor livelihood status. Effects of riverbank erosion makes the status become more vulnerable. (Uddin and Basak 2012)

Consequences and cumulative effects of the river erosion are presented in the following figure (figure 1.1)

Figure 1.1 Conceptual Framework



1.6 Scope and Limitation of the study

The present study was designed to identify the problems and challenges of the victims of river bank erosion of Shariatpur district who were affected by the erosion of mighty river Padma. Every year a large number of people become victims of the erosion and take shelter around the embankment and road side slopes. Some also take shelter in the nearby char areas of the river Padma. The present study is concentrate relating to those victims who have recently been victimized due to river bank erosion. The study area is located to the river-belt areas of Shariatpur district where there are

concentration of the victims. The main purpose of the study was to understand and underscore the strategies of their struggle for existence. The study will be limited only around the objectives set forth for the study and not beyond that.

1.7 Definition of Key Concepts

A. ***Displaced People****:* Displaced People are those who have been rooted out from his original house or homestead for the time being or forever. Displacement may occur due to many reasons i,e, displacement due to natural calamities like flood, tornado, tidal bore etc. Displacement may also occur due to manmade disaster like political unrest, communal riots, war and frictions. Here we have conceived 'displaced' people as those who have been rooted out due to river bank erosion in the district of Shariatpur.

B. ***Riverbank Erosion*****:** Usually water flows from upward to downward. Bangladesh is a land of rivers with their tributaries. Some are big and some are small. The mighty river Padma, Jamuna and Meghna are the major rivers of Bangladesh. The origin of these big rivers start flowing from the Himalayan belt through the Indian territory. Due to heavy monsoon rainfall in the upstream the water comes down through these main rivers with a great speed. Due to the follow of current, the river bank cannot bear the pressure of water and sometime due to heavy flood the river cannot bear the pressure the excessive water in turns submerging the riverine areas. As a result the river bank erosion takes a serious turn. This is a common feature in Bangladesh almost every year.

C. ***Survival Strategy****:* Generally survival strategy means the ways and techniques which are adopted by people to survive in the straggle for existence. Every living animal straggles for its survival on earth. No one likes to die. It is one of the attributes of every human being to cope up or to accommodate with any unusual situation whatsoever. Hence, survival strategies of the displaced people mean the people who have been displaced due to river bank erosion and the strategies they adopted in order to survive.

CHAPTER TWO : METHODOLOGY OF THE STUDY

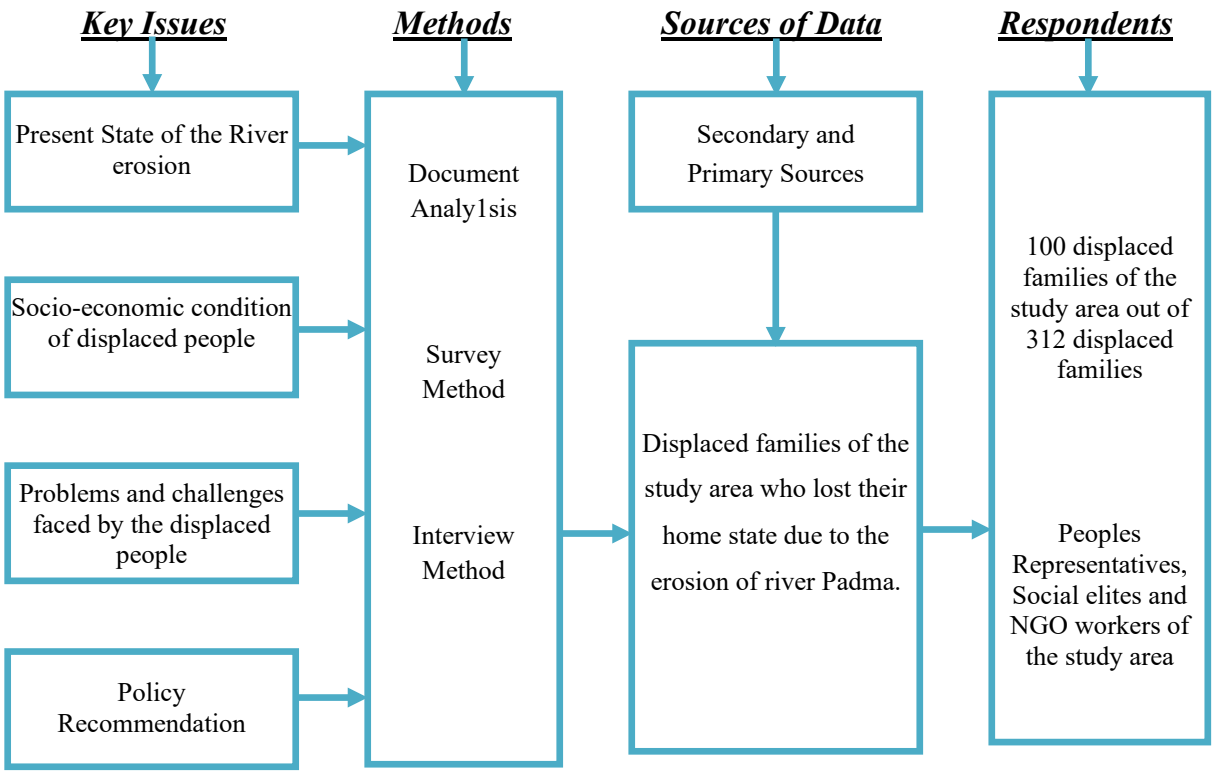
2.1 Introduction:

Research methodology is a systematic way to solve a research problem. It is a structure of research as to how research will be carried out. Essentially, it includes the procedures by which researchers go with their work of describing, explaining and predicting on a phenomenon. These are known as research methodology. Its aim at giving the work plan of a research. The general objective of the present study is to make an attempt to understand how the people are coping with the adverse situation after being displaced by riverbank erosion and how they are struggling to survive. To achieve its objective the following methods and techniques were used and followed.

2.2 Study Design

For achieving the study objectives descriptive technique has been followed. Secondary data have been collected from the government offices and from related publications. Social survey method were used for collecting data from the victims of the river erosion by the mighty river Padma. It aimed at knowing the problems faced by the victims and strategies adopted by the displaced people to survive. Appropriate statistical techniques have been used for the purpose. The research issues and research design have been presented in the Figure-2.1.

Figure 2.1 Key Issues of Research and Design to the achieve the Objectives



2.3 Selection of the study area with justification:

The present study has been carried out in two villages Condipur and Charjujira of Naria upazila under the district of Shariatpur. Shariatpur district is one of the most vulnerable districts and Naria upazila is the most affected area by the river bank erosion among the 6 upazilas of the district. These two villages have been selected purposefully depending on the paper, news and report of the mass media and official report of the GO and NGOs of Shariatpur.

"Twenty dwelling houses have entered the gorge of the gluttonous river and two villages in Naria upazila of the district within seven days. The mighty Padma has engulfed 20 houses of the village **Condipur** and **Charjujira** under **Kedarpur** union

of the upazila. Besides, existence of Sureshwar Government Primary School, Sureshwar High School and Sureshwar College went under threat of the river erosion. (UNB Report: July 12th, 2013)

"According to the report of the District Control Room of Shariatpur 3600 families have already been affected by river bank erosion. About 34288 acres lands, 50.2 km road fully and 728.83 km partly damaged, including 2 markets,16 villages 8 schools and other institutions have gone into river and 425 School and Social institution have been partly damaged" (Flood Situation Report – IX, SDS, Shariatpur, August 04, 2010)

"About forty kilometer road from char-Jalalpur of **Naria** upazila to Mongolmajhir Ghat of Jajira upazila of Shariatpur has been affected by the massive erosion of mighty river Padma. Sixteen hat/bazars including Dularchar, Wapda, Suressar, were at stake". (Independent News July1, 2013)

"Massive erosion of the river Padma has occurred at Gharisar and **kedarapur** union of **Naria** upazila of Shariatpur district. Twenty homesteads have been destroyed within seven days. Existence of two schools and a college were about to disappear. People of Sureshar area organized a human chain to demand the construction of the dam. Students of college, school, market traders and villagers participated in the human chain." (The Daily Ittefaq Friday, July12, 2013)

The official record of the damage of Shariatpur caused by the river erosion has given a brief picture of the destruction of Shariatpur districts and Naria upazila.

Table 2.1 Damage by river erosion at Shariatpur during the last 5 years (2009-2013)

Particulars	*Unit*	*Totally Damaged*	*Partially Damaged*	*At Stake*
Highways	Kilometer	04	01	09
Road	Kilometer	10	05	02
Bridge	Number	06	03	08
Culvert	Number	02	01	03
House	Number	1900	200	3000
Institution	Number	06	03	05
Land	Acre	1800	00	500
Embankment	Kilometer	2.5	04	05

Source: Office of the Ex. Engineer, BWDB, Shariatpur

From the above description and data it is evident that Charatra, Ghorishar, Nawpara and **Kedarpur** union out of fourteen (14) unions of **Naria** Upazila of **Shariatpur** have been badly affected by the river bank erosion because those unions were situated on the bank of the river Padma. Naria is the frequently squandered upazila of the district. People of those areas of Naria upazila are striving hard to survive. A large number of victims from different adjacent affected villages have taken shelter in the village named Wapda, **Charjujira**, Shaberchar, and **Condipur** of Kedarpur union and Pachgaon and Shureshar of Ghorishar union. Among those villages **Charjujira** and **Condipur** have been selected as study area. A large number of households, land, institutions, roads and establishment went under water of these two villages. Moreover a sizeable number of displacees from different adjoining erosion-affected areas have settled down in the study villages. These two villages are located within the same physiographic and ecological setting. They have identical culture as they are from the same adjoining areas. The geographical feature indicates that a significant

area of Naria upazila is engulfed by the river Padma and now a part of this engulfed area is in riverbed and part of it has emerged as *char* land.

From the above discussion it is obvious that the selection of these two villages was justified from the point of view of destruction due to river bank erosion.

2.4 Sampling Procedure and Sample Size:

Two villages of Naria Upzila named 'Charjujira' and 'Condipur' have been selected as study area. There were 334 victim families in these two villages. Of them one hundred and forty eight (148) families live in the village Chandpur and One hundred and sixty four (164) families in the village Char Jujira. All of them were the victim of river erosion. The total victim households of the selected villages were considered as universe. Out of those displaced households 50 household from Condipur (33.78%) and 50 households from Charjujira (30.48%) were selected following simple random sampling technique keeping in the mind the proximity of being included all categories of victims.

Table 2.2 Sample Population

Name of Village	***Number of Displaced families***	***Number of Respondents***	***Percentage***
Condipur	148	50	33.78%
Charjujira	164	50	30.48%
Total	**312**	**100**	**32.13%**

Source: Field data

2.5 Techniques of Data Collection:

For collecting data sampled family headmen of the victim families were interviewed through a structured questionnaire after having being pretested. Respective household headman considered as the sample unit. In addition to survey method, data have been collected through conducting focus group discussions (FGDs), oral deliberations of the victims and through case studies. Formal interview with the local elites and union council leaders were taken and incorporated. Observation method was also used. The data collection started from June 2012 and completed by April 2013. Besides primary data, secondary data has also been collected from monthly and yearly bulletins of the Bangladesh Bureau of Statistics, Ministry of Forest & Environment, Ministry of Water resources, Water Development Board and various government departments of the district. Daily newspapers were also consulted.

2.6 Presentation and Analysis of Data

Data have been presented through univariate, bi-variate and multivariate tables and pictures (Graphs and Diagrams). Statistical techniques such as central tendency, correlation and test of significance have also been used to analyze the data. Data has been computerized and analyzed using different software techniques.

CHAPTER THREE : BACKGROUND OF THE STUDY AREA

3.1 Historical Background of the Shariatpur District

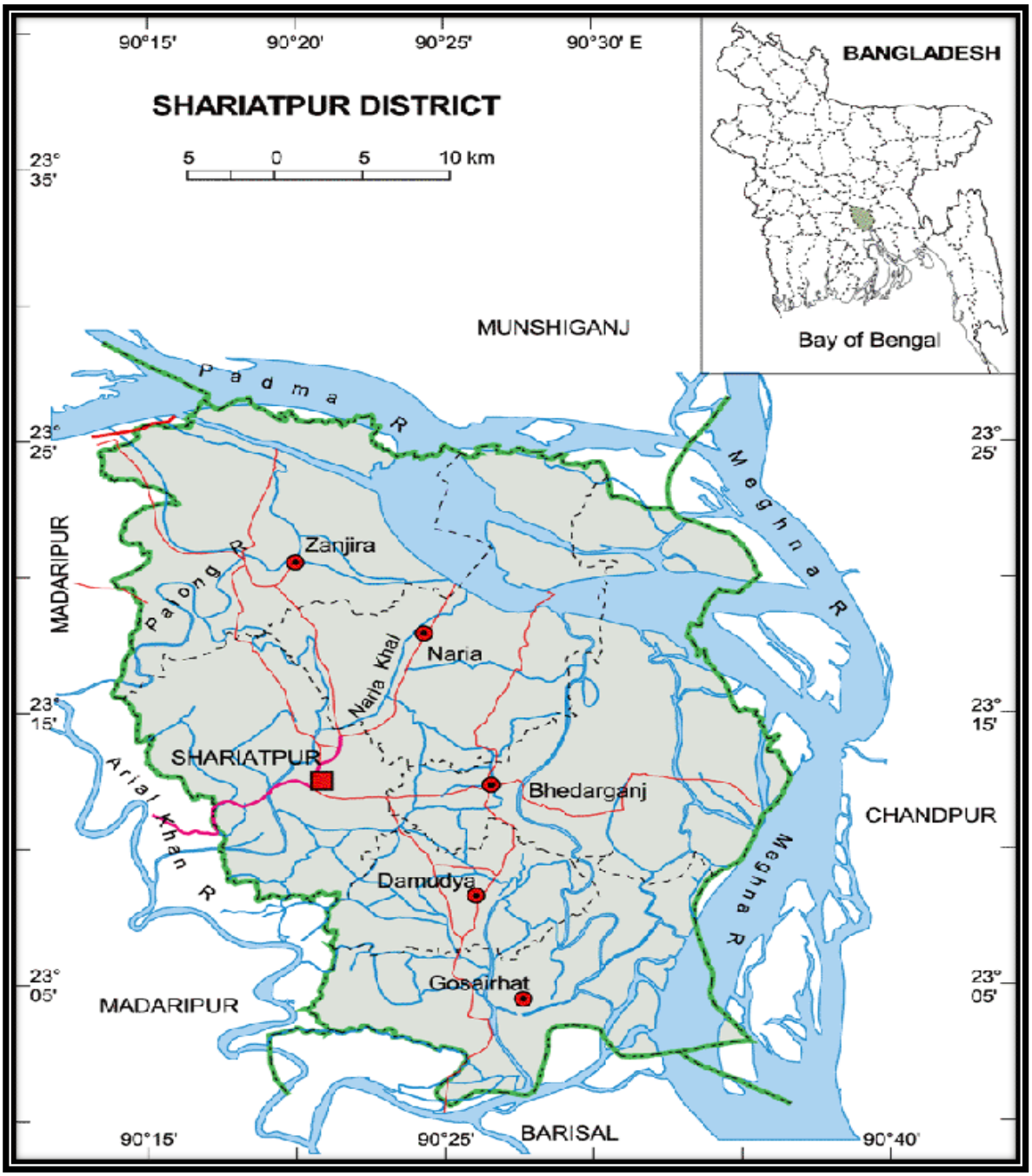
Shariatpur was a part of the grater district of Bicrompur in the past. For administrative purpose it was included with Bakergonj district in 1869. After that it was included under Madaripur sub division of Faridpur in 1873. An initiative was taken in 1912 for constituting a new subdivision with grater eastern region of Madaripur to ensure smooth functioning of administrative activities. After independence that decision came into force in 1976. Name of the new sub division was as Shariatpur according to the Name of Hazi Shariat Ullah, a famous religious reformer and leader of anti-British movement namely 'Farayzi Movement'. Palong Thana was selected as district headquarters. According to the decision of Administrative Rearrangement during president Ershad Shariatpur subdivision promoted to a district along with others districts in 1983 and it was inaugurated by Mr. Nazimuddin Hasim, Information Minister on 7th March in 1984. Now it is one of the full districtsof Bangladesh. (Abdur Rob 2000)

3.2 Geography and Socio - Economic Characteristics of the Study Area

3.2.1 *Introduction*

The present study was conducted in Naria upazila under the district of Shariatpur. It is needed to know the socio-economic condition and of the study area. The historical background of the district, location, administrative unit, socio-economic condition on the basis of literacy rate, transportation, local market etc have been described in this chapter.

Map 1: Shariatpur District



3.2.2 *Location*

Shariatpur is one of the districts of Dhaka division of Bangladesh. It is located to the southern part of the country with an area of 1102.45 Square kilometer. It is bounded by Munshiganj district on the north, Barisal district on the south, Chandpur district on the east, Madaripur district on the west and it is srounded by the river Padma, Meghna and Arialkhan.

Table 3.1 Geographical Profile of Shariatpur

Sl.	*District/Upzila*	*Area (sq.km)*	*North latitude*	*East Longitude*
1.	Shariatpur	1102.45	23.01o - 23.27o	90.13o - 90.36o
2.	Shariatpur Sadar	175.08	23.08o - 23.18o	90.14o - 90.23 o
3.	Zanjira	239.60	23.16o - 23.27o	90.13o -90.26o
4.	Naria	218.70	23.14o - 23.25o	90.18o - 90.30o
5.	Bhedarganj	246.20	23.08o - 23.24o	90.23o - 90.36o
6.	Damuddya	91.00	23.06o -23.12o	90.20o - 90.30o
7.	Gosairhat	133.10	23.01o - 23.10o	90.20o - 90.30o

***(Source:** Official website of Shariatpur District, GOB,)*

3.2.3 *Basic Data of Shariatpur District*

Basic information of the district Shariatpur is given in the following table

Table 3.2 Basic Data of Shariatpur District

1.	Name of the District	Shariatpur
2.	Year of Establishment	1984
3.	Location	81 kilometers from the capital city Dhaka, Munshiganj district on the north, Barisal district on the south, Chandpur district on the east, Madaripur district on the west
4.	Area	1102.45 Square kilometer
5.	Population	• Female: 538462 • Male: 543838 • Total: 1082300
6.	Upazila: 06	1 Zanjira, 2. Naria, 3. Bhedarganj, 4. Damudya, 5. Gosairhat, 6. Shariatpur
7.	Thana: 07	1 Zanjira, 2. Naria, 3. Bhedarganj, 4. Palong 5. Gosairhat, 6. Shokhipur 7. Damudya,
8.	Municipality: 05	1 Shariatpur, 2. Zanjira, 3. Naria, 4. Bhedarganj, 5. Damudya,
9.	Union Parishad:	65
10.	Number of Mouja:	625
11.	Number of Village:	1239
12.	Number of House hold:	213719
13.	Number of Voters:	668072
14.	College: 17	Govt. -3, Non Govt.-12, Polytechnic -1, Vocational-1
15.	High School : 125	Govt. -2, Non Govt.-108, Junior -15
16.	Primary School: 631	Govt.-399, Registrar-140, Community -92
17.	Kindergarten:	79
18.	Madrasha: 106	Kamil -1, Fajil -6, Alim -8, Dakhil-38, Ebtedayee- 53
19.	Education Rate	38.95%
20.	Enrollment rate at Primary school: 95%	

Source: Official website of Shariatpur District.(www.shariatpur.govt.bd)

3.2.4 *Naria Upazila*

The present study area is located in Naria Upzila. Naria is situated to 14 km eastern side of the district town. It is bounded by river Padma and Munshiganj district on the north, Shariatpur Sadar Upzila on the south, Bhederganj Upzila on the east and Zazira Upzila on the west. Naria became as a police station in 1930. It has been upgraded as an upzila in 1983. The main occupation of the people of this region is agriculture. People are also involved in business and government and non government services. Near about 50000 people are working abroad including Italy and Middle East. Blacksmith, potterers, fishermen, cottage industrial workers also live in this area.

Map 2 Naria Upazila Map

Basic data of the study upazila of Naria is given in the following table (Table 3.3)

Table 3.3 Basic data of the study upazila (Naria)

Subject		*Unit*	*Figure*
Administrative	Area	Squire km	240
	Union	Number	24
	Muja	Number	1181
	Village	Number	190
Population	Total Population	Lack	2.25
	Male	Lack	1.11
	Female	Lac	1.14
	Density of population	Man/sq.km	940
	Gender Ratio	Ratio	100:97
	Total number of household	Lack	0.44
	Size of the household	Man /Household	5.08
	Women headed family	(%)	2.0
Infrastructure	Home with Durable wall	Total household (%)	46
	Home with Durable roof	Total household (%)	73
	Electricity connected household	Total household (%)	3.47
	Primary School	Number	152
	Secondary School	Number	23
	College	Number	8
Economy	Agricultural labor	(%)	24
	Agriculture Based family	(%)	75
	Non Agriculture Based Family	(%)	25
	Total farming land	Hector	14736
	Single crop land	(%)	47
	Double crop land	(%)	38
	Tri crop land	(%)	16
	Value of per 0.01 hectares of land	Taka	5000
Education	Literacy rate (7+ Years)	(%)	42
	Admission rate at primary school	6-10 years Baby (%)	92
	Admission rate of female child	6-10 years Baby (%)	96
Health	Active Tube Well	Number	3247
	Benefits of safe water	(%)	77
	Sanitary Latrine facilities	(%)	6

(Source: Official Website of Shariatpur http://www.shariatpur.gov.bd/)

3.2.5 *Kedarpur Union:*

The study villages Charjujira and Condipur are situated under Kedarpur union. Kedarpur is one of the unions of Naria Upazila. It is rounded by river Padma in the north, Bhumkhara union in the south, Ghorishar union in the East and Naria Municipality in the west. Area: 4.00 square kilometers. Population 16424, there are 9 villages in this union. The villages are Burna, **Charjujira**, Char Naria, Datto potti, Kedarpur, Saheberchar, Pachgaon, **Chondipur** and Sureshar, There are 27 educational institution in this union including 01 High School, 08 Government Primary School, 03 Non-Government Primary School and 02 Madrashas. There are four Small and big hat and bazaars in this union.

From the above review, it can be said that the socio-economic and environmental condition of Shariatpur District is as usual compared to other Districts of Bangladesh. It has also been observed that the people of this area are religiously pious, industrious, hardworking and simple in manner compared to other areas of Bangladesh. [1]

[1] **Sources & References:** Office of the Deputy Commissioner of Shariatpur, Official website of Shariatpur District**,** Bangladesh Population Census 2001*,* Bangladesh Bureau of Statistics; Field survey of Shariatpur District 2011; Field survey of Upazila of Shariatpur District 2011. http://www.shariatpur.gov.bd/, http://en.wikipedia. org/ wiki/Shariatpur_District, and http://www.banglapedia.org/HT/S_0361.htm Accessed on 16.4.14

3.3 Intensity of River Bank Erosion of Shariatpur District with Special Reference to the Study Area

Shariatpur is one of the most vulnerable districts in the country from the point of view of river erosion as this district is rounded by three big rivers of the country named Padma, Meghna and Arialkhan. An online newspaper highlights the devastating damage of erosion of this district during the last forty years.

Table 3.4 Damage by erosion during the last forty years

Sl	***Particulars***	***Figure***
1.	Village (of 25 unions)	80
2.	Land (Acres)	70000
3.	Educational Institution	100
4.	Village Market	08

(Source: http://www.al-ihsan.net/FullText.aspx?subid=2&textid=1761Accessed on 18.4.14)

As per the report of the Executive Engineer, Water Development Board of Shariatpur, near about ten kilometers high way, 14 kilometers local road, Sixe bridges, eight culverts, about one thousand and nine hundred houses, four educational institutions and about two hundred acres of land have totally been destroyed during the last five years. At a glance report of damages are given bellow.

Table 3.5 Damage by erosion at Naria Upazila during the last 5 years

Particulars	***Unit***	***Totally Damaged***	***Partially Damaged***	***At Stake***
Highways	Kilometer	03	.80	06
Road	Kilometer	05	02	01
Bridge	Number	04	02	05
Culvert	Number	01	01	02
House	Number	1200	100	2200
Institution	Number	04	02	05
Land	Acre	1200	00	500
Embankment	Kilometer	2.5	04	05

Source: Office of the Executive Engineer, WDB, Shariatpur

3.4 Consequences and Challenges Faced by the Study Population.

3.4.1 *Frequency of displacement*

The people of the study area are living within a continuous struggle and are facing many challenges. When they try to overcome their miseries with hardest efforts; devastation comes making them into deep shook. Table 3.5 represents the intensity of erosion experienced by the respondents' families.

Table 3.6 Frequency of displacement by the river erosion

Frequency	*Number*	*Percentage*
1—2 times	10	10%
3—4 times	39	39%
5—6 times	11	11%
7—8 times	17	17%
9 – 10 times	10	10%
11 – above	13	13%
Total	100	100%

Highest 39 percent of the responders have lost their homestead and forced to shift their house three to four times followed by 17 percent seven to eight times, 13 percent eleven times and above, 11 percent five to six times, 10 percent nine to ten times and 10 percent one to two times. Besides, they have to face various economic, social and mental problems. Lack of safe drinking water, lack of safe sanitation facilities and discontinuation of the education of their children were the burning issues of the displaced families. Moreover, physical and mental hazards and unhygienic environment become the cause of various diseases. Depending on the field visit, observation, and interview with victims, social leaders, public representatives, NGO

workers and government officials the following problems and challenges are being faced by the victims.

3.4.2 *Problems Faced by the displaced families;*

01. ***Housing Problem***: The first challenge faced by the displaced people was shelter. Those who had ability to survive only 16% of them shifted to their own land in the same or nearby villages. Rest 84% families had to take shelter in government or others' land like Khash land (38%), land of relatives or neighbors (32%) and Slope of the high ways (14%).

02. ***Rural-Urban Migration***: A large number of people lost their capability to reconstruct home had to migrate to unknown destination. Most of the slum duelers of the Dhaka and other big cities of the country are the worst victims of river erosion.

03. ***Lack of Medical service:*** Many of the displaced families have been deprived of minimum health care facilities.

04. ***Unhygienic Environment:*** Most of the displaced families are living in a concentrated area without having sanitation facilities.

05. ***Lack of Safe Drinking Water:*** A large number of families are depended on pond or river water to drink.

06. ***Dropout from School:*** A large number of students' dropped out every year by being displaced by the river erosion.

3.5 Reflection of River Bank Erosion in Mass Media Communication

Rivers in Bangladesh are morphologically highly dynamic. A study concluded in 1991 reported that out of the 462 administrative units in the country, 100 were subjected to riverbank erosion, of which 35 were serious. Around 10,000 hectares of land are eroded by river per year in Bangladesh (NWMP, 2001). A recent study shows that bank erosion along Padma River during 1973 – 2004 was 29,390 hectares and along Jamuna River during 1973 – 2004, it was 87,790 hectares. (CEGIS 2005)

River erosion is one of the nationwide concerns in the country. Different mass media ventilated the issue to draw the attention of the concerned authority and people.

Photo 3.1: Poor villager who lost everything

“Erosion by Padma turns grim in Shariatpur, 20 houses go into the river gorge in a week”

The News Today Dhaka; July 13, 2013

Erosion by the river Padma has taken a disastrous form in Shariatpur in recent times, reports UNB. Twenty dwelling houses have entered the gorge of the gluttonous river in two villages at Naria upazila within seven days. The mighty Padma has engulfed 20 houses at Sureshwar village under Gharishar union and Saheb Char village under Kedarpur union of the upazila. Besides, existence of Sureshwar Government Primary School, Sureshwar High School and Sureshwar College is under threat of the river erosion. Hasanuzzaman Khokon, a teacher of Sureshwar High School, said the school building stands 200 metre away from the river. The school has already become victim of the river erosion three times. About 300 families were rendered homeless by the eroding Padma in the upazila last year, said Abdur Rab Hawladar, Chairman of Ghrishar Union.

More than 500 houses of Naria upazila are under water due to the cruel erosion of mighty river Padma

Daily Naya Diganta, August 8, 2011

More than 500 household, 300 acres of land with corps, school, and mosque have gone under water during the last 15 days due to the cruel erosion of mighty river Padma. Besides, thousands acres of land, corps, numbers of educational institutions and government and non-government structure are in danger.

About nine hundred families of Shariatpur have become homeless during the last four days

Daily Amardesh, September 26, 2011

Photo 3.2. Erosion at Shariatpur

In Shariatpur: due to the continuous erosion of river Padma near about nine hundred families of twenty three villages of Shariatpur district have become homeless during the last four days. Hat, bazaar, Educational Institutions, road, bridge and other structure have gone under water. Displaced people of river bank erosion are trying to take shelter at the slope of high ways. Most affected areas are Nawdoba, palerchar of Zanjira upazila, Kedarpur, Sahaberchar, Wapda, Charatra and Nawpara of Naria upazila, Tarabunia and Kachikata unions of Bhedarganj upazila and 11 villages of Goshairhat upazila

Erosion of the river Padma and Meghna is continued at Shariatpur

Daily Prothom Alo, October 01, 2011

More than 20 meters road of Dhaka –Shariatpur highway and 50 meters of herringbone road destroyed during the last Wednesday and Thursday. Near about 200

families lost their houses and shelters. Mr. Nazrul Islam, Assistant Engineer, Water Development Board, Shariatpur, reported that there is no budget allocation for protecting river erosion and rehabilitating the victims.

Erosion of River Padma at Shariatpur: Wapda and Chondipur Bazar of Naria Upazila are at stake

Daily Naya Diganta, July 7, 2010

Due to the nonstop rising of water level of the river Padma, Wapda and Chondipur launce station, Chandipur Bazar, eight villages and a large area of land of Naria Up-zila are at stake. Partial area of Wapda, Chondipur, Saheberchar, Charjujira,Pachgaon bridge, already have gone into river. Near about three kilometers of Shureshor-Chondipur road has been destroyed

Human chain at Naria upazila of Shariatpur demanding construction of protection Dam

The Daily Ittefaq Friday, July12, 2013

"Massive erosion of the river Padma has occurred at Gharisar and kedarapur union of **Naria** upazila of Shariatpur district. Twenty homesteads have been destroyed during the last seven days. Existence of two schools and a college is about to disappear. People of Sureshar organized a human chain on Thursday to demand the construction of permanent protection dam. Students of different colleges, schools, market traders and villagers participated in the human chain."

Photo 3.3 Human chain at Naria upazila of Shariatpur

The above headlines of National Dailies indicate how many people of this district had lost their home and shelter and became environmental refugees due to the river bank erosion.

3.6 Characteristics of the study area and study population

3.6.1 *Demographic Information*

Population size of Shariatpur is 1082300; Male 543838 and Female 538462. Males constitute 49.58%, of the population and females 50.42%. Majority of the people is Muslim (95.54%), Hindu (4.30%) and others (0.16%). Density of population is 940 per/sq.km. Gender Ratio is 100:97. 98% families are headed by male and rest 2% families are headed by female. Out of 1082300 populations 668072 are of below eighteen year old.

(Source: Official website of Shariatpur District)

3.6.2 *Education*

Education is an important parameter to understand the socio-economic condition of any area. There are 17 colleges in this district including three (3) Government College, 01 polytechnic college and one 01 vocational college. High School 110, Junior high school 15, primary school is 631 and Madrasha 106. Enrolment at primary school is almost 95%. Average literacy rate is 38.95%; (male 42.17%, female 35.77%).

(Source: Official website of Shariatpur District)

3.6.3 *Occupational Status*

Occupation is also another parameter of socio-economic condition. It was found that maximum people of Shariatpur district is involved in agriculture. The distributions of occupational status are as follows; Agriculture 61.66%, non-agricultural laborer 2.64%, industrial worker 0.91%, commerce 14.34%, transport and communication 2.41%, service 6.41%, construction worker 1.13%, religious service 0.28%, Double crop land 50.12% and triple crop land 27.64%. 22% people are landless, 29% marginal, 28% small, 17% intermediary, 4% rich. Main crops are Paddy, jute, wheat, sweet potato, onion, garlic, and tomato.

(Source: Official website of Shariatpur District)

3.6.4 *Transportation and Communication*

The socio-economic condition of this district is not so developed. Shariatpur is situated at about 81 kilometres away from the capital city. There are two types of

communication network from Dhaka to Shariatpur. One is water transport and another is road transport. In the district there are 2092.12 kilometres road including 639.71 kilometres pucca and 1452.41 kilometres mud road and waterways is 49 nautical miles. Traditional transport: Palanquin (now almost extinct), Horse Carriage (near to extinct), Boat. Bus, Tempoo, Easy Bike, Motor Van (locally known as Nosimon) are used to go from one place to another. Launch, Motor boat (locally known as Troller) are used to carry people through the water ways. Ferry and speed boat are also used for crossing Padma River on the way to Dhaka.

(Source: Official website of Shariatpur District)

3.6.5 *Health Facilities*

Health is the basic need of every human being. It is also a constitutional right of every citizen. There is a Modern District Hospital at the District like other districts. There are 5 Upazila Health Complexes, 18 Sub-Health Centres, 02 Mother & Child Care Centres, 33 Family Welfare Centres and 80 Community Clinics in the district. There are some private clinics in different places of the district and they are providing health services to the people.

(Source: Official website of Shariatpur District)

3.6.6 *Industry*

There is no big industry in the district. There are 405 small industries and 3118 cottage industries in Shariatpur. Once upon a time Shariatpur was famous for Brass industry and Mud industry. Notable Manufacturing are: Ice factory 13, saw mill 144, shoe factory 4, oil mill 6, rice mill1 64, bidi factory 9 and Cottage industries

(Weaving) 88, goldsmith 341, blacksmith 324, potteries 90, tailoring 425, welding 47. (Source: Official website of Shariatpur District)

3.6.7 *Land Use and Main Crops*

Economy of Shariatpur district is mainly agriculture. Total cultivable land is 97416 hectares; fallow land is 8346 hectares, single crop 24859 hectares, double crop 48638 hectares and triple crop 10094 hectares. Agricultural khas land 22334.91 hectares, Non-agricultural khas land 8769. 95 hectares. Crop intensity 178.02%. 20% cultivable land came under irrigation (30778 hectares).

- **Land holding**: Among the peasants, 22% are landless, 29% marginal, 28% small, 13% intermediary, 8% rich. (Above 15 acres)
- **Value of land**: The market value of first grade agricultural land is Tk 7000 per 0.01 hectare. (Current price)
- **Main crops** : Paddy, jute, wheat, sweet potato, onion, garlic, tomato.
- **Extinct and nearly extinct crops**: Sesame, kaun, arahar and sanpat.
- **Main fruits**: Blackberry, mango, banana and wood apple.
- **Main exports**: Jute, onion, garlic, tomato.
- **Fisheries, dairies and poultry farms:** Fishery 32, poultry 1453, dairy 56.

In the past Shariatpur was famous for producing plenty of jute. At present Shariatpur is famous for producing vegetables especially for tomatoes. Vegetables of Shariatpur have special popularity for their test, colour and freshness.

(Source: Official website of Shariatpur District)

3.6.8 *Hat, Bazaar and Marketplace:*

Agriculture based economy is operated by local Hat/ bazar. Out of total 88 hats-bazaars notables are Angaria bazar, Dasherjangal bazar, Burirhat Bazar, Kazir hat, Vojeshwar bazar, Naria bazar, Haturia hat, Nagerpara bazar, Sakhipur hat, Palong hat, Kanaipur, Piaskhaki, Kanarkhali, Haziganj Bazar, Gongaproshad Bazar.

3.6.9 *NGOs in Shariatpur District*

Many NGOs are working in Shariatpur as development partner side by side with the government organizations. They are working in the field of education, health, sanitation, women empowerment etc for the socio-economic development of the vulnerable and marginal people of this area. Besides National local NGOs like BRAC, ASA, GUP, Grameen Bank, Proshika,, CARE, CARITAS, Grameen Unnayan Sangstha, SDS (Shariatpur Development Society), SDO (Society for Environment & Development Observer) Madaripur Lagal Aid Association, NUSA (Naria Unnyan Somity) ,CDS (Charvaga Development Society) are working for the socio-economic development of the district. Among all other activities mainly they deal with income generating activities by giving small/micro credit. Some socio cultural programmes like none-formal primary school, sanitation programmes, community forestry and such other programmes are being arranged and run by the different NGOs in the District of Shariatpur including the study area.

CHAPTER FOUR : DEMOGRAPHIC CHARACTERISTICS OF STUDY POPULATION

4.1 Family Structure and the Size of the Family:

Family size and family structure of the study population help to understand the socio-economic characteristics of the people of the study area. Following table presents the family structure of the respondents.

Table 4.1 Family Structure of the respondents

Family Structure	*Number*	*Percentage*	*Average family Size*
Single	78	78%	4.64 persons
Joint	22	22%	7.81 persons
Total	100	100%	5.33 persons

It is evident that 78% of the respondent families are single and rest 22 % families are of joint in nature. Average family size of the single family is 4.6 persons where joint family size is 7.81 persons.

Pie Chart 4.1 Family Structure of the respondents

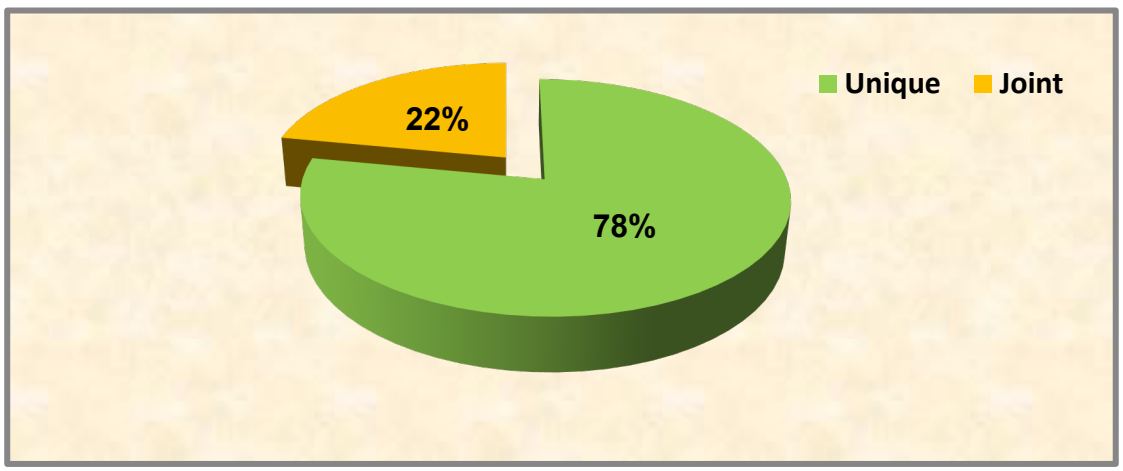


Table 4.2 Family Size of the respondent's family

Family Structure	*Number*	*Percentage*
2—3 members	11	11%
4—5 members	54	54%
6 and above	35	35%
	100	100%

4.2 Age structure of the Respondent

4.2.1 *Age Level of the Respondent (Family Head)*

Age level of the family head of the study population is as given below (Table 4.3).

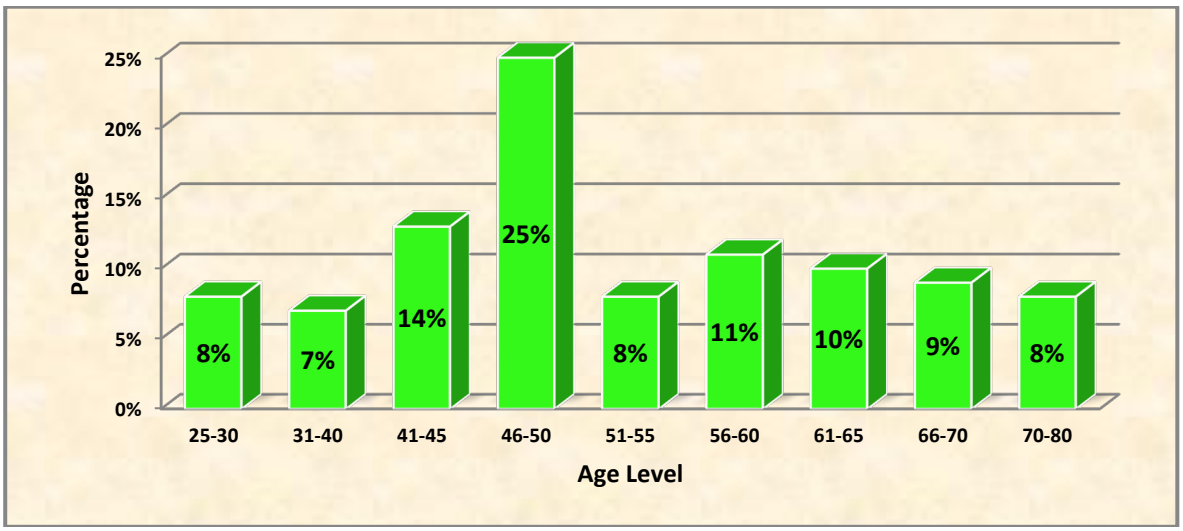
Table 4.3 Age Level of the Respondents

Age Limit	*Number*	*Percentage*	*Cumulative*
25-30 Years	08	8%	08
31-40 Years	07	7%	15
41-45 Years	14	14%	29
46-50 Years	25	25%	54
51-55 Years	08	8%	62
56-60 Years	11	11%	73
61-65 Years	10	10%	83
66-70 Years	09	9%	92
70-80 Years	08	8%	100
Total	**100**	**100%**	

It is evident that the age limit of the highest proportion (25 percent) of the respondents remains between the age group of 45 to 50, followed by the age group of 25 to 30 (8 percent), 31 to 40 (7 percent), 41 to 45 (14 percent), 51 to 55 (8 percent), 56 to 60 (11 percent) 61 to 65 (10 percent), 66 to 70 (9 percent) and 70 to 80 are 9 percent. The

average age of the total respondents was 51 years. It indicates that most of the respondents are mid aged.

Diagram 4.1 Age level of the respondents



4.2.2 *Gender Status of the Respondents*

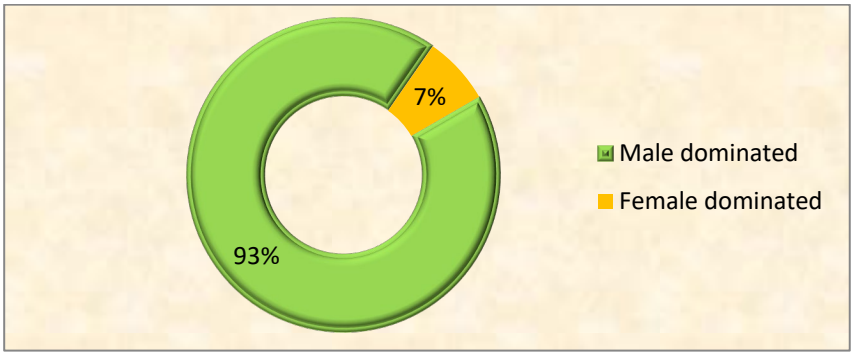
Gender status of the respondents family shows the spread of domination in the society and as well as in the family.

Table 4.4 Gender status of the respondent's family

Sex	***Number of family***	***Percentage***
Male dominated	93 family	93%
Female dominated	7 family	7 %
Total	100 family	100%

The table shows that most of the families of the study area are headed by male (93 percent) and only a few number of families (7 percent) headed by female which is the common characteristics of rural Bangladesh. Most of the females who are the head of the families are either widow or divorcees.

Pie Chart 4.1 Gender Status of the Respondents



4.2.3 *Marital Status of the Respondents*

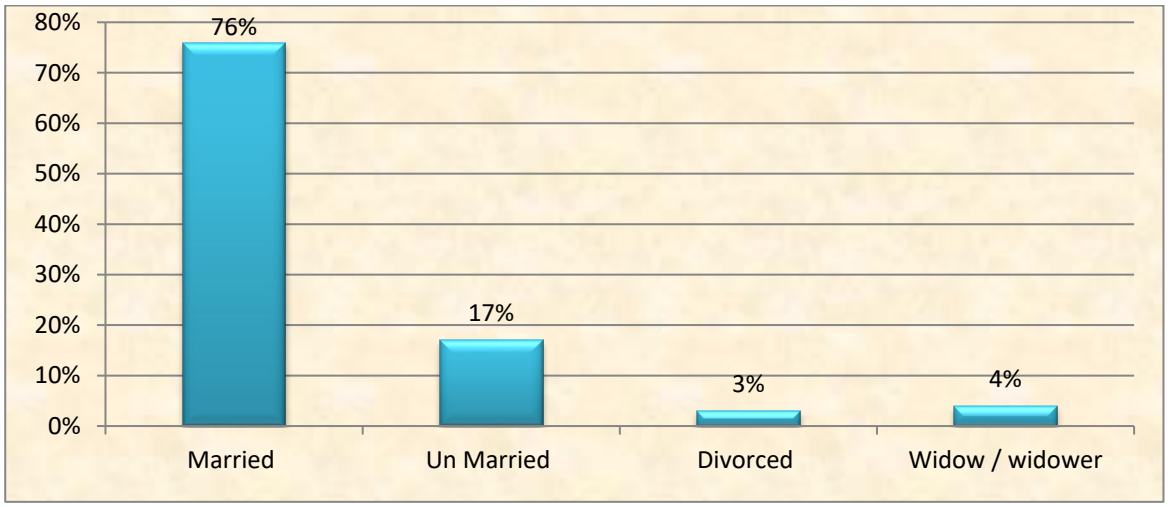
Marriage is an important part for human life. It is a cultural phenomenon and social sanctions. It is more or less permanent union between partners, conferring legitimacy on their offspring. The marital status of the respondents is shown in the Table 4.5 and Diagram 4.**2.**

Table 4.5 Marital Statuses of Respondents (Family Head)

Status	**Number**	**Percentage**
Married	76	76%
Un Married	17	17%
Divorced	3	3%
Widow / widower	4	4%
Total	100	100%

Maximum respondents (76%percent) are married. Rest of the respondents 17% percent is unmarried, 3 percent divorced and 4 percent is widower/widow.

Diagram 4.2 Marital Status of Respondents (Family Head)



4.3 Educational Background of the Respondents:

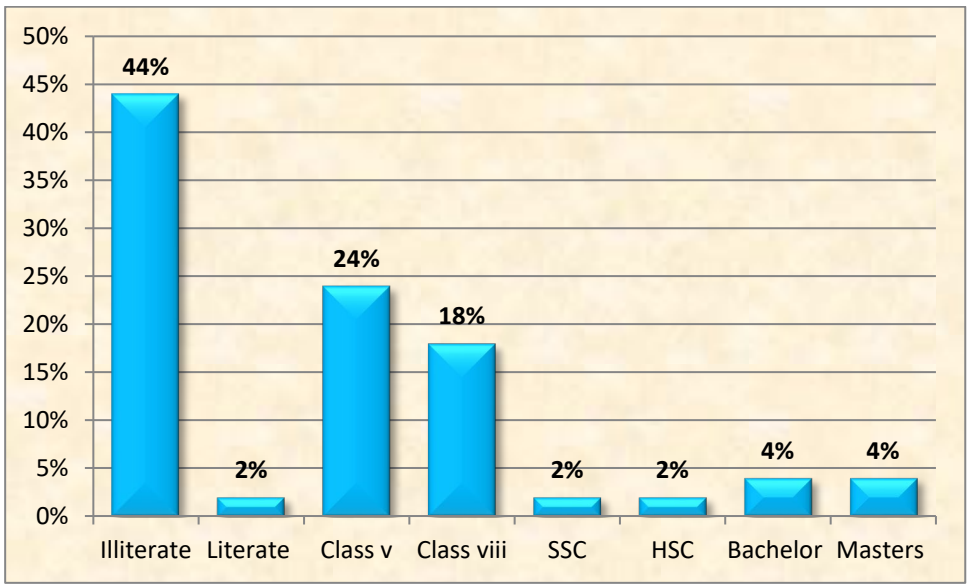
Education is the basic component of the human resource development. Education plays an important role to develop a nation. It is one of the indicators of social development. A vast number of respondents of the study were found illiterate. It was 44 percent (Table 4.6).

Table 4.6 Educational Background of the Respondents

Level of Education	**Number**	**Percentage**
Illiterate	44	44%
Literate (only can sign)	2	2%
Class v	24	24%
Class viii	18	18%
SSC	2	2%
HSC	2	2%
Bachelor	4	4%
Masters	4	4%
Total	100	100%

It is evident that most of the respondents (44%) are illiterate. Rest 2% of them only can read and write their name. 24% has completed primary education and 18% has completed their junior school education. Only 2% has completed SSC and 2% has completed higher secondary level. 8% has completed higher education out of which 4% graduate and 4% Masters.

Diagram 4.3 Educational Background of the Respondents



4.4 Occupational Status of the Respondents:

Occupation is one of the important indicators to know the economic condition of a person. Especially, occupation or employment of the people is one of the most powerful indicators to know the socio-economic condition of their families. In this study the table 4.7 shows the occupational status of the respondents. It was found that the displacees are engaged in different types of occupation.

Table 4.7 Occupational Status of the Respondents

Occupation	Number	Percentage
Small Business *[2]	23	23%
Day labor	16	16%
Farmer	14	14%
Rickshaw P	11	11%
Carpenter	5	5%
Masson	4	4%
Motor boat Dr	4	4%
Non Govt. Job	4	4%
Tailor	3	3%
Fisherman	2	2%
Stock Business	2	2%
Teacher	2	2%
Butcher	1	1%
Govt. Employee	1	1%
Work in Abroad	1	1%
Unemployed	7	7%
Total	100	100%

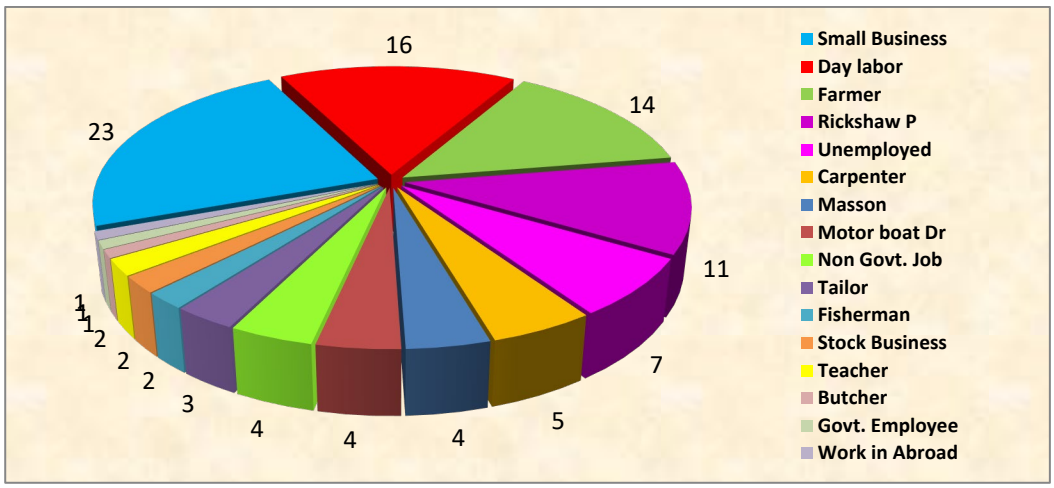
Source: Field data:

Data shows that out of the total respondents highest 23% adopted small business as their profession like shop keeper, seasonal seller of vegetables, fruits, sugarcane, green coconut hawkers etc. followed by day labor 16%, farmer 14%, Rickshaw pooler 11%, carpenter 5% Masson 4%, motor boat driver 4%, non Govt. job 4%, tailor3%,

[2] * Small business includes hawkers, shopkeepers, fruits, vegetables, fish etc seller and temporary goods seller in the village hat, tea stall etc

fisherman 2%, stock business 2%, teacher 2%, butcher 1%, Govt. employee 1% and work in abroad 1% and 7% remaining unemployed.

Pie Chart 4.2 Occupational Status of the Displaced People



4.5 Income level of the respondents

4.5.1 *Income Level of the Respondents by Category*

Income is an important indicator to identify the socio-economic status of a person. But it is difficult to know the actual amount of income. People are generally afraid of giving exact figure. However, by manipulation we could collect figure in some way which is shown in the table no 4.8 and Diagram 4.4.

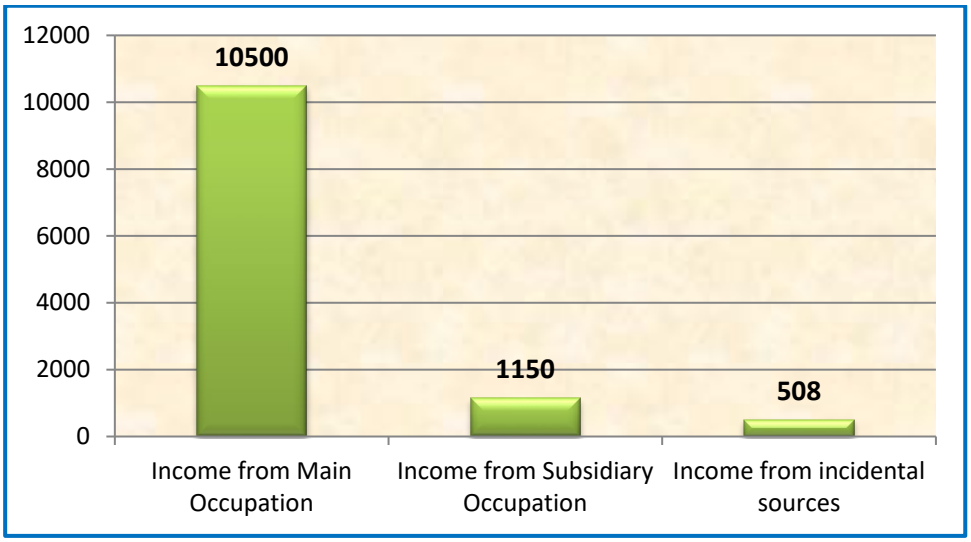
Table 4.8 Monthly Average Income by Category

Sl	***Income Source***	***Amount***
1.	Income from Main Occupation	10500.00
2.	Income from Subsidiary Occupation	1150.00
3.	Income from incidental sources	508.00
4.	Monthly Average Income	12158.00

It is evident that monthly average Income of the respondent BDT 12158 of which BDT 10500 from principal occupation BDT 1150 from subsidiary occupation and BDT: 508 from incidental sources.

Principal occupation is the only source of income of most of the people of the study area. However, some people have scope to earn from other sources like seasonal business, private tuition, auto driving, fishing, brokering etc. Only a few numbers of people have some regular resources such as land, auto rickshaw, trollar, fishing boat etc.

Diagram 4.4 Monthly Average Income by Category



4.6 Income Range of the Respondents by Percentage

Iincome range of the respondent is shown in the following table (Table 4.9) and diagram (Diagram 4.5)

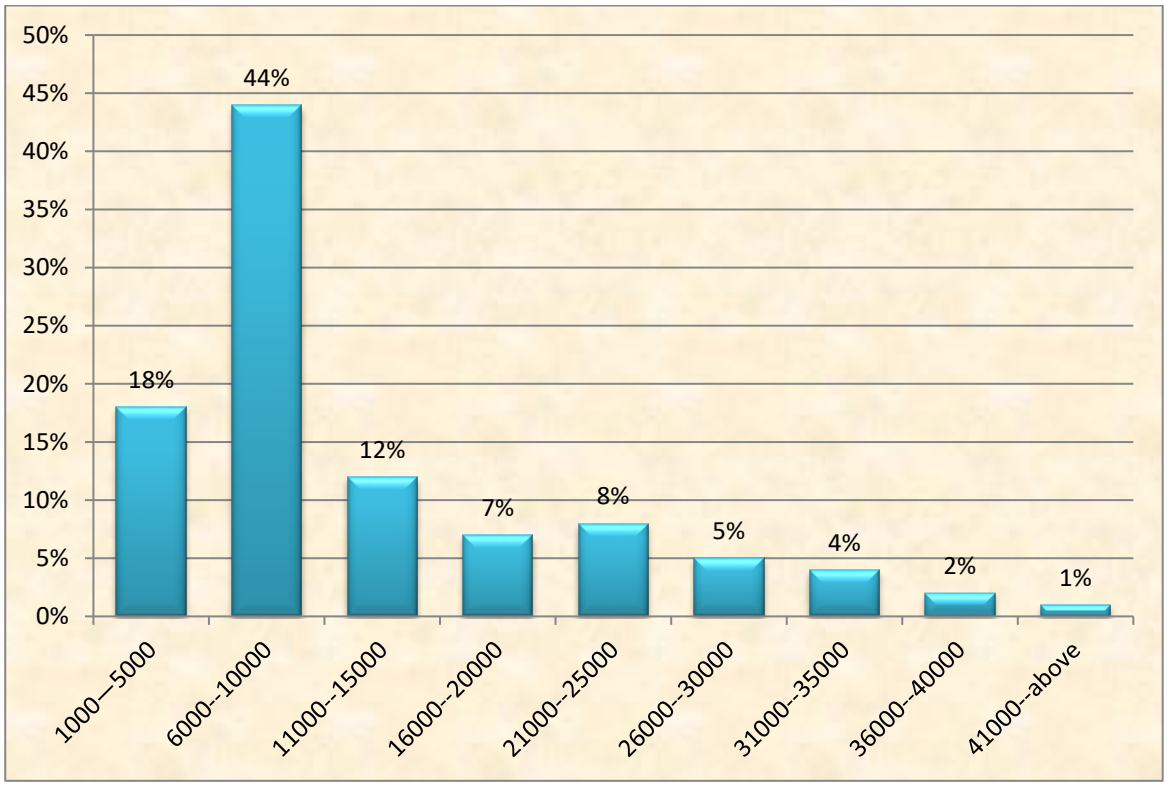
Table 4.9 Income Level of the Respondent Household (monthly)

Income slab	*Number*	*Percentage*	*Total*	*Average*
1000—5000	18	18%	64800	3600
6000--10000	44	44%	343200	7800
11000--15000	12	12%	146400	12200
16000--20000	7	7%	120400	17200
21000--25000	8	8%	184000	23000
26000--30000	5	5%	136000	27200
31000--35000	3	4%	100800	33600
36000--40000	2	2%	76400	38200
41000--above	1	1%	43800	43800
Total	100	100%	1215800	12158

Source : Field Data

It is evident that, 18% of the total respondents' income is between BDT 1000 to 5000. 44 % of the respondents earn between BDT. 6000 to 10000, 12 % of the respondents earn between BDT. 11000 to 15000, 7 % of the respondents earn between BDT. 16000 to 20000, 8 % of the respondents earn between BDT. 21000 to 25000 5 % of the respondents earn between BDT. 26000 to 30000, 3 % of the respondents earn between BDT. 31000 to 35000 2 % of the respondents earn between BDT. 36000 to 40000, 1 % of the respondent earn between BDT 41000 and above. Average monthly income of the respondent household is Tk.12158 only.

Diagram 4.5 Income Level of the Respondent



4.7 Expenditure Level of the Respondent Families

Monthly expenditure of the respondent is another important indicator to understand the living standard of the people. The following table (Table 4.10) shows the monthly expenditure of the household for the purpose of food, clothing, education, treatment and miscellaneous.

Table 4.10 Monthly expenditure of the respondent household

Head of Expenditure	Range of spending	Number of respondent	Percentage
Food (Monthly)	1000—3000	8	8%
	3001—5000	14	14%
	5001—7000	18	18%
	7001--above	60	60%
	Total	100	100%
Clothing (Yearly)	1000—3000	4	4%
	3001—5000	12	12%
	5001—7000	38	38%
	7001--above	46	46%
	Total	100	100%
Health (yearly)	1000—3000	5	5%
	3001—5000	11	11%
	5001—7000	41	41%
	7001--above	43	43%
	Total	100	100%
Shelter (Yearly)	1000—3000	3	3%
	3001—5000	17	17%
	5001—7000	33	33%
	7001--above	47	47%
	Total	100	100%
Education (Monthly)	< 1000	12	12%
	1001—2000	26	26%
	2001—3000	38	38%
	3001--above	24	24%
	Total	100	100%
Miscellaneous (Yearly)	1000—3000	7	7%
	3001—5000	10	10%
	5001—7000	18	18%
	7001--above	65	65%
	Total	100	100%

Source: field data

It is found that monthly expenditure limit between 1000-3000 for food 8% families, between 3001-5000 14%, between 5001—7000 18% and 7001 ad above 60% families.

Yearly expenditure limit between 1000—3000 for clothing 4% families, between 3001—5000 12%, between 5001—7000 38% and 7001 ad above 46% families. Yearly expenditure limit between 1000—3000 for Health 5% families, between 3001—5000 11%, between 5001—7000 41% and 7001 ad above 43% families. Yearly expenditure limit between 1000—3000 for shelter 3% families, between 3001—5000 17%, between 5001—7000 33% and 7001 ad above 47% families. Mothly expenditure limit between 1000—3000 for education 12% families, between 3001—5000 26%, between 5001—7000 38% and 7001 ad above 24% families.

Yearly expenditure limit between 1000—3000 for miscellaneous 7% families, between 3001—5000 10%, between 5001—7000 18% and 7001 ad above 65% families.

4.8 Deficits and surplus level of income of the respondent families

Deficit and surplus position of the respondent is another indicator which states the economic condition of the respondent families. Table 4.11 presents the deficit and surplus position of the study population

Table 4.11: Deficit position of income of the respondents

Deficit position	***Number of respondents***	***Percentage***
Have Deficit	64	64%
Do not have deficit	36	36%
Total	100	100%

Source: field data

It is evident that 64% of the respondent household could not maintain their livelihood with their income. Amount of the monthly deficit of those households are given in the table 4.12. Rest 36% has no deficit. Their income is sufficient for meeting their expense.

Pie Chart 4.3 Deficit position of income of the respondents

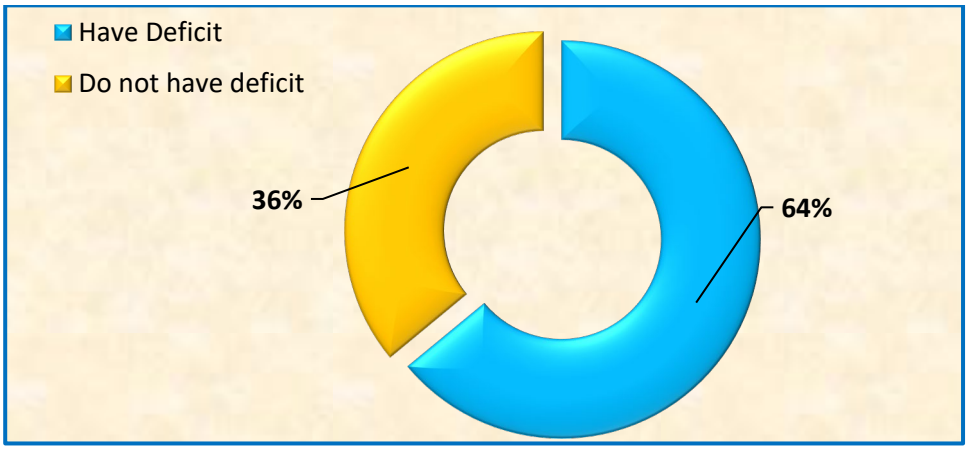


Table 4.12: Amount of monthly deficit

Range	*Number of respondents*	*Percentage*
100 — 500	20	20%
501— 1000	06	06%
1001— 1500	26	26%
1501— above	12	12%
Total	64	64%

Monthly deficit amount of the 20% respondents families is between 100—500, deficit of 06% respondents families is between 501—1000, deficit of 26% respondents families is between 1001—1500, deficit of 12% respondents families is 1501 and above.

4.9 Deficit mitigation strategies adopted by respondents

Respondent families have taken different strategies for mitigating their deficit amount. In some cases it was found that the respondents have taken two or more strategies for overcoming their deficit. The following table is showing the strategies taken by the respondents.

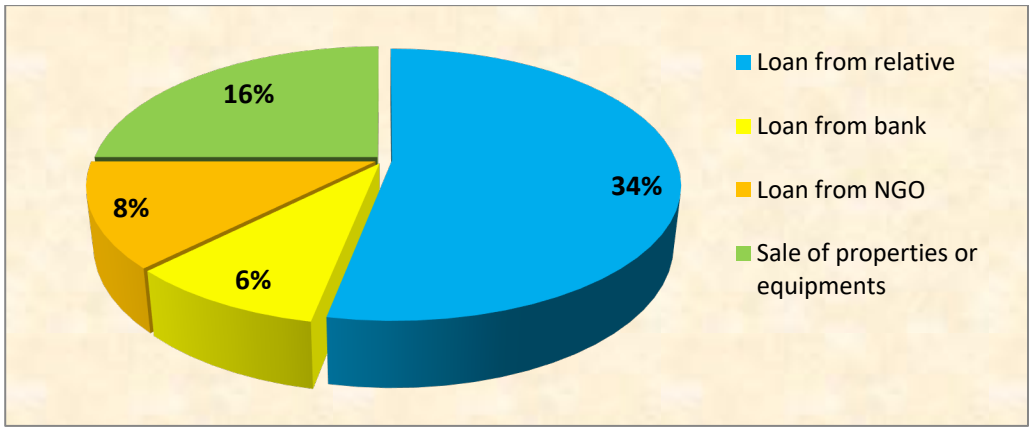
Table 4.13: Deficit mitigation strategies adopted by respondents

Strategy	Number of respondents	Percentage
Loan from relative	34	34%
Loan from bank	06	06%
Loan from NGO	08	08%
Sale of properties or equipments	16	16%
Total	64	64%

Source: field data

It is evident that 34% of the respondents have taken loan from relatives, 06% have taken loan from Bank, 08% have taken loan from NGOs and rest 16% of the respondent were forced to sale their properties and equipments due to their insufficient income.

Pie Chart 4.4 Deficit mitigation strategies adopted by respondents



4.10 Surplus level of income of the respondent families

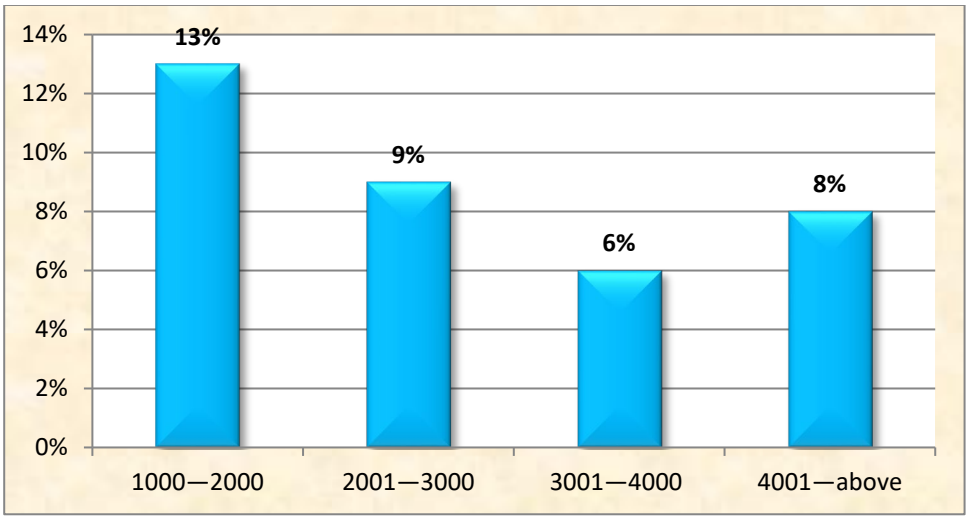
Out of 100 respondent families 36% of the respondent has surplus in their income. Annual surplus position of the families is given in the following table.

Table 4.14 : Surplus position of income of the respondents (Annually)

Range	*Number of respondents*	*Percentage*
1000—2000	13	13%
2001—3000	09	09%
3001—4000	06	06%
4001—above	08	08%
Total	36	36%

It is evident that 36 respondents families have annual surplus out of which 13 families have BDT 1000 —2000, annual surplus of 09 families is BDT 2001—3000, annual surplus of 06 families is BDT 3001—4000, annual surplus of rest 08 families is BDT 4001 and above

Diagram 4.6 Surplus position of income of the respondents (Annually)



4.11 Use of surplus amount

The respondent households use their surplus in different purpose. The following table is showing how they use their surplus amount.

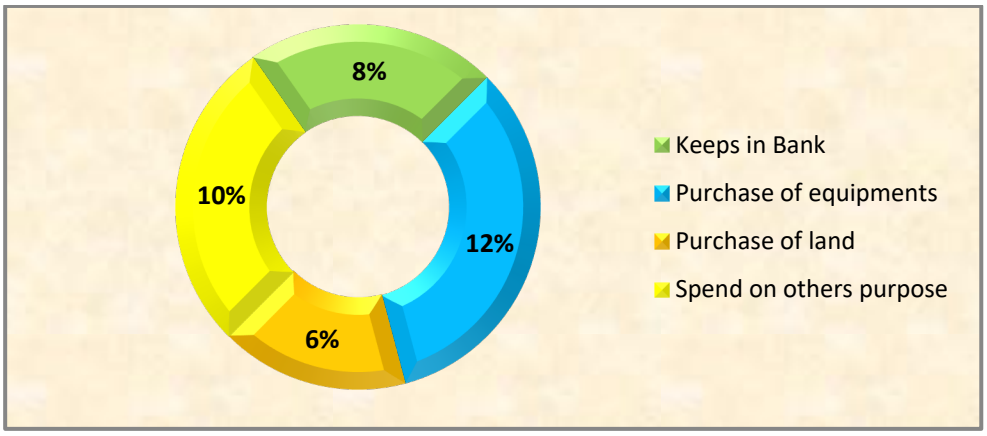
Table 4.15 Use of surplus amount by the respondents

Strategy	*Number of respondents*	*Percentage*
Keeps in Bank	8	8%
Purchase of equipments	12	12%
Purchase of land	6	6%
Spend on others purpose	10	10%
Total	36	36%

Source: Field data

It is found that 08 families out of 36 households having surplus keep their surplus amount in bank 12 households purchase equipments, 6 families purchase land and rest 10 families uses surplus in others purposes.

Pie Chart 4.5 Use of surplus amount by the respondents



CHAPTER FIVE : SOCIO- ECONOMIC CONDITION OF THE VICTIMS BEFORE AND AFTER RIVER EROSION

5.1 Economic condition of the study population before being displaced

5.1.1 *Monthly Income*

Income is the basic indicator to understand the economic condition of a people. Monthly average income of the respondent was BDT 16836 before being displaced by the river erosion out which Tk. 13500 from main occupation, Tk. 2000 from subsidiary occupation and Tk. 1336 from incidental sources.

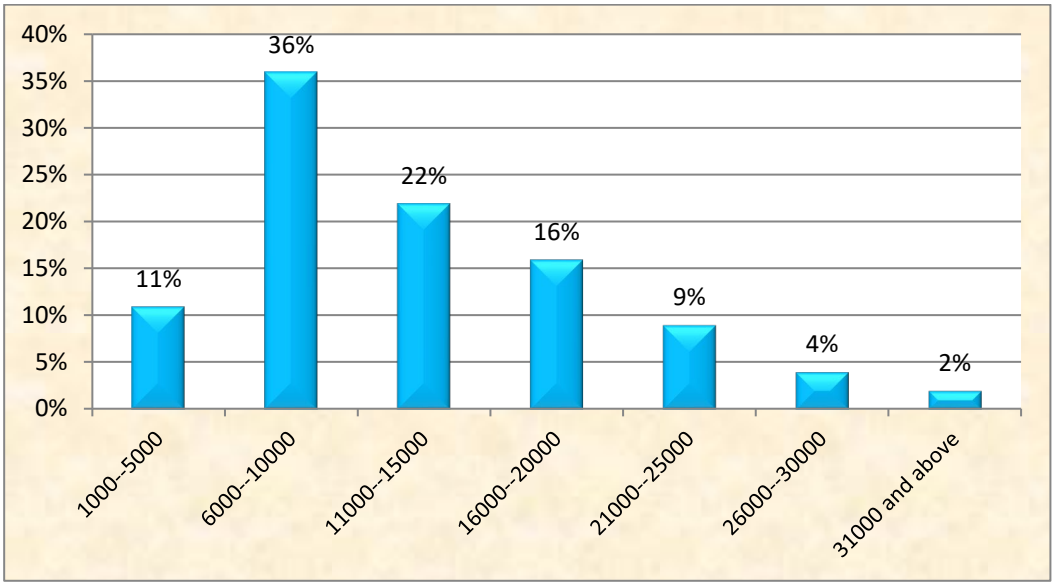
5.1.2 *Monthly Expenditure*

Expenditure is another indicator of understanding standard of living. Average monthly expenditure of the respondent was 12500.00 out of which 6500.00 for food and clothing, 1800.00 for education of their children, 950.00 for medicine and treatment and 3250.00 for miscellaneous purpose.

Table 5.1 Monthly expenditure before displacement

Expenditure	***Before Displacement***			
	Number	*Percentage*	*Total*	*Amount (Av)*
1000--5000	11	11%	52800	4800
6000--10000	46	36%	395600	8600
11000--15000	16	22%	214400	13400
16000--20000	13	16%	227500	17500
21000--25000	8	9%	182400	22800
26000--30000	4	4%	108000	27000
31000 and above	2	2%	69300	34650
Total	100	100	1250000	**12500**

Diagram 5.1 Monthly expenditure before displacement



5.1.3 *Land holding*

There was no landless household among the respondents before displacement. 80% of the respondents were holding one to five (1-5) acres of land. Rest 20% respondent families owned five and above acres of land. (Table 6.5)

5.1.4 *Economic solvency*

It is evident that 61% of the respondents was solvent before displacement, 35% of the respondents were insolvent and 4% of the respondents were under the poverty line. (Table 6.6)

5.1.5 *Housing condition*

It is found that 4% of the respondent lived in pucca house, 39% of the respondents were in semi pucca house and rest 67% of the respondents families lived in tin thatched house.

5.2 Income level of the respondents before and after displacement

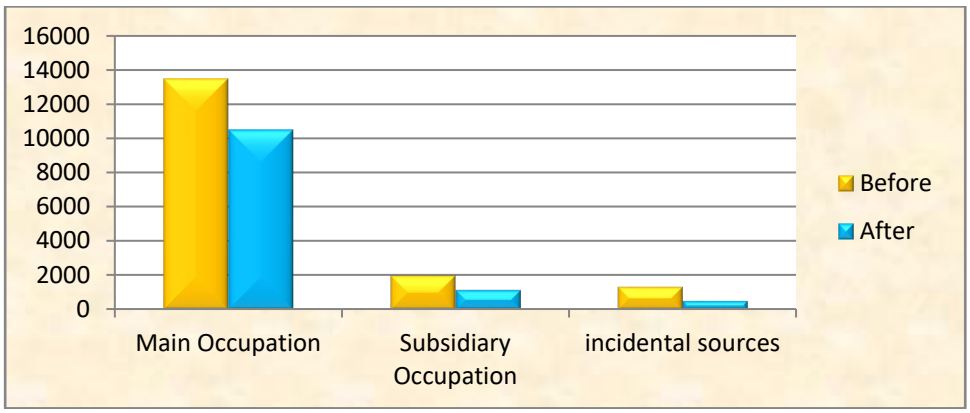
Income is an important indicator to identify the socio-economic status of a person. Variation of income of the respondents before and after displacement indicates the impact of the river erosion on their livelihood. Comparative statement of the average monthly income of respondents before and after displacement is given in the following table and diagram (Table 5.1 and)

Table 5.2 ***Source of income before and after displacement***

Sl	***Income Source***	*Average Monthly Income*	
		Before Displacement	*After Displacement*
1	Main Occupation	**13500**	**10500**
2	Subsidiary Occupation	**2000**	**1150**
3	incidental sources	**1336**	**508**
4	Total	**16836**	**12158**

It is evident that monthly income of the respondents decreased by BDT: 3000.00 from main occupation, BDT: 850.00 from subsidiary occupation and BDT: 828.00 form incidental resources after being displaced. Average monthly income of the displaced families decreased by BDT: 4678.00.

Diagram 5.2 Source of income before and after displacement

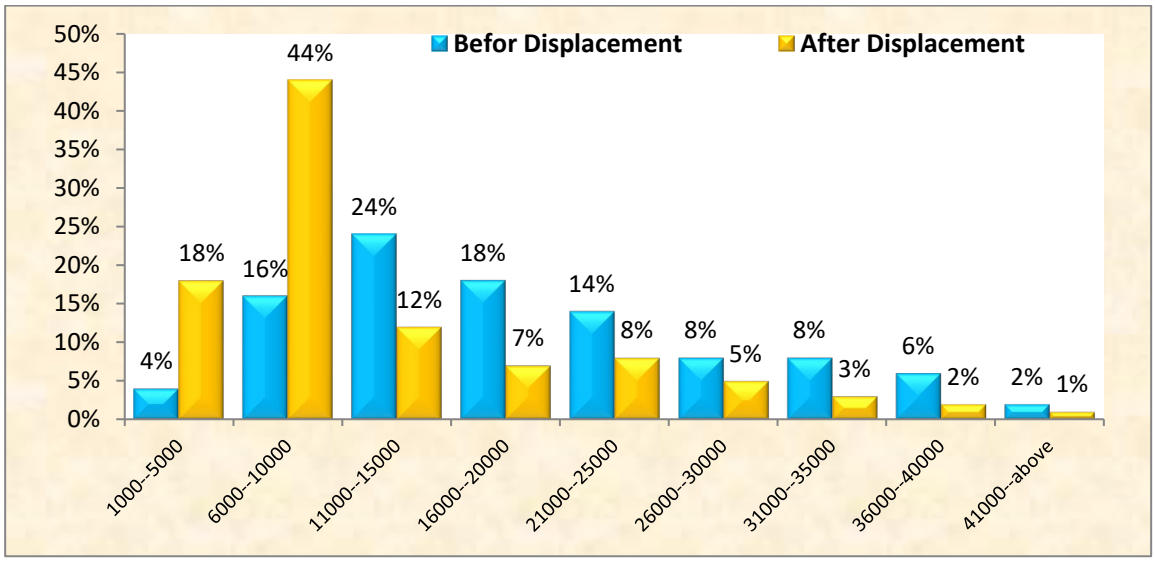


Monthly income range of the respondents before and after displacement is presented in the following table. (Table 5.2)

Table 5.3: Income range of the respondents before and after displacement

Incommode	*Income level Before displacement*			*Income level After displacement*		
	Number	Percentage	Amount (Av)	Number	Percentage	Amount (Av)
1000--5000	4	4%	4200	18	18%	3600
6000--10000	24	16%	7100	44	44%	7800
11000--15000	22	24%	12200	12	12%	12200
16000--20000	18	18%	17400	7	7%	17200
21000--25000	11	14%	21400	8	8%	23000
26000--30000	8	8%	27200	5	5%	27200
31000--35000	6	8%	31500	3	3%	33600
36000--40000	5	6%	37600	2	2%	38200
41000--above	2	2%	42400	1	1%	43800
Total	100	100%	16836	100	100%	12158

Diagram 5.3 Income range of the respondents before and after displacement



5.3 Expenditure level of the respondents before and after displacement

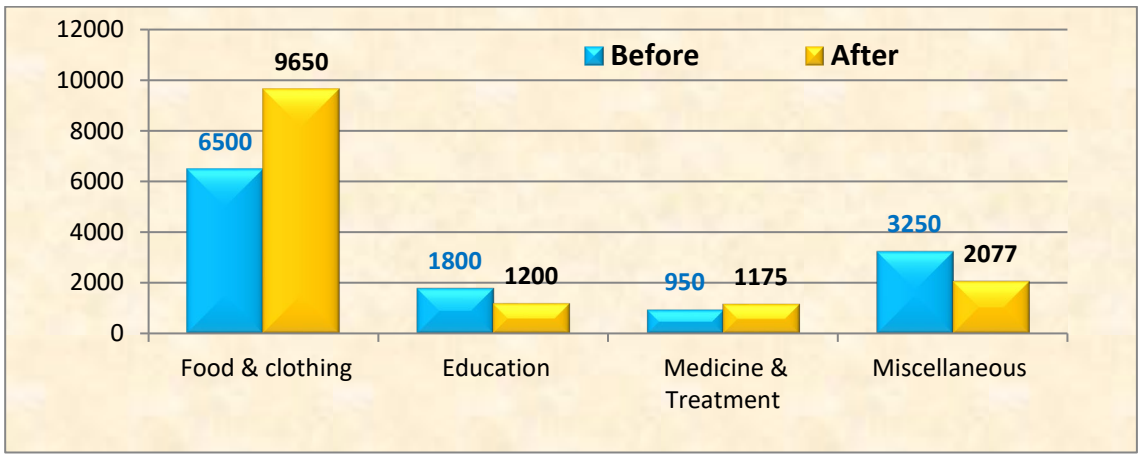
Monthly expenditure of the respondent indicates the consumption capacity of the people which can provide an important idea in understanding the living standard of the people. The following table (Table 5.3) and diagram (Diagram5.3) represents the present consumption level of the respondents in respect of food, clothing, education, treatment and miscellaneous purposes before and after being displaced.

Table 5.4 Monthly expenditure of the respondent before and after displacement

Sl	***Head of Expenditure***	***Before***	***After***
1	Food & clothing	6500	9650
2	Education	1800	1200
3	Treatment	950	1175
4	Miscellaneous	3250	2077
5	Total	**12500**	**14102**

It is evident that respondent families spend BDT 9650 for food and cloth, BDT 1200 for education of their words, 1175 for treatment and medicine and 2077 for other purposes. However, before displacement their expenditure for food & clothing and treatment was relatively low such as BDT 6500 and BDT 950. One the other hand expenditure for education, recreation and for other social involvement reduced significantly after being displaced.

Diagram 5.4 Monthly expenditure of the respondent before and after displacement



Following table is presenting the expenditure limit of the respondents before and after displacement.

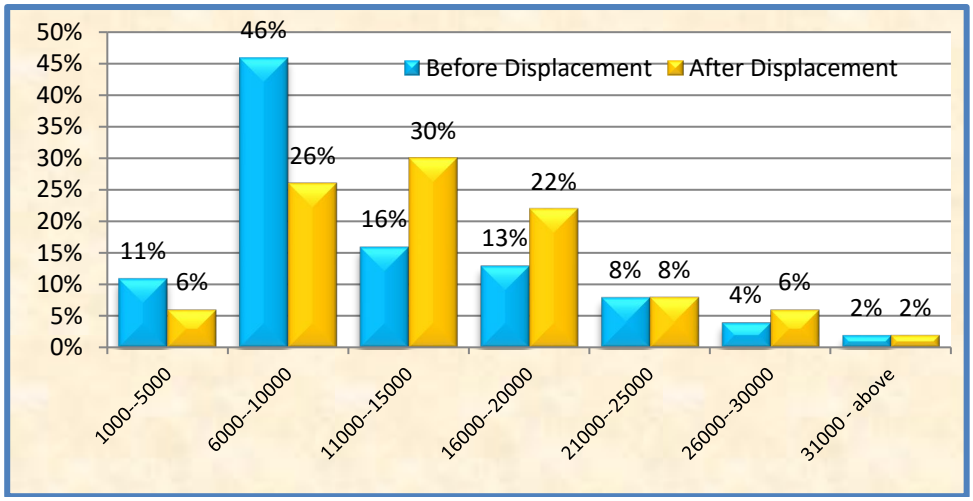
Table 5.5 Expenditure Limit of the respondent household before and after displacement

Expenditure	*Before Displacement*			*After Displacement*		
	Number	*Percentage*	*Amount (Av)*	*Number*	*Percentage*	*Amount (Av)*
1000--5000	11	11%	4800	6	6%	4600
6000--10000	46	46%	8600	26	26%	9300
11000--15000	16	16%	13400	30	30%	12700
16000--20000	13	13%	17500	22	22%	16500
21000--25000	8	8%	22800	8	8%	22100
26000--30000	4	4%	27000	6	6%	26000
31000 - above	2	2%	34650	2	2%	32000
Total	100	100%	**12500**	**100**	**100%**	**14102**

It is found that monthly expenditure capacity of 1000 to 5000 of the respondents household decreased by 5%, 6000 to 10000 decreased by 20% and 26000 to 30000 decreased by 2% . One the other hand monthly expenditure limit form 11000 to 15000 increased to 14%, 1600 to 20000 increased to 9% and 26000 to 30000 increased to

2%. Expenditure limit 21000 to 25000 and 31000and above remain unchanged. Following diagram is showing the variation of the expenditure slab of the respondents household before and after displacement.

Diagram 5.5 Expenditure Limit of the respondent before and after displacement



5.4 Occupational mobility of the respondents before and after river bank erosion

Significant changes took place in the life of the respondent due to the river erosion specially in occupational mobility. A large number of people were bound to migrate to Dhaka city during the last ten years. Most of them are now slam dwellers. They are doing different odd jobs like day labor, construction labor, hawker, cleaner, rickshaw puller, bus helper, garments worker, house maid and even street bagger. A large numbers of people who resettled in nearby villages were forced to change their traditional occupation. Occupational mobility after displacement is given in the following Table and Diagram. (Table 5.2 and Diagram 5.2)

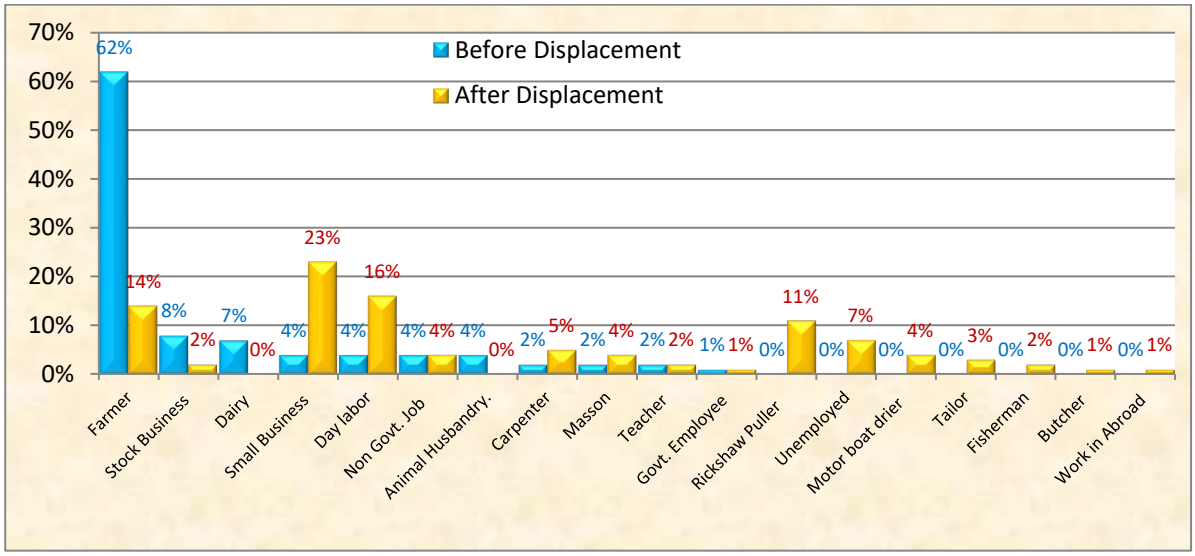
Table 5.6: Occupational Mobility of the Respondents

Occupation	Before Displacement		After Displacement	
	Number	Percentage	Number	Percentage
Farmer	62	62%	14	14%
Stock Business	8	8%	2	2%
Dairy	7	7%	0	0%
Small Business	4	4%	23	23%
Day labor	4	4%	16	16%
Non Govt. Job	4	4%	4	4%
Animal Husbandry.	4	4%	0	0%
Carpenter	2	2%	5	5%
Masson	2	2%	4	4%
Teacher	2	2%	2	2%
Govt. Employee	1	1%	1	1%
Rickshaw Puller	0	0%	11	11%
Unemployed	0	0%	7	7%
Motor boat drier	0	0%	4	4%
Tailor	0	0%	3	3%
Fisherman	0	0%	2	2%
Butcher	0	0%	1	1%
Work in Abroad	0	0%	1	1%
Total	100	100%	100	100%

Source: Field data:

It is evident that most of the people were involved in agriculture before displacement which was 62%. After displacement it has decreased to 14%. After displacement highest number of people (23%) engaged themselves in small business which was only 04% before displacement. 8% of the respondent was involved in stock business of crops which reduced by 2% after displacement. 11% of the respondents families maintained their livelihood through dairy firm and animal husbandry but they lost their occupation after displacement. Some respondents have forced to adopt with new occupation such as rickshaw puller (11%), motor boat driver (4%), tailor (3%), fisherman (2%), butcher (1%). 7% of the respondent remaining unemployed.

Diagram 5.6 Occupational mobility of the respondents



5.5 Standard of living of the respondent

5.5.1 *Standard of living of the respondent in terms of income and expenditure*

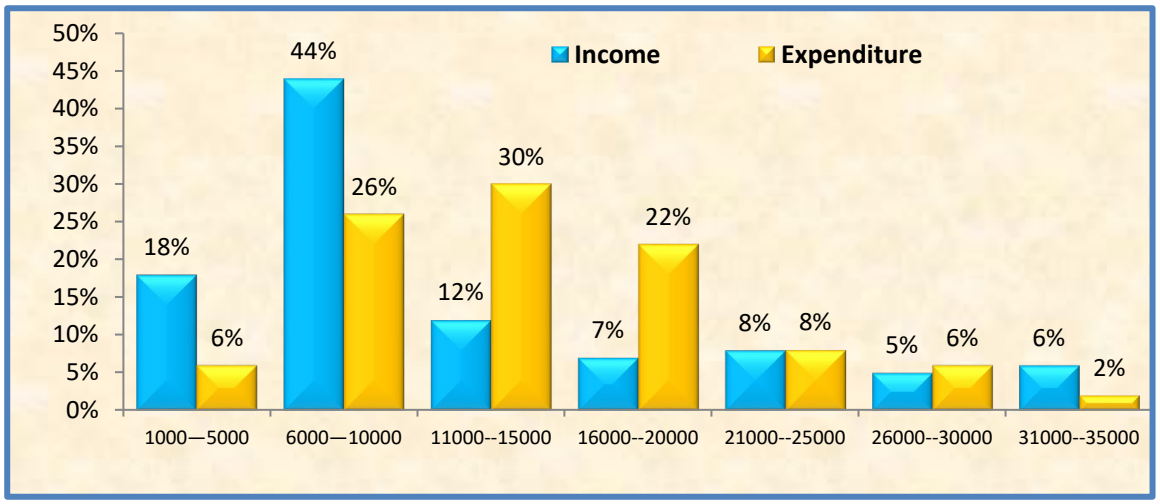
A comparative statement of income and expenditure of the respondent household is given in the following table which indicates the standard of living of the study population.

Table 5.7 Income and Expenditure level before and after displacement

Incommode	*Income level After Displacement*			*Expenditure After Displacement*		
	Number	*Percentage*	*Amount (Av)*	*Number*	*Percentage*	*Amount (Av)*
1000—5000	18	18%	3600	6	6%	4600
6000—10000	44	44%	7800	26	26%	9300
11000--15000	12	12%	12200	30	30%	12700
16000--20000	7	7%	17200	22	22%	16500
21000--25000	8	8%	23000	8	8%	22100
26000--30000	5	5%	27200	6	6%	26000
31000--35000	6	6%	33600	2	2%	32000
Total	**100**	**100%**	**12158**	**100**	**100%**	**14102**

Income level indicates the purchasing capacity of the people and expenditure indicates their actual consumption status that how much they pay for satisfying their basic needs and for other requirements.

Diagram 5.7 Level of Income and Expenditure after Displacement



It is evident that monthly average income of the respondent household is BDT 12158.00 and monthly expenditure is BDT: 14102.00 which are greater than income by BDT 1741 that means monthly average deficit of the hold is BDT: 1944.00. Table 5.3 indicates that respondent families spend BDT 9650 for food and cloth, BDT 1200 for education of their words, BDT 1175 for treatment and medicine and BDT 2077.00 for other purpose. However, before displacement their expenditure for food & clothing and treatment was relatively low such as BDT 6500 and BDT 950. One the other hand expenditure for education, (2400) recreation and for other social involvement (3250) reduced significantly after being displaced which indicate that the standard of living decreased for being victim of river bank erosion.

5.5.2 *Standard of living of the respondents in terms of social condition after displacement*

Standard of living is measured considering some social variables which represent the livelihood condition of the respondents. The following table is showing the living status of the respondents after displacement.

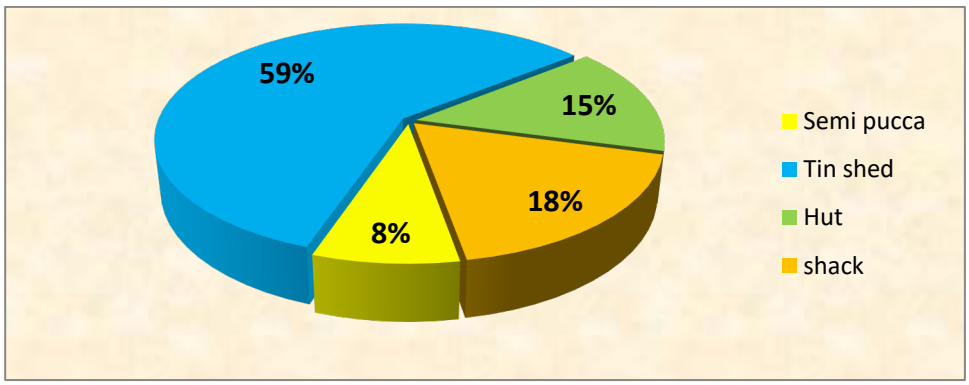
Table 5.8 ***Standard of the living of the respondent***

1. **Housing condition**	Number		Percentage	
Pucca	0	100	0%	100%
Semi pucca	8		8%	
Tin shed	59		59%	
Hut	15		15%	
Shack	18		18%	
2. **Dwelling environment**				
Congested	43	100	43%	100%
Fair	38		38%	
Comfortable	19		19%	
3. **Power facility**				
Electricity supply	33	100	33%	100%
Solar electric	12		12%	
No electricity	55		55%	
4. **Education**				
Children go to school	73	100	73%	100%
Not go to school	27		27%	
5. **Drinking water**				
Safe water	93	100	93%	100%
Unsafe water	7		7%	
6. **Sanitation**				
Hygienic Latrine	49	100	49%	100%
Unhygienic Latrine	42		42%	
No latrine	9		9%	
7. **Birth control**				
Use contraceptive	48	100	48%	100%
Not use contraceptive	52		52%	
8. **Child nutrition**				
Adequate nutrition	29	100	29%	100%
ordinary nutrition	57		57%	
Malnutrition	14		14%	

5.5.3 *Housing condition*

Housing condition of the people is one of the indicators of their living standard. After the destruction of their houses by river erosion none of the victims could build pucca house. Out of 100 respondent household only (8%) are living in the semi pucca houses. Highest portion of respondent families (59%) live in tin shed house. Rest 15% of respondents live in hut and 18% in shack house.

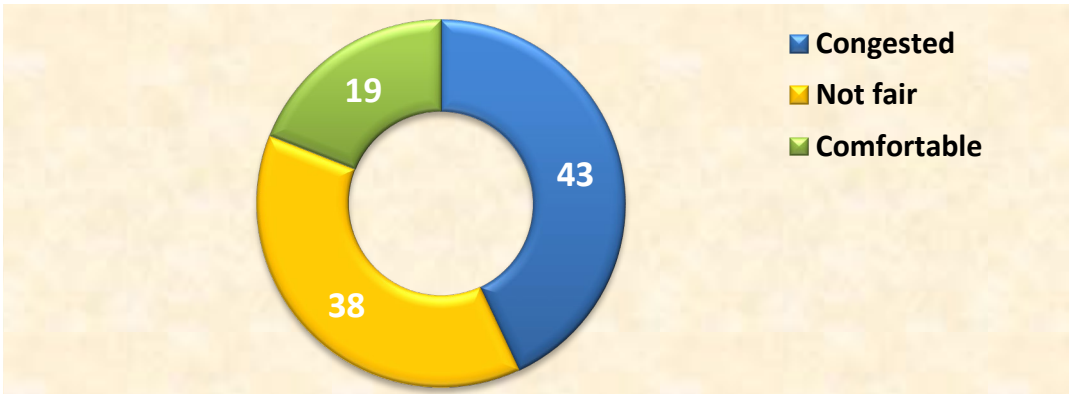
Pie Chart 5.1 Housing Condition



5.5.4 *Dwelling environment*

After displacement most of the resettled families (43%) are living in the congested environment in terms of accommodation. Another 38% accommodation condition is not fair and only 19% families are living with modest dwelling environment.

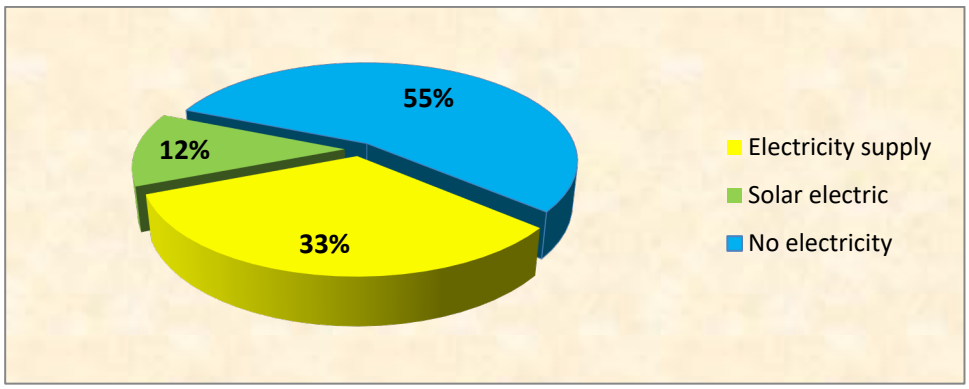
Pie Chart 5.2 Dwelling Environment



5.5.5 *Electric Facilities*

Power supply is one of the essential features for living a meaningful life in this modern era. Out of 100 respondents household 55 families (55%) are still deprived of electricity supply. 33 families (33%) have power facility and others do not have electric facilities. Some are using solar power and others are depended on traditional system.

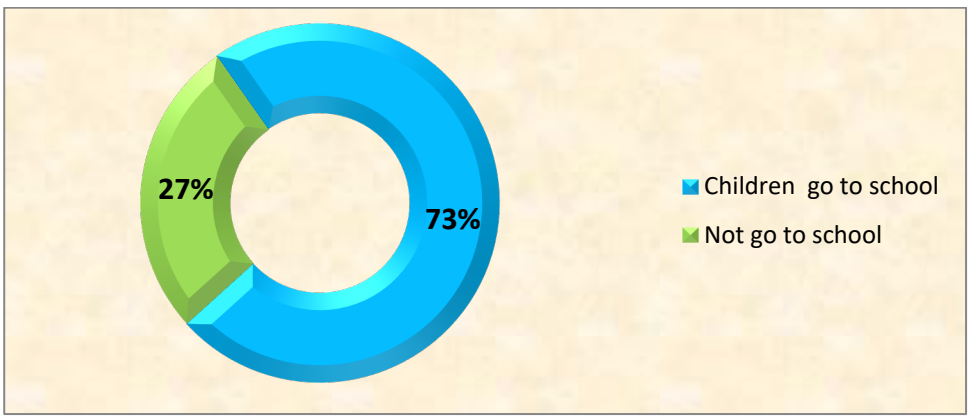
Pie Chart 5.3 Electric Facilities



5.5.6 *Education of the children of the respondents*

Access to education of the children is another component for measuring the standard of living of the respondents. Out of 100 respondents children of 73% families go to school. Children of rest 27% families do not go to school.

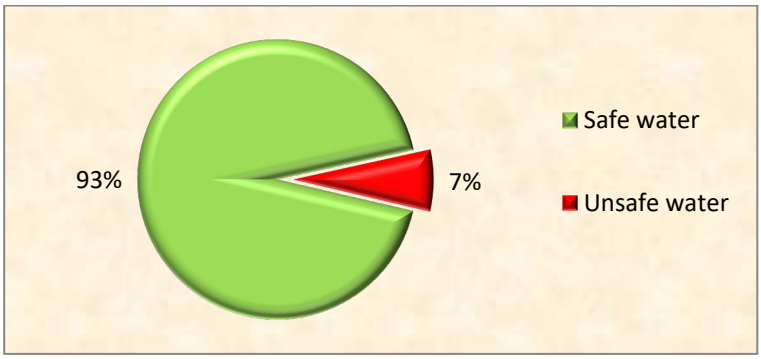
Pie Chart 5.4 Child Education



5.5.7 *Drinking water Supply*

It is evident that 93% of respondent families have access to the safe drinking water rest 7% of respondent families do not have access to safe drinking water. They use water of river, canal or pond for their domestic purpose.

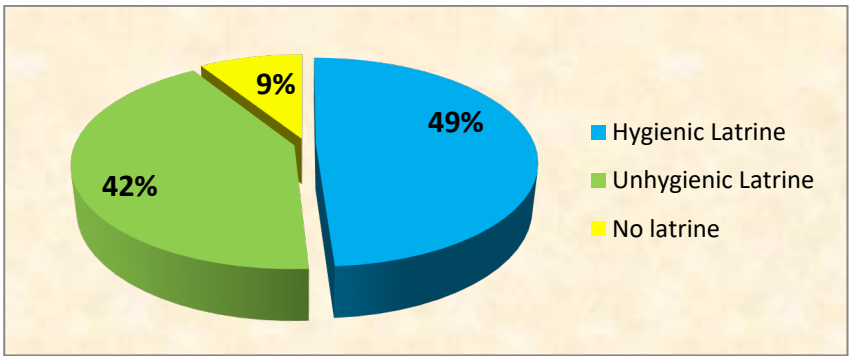
Pie Chart 5.5 Nature of Drinking Water



5.5.8 *Sanitation*

Overall sanitation arrangement of the study population is not satisfactory. 51% of the respondents are living with unhealthy sanitation condition out of which 42% family use unhygienic latrine and 9% families are living without having any latrine.

Pie Chart 5.6 Condition of Sanitation



5.5.9 *Birth control*

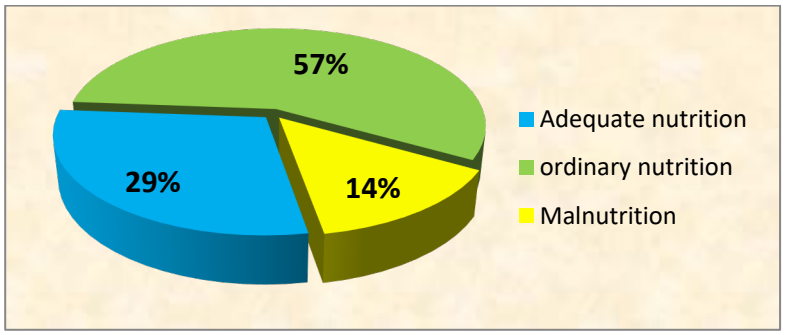
Most of the respondents are aware of family planning and birth control. 48% of the respondents use contraceptive for remaining their family size small. Rest 52% of the

respondents are either not aware about impact of unexpected growth of population or willing to use contraceptives.

5.5.10 *Nutritional status of the children of the respondents*

State of the child nutrition of respondent families is also below the expected level. Children of 29% of the respondent families are growing up with adequate nutrition. Children of the 57% of the respondent families are growing up with ordinary nutrition and rest 14% are suffering from malnutrition.

Pie Chart 5.7 State of the child nutrition



CHAPTER SIX : SURVIVAL STRATEGIES OF THE RESPONDENTS

6.1 Accommodation strategy

It was observed that when the villagers feel that their life and homestead are at stake, they shift their family members, livestock, house structure and other tangible asset from their affected homestead to temporary shelter like the Highway slope, embankment, relatives' house or nearby villages. Overcoming the first hazards they pay heed to resettle their homestead and start struggling to survive. The people adopted different indigenous strategies for accommodating their family. Only solvent families could resettle their homestead with their own resources. Others took loan from bank, NGO or debt from relatives. The accommodation status after resettlement of the respondents is given in the following table.

Table 6.1 Accommodation Strategies of the respondent

1. **Ownership of homestead**	Number	Total	Percentage	Total (%)
Paternal land	18	100	18%	100%
Newly Purchased land	15		15%	
Relatives' land	19		19%	
Lease land	36		36%	
Govt. khas land	12		12%	
2. **Housing condition**	Number	Total	Percentage	Total
Pucca	0	100	0%	100%
Semi pucca	8		8%	
Tin shed	59		59%	
Hut	15		15%	
Shack	18		18%	

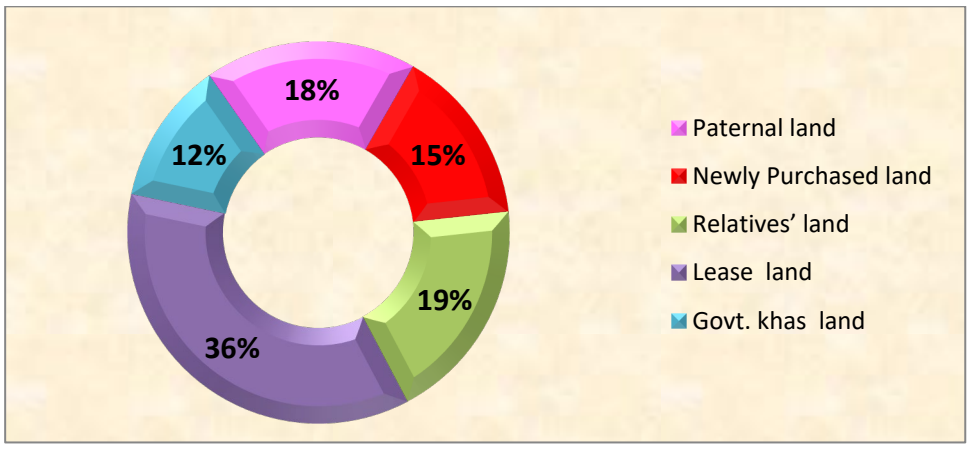
3. **Dwelling environment**	Number	Total	Percentage	Total %
Congested	43	100	43%	100%
Fair	38		38%	
Comfortable	19		19%	
4. **Drinking water**	Number	Total	Percentage	Total
Safe water	93%	100	93%	100%
Unsafe water	7		7%	
5. **Sanitation**	Number	Total	Percentage	Total
Hygienic Latrine	49	100	49%	100%
Unhygienic Latrine	42		42%	
No latrine	9		9%	

(Source: Field data)

6.1.1 *Ownership status of the homestead*

Most of the respondent resettled their house in the land of their relatives, neighbors, government khas land or in the leased land. Highest 36% of respondents resettled on the leasing land followed by 19% on the relatives land, 17% on own purchased land, 16% on paternal land and 12% on government khas lands. Ownership status is presented in the following Pie chart (Pie Chart 6.1)

Pie Chart 6.2 Ownership Status of the Homestead



6.1.2 *Housing condition*

Housing condition of the people is one of the indicators of living standard. After destruction of their houses by river erosion none of the victims could build pucca house. Out of 100 respondents only 8% is living in the semi pucca house. Highest portion of respondents (59%) live in tin shed house. Rest 15% of respondent live in hut and 18% in shack house.

6.1.3 *Dwelling environment*

After displacement most of the resettled families (43%) are living in congested house. accommodation condition 38% is not fair and only 19% families are living in a modest dwelling environment.

6.1.4 *Drinking water*

It is evident that 93% of respondent families have access to the safe drinking water rest 7% of respondent families do not have access to safe drinking water. They use water of river, canal or pond for their domestic purposes.

6.1.5 *Sanitation*

Overall sanitation arrangement of the study population is not satisfactory. 51% of the respondent families are living with unhygienic sanitary condition out of which 42% use unhygienic latrine and 9% living without any latrine.

6.2 Adjustment and coping strategies of the respondent in the new environment

The displaced families took their adaptation strategies at the individual level. For coping with the changed environment they had to take different strategies. Their strategies were interesting in their features. The displacees generally used multiple strategies, as none of those was adequate for their purpose. Their strategies were moulded basing on the situation to cope with the hazardous phenomenon. Socio-economic and environment situations significantly influenced the displacees to adopt local strategies (Zaman, 1989).

6.2.1 *Shifting of lives and properties during erosion*

The shift of lives and properties from erosion-threatened homestead to a safer place was one of the significant coersive strategies undertaken by the victims. It was found that all the respondent families (100%) shifted their family members, tangible properties and livestock from their affected homestead to the Highway slope, BWDB embankment, relatives' shed, neighbors' land, khasland, and to other villages. In local language such types of temporary shelter is called "**Patna**"

Photo 6.1 : Temporary Shelter (Patna)

6.2.2 *Salvaging house structure*

The displacees formulated and undertook some local strategies to reduce the quantity of their economic loss induced by riverbank erosion attack. The loss-reduction strategy of salvaging housing structure was widely used by the displacees.

Photo 6.2: Shifting of Housing structure

This strategy promptly helped them to build a hut on the embankment or on khas land or on the land owned by kin or neighbor after their displacement. Table 6.2 an Pie chart 6.2 are showing the salvaged condition.

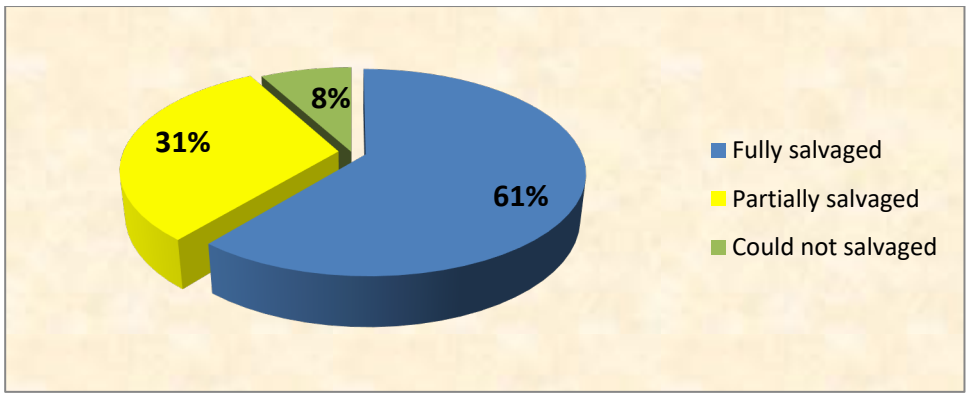
Table 6.2 Salvaging house structure

Nature of Salvage	*Number*	*Percentage*
Fully salvaged	61	61%
Partially salvaged	31	31%
Could not salvaged	8	8%
Total	100	100%

Source: Field data.

Most of the structural pattern of residence of the respondent families were salvageable. 61 percent of the respondent family shifted their houses to the safer places. 31% respondent families partially shifted their houses because those families used brick as wall martial and rod cement (RC) as floor material. 8% of kacha and mixed type houses could not be shifted due to quick erosion.

Pie Chart 6.3 Salvaging Housing structure



6.2.3 *Cutting Standing Crops and trees*

It was found that 94% of the respondent families cut their standing trees and saved it from the attack of riverbank erosion. Among them 51% sold those trees for procuring money to meet the needs of resettlement. Another 43% preserve them for use in their resettlement. Rest 6% of the respondents could not cut or sold their trees because it was engulfed by erosion quickly. Out of 100 respondents 47% had standing crops on their land. Out of which 25% could cut their crops. 16% of corps were immature. Rest 6% families could not salvage their standing crops due to sudden attract of erosion.

6.2.4 *Sale of properties*

A considerable proportion of the displaced families sold their properties at the time of displacement for reducing their loss. They adopted this strategy to procure some cash money in adapting to the changing environment.

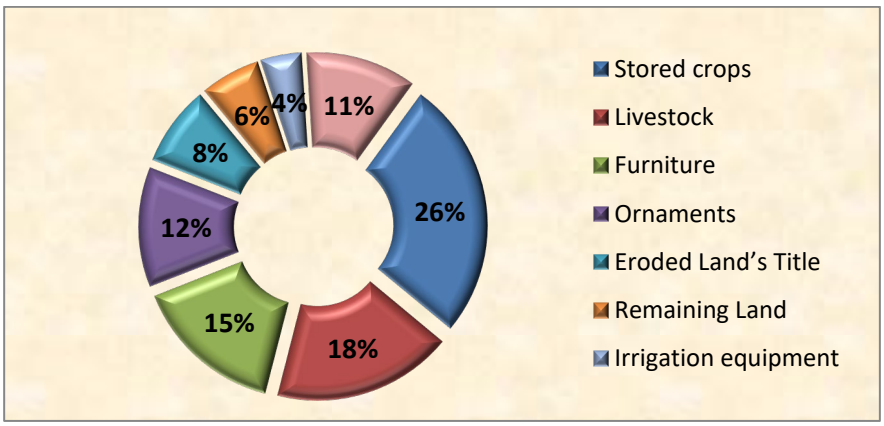
Table 6.3 *Sale of properties*

Items	Number	Percentage
Stored crops	26	26%
Livestock	18	18%
Furniture	15	15%
Ornaments	12	12%
Eroded Land's Title	8	8%
Remaining Land	6	6%
Irrigation equipment	4	4%
Other Valuable Assets	11	11%
Total	100	100%

Source: Field data.

It is evident that 26% of the respondents could sell their stored crops, Livestock 18%, furniture 15%, Ornaments 12%, remaining land 6%, irrigation equipments 4% and other valuable asset 11%. 8% of the displacees were forced to sell their land engulfed by riverbank erosion. They sold it to the wealthy landowners who could wait for the reemergence of that dislocated land (Rogge 1991, Zaman 1989).

Pie Chart 6.4 Sale of property



6.2.5 *Change of Occupation*

Most of the people of study area were involved in agriculture and agro-based occupation like farming, dairy, animal husbandry etc. After displacement 58 % of the respondents were forced to change their occupation out of which 19% took small business as their occupation, Day laborer 12%, Rickshaw Puller 11%, Engine boat driver 4%, Carpenter 3%, Tailor 3%, Fisherman 2%, Butcher 1% and 1 % went abroad taking a job for overcoming their miseries (Table 5.5).

6.3 Strategies adopted by the displaces for fulfilling their basic needs

It is evident that monthly income of the respondent was Tk.16832 before displacement which reduced to Tk 12158. Moreover, a large number people become unemployed due to the loss of their traditional occupation. To overcome the loss of erosion and to maintain their livelihood they were striving hard. No single strategy or initiative was found sufficient to survive. The respondent household adapted various types of strategies simultaneously for fulfilling their basic needs. (Table 6.4)

Table 6.4 Strategies Adopted by the Respondents for fulfilling the basic needs

Strategies Adopted by the Respondents	*Number*	*Percentage*
Adapted new occupation	45	45%
Selling livestock and properties	13	13%
Help received from Relatives'	11	11%
Taking loans from the NGOs	10	10%
Early employment of adolescent	8	8%
Money spent from savings	7	7%
Loan from the Bank	5	5%
Went abroad for earning	1	1%
Total	100	100.%

Source: Field data.

It was found that 45% of the respondent adopted in new occupation for maintaining their livelihood. 13% of the respondents sold their various assets and livestock for fulfilling their basic needs, 11% of the respondent received help from relatives, 10% took loan from NGO, 8% of the respondent families engaged their young members in work before completion of their education. 7% spent money from savings, 5% took loan from schedule banks and 1% went abroad for bringing solvency in their family.

6.4 Consequences and challenges faced by the victims of river erosion

River bank erosion is silent but very cruel natural disaster in riparian areas of the country. River erosion washed away land, crops and houses which ultimately take away the happiness of the dwellers leaving aside various socio-economic problems.

6.4.1 *Loss of land and homestead*

The first and most significant effect of the river erosion is the loss of homestead and land. Land holding by the respondent households before and after displacement is given in the following table

Table 6.5 Land holding by the Respondents Before and After Displacement

Land in Acre	*Before*		*After*	
	Number	Percentage	Number	Percentage
Land less	0	0%	67	67%
Below 1 acre	3	3%	27	27%
1—2	31	31%	6	6%
2—3	26	26%	0	0%
3—4	17	17%	0	0%
4—5	11	11%	0	0%
5—above	12	12%	0	0%
Total	***100***	***100%***	***100***	***100%***

It is evident from the above table that there were no land less families among the respondents before displacement however, 67% of them became landless after displacement. Rest 18% hold their remaining land and 15% respondents purchased small piece of land after displacement for resettlement (see Table 6.1). Only 3% respondent was the owner of marginal land before displacement which increased to 27% after displacement. Land holing up to two acres was 31% before displacement which decreased to 6% only. 66% of the respondents were the owner of 3 and above acre of land however none was found in that category after displacement.

6.4.2 *Decreasing economic solvency*

Economic solvency of the respondent families decreased after displacement which is given in the following table;

Table 6.6 Economic condition of the respondents before and after displacement

Level of solvency	*Before displacement*		*After displacement*	
	Number	*Percentage*	*Number*	*Percentage*
Solvent	61	61%	21	21%
Insolvent	35	35%	61	61%
Below poverty line	04	04%	18	18%
Total	100	100%	100	100.%

It is evident that 40% of the respondent families lost their solvency out of which 26% became insolvent and rest 14% have went under poverty line after displacement.

6.4.3 *Economic obstacles faced by the victims*

The degree of economic loss and vulnerability of the people due to river bank erosion has severely increased in recent years. The impact of land loss involves primarily the

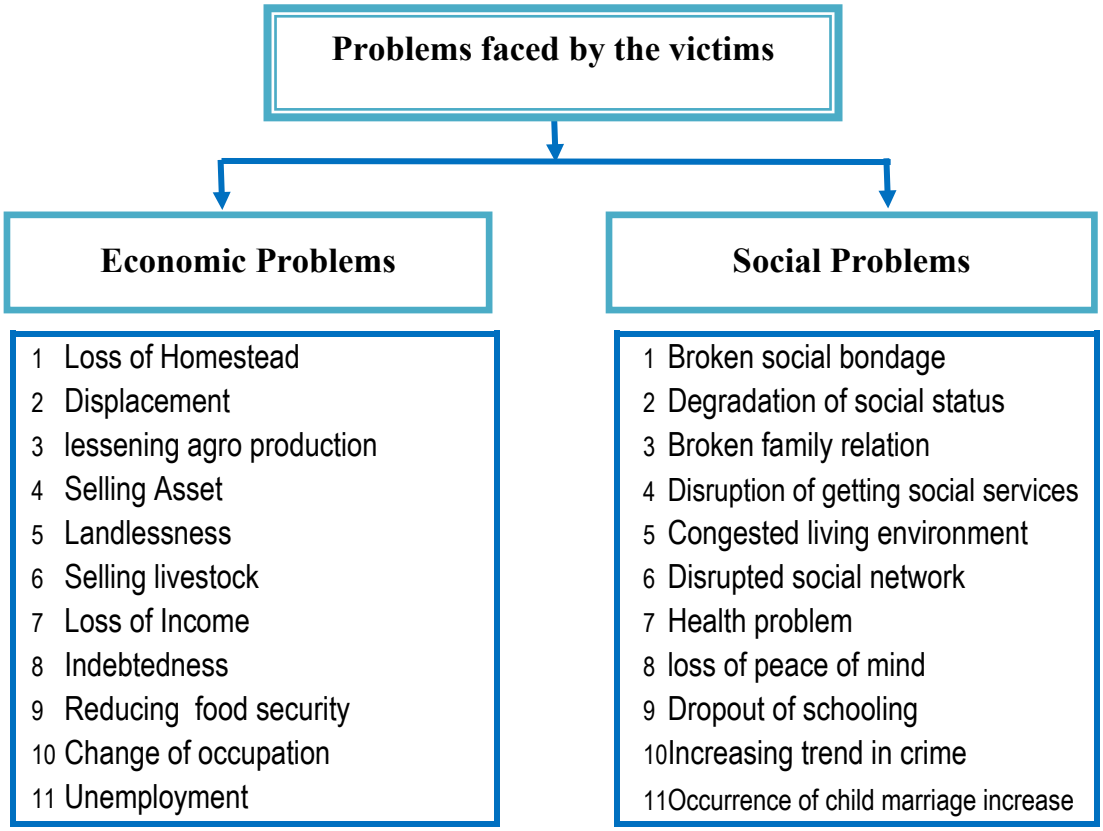
loss of homestead, housing structures, crops, cattle, trees and household equipments. Loss of homesteads forces people to move to new places without any option. Almost one million people are directly affected each year by river bank erosion throughout the whole country. The total monetary loss is estimated to be approximately US$500 million in a year. About 300,000 displaced persons usually took shelter on roads, embankments and government-requisitioned lands. Bank erosion affects people, irrespective of farm sizes. Riverbank erosion causes setback for agriculture. Along with homestead settlements, it erodes farmland, infrastructure and the communication network. It affects the income of all people. The big farmers are also affected, followed by medium and marginal farmer. The affected people lose their assets and are forced to depend on savings and often fall into further debt (Rahman 2010). Economic problems faced by the displacees are loss of homes; they are to sell the land, livestock, and ornaments to meet the needs. They are to change previous occupation and some become unemployed.

It is found that 100% of the respondent families lost their homested being affected by erosion and consequently become displaced. Due to the loss of cultivatable land, crops and all sorts of agro products of the displaced families were decreased significantly. They were also forced to sell their properties and livestock. 67% of the respondents became landless (Table:6.5), Monthly income of the 64% households reduced significantly after displacement. 40% of the respondents lost their economic solvency (Table:6.6) after displacement out of which 26% became insolvent and rest 14% went under the poverty level. 26% families being indebted, 58% respondents were forced to change their occupation and 7% become unemployed. (Source: Field data)

6.4.4 *Social problems faced by the victims*

Beyond economic problems displaced families were to face various social problems in maintaining their livelihood. Social problems faced by the victims are given in the figure 6.12 based on the field data.

Figure 6.1 Problems Faced by the Victims



6.5 Internal- external help and assistance received in coping up with the problems

Victim families received help and assistance from various sources at the different stages of rehabilitation like shifting house structure, resettlement and coping with the situation and survive. In this study saving of the respondent families, sale of properties, earning of the respondent family members and help of close relatives such as brother, sister, maternal and paternal uncle, father in law, brother in law etc. are as

internal source and the help of public representatives, government agencies, nongovernment and other financial organization and people like friends, well-wisher have been categorized as external resources.

6.5.1 *Internal- external help and assistance received for Primary shelter*

When the villagers fallen into risk of erosion they tried to shift their asset to a safe place from the vulnerable place. The respondents and received assistance from different sources which are given in the table 6.7

Table 6.7 ***Internal- external help received for Primary shelter***

	Have taken shelter with the help of	*Number*	*Percentage*
Internal 68%	Own source	39	39%
	Help of Relatives'	29	29%
External 32%	Help other than relative	23	23%
	Help of Government agencies	04	4%
	Help of Union porishad	05	5%
		100	100%

6.5.2 *Internal- external help and assistance received for resettlement*

Overcoming the first hazard of salvaging lives and asset the victims concentrated their attention to resettlement. From the field survey it was found that 57.% of the respondent household resettled their house depending on their internal resources and rest 43% received help from external sources (Table 6.8)

Table 6.8 ***Internal- external help received for resettlement***

Source		*Number*	*Percentage*
Internal 57%	Previous Saving	10	10%
	Land sale	17	17%
	Asset sale	14	14%
	Borrowing money from relatives	16	16%
External 43%	Loan from individual	05	05%
	Loan from Cooperative society	07	07%
	Loan from NGO	19	19%
	Loan from Bank	08	08%
	Government relief	04	04%
Total		100	100%

6.5.3 *Internal- external help and assistance received for maintaining their livelihood*

From the field data it was found that respondent families received help from external sources for solving their problems and fulfilling their basic needs. The contribution of the internal and external sources is given in the following table and diagram (Table6.9)

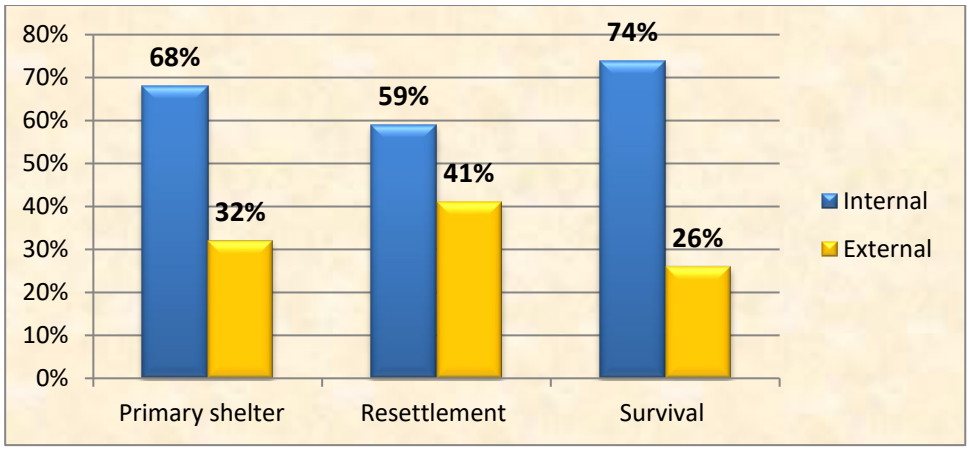
Table 6.9 ***Internal- external help received by respondent***

Purpose	***Internal***	***External***	***Total***
Primary shelter	68%	32%	100%
Resettlement	59%	41%	100%
Survival	74%	26%	100%

It is evident that 43% respondents received assistance from external sources including 19% from NGOs, 8.% from Bank, 7% from cooperative society, 4% from

Government agencies and 5 loan from individual (See table 6.8) 57% of the respondent did not get any support from external sources. They tried to survive on their own initiative.

Diagram 6.1 Internal- external help received by respondent



6.6 Case Studies No: 01

Md. Motaleb Sarder, Fathers Name: Solaiman Sarder

Md. Motaleb sarder is an old man with 53 years of age. He was born in the village Condipur under the Naria upazilla of Shariatpur district. His father, Solaiman Sarder, was a solvent farmer and he was the owner of 16 acres of fertile land. Motaleb was the eldest out of his two brothers and four sisters. He started his education in the primary school of his village. After completing primary education he joined in his father's occupation. He married Amena Begom of nearby village at the age of 23.

Motaleb Sarder was living a pleasant life along with his two sons and one daughter with his adequate income which was earned from the agricultural land. Every year he

could save some money after meeting his family needs. He was known to the villagers as a solvent and successful farmer.

Misfortune came down on their life in 2009. In that year he lost about 50% of his cultivable land due to the massive erosion of mighty river Padma. In the next year he lost another 30% of his land. The mighty river Padma engulfed all of his remaining land including his homestead in 2011. Then he took shelter in the slope of the nearby high way. First two months he took help from his relatives and well-wishers. He started a petty business at Sureshar bazaar. He straggled hard to survive. His elder son Sumon was a student of Naria Government College and younger son Ripon was in class nine at Sureshar High School. His only daughter was in class eight. It was not possible for Motaleb to maintain the cost of study of his sons and daughter with the low income from petty business. He then shifted to Dhaka along with his family and took shelter in a slum at Malibag Chowdhury para. His two sons and daughter joined in Sikder Apparels- a Garments factory owned by a rich man of Shariatpur. Motaleb become a street hawker. He started selling vegetables at the foot path. Thus Motaleb Sarder, a solvent farmer, became a street hawker and slam dweller in Dhaka city due to the cruel erosion of mighty river Padma. His sons and daughter also became garments workers. However, it was his dream to make them educated and government officials. It was very sad experience of the life of Motaleb when he lost everything by the river erosion and became land less.

He expressed his experience in his own language as “Chele –meye nia onek sukhe asilam Gang amare pothe namaia dise. Now, I am a rastar hawker, bostir basinda. Onek assa chilo chele meye der ke lekha pora sikhamu, boro ofiser banamu, kintu aij

ora garments sromik. Sorbonasa podma amar vita-mati, sohay-sombol, such-sopno sob kaira nise." (I was very happy with my family. river come down me at street. River thrown me at street. Now, I am a street hawker. It was me dream to make my children educated and high officials. However, they are now garments worker. Cruel Padma has snatched away all of my properties, pleasure and dream.")

Two: Md. Salim Dewan, Father: Late Amir Hossain Dewan

Md. Salim dewan lives in the village Chondipur of Naria Upazila along with his wife, son and two daughters. He is owner of a small shop at Chondipur bazaar. He maintains his five member family through hands to mouth with very little income of his small shop. However, he was known as one of the rich men and successful business persons in his village.

Salim Dewan was born in the village Bosharchar under the Naria Upazilla of Shariatpur district in 1970. He was the only son of his parents. His father, Amir Hossain Dewan, was a solvent farmer. He was the owner of 25 acres of land. He died in 1985 when Salim Dewan was a student of class nine at Naria B.L high school. It was a deep shock for Salim. His study became stopped and he took the responsibility of his family. He started hard struggle to survive through agricultural work in his father's land. With the income of farming, he built a warehouse ('Arot' in local term) at Wapda Bazaar in 1996 and started stock business of locally produced crops. With his hard labor and restless efforts, he became one of the big traders in Wapda Bazaar.

Salim got married Saleha Begum in 1999. They were living a joyful life with their son and two doters.

In August 2010 Saheberchar village was inundated by the erosion of mighty river Padma. Salim Dewan lost his homestead and most of his land. He then sifted his family in the nearby village Charjujira by making a temporary house. He lost rest of his cultivable land within next year. One night in September 2011, a massive attracts of river erosion occurred in Charjujira, Charatra and Wapda bazaar. Due to a sudden attract, he could not salvage his warehouse and stored crops. He lost also his temporary house and shifted his family again in Chondipur. After losing all of his properties and becoming a displacee he fell into deep shock which made him a cardiac patient. He had to spend a huge amount of money for his treatment. He then tried to get bank loan. however, Bank did not approved any loan without mortgage. At last, he browed money from his relatives and started a small shop at chondipur bazaar. But, he could not run that properly due to his illness. His only son Emon was then student of class eight at Sureshor High School. He took over the shop considering the physical condition of his father. Thus, poor Salim dewan and his son Emon were struggling to survive after being displaced by the river bank erosion.

Salim expressed his misfortune in his own ways. “ ki ar koimu sir! Kosto klesh koira ghor -bari, joma-jomi, dokan-pat jursilam. Gang amare pother fokir baniadise”.

(What I would say! I earned land properties, made dwelling house and warehouse through hard labor. But, cruel river made me a street beggar)

Three: Md. Nurul Islam Noor

Md. Nurul Islam was born in the village Charjujira under the Naria Upazilla of Shariatpur district in 1972. He was the eldest son of his parents out of their 2 sons and one daughter. He has passed the SSC examination in 1988 from Sureshar High School. Suddenly, his father died in 1989 when he was a student of Naria College. In absence of his father he was forced to take responsibility of his four member family. He then started a restaurant at Wapda Launch Station nearby his village. As an educated and young entrepreneur, he became very popular person within very short time and his business was increasing day by day. Noor then involved his younger brother, Habib, in his restaurant business. Simultaneously, he started stock business of locally produced crop by building a warehouse ('Arot' in local term) at Wapda Bazar. Within a couple of years, he got success in his business. He built a two storied house in his village and purchased about ten acres of land from the income of his restaurant and stock business. He got married with Sadia of Paikpara village in 1998. Rakib, the elder son of Noor and Sadia, was born in 2002 and their younger son Sakib was born in 2005. They were living a cheerful life.

One night in September 2005, a large area of Charjujira village and Wapda bazaar were inundated by the erosion of mighty river Padma. Due to sudden and massive attract, he could not salvage his restaurant, warehouse even his homestead. He shifted his family in a temporary house in nearby village, Condipur. He started new straggle to survive by establishing another restaurant in Condipur launch station with his

previous savings. It is told that misfortune does not come alone. He lost most of his cultivable land within the next two years. A large area of Naria upazila including Condipur launch station, Condipur bazaar, Sureshor launch station were submerged by the river Padma within the year 2006 an 2007. Poor Nurul Islam lost his restaurant and home again. He fell down in darkness and faced a new challenge. He sold his remaining land, ornaments of his wife and browed money from relatives. At last, he went to Italy in 2009 with the help of his school friend Kamal who was living in Italy since 1996 and achieved green card of that country.

Now, the life of Noor changed. His family is getting adequate amount of foreign remittance for maintaining their livelihood. They purchased a piece of land near Naria upazila parishad for making their permanent residence. Noor expressed his fillings in his own words, "Nodir parer manusera prokritir nanan protikulota mokabila korey beche thake. Tritiobar vangoner siker hobar por ami sorbo santo hoye gesilam, kintu asa ar sahos harai nai. Se jonnoi aaj ami poristhiti mokabela korte peresi. Allah'r sukria ar attio sojon der proti ami kritoggo."

(People of river bank areas has to face various adverse situation of nature to survive. I became quite helpless after losing my properties third time. But I never lost hope and courage. That's why I became able to overcome the situation. I am grateful to Allah and my relatives and friends for their guidance and help.)

CHAPTER SEVEN : ROLE OF GOVERNMENT AND NON GOVERNMENT ORGANIZATION IN THE FIELD OF REHABILITATION OF THE DISPLACEES

7.1 Government agencies and institution for rehabilitation of the displacees

Ministry of Water Resources and Ministry of Food and Disaster Management are two key ministries to work in this area for providing relief and rehabilitation. Ministry of Water Resources is responsible for riverbank protection and management and Ministry of Food and Disaster Management has been assigned for coordinating the government disaster management efforts with two line agencies as the Directorate of Relief and Rehabilitation and the Disaster Management Bureau (GOB 2011).

The Ministry of Food and Disaster Management is responsible for building awareness in pre-disaster phase and distributing relief goods in post-disaster phase as well as rehabilitations. Some of the displacees are accommodated in *Khas* land, *Adarshaya Gram* and *Abashon* projects. NGOs like CARE-Bangladesh, OXFAM, BDPC and RDRS are working with displacees in certain areas of Bangladesh. (Islam & Rashid 2011)

The National Policy on Disaster Management has emphasized on a of broad based strategies, i.e. risk management, community involvement and non-structural mitigation measures. In Bangladesh there are three bodies for multi-sectoral coordination and collaboration at the national level

a) The National Disaster Management Council (NDMC) is headed by the Prime Minister,
b) Inter-Ministerial Disaster Management Coordination Committee (IMDMCC),

headed by the cabinet Minister in charge of the Ministry of Food and Disaster Management (MFDM)

c) National Disaster Management Advisory Committee (NDMAC) with memberships from both the public and private sectors. There are committees also in district, upazila and union levels followed by the directives of national committees. (GOB 2010)

7.2 Nature and types of help provided by govt. agencies

The following departments are found involved in the relief and rehabilitation activities of the erosion victims of the study area.

7.2.1 *Help provided by District Relief Section*

It is the responsibility of Deputy Commissioner of the respected district to extend primary help and relief to the victims of any natural disaster or any unpleasant incident occurred. Relief and assistance provided by the District relief section to erosion victims of the study area are as given below.

Table 7.1 Relief provided by District relief section, Shariatpur(2011-2013)

Item	*Quantity*	*Number*	*Percentage*
Corrugated Iron sheet	5 bundle/household	03	03%
Cash money	3000.00 /household	03	03%
Rice	30 kg/ household	12	12%
Rice	25 kg/ household	16	16%
Rice	20kg /household	30	30%
Total		64	64%

Source: Office of the Upazila Nirbahi Officer, (Relief Section) Naria, Shariatpur

It is evident that 05 bundle of corrugated iron sheet along with 3000 cash money were given to 03 such families who could not salvage their house structure. 30 kg rice per household were given to 12 families followed by 25kg/household 16 families and 20kg /household to 30 families as emergency relief. (2011-2013)

7.2.2 *Help provided by Kederpur Union Parishad*

Union porishad is the lowest tier of the local government. It provides help and assistance to the vulnerable group under the social safety network. Following table (Table 7.3) shows the coverage provided to the displaced people in the study area (among the total population of the study area including sample population).

Table 7.2 Help provided by Kederpur Union Parishad to the erosion victims

Name of program	***Nature of Help***	***Number***
VGD Card	30 kg wheat/ household per month	18
VGF Card	10kg rice /once per household	40
Old age pension	300.00 /per month	12
Widow Allowance	150.00/per month	6
Disability pension	300.00/per month	2
Total number of beneficiary		78

Source: *Kederpur Union Parishad*

It was found that 18 families have received VGD benefit of (Vulnerable Group Development) which include 30kgs of wheat per month along with saving scheme. 40 household have received Vulnerable Group Feeding (VGF) benefit, where 12 persons got old age pension, widow allowance 6 women and 2 persons are getting disability pension.

7.2.3 *Assistance provided by Department of Public Health Engendering*

Public Health Engendering Department is concerned with supplying pure drinking water and sanitation. DPHE provided the following facilities among the erosion victims (among the total population of the study area including sample population) (2011-2013)

Table 7.3 Help provided by Department of Public Health Engendering (DPHE)

Item	***Quantity***	***Number***
Sanitary Latrine	1 set / household	15
Shallow tube well	1 set / household	10
Deep tube well	1 set / 5-10 household	2
Total		27

Source: *Kederpur Union Parishad*

It is evident that sanitary latrines were given to 15 household, 10 household were given shallow tube-well and 2 set of deep tube-well were given among the victims' families.

7.3 Role of NGOs working in the field of rehabilitation of the displacees

Some Non-Government Organizations are working in the study area. Most of the NGOs are working in the field of microcredit. It is mentioned that CARE-Bangladesh, OXFAM, BDPC and RDRS are working with displacees of different erosion prone areas of the country (Islam & Rashid 2011) however, we found no activity of those organizations in the study area. Only two organizations were provided relief to the victims immediate after erosion.

7.3.1 *Society for Environment and Development Observer (SDO)*

Society for Environment and Development Observer (SDO) is a local NGO. This organization works in the field of water, sanitation, women development and employment generation etc. Besides, SDO provides relief and assistance among the victims of natural disasters. Executive Director of SDO has provided the following data of their relief work among the erosion victims of the study villages. (Table 7.5)

Table 7.4 ***Help and Assistance provided by SDO (2011-2013)***

Item	***Quantity***	***Number***
Corrugated Iron sheet	3 bundle/household	33
Cash money	1000/ household	50
Rice	Rice 20 kg, / household	50
Total		133

Source: Executive director, SDO

It is found that SDO has provided 100 bundles of Corrugated Iron sheet among victim households, 50000 BDT cash money among 50 household and 100 quintals of rice among 50 households.

7.3.2 *Shariatpur Development Society (SDS)*

Shariatpur Development Society (SDS) is a non-government organization (NGO) located in Shariatpur district, founded with a view to empowering the disadvantaged people and to bring about overall change in the life of the rural poor. Major programs are climate change adaptation, Disaster Management and response, Non formal education, Agriculture & food security, Health & sanitation, and Microfinance. In addition to microcredit it also extends it's cooperation in the field of water and sanitation (Table 7.5)

Table 7.5 Help and Assistance provided by SDS (2011-2013)

Item	*Quantity*	*Number*
Latrine	1 set / household	20
Shallow tube well	1 set / household	10
Deep tube well	1 set / 10 household	4
Total		32

Source: Program Officer, SDS

It is found that SDS provided sanitary latrine to 20 households, shallow tube well to 10 victim households and 4 sets of deep tube well among the displaced households.

7.4 Expectation of the respondents from govt. agencies in matters of their rehabilitation and achievement thereof

7.4.1 *Expectation of the respondents from govt. agencies in matters of their rehabilitation*

From the opinion of the respondent families and from the discussion with social leaders, social workers, public representatives and local administration it was found that most of the erosion victims are not willing to receive relief , they want to retrieve their position and recover their loss. They expect necessary support and cooperation from government to confront with the adverse situation and to get emancipation from the threat of further damage. Mostly common expectation of the respondents are given in the following table (Table 7.12 and Diagram 7.1)

Table 7.6 ***Expectation of the respondents from Govt.***

Nature of Expectation	*Number*	*Percentage*
Protection of Erosion & Permanent Dam	**100**	**100%**
Distribution of khas land among the displaces	**67**	**67%**
Bank loan without interest	**58**	**58%**
Free education for their children	**53**	**53%**
Rescue team for salvaging lives and property	**46**	**46%**
Proper Rehabilitation for all displaces	**42**	**42%**
Employment opportunity within home & aboard	**34**	**34%**
Not relief but work	**32**	**32%**
Exemption of existing Bank loan	**28**	**28%**

Source: Field data

It was evident that 100% of the respondents wanted permanent dam and effective protection of the river bank, 67% respondents demanded allocation of khas land, 58% wanted bank loan without interest, 53% desired cost free education of their children, 46% asked for forming well equipped and trained rescue team for saving the lives and properties. 42% demanded well planned and proper resettlement of the displaces, 32% claimed for employment opportunity at home and abroad, 23%, made their appeal to excuse their previous bank loan.

7.4.2 *Relief and assistance received by the respondents form govt. agencies*

Out of 100 respondent household only 22 % families acknowledged that they got emergency relief immediate after displacement from govt. agencies. The kind of help received is given in the following table.

Table 7.7 Emergency relief received by the Respondents

Item of Help	*Number*	*Percentage*
Corrugated Iron Sheet	1	1%
Cash Money Tk 3000	3	3%
Rice (20kg per household)	18	18%
Total	22	22.%

Source: field data

It is evident that out of 100 respondents only 1% families received Corrugated Iron sheet for resettling their house, 3% households received cash money (TK. 3000/household) and 18% received rice as emergency relief provided by district relief fund .

Out of 100 resettled respondent households only a few number of house received water and sanitation support from Public Health Engineering Department. (Table 7.8)

Table 7.8 Sanitary Support Received by the Respondents

Item of Help	*Number*	*Percentage*
Latrine	4	4%
Shallow Tube well	2	2%
Deep Tube well	1	1%
Total	**7**	**7%**

Source: field data

It was found that 4% of the respondent received sanitary latrine, shallow tube-well 2.% and deep tube-well 1%. 24 % of the respondent received the benefit of social safety program which is being provided by the Ministry of Social Welfare and distributed under direct supervision of the local Union. (Tabla 7.9)

Table 7.9 Social safety support received by the respondents

Item of Help	***Number***	***Percentage***
VGD	8	8%
VGF	12	12%
Old age pension	3	3%
Widow Allowance	1	1%
Total	**24**	**24%**

Source: field data

It was found that 8% families were getting the benefit of Vulnerable Group Development program (VGD) which include 30 kgs of wheat per month along with saving scheme. 12% households received Vulnerable Group Feeding (VGF) benefit, where 3% having the benefit of old age pension, 1.80% were getting widow allowance and 0.6% were receiving disability pension.

7.5 A comparative analysis between G.O. and N.G.O in terms of help and assistance provided

Most of the victims solved their initial problems by themselves during the natural disasters. But the poor peasants need help and economic assistance from others However, Government assistance and NGO help reach the villages quite late. Some of the villagers told that a few families received some rice from the Union Parishad which was quite insufficient for their survival. Many of them expressed their utmost

dissatisfaction with regard to government help at the time of erosion. On the other hand six NGOs working in the study area but only two organizations provided relief and assistance. A comparative statement of help provided by GO and NGOs are given in the subsequent table and diagram (Table 7.10, Diagram 7.2)

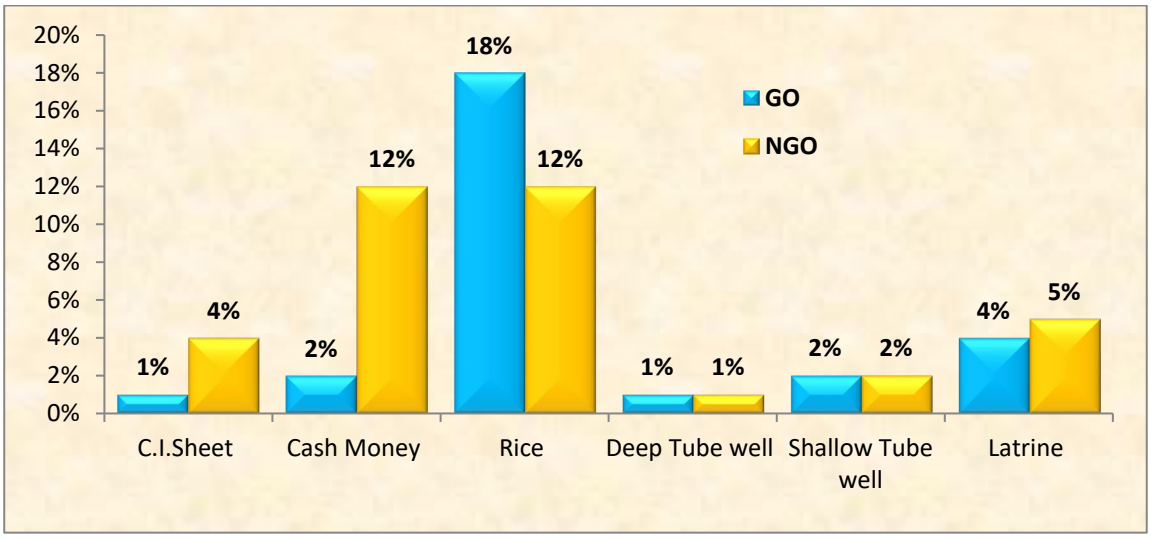
Table 7.10 ***Comparison Between GO and NGOs help to the victims***

Item of Help	***GO***		***NGO***	
	Number	***Percentage***	***Number***	***Percentage***
Corrugated Iron Sheet	1	1%	4	4%
Cash Money	3	2%	12	12%
Rice	18	18%	12	12%
Deep Tube well	1	1%	1	1%
Shallow Tube well	2	2%	2	2%
Latrine	4	4%	5	5%
Total	29	38%	36	36%

Source: field data

It is evident that 1% families received CI sheet from GO and 4% from NGO. 2.% households got cash money from GO and 12% from NGO. 18% have received rice from GO and 12% from NGOs'. 1% received deep tube well from GO and sent percent also from NGO, Shallow Tube well provided by GO to 2% and NGO to 2% and 4% received sanitary latrine from GO and 5% from NGO,

Diagram 7.1 ***Comparison Between GO and NGOs help to the victims***



CHAPTER EIGHT : SUMMERY AND CONCLUSION

8.1 Summery and findings of the study

It is estimated that about 100,000 people are being homeless every year due to country's two largest rivers the Jamuna and the Padma. (BBC News 2009) Mr. Bob Makenro, the regional chief of the International Federation of the Red Cross and Red Crescent Societies (IFRCS) in 2000 identified the river erosion as the largest concern of Bangladesh. But very few people are concerned of it. He mentioned that the complexity of the issue is critical enough to be focused in the mass media communication. According to him, this is a slow and silent disaster. Another report (DFID, in association with Disaster Forum) identified the river erosion as the country's topmost disaster from the point of view of losses. The World Disaster Report 2001 published by IFRCS, reveals that in Bangladesh annually 1 million people are having displaced and 9 thousand hectares of land inundated by river erosion. (Equity bd. 2007).

Centre for Environment and Geographic Information Services- CEGIS showed in a study that during the last 34 years submerging of river side lands were 219286 acres in Jamuna, 69135 acres in Ganges and 95119 acres in Padma. Geography and Environmental Science, Department of the Jahangirnagar University presented a chart of the losses of river erosion between1996 to 2000. In 1996 financial loss 5809 m, affected areas71680.4 acres and affected population 10103635 consequently in 1997 financial loss 33012m, affected areas 7756 acres, affected population 173090. In 1998 financial loss 2201m, affected areas 41519acres, affected population 321000. In

1999 financial loss 10535m, affected areas 227755acres, affected population 899275. In 2000 financial loss 3286 m, affected areas 219310 acres, affected population 415870. No loss of life happened due to erosion but it made people homeless and helpless.

The present study was conducted to assess the losses and miseries caused by the river bank erosion, finding out the effects of erosion on livelihood and to explore the survival and coping strategies adopted by the displaced people of the study area as well as help and assistance provided by the GO and NGOs in respect of their rehabilitation.

It is evident that most of the respondents 44% are illiterate. 2% only can read and write their name. 24% have completed primary education and 18% have completed their junior school certificate course. Only 2% have completed SSC and 2% have completed higher secondary level. 8% have completed higher education out of which 4% graduate and 4% Masters Degree.

Data shows that out of the total respondents highest 23% of the respondents have chosen small business as their profession like shop kipper, seasonal seller of vegetable, fruit, sugarcane, green coconut followed by day labor 16%, farmer 14%, Rickshaw pooler 11%, Unemployed 7%, carpenter 5% Masson 4%, motor boat driver, 4%, non Govt. job 4%, tailor3%, fisherman 2%, stock business 2%, teacher 2%, butcher 1%, Govt. employee 1% and work in abroad 1%.

Monthly average Income of the respondent households BDT 12158 of which BDT 10500 from principal occupation BDT 1150 from subsidiary occupation and BDT: 508 from incidental sources. Principal occupation is the only source of income of most of the people of study area. However, some people have scope to earn from other sources like seasonal business, private tuition, auto driving, fishing, brokering etc. only a few respondents have some resources such as land, auto rickshaw, trolar, fishing boat etc

After displacement monthly income of the respondent decreased by BDT: 3000.00 from main occupation, BDT: 850.00 from subsidiary occupation and BDT: 828.00 form casual sources. Average monthly income of the displaced families has decreased by BDT: 4678.00.

It is evident that respondent families spend BDT 9650 for food and cloth, BDT 1200 for education of their words, 1175 for treatment and medicine and 2077 for other purpose. However, before displacement their expenditure for food &cloth and treatment was relatively low such as BDT 6500 and BDT 950. One the other hand expenditure for education, recreation and for other social involvement reduced significantly after being displaced.

Monthly average income of the respondent household is BDT 12158.00 and monthly expenditure is BDT: 14102.00 which is bigger than income by BDT 1741 that means monthly average deficit of the respondent is BDT: 1944.00

It is evident that there was no landless families among the respondents before displacement however, 67% of them became landless after displacement. Rest 18%

holding their remaining land and 15% respondents purchased small piece of land after displacement for resettlement (see Table 6.1). Only 3% respondent was the owner of marginal land before displacement which increased to 27% after displacement. Land ownership was up to one acre was 31% before displacement which decreased to 6% only. 66% of the respondents were the owner of 3 and above acre of land however none were found in that category after displacement. It is evident that 40% of the respondent families lost their solvency after displacement out of which 26% became insolvent and rest 14% went under poverty line.

The study findings revealed that on an average, 250 acre of land and 200 household of the study area were eroded per year during the period of 2009-2013. It was also found that during that period the rate of damage in 2011 and 2012 was higher than previous years and it was highest in the year 2013 which was an indication of increased erosion rate.

Displaced families have undertaken different indigenous strategies for overcoming their misery and to survive. 45% of the respondent adapted to a new occupation for maintaining their livelihood. 13% sold their various asset and livestock for fulfilling their basic needs. 11% of the respondent received help from relatives, 10% have taken loan from NGO. 8% of the respondent families involved their young members in work before completion of education. 7% spent money from saving, 5% have taken loan from schedule banks and 1% went abroad for bringing solvency in their family.

It was learned from the people that those who had some savings somehow could

manage their initial problems during the river bank erosion. But the poor peasants had to seek help and economic assistance from their neighbors and relatives. Government assistance and NGO help reached the villages quite late. It was suspected that due to dishonesty and insincerity, government assistance did not reach properly to all the villagers. Many villagers expressed their utmost dissatisfaction in regard to government help at the time of a erosion. The same view was true for the Union Parishad as well. People did not receive good response from the Union Parishad though it is a local government institution from which resources are expected to be channeled to the villagers. People in both the villages complained that they never got satisfactory support from the elected member of the National Parliament.

It was found that only 1% family received Corrugated Iron (CI) sheet for resettling their house from GO and 4% from NGO. 2% family received cash money from GO and 12% from NGO. 18% of the respondent received rice from GO and 12% received from NGO. 1% of the respondent received deep tube well from GO and 1% from NGO. Shallow tube well provided by GO to 2% and NGO to 2%. 4% of the respondent received sanitary latrine from GO and 5% from NGO.

According to the opinion of the respondent families and discussion with the social leaders, social workers, public representatives and local administration it is found that most of the victims are not willing to receive relief , they want full recovery of their loss. They expect necessary support and cooperation from government to cope with the adverse situation and to get rid threat of further damage.

It was evident that 100% of the respondents expected permanent dam and effective protection of the river bank. 67% respondents demanded allocation of khas land

among the displaces, 58% asked for bank loan without interest, 53% desired free education of their children, 46% asked for trained rescue team for saving the lives and properties. 42% demanded well planned and proper resettlement of the displacees, 32% claimed for employment opportunity in home and abroad and 23%, made their appeal to excuse their previous bank loan.

8.2 Policy Recommendations

It is common in Bangladesh that the victims of riverbank erosion do not get same response like the victims of flood, tornado and cyclone- who get importance in the list of disasters. Because of its slow process and scattered incidences, displacees of riverbank erosion fail to draw attention of the respective authorities. Riverbank erosion does not get so much medium coverage as like victims of other disasters. As a result, almost a silent catastrophe is going on throughout the year to that unfortunate group of people. But there is no specific policy or program for the riverbank erosion sdisplacees neither in government nor in non-government sectors. Riverbank erosion victims are not treated properly as the victims of other disasters. Government has issued general principles for distribution of relief goods to the victims of all disasters.. In May 2007, four important government circulars were issued by the Ministry of Food and Disaster Management directing guidelines for distribution of CI Sheets, General Relief (cash), allotment (cash) for house building, and General Relief (Food) among the victims of cyclone/fire/flood/riverbank erosion/tidal bore /earthquake etc. Riverbank erosion displacees do not get first two types of assistances because of absence of the required conditions. For getting CI Sheets, victims should have their own land. But, victims became ‘displacees’ losing their land due to riverbank erosion.

So, they fail to get CI Sheets which is essential for building a temporary shelter. They do not get general relief (cash) also. If a person dies due to other disasters his family gets assistance as cash. But, death is rare in case of riverbank erosion. Twenty KGs of rice is distributed to each family once only as general relief, with which a five-member family can run only for ten days. Three thousand Taka is given to each family to repair their damage houses.

Problem also lies in selecting victim families. There are temporary shelters build by the government at cyclone prone areas, where people take shelter during cyclone-surge. Authorities can easily get reach to them. They also can reach to those who do not come to the shelter, because they live in their own land. It is also the same for the flood affected people. But there is no temporary shelter for riverbank erosion victims or no early warning system or no early evacuation process to evacuate the inhabitants of erosion prone areas. As a result, after losing homestead, displacees leave the area on their own initiatives to distant safer places as there is no chance for getting land. Field level experience shows that most of them move to different administrative Jones. So, the officials of their original area cannot assist them and the officials of resettled area have limited scope to help them as they are not the victims of that administrative area. The consequence is that, these environmental refugees become more vulnerable and are compelled to live under extreme poverty. (Islam & Rashid 2011)

One the basis of the above discussion the following recommendations can be put forward to reduce the vulnerability and improve the condition of the riverbank erosion induced people.

8.2.1 *Prevention phase*

8.2.1.1 National Policy Development

It is estimated that about 100,000 people are made homeless every year by river erosion. It is one of the topmost disasters in respect of losses. The National Disaster Council (NDMC) should enact a comprehensive river bank erosion management policy for protecting the right of the displacees and to coordinate bank protection works and displacees' livelihood development program. Government should develop long term plan for helping the displacees due to riverbank erosion.

8.2.1.2 Innovation of Sustainable Technology

Technical assessment and innovation of sustainable technology for bank protection is needed for ensuring sustainable protection. The government should undertake large-scale engineering works and allocate fund for preventing the riverbank erosion and should ensure regular maintenance

8.2.1.3 *Massive afforestation*

Massive afforestation program should be implemented with the involvement of GO, NGOs and the participation of local people and their maintenance can reduces the erosion. Stern action against deforestation should also be taken.

8.2.1.4 *Form an international alliance*

Government should take initiatives to form an alliance among SAARC countries in order to ensure water distribution and advance warning about water follow, flood etc. and share knowledge among them. International agencies also be contacted in respect of river bank protection and rehabilitation of the displacees due to riverbank erosion.

8.2.2 *Precaution Phase*

8.2.2.1 *People awareness*

More consultation and discussion on climate change and its consequences is required in order to create awareness among the people. Training on disaster preparedness involving local institution/ local government can help the victims to reduce the loss and to take preparation quickly to face the situation.

8.2.2.2 *Early warning system*

Forecasting on river bank erosion using advanced technology and satellite connection and development of early warning system can help the people to take early preparation and reduce their losses. Regular monitoring on the situation at critical period and the use of local knowledge for providing early warning to the people in dangerous situation can be effective for salvaging people and property.

8.2.3 *Salvation and protection phase*

8.2.3.1 *Rescue Team*

Government should form a rapid response team with logistic support for salvaging lives and property at the critical moment for the most erosion prone areas in the country.

8.2.3.2 *Evacuation announcement*

Evacuation announcement and assistance be provided in advance in the dangerous situation can be helpful to the victims.

8.2.3.3 *Designation of the area for resettlement:*

Some areas or sites are to be designated for resettlement where the victims may be

allowed to re build their structure quickly. Government should provide them with adequate assistance for their shelter.

8.2.3.4 *Emergency food ration*

The displacees face food crisis immediate after erosion. So, emergency food provision may be given to the victims. They expect that the food rationing be provided by the government to the victims of riverbank erosion.

8.2.4 *Rehabilitation Phase*

8.2.4.1 *Resettlement plan*

Displacees resettle themselves here and there as per their capacity. Comprehensive plan for resettlement should be made for the better settlement. Local administration and local government can take measure for resettlement with income generating activities and skill development.

8.2.4.2 *Support to the severely affected families*

The homestead plot, housing materials and financial support are needed for the victims. They expect that the government and non-government organizations should come forward to extend help and assistance to the needy families.

8.2.4.3 *Support in Health and WATSAN*

The displacees are subject to health hazard and its ultimate result is epidemic. The government should provide them with health care and low-cost house with sanitary latrine and arsenic-free drinking water facilities. This assistance will help them in adapting to their hazardous riverine environment.

8.2.5 *Survival and Livelihood Management phase*

8.2.5.1 *Social Safety Coverage*

Expansion of social security program for the displaces like VGD, VGF, widow allowance, old age pension, disability pension, stipend for disable children should be extended to the displacees.

8.2.5.2 *Distribution of Khas Land*

Distribution of government khas land among the displacees of below poverty level can be helpful in rehabilitating the victims. Agricultural equipments should be distributed among the displacees either free of cost or at a subsidized rate.

8.2.5.3 *Education for children*

The displacees lost not only their homestead and cultivable land but also the educational institution. Government should take initiative for ensuring the continuation of study of their children. Satellite schools may be established for the children of the victim families.

8.2.5.4 *Employment Generation*

The displacees wait for their employment by the government and non-government organizations for their survival. They should arrange skill development training which can enable them to get suitable employment. Effective plan for exporting manpower from among the erosion victims with short term training and financial support by the government can be helpful program in respect to the rehabilitation.

For addressing the problem of erosion Government, NGOs and public representatives should pay head and take interest on the problem. National policy and comprehensive action plan should be taken.

8.3 Conclusion:

This study was conducted to focus on the socio-economic conditions of the riverbank erosion victims of Bangladesh and focus on the strategies taken by the erosion displacees for coping with the situation and to survive. In absence of adequate institutional and structural support the victims undertake their own strategies to confront their precarious condition. It is found that the influences of the ecological and the socio-economic conditions and the strategies taken by the victims are less effective to survive with the changing circumstances. By developing social relationships with their social counterparts the victims of riverbank erosion have adopted some indigenous strategies to cope with their precarious conditions. They share sorrows and pleasures with their counterparts.

It is found that the displaced people have adopted diversified strategies for their initial adaptation to the physiographic, economic and socio-cultural situation in the villages. We have listed as many as eleven diversified strategies. It seems that the most important way of dealing with it is to allocate bank loan for them without interest. They also obtained help from relatives. However, a few of the villagers admitted receiving some kind of help from government and from the local NGOs. But they rarely got any help from the local leaders and UP members.

This study has both academic and policy related implications. Under the circumstances the policymakers and development workers at the national level needed to be aware of the nature of socio-economic and environmental conditions of

riverbank erosion in Bangladesh.

From the above discussion it is clear that the erosion has a great impact on the livelihoods of riparian population, agriculture, and environment. Different types of vulnerabilities are being generated as a consequence of erosion. Family relation and social bondage break down, and the social status is degraded. The social services and the social networks are also disrupted. Therefore, structural measures and at the same time non-structural measures should be adopted for reducing socio-economic problems of the displaced persons due to river bank erosion.

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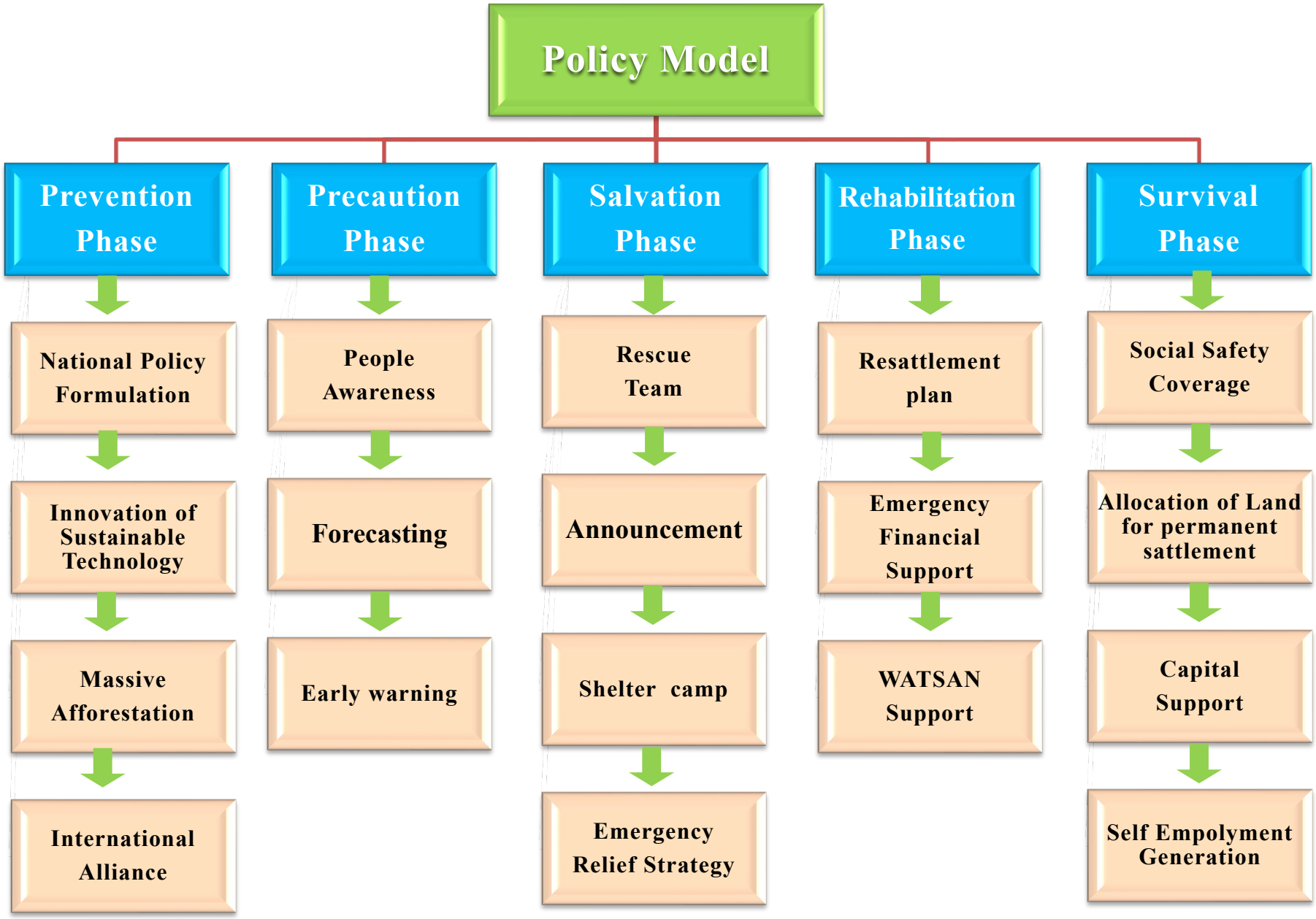
Policy Model
Prevention Phase
National Policy Formulation
Innovation of Sustainable Technology
Massive Afforestation
International Alliance
Precaution Phase
People Awareness
Forecasting
Early warning
Salvation Phase
Rescue Team
Announcement
Shelter camp
Emergency Relief Strategy
Rehabilitation Phase
Resattlement plan
Emergency Financial Support
WATSAN Support
Survival Phase
Social Safety Coverage
Allocation of Land for permanent sattlement
Capital Support
Self Empolyment Generation