CONFRONTATION WITH MONGA BY THE MONGA AFFECTED PEOPLE OF GANGACHARA UPAZILLA UNDER RANGPUR DISTRICT

BY

MD. AHSAN HABIB

Reg. No. 03-01136

A Thesis

Submitted to the Faculty of Agriculture,
Sher-e-Bangla Agricultural University, Dhaka,
In partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

IN

AGRICULTURAL EXTENSION

SEMESTER: JANUARY- JUNE - 2008

APPROVED BY:

.....
Prof. Mohammad Hossain Bhuiyan
Supervisor

.....
Prof. Md. Shadat Ulla
Co-Supervisor

.....
Prof. M. Zahidul Haque
Chairman,
Examination Committee

CERTIFICATE

This is to certify that thesis entitled "**CONFRONTATION WITH MONGA BY THE MONGA AFFECTED PEOPLE OF GANGACHARA UPAZILLA UNDER RANGPUR DISTRICT**", submitted to the faculty of Agriculture, Sher-e-Bangla Agricultural University, Dhaka, in partial fulfillment of the requirements for the degree of **Master of Science** in **Agricultural Extension, embodies the result of a piece of *bona fide* research work carried out by Md. Ahsan Habib,** Registration No. 03-01136, under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

I further certify that such help on source of information, as has been availed of during the course of this investigation has duly been acknowledged.

Dated:03.04.2009
Dhaka, Bangladesh

.....
Prof. Mohammad Hossain Bhuiyan
Supervisor

Dedicated

To

My Beloved

Parents & Grand Parent

ACKNOWLEDGEMENT

All praises are due to Almighty Allah, the Great, Gracious and Merciful, Whose blessings enabled the author to complete this research work successfully.

The author is grateful to them all who made a contribution to this research work, although it is not possible to mention all by names.

In particular, the author takes the opportunity to express his deepest sense of gratitude to his honorable Supervisor Prof. Mohammad Hossain Bhuiyan, Professor, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka for his inspiration, valuable suggestions, constant guidance and intensive supervision throughout the period of the study and preparation of this thesis.

The author takes an opportunity to express his profound gratitude and sincere appreciation to Md. Shadat Ulla, Professor, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka, as Co-supervisor, his creative suggestions, guidance and constant inspiration from beginning to the end of the work have greatly contributed to the completion of the study.

The author wishes to express his sincere appreciation and heartful indebtedness to all other teachers of the Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka for their valuable advice and suggestions in conducting the research.

The author is grateful to the monga affected people managed themselves to give their valuable time during interviews for the collection of data. The author is also grateful to Dr. Jasim Uddin & Mr. Mosiur Rahman and other PKSF personnel for their kind cooperation during the research. Moreover the auther is thankful to the personnel of Padakhep Manabyk Unnayan Kendra, Gangachara unit.

Special and thankful appreciation is also due to the friends of researcher namely, Alo, Arif, Mintu-Shipra, Farid, Masum, Ifrat, Hasan, Iqbal, Shoaib, Zuboraj, Pulok, Sharif, Sumon, Masum, Runa, Kanta, Dalia, Mousumi, Rafia, and Tanima for their fellow feeling and encouragement during the study period.

Lastly the author cannot but expresses his immense indebtedness, deepest sense of gratitude and profound respect to his parents, brothers, sister-in-lows and grandmother who had been a constant source of blessing, inspiration and encouragement for his higher study.

The Author

CONTENTS

CONTENTS (Contd.)

CONTENTS (Contd.)

CONTENTS (Contd.)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABBREVIATIONS AND ACRONYMS

BRDB	=	Bangladesh Rural Development Board
BBS	=	Bangladesh Bureau of Statistics
BRAC	=	Building Resources Across Community
CFW	=	Cash for Work
CLP	=	Chars Livelihoods Program
CPD	=	Centre for Policy Dialogue
DER	=	Disaster and Emergency Response
df	=	Degrees of Freedom
DFID	=	Department for International Development
FFW	=	Food for Work
GDP	=	Gross Domestic Product
GoB	=	Government of Bangladesh
GR	=	Gratuitous Relief
IMO	=	International Monetary Organization
MDG	=	Millennium Development Goal
NGO	=	Non Government Organization
OMS	=	Open Market Sell
PKSF	=	Palli Karma Sahayak Foundation
PRSP	=	Poverty Reduction Strategy Paper
RDRS	=	Rangpur Dinajpur Rural Service
TR	=	Test Relief
VGD	=	Vulnerable Group Development
VGF	=	Vulnerable Group Feeding
WFP	=	World Food Program

ABSTRACT

The main purpose of the study was to determine and describe the confrontation with *monga* affected people under Rangpur District and to explore the relationship between the selected characteristics of *monga* affected people and their confrontation with *monga*. The study was conducted at Gangachara Upazilla under Rangpur District. Data were collected from the *monga* affected people using a pre-tested interview schedule during the period from 23th June 2008 to 24th July 2008.The highest proportion (65.72 percent) of the respondents had medium confrontation with *monga* compared to 27.62 percent having low confrontation with *monga* and 6.66 percent had high confrontation with *monga*. Pearson Product Moment Correlation (r) test was used to ascertain the relationships between the concerned dependent and independent variable of the study. Age, level of education, farm size, annual family income, family assets, credit availability and migratory behavior had positive and significant relationship with confrontation with *monga* while family size, food security status and scope of work during *monga* period had non-significant relationship with confrontation with *monga*. Landlessness of farmers causes the highest severity of *monga* as indicated by its CMI of 256 while cultivation of tobacco causes the lowest severity of *monga* as indicated by its CMI of 64. And creating permanent work opportunities by the government and other agencies would be the best remedy of *monga* as indicated by its MRI of 250 while protection and repair of Tista barrage would be the lowest remedy of *monga* as indicated by its MRI of 59.

Chapter I

INTRODUCTION

CHAPTER I

INTRODUCTION

1.1 General background

Nowadays, the term *monga* is widely known in Bangladesh. The national media reports about the seasonal food insecurity are using the term '*monga*' very frequently. *Monga* or seasonal food insecurity is not a new phenomenon in rural Bangladesh, but the topic just started to catch interest in the last few years. It is said that the term *monga* originates from the northern districts. *Monga* is a popular expression for a severe food crisis. In other parts of the country other expressions like *akal* or *ovab* are used for the same or similar situations.

Bangladesh is an agro-based country and her economy is primarily depended on agriculture. About 85% of the total population live in rural areas and are directly or indirectly engaged in a wide range of agriculture (World Bank 2005). People of North Bengal mainly greater Rangpur and Dinajpur are poorer and underdeveloped than other parts of this country. Agriculture is the main occupation of this region. Lands take the leading role in generating rural income and its distribution in this region. But 80-90 % of the household do not posses enough land to generate income for subsistence as they are either landless or near landless. These large proportions of population live only by selling their labors in agricultural activities. Labors are available in agricultural sector due to lack of opportunity in other non agricultural sectors (industries, poultry, dairy or cottage industry *etc.*). So the labor wage is very low in this area. With the meager income, the poor cannot meet their basic needs even two square meals. On the other hand rich people do not create any opportunity of income generation for the poor. Ultimately poor becomes poor and rich becomes richer. It is known that people of this region bearing the blame of poverty from generation to generation.

The Northern Region of Bangladesh is situated in the Tista and Jamuna basin, and contains many tributaries of these. Topography and climate make the area ecologically vulnerable to destabilizing variations including floods, river erosion, drought spells, and cold waves, all of which occur more frequently and intensely than in other regions. In addition, the north-west region of Bangladesh, a slightly slopped plain area is a food surplus production area, where agriculture is the principal source of employment. Despite this, a large number of populations remain food insecure. This is primarily the outcome of poor food access resulting from unequal land distribution, low agricultural wages and the impact of natural disaster (The Food Security Atlas of Bangladesh, 2005).

People usually call the period '*Monga*' as *Mora Kartic*, meaning the months of death and disaster. These two months come with more hard time than usual to the rural people because of extremely shrinking job opportunities. This is due to lack of industry oriented job opportunity in that area. In this context of vulnerability, seasonal food insecurity manifests itself in all three of its dimensions: availability, access and utilization. The shocks that trigger food insecurity are usually local natural disasters, aggravated by the specific vulnerability that the hard-core poor endure in economic, social, health, and governance factors.

1.1.1 Definition and interpretation of *monga*

'*Monga*' is not itself the cause of the problems, but the word used to describe the impact at household level of a combination of factors such as the reduction in day-labor opportunities after the rice crop is sown arid before the harvest, seasonal higher prices of basic food commodities, and the after-effects of monsoon flooding (DER, 2004b).

According to Center for Policy Dialogue (CPD) "*Monga* is a local term used to indicate acute deprivation caused due to the erosion of purchasing power from lack of gainful employment opportunities".

This periodic catastrophe has long been linked with our traditional subsistence agriculture system, feudal land tenure arrangement and exploitative *dadan* system in rural credit market. Sometimes natural calamities like riverbank erosion, flood, drought *etc.* severely affect intensity and extensity of *monga*. On the other hand, lack of transport, marketing, irrigation facilities, employment opportunities in the *monga* region can increase people's vulnerability to a great extent. As a result *monga* may be considered as both nature and man-made disaster.

1.1.2 The location of *monga* affected area

The North Bengal as a whole is relatively disaster prone area and the economic condition is poor in comparison to other parts of the country. Five northern districts (Rangpur, Gaibandha, Kurigram, Nilphamari and Lalmonirhat) are affected by *monga* during the months of Aswin-Kartic and Chaitra. Kurigram, Nilphamari and Gaibandha and particularly the char and riverbank areas of Brahmaputra, Jamuna and Tista are found to be severely affected by *monga*. Some basic statistics of *monga* prone districts are given in table 1.1 showing wage rate and other aspects of poverty.

Table 1.1 Some basic statistics of *monga*-prone districts

District	Area (sq.km)	Population Density	Cultivated Land (ha.)	Agri. labor Household.	Wage Rate	Literacy Rate (7+)
Rangpur	2368	1101	394638	194648	62	40
Lalmonirhat	1241	894	194849	80855	63	41
Kurigram	2296	720	280579	160798	50	32
Nilphamari	1581	994	279635	126650	53	37
Gaibandha	2179	981	328269	193970	50	34

Source: BBS,2004

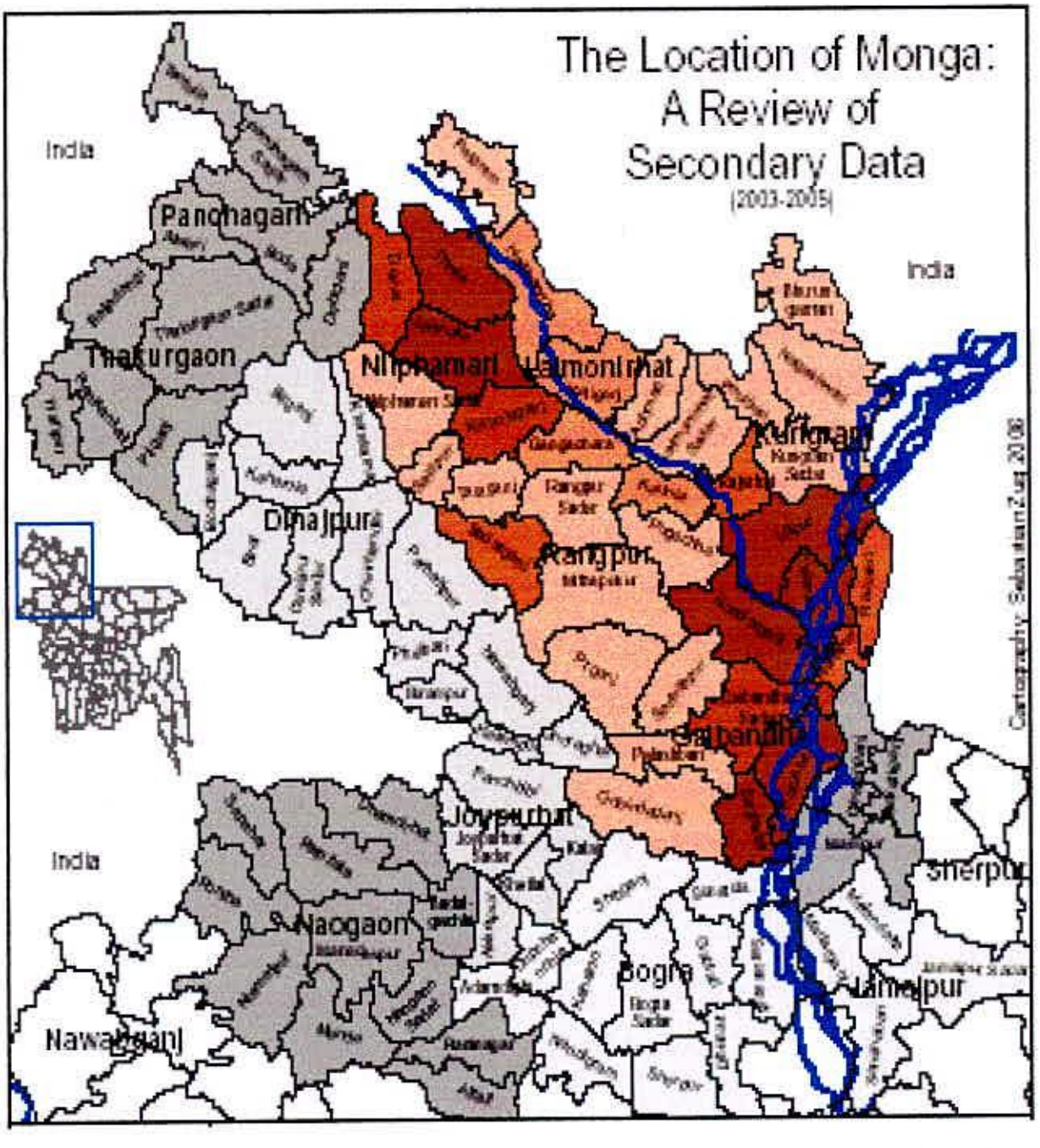


Fig. 1.1 The Map shows *monga* affected areas (colored portion)

1.1.3 Existing cropping pattern and period of occurrence of *monga*

To have a clear understanding on the period of occurrence of *monga*, it is necessary to have a look on the existing cropping patterns in the *monga* region. Agriculture in the *monga* region is not so diversified. Usually there are six cropping patterns followed in the Northern region as shown in the Table 1.2.

Table 1.2 Existing 6 different cropping patterns in Northern Bangladesh

Sl	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1		Boro							Aman			
2		Tobacco							Aman			
3		Maize							Aman			
4	Potato				Maize				Aman			
5		Wheat							Aman			
6	Potato	W.Veg			Jute				Aman			

Note: Shaded months are *monga* period

Source: Bithi, 2006

The farmers now follow diversified crops in *boro* season, but in no way they give up/ignore *aman* production. This causes joblessness in agricultural field in the month of September, October and November. Pre-harvest acute employment crisis during *Aswin* and *Kartic* (October-November) among the poor farmer causes occurrence of *monga*. This situation continues up to harvesting period in December. *Monga* also appears during *Chaitra-Baishakh* before harvesting of *boro*, but its severity remains relatively lower.

Looking at *monga* from a rights-based viewpoint, the Government of Bangladesh has the obligation to actively combat food insecurity and *monga* as one of its major manifestations. Article 15 of the Bangladeshi constitution states: "*It shall be a fundamental responsibility of the State to attain, through planned economic growth a constant increase of productive forces and a steady improvement of the material and cultural standard of living of the people, with a view to securing to its citizens the provision of basic necessities of life, including food, clothing, shelter, education and medical care*"

a) *the provision of the basic necessities of life, including food, clothing, shelter, education and medical care;*
b) *the right to work, that is the right to guaranteed employment at a reasonable wage having regard to the quantity and quality of works;*
c) *the right to reasonable rest, recreation and leisure and*
d) *the right to social security, that is to say lo public assistance in cases of undeserved want arising from unemployment, illness or disablement, or suffered by widows or orphans or in old age or in other such cases. (Salam, 2008).*

Considering *monga* situation government should gear up Vulnerable Group Feeding (VGF), Vulnerable Group Development (VGD), and Food for Work (FFW) and Cash for Work (CFW) program. Allotment under Test Relief (TR) and Gratuitous Relief (GR) should be increased because thousands of starving people in the region used to earn a living by engaging themselves in various rural developmental activities which give some respectability to the people in earning their livelihood without having to beg or to flock the cities to eke out a living. The activities included renovation of roads, tree plantation, earth filling work, re-excavation of ponds and canals.

As *monga* badly affect the livelihood of rural poor, so it is a matter of humane. Peoples are the victim. It is hopeful that GOs *e.g.* Polli Karma Sahayak Foundation (PKSF), Bangladesh Rural Development Board (BRDB) and NGOs *e.g.* Rangpur Dinajpur Rural Service (RDRS), Grameen Bank, Building Resources Across Community (BRAC), Zibika, Padakhep Manabyk Unnayan Kendra *etc.* have taken initiatives to make *monga* situation tolerable. Among the activities awareness rising about *monga*, various soft loan schemes during the lean period, introduction of new cropping patterns in *monga* prone areas, various saving schemes, introduction of different income generating activities and assistance upon them *etc.* are mark able.

1.2 Statement of the problem

Monga is a major and constant problem of the northern districts of Bangladesh. It is a consequence of few past famines that had occurred in this area in 1950s and in 1974. Both of these incidents took lot of lives of general people. Currently Bangladesh faces two periods of food insecurity induced by agricultural employment shortage: *monga* and *little monga* preceding the harvest of *aman* and *boro* respectively. The phenomenon of lack of options for income generation at this time of year in North Bengal was noted as long ago as the colonial period but has only been reported prominently in the media in recent years.

During the *monga* season people are forced to starve due to the lack of food and access to food as well as there are no crops to be harvested and very little work for farmers to feed their families. Many farmers rush to the cities to become temporary rickshaw pullers or day laborers or to find any jobs to earn to pay off the loans and bring home some much needed cash to live by.

Currently a debate is going on regarding the need to achieve durable solution to *monga* problem, the government and NGOs trying to make efforts towards eradication *monga* from north region. In view of forgoing discussion the researcher undertook a study entitled "Confrontation with *Monga* by the Affected People of Gangachara Upazilla under Rangpur District".

Main focus of the study was to determine the confrontation with *monga* by the *monga* affected people. So, it is necessary to know how people face *monga* and what happens to them in the long run with the following queries:

i. How the people confront *monga* in *monga* prone areas?
ii. What are the characteristics of *monga* affected people that help them to confront *monga*?
iii. What relation exits between their selected characteristics of the *monga* affected people and their confrontation regarding the causes and remedies of *monga*.

iv. What are the causes and remedies of *monga* as perceived by the *monga* affected people?

1.3 Specific objectives of the study

In view of the consideration stated above the following specific objectives were formulated for giving proper direction to the study.

1. To determine and describe the process of confrontation with *monga* by the affected people of Gangachara Upazilla under Rangpur district

2. To determine and describe some selected characteristics of the *monga* affected people of Gangachara upazilla under Rangpur district. The selected characteristics were as follows:

    i. Age
    ii. Level of education
    iii. Family size
    iv. Farm size
    v. Annual family income
    vi. Family assets
    vii. Food security status
    viii. Scope of work during *monga* period
    ix. Credit availability
    x. Migratory behavior

3. To explore the relationship between the selected characteristics of the *monga* affected people and confrontation with *monga* of Gangachara upazilla under Rangpur district

4. To identify and describe the causes and the remedies of *monga*

1.4 Justification of the study

Monga is now a burning issue in our country. Government and NGOs are trying to alleviate *monga*. Though *monga* come here every year in cyclic order, so it is very much important to find out the main causes of *monga*, to know what efforts should need to combat and to determine how the people confront it by themselves.

The study aimed at evaluating and explaining the extent to which *monga* affects the livelihoods of landless rural poor. *Monga* creates major hardship and health problems to the population. The study area, Gangachara upazilla under Rangpur district is not different from it.

Very few or mere research has been reported home and abroad to determine farmers' confrontation about causes and remedies of *monga*. Therefore, this study was undertaken to determine confrontation with *monga* by the *monga* affected people. The findings of this study may be useful to many government and non-government organizations working in Bangladesh in the field of agriculture and rural development.

1.5 Scope of the study

The present study was initiated in order to have an understanding of confrontation with *monga* of the *monga* affected people about causes and remedies of *monga*. The findings of the study are applicable in Rangpur district under Rajshahi division. However, the findings may also be applicable for other areas of the country having similar physical, socio economic, cultural and geographical conditions of the study area. As seasonality of agriculture is a problem all over rural areas in Bangladesh and even in region that are said to be better developed, *monga* like situations are prevalent in other regions of Bangladesh, too. Thus the study may give pertinent information for making sound management and decision making for livelihood improvement.

1.6 Assumptions of the study

An assumption is the supposition that an apparent fact or principle is truly in the light of the available evidence (Goode and Hatt. 1952). An assumption is taken as a fact or belief to be true without proof. The research was carried out keeping the following assumptions in mind:

1. The respondents included in the sample for this study were capable enough to furnish proper responses to the questions set up in the interview schedule.
2. The sample size was representative of the whole population of the study area.
3. Views and perceptions furnished by the respondents were reliable and they expressed the truth while passing their perceptions and providing information and data.
4. The data collected by the researcher were free from bias.
5. The respondents of the study were said to be *monga* affected as they were day laborer, and/or their monthly income not more than Tk 1500 and/or possess less than 50 decimal of land.

1.7 Limitations of the study

Considering the time, money and other necessary resources available to the researcher, it becomes necessary to impose certain limitations, which are mentioned below:

1. The study was confined to only one upazilla namely Gangachara under Rangpur district.
2. The characteristics of the respondents in the study area were many but only ten of them were selected for investigation in the study.
3. For information about the study the researcher was depended on the data furnished by the selected respondents at the time of interviewing.
4. The study was conducted before the *monga* period.
5. Population of the study included only the heads of the farm families.

1.8 Definition of key terms

A concept is an abstract of observed things, events or phenomenon or in other words, it is a short hand representation of variety of facts (Wilkinson and Bhandarkar, 1977). A researcher needs to know the meaning and contents of every term that he uses. It should clarify the issue as well as explain the fact to the investigator and readers. However, for clarity of understanding, a number of key concepts/terms frequently used throughout the study defined are interpreted as follows:

Monga

The word '*monga*' means scarcity of food or near famine situation. It is a local term used to indicate acute deprivation caused due to the erosion of purchasing power from lack of gainful employment opportunities. The immediate impact of *monga* is on unemployment rates, then on household incomes, then on their food security, and finally on their nutrition levels. In this study food and nutrition insecurity at a specific time period in greater Rangpur district was called '*monga*'.

***Monga* affected people**

The people who were agricultural day laborer, near landless/marginal farmer, female headed household, poor widows and old aged, sick and disabled and victims of river bank erosion or other natural disaster were called *monga* affected people. In this study who possess less than 50 decimal of land or whose monthly income less than Tk. 1500 or who are day laborer were called *monga* affected people.

Farmers

The persons who were involved in farming activities are called farmers. They participated in different farm and community level activities like crops, livestock, fisheries, other farming activities etc. In this study the *monga* affected people were considered as farmers.

Age

The age of a farmer refer to the period of time from his birth to the time of investigation. It was measured in terms of year. Here age refers to the period of time from the birth of a *monga* affected people to the time of face-to-face interview with him.

Education

Education of an individual farmer was defined as the formal education received up to a certain level from an educational institute, (*e.g* school, college and university). In this study education of the *monga* affected people was measured in terms of actual year of successful schooling of them.

Family size

Family size of the respondent of the study refers to the total number of members including the respondent himself, spouse, children and other dependents, which live and eat together in a family unit.

Farm size

Farm size refers to the total area possessed by a farmer on which he carries out farming operations to provide life support including food and shelter to his dependents. The farm size being estimated in terms of full benefit to the farmers and was measured in terms of hectares.

Annual family income

It means the total earning by the respondent himself and the members of his family from agriculture and other sources during a year. It was expressed in taka.

Family assets

Family assets include all those things which have an economic value that was possessed by the *monga* affected people. In times of crises people have the

possibility to transform their assets into money to cover their daily expenses. Here, family assets include house, livestock, jewelry, furniture and agricultural implements.

Food security status

Food security exists when all people, at all time, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food performance for an active and healthy life.

Scope of work during *monga* period

Scope of work during *monga* period refers that *monga* affected people were trying to get a job or to involve in a job though job opportunities strongly decreased between transplanting and harvesting of paddy.

Coping strategies

Coping strategies are the strategies that the poor, and others, adopt in the face of threats such as natural calamities, emergence of various diseases and adverse circumstances. Here people try to minimize the effect of the lean season or *monga* on their livelihoods through different strategies by themselves or with other individuals who do not suffer from *monga.*

Migration

The movement of *monga* affected people from one place to another to secure a better life by finding a suitable atmosphere to live there. Most of the people are being migrated to the divisional cities or capital for getting a job due to extremely shrinking job opportunities at their locality. They are being called *mofij*.

Livelihood

Livelihoods denotes the means, activities, entitlements and assets by which *monga* affected people make a living. A livelihood is sustainable which can cope with

and recover from stress and shocks, and provide sustainable livelihood opportunities for the next generation.

Social security

Social security is something experienced by individuals but produced within societies. It has material and non-material manifestations, including both the extent to which people are able to meet their most basic of needs (things such as water, shelter, good health and food) in a secure manner and the freedom people enjoy from threat of violence, prejudice, oppression and environmental risks.

Variable

A general indication in statistical research of characteristic that occurs in number of individuals, objects, group etc. and that can take on various values, for example the age of an individual.

Availability

Availability is the physical existence of food. In this framework availability refers to the regional or national level and is a combination of food production, commercial food imports, food aid, and domestic food stocks.

Access

Access is ensured, when the households and its members have sufficient resources to obtain foods. This can be done through subsistence production or by gaining enough income to purchase on the market.

Utilization

Utilization refers to the quality of the food consumed and how balanced it is concerning its nutrients. Utilization requires not only an adequate diet, but also the ability of the human body to convert it into energy, which is either used to undertake daily activities or stored.

Cash for Work (CFW)

Cash for Work (CFW) is a program generated by the government and other agencies providing work/employment to a big number of *monga* affected people for periods up to several weeks or even months. It is a short term employment creation which the government mainly uses for building and maintaining roads, embankments and flood shelters. It is a similar term with *"kabita" i.e.* kajer binimoyae taka.

Food for Work (FFW)

Food for Work (FFW) is a program in which people receive directly food instead of money, which can be an advantage during *monga* as food prices are high. It is also a short term employment creation which the government mainly uses for feeder road repairing, homestead raising and setting up sanitary latrines. It is a similar term with *"kabikha" i.e.* kajer binimoyae khadaya.

Vulnerable Group Development (VGD)

Vulnerable Group Development (VGD) is a relief program generated by the government in co-operation with the WFP in which women can receive 30 kg of rice per month for a period of 18 months. It generally aims to reduce the vulnerability of the female headed households towards food insecurity. VGD beneficiaries are usually selected by the Union Parishad (UP). But it is an open secret that a VGD card costs approximately a bribe of 1000 taka, which the poorest cannot afford.

Vulnerable Group Feeding (VGF)

Vulnerable Group Feeding (VGF) is a relief program generated by the government and other agencies distributing a certain amount of grains for a few months to those families, who have been targeted as being most vulnerable.

Millennium Development Goals (MDGs)

The eight Millennium Development Goals (MDGs) – which range from halving extreme poverty and developing a global partnership for development by the target date of 2015 by all the world's countries and the entire world's leading development institutions. In September 2000, 147 heads of State and Government, and 189 nations in total, in the United Nations Millennium Declaration (A/RES/55/2) committed themselves to promote "a comprehensive approach and a coordinated strategy, tackling many problems simultaneously across a broad front to freeing the entire human race from want". They have galvanized unprecedented efforts to meet the needs of the worlds poorest and these efforts are being known as Millennium Development Goals (MDGs). The goals of MDGs are-

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote a gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability and
8. Develop a global partnership for development

Poverty Reduction Strategy Paper (PRSP)

The Poverty Reduction Strategy Paper (PRSP) initiated by the International Monetary Fund (IMF) and the World Bank (WB) in 1999, results in a comprehensive country based strategy for poverty reduction. It aims to provide the crucial link between national public actions, donor support and the development outcomes needed to meet the United Nations Millennium Development Goals (MDGs). The PRSP document identified eight major priority areas namely- 1.Employment, 2.Nutrition, 3.Quality education, 4.Indigenous good governance, 5.Maternal health, 6.Sanitation, 7.Checking crime and 8.Monitoring.

Chapter II

REVIEW OF LITERATURE

CHAPTER II

REVIEW OF LITERATURE

The present study is concerned with the farmers' extent of confrontation with the *monga* that occurs in greater Rangpur district and its relationship with their selected characteristics and also to identify the reasons for why *monga* occurs and how its remedies are made by farmers. After searching the available books, journal and printed materials from home and abroad, very few literatures were found directly related to the dependent variable.

It is worth mentioning that such a study like confrontation with monga of landless rural people is an important study. No empirical study on this issue was conducted before. However some NGOs or interested persons have some descriptive studies which are very theoretical and conceptual. A foreign social worker Zug (2006) studied on *monga* and developed some conceptual matters. As the study is relatively new in Bangladesh, related reviews of the past studies were not found fairly enough. However, reviews of relevant literatures were presented to set the context of the study.

This chapter encompasses literature from following major areas of investigation namely:

1. *Concept of monga and its logical interpretations and the historical background of past famines, poverty and monga, and effect of monga on households,*
2. *Causes and confrontation with monga,*
3. *Relationship of selected characteristics of individuals with farmers' confrontation and*
4. *Strategies and intervention for tackling monga.*

2.1 Reviews on *monga*

2.1.1 Concept of *monga*

The word '*Monga*' means *akal* or *ovab that is* scarcity of foods or near famine situation. It is a very familiar word to the people of the country especially in the north (Ahmed *et al.*, 2004). The basic explanation of *monga* phenomenon is widely known: employment and income opportunities of the rural poor strongly decrease between transplantation and harvest of paddy. The lack of income reduces their ability to cover nutritional requirements. The achievement of sufficient nutritional requirements depends on the three factors availability, accessibility and utilization of food. Each of these three factors can vary in time (Zug, 2006).

Ahmed (2004) stated that the Bengali month *Ashwin* and *Kartik* are off season for the agricultural laborers as they have no work after transplanting of *aman* paddy. For this seasonal unemployment, their purchasing capacities become very low. As a result, they cannot manage two square meals and sometimes they consume unhygienic products and collect wild growing plants. This human tragedy in the northern districts is called *monga* and in the southern districts called *akal*.

Bithi (2006) found that during the seasonal unemployment people face hardship in managing food and cloths. Limited scope for alternative employment in nonagricultural sector compels unemployed people to sell their labor at the lowest price. This ultimately leads extreme seasonal poverty termed as *monga*.

Ahmad (2005) conducted a research in several regions of Bangladesh during the months when the households face scarcity. She found out that "irrespectively of location *Badhro, Aswin* and *Kartik* (*monga*) are the three months of scarcity/deficit followed by the months *Ashar, Sraban* (floods) and *Chaitra* (little *monga*)". The author directly links the reasons for the scarcity in

Ashwin and *Kartik* to a lack of agricultural work during the lean season of *aman* rice cultivation.

Although *monga* is restricted to the time before harvest of aman rice, often it extends a period of one and a half to three month (DER, 2004a). Others use the term in a wider period of time and include the respective time before boro rice is harvested around mid March to mid April (WFP, 2005).

According to Zug (2006) "*Monga* is seasonal food insecurity in ecologically vulnerable and economically weak parts of north-western Bangladesh, primarily caused by an employment and income deficit before *aman* is harvested. It mainly affects those rural poor, who have an undiversified income that is directly or indirectly based on agriculture." He also found that marginal farmers face *monga*, too. Their financial assets reduce due to successive inputs supply to their field, but they receive the return for their work not until after harvest. The financial resources of many marginal farmers are not enough to ensure the inputs for their crops and sufficient food for their families in the same time.

As *monga* is mainly defined as seasonal employment shortage, it has turned into a kind of synonym for it, one might get the impression that seasonal employment shortage in Bangladesh and connected lower intake of foods is only present in the *monga* regions (Greater extend-greater Rangpur, lesser extend-greater Dinajpur). This is not true at all. Seasonality of agriculture is a problem all over rural areas in Bangladesh. Even in regions that are said to be better developed (Zug, 2006).

Definitions used in the debate among NGOs, scientists, the government and journalists are contradictory, although they mainly agree on their central definitions. It is widely agreed that *monga* is a phenomena of food insecurity, which is strongly connected to a seasonal employment deficit.

2.1.2 Understanding *monga*: logical interpretations

Monga like situations are prevalent in other regions of Bangladesh, too, but are not called *monga* there. There is a general perception that the problem is more severe in those districts than anywhere in Bangladesh. There are different reasons and explanations why the northern districts are more vulnerable. Poverty in *monga* prone areas is not only a seasonal problem. 'The *monga* districts' a bigger part of the population is earning its daily living from agricultural labor compared to most other regions in Bangladesh. And vulnerability to natural disaster kept the northern region relatively underdeveloped. Taking only the GDP's component of manufacturing into consideration, Bangladesh is very heterogeneous. The five worst-off districts Rangpur, Kurigram, Gaibandha, Lalmonirhat and Nilphamari were with the lowest GDP in whole Bangladesh. But there are other pockets in Bangladesh where the GDP is almost similar (Zug, 2006).

If people are talking about *monga*, they differ in the geographical use of the term. For example, Rahman (2005) reserves the term for the ecologically vulnerable northern part of the country. He calls similar phenomena in other regions seasonal poverty and excludes therefore all these regions from the *monga* definition.

But Shawkat *et al.* (2003) does not connect *monga* at all to a geographical area or mention locations like the northwestern districts, west of the Brahmaputra (DER, 2004a and Hasan, 2006) as regions where *monga* mostly, but not exclusively, occurs. In the public discussion *monga* is strongly related to the seasonal food insecurity in north-western Bangladesh.

Hasan (2006) observed that people within the so-called *monga* regions, which are more orientated towards the districts east of Jamuna, do not know the term *monga*, was also the case with some inhabitants of a char in Gaibandha's Shaghata Upazilla, which is geographically close to Jamalpur.

Absence of growth in the industrial sector, in the region has limited the scope for alternative employment in non-agricultural sectors. The poor economic condition, absence of employment opportunities, inadequate economic activities, joblessness of migrated labors during natural disasters are the main reasons of increasing poverty, and where people suffer more from poverty all around the year, it is a logical consequence that seasonal shocks have a bigger effect on their livelihoods and this acute poverty results *monga* especially in the northern districts as if they had higher income and a better nutritional status in normal periods (Bithi, 2006).

2.1.3 Famines in Bangladesh and *monga*

Monga, a near-famine situation which hits the northern districts every year, has forced poor people either to borrow money from local money lenders at an excessively high interest or to sell their labour in advance at an unusually low rate to keep their families from starvation (Wikipedia, 2007). Many people have sold their meagre produce of *aman* crops well before harvesting to tide over the acute shortage of employment and food.

Monga is a consequence of few past famines that had occurred in this area in 1943 and in 1974 (Ifrat, 2006). The Great Bengal Famine of 1943 was one of the worst famines to have struck this rise in the prices of food grains was a cause as well as an effect of the famine. And the 1974 famine was a rural phenomenon and people travelled miles from rural to urban areas in search of food. In this process many families were separated, while many others were totally uprooted. A large number of rural households were compelled to sell their last assets. Distress sale of land became the common practice.

The famine of 1974 is known to all of this generation. There was a shortage of food in 1974 throughout the world. However, unlike some other countries that suffered from food scarcity, the situation in Bangladesh was rooted in the historic evolution of the society and others germinated from poor management of the food distribution system in the face of severe floods (Wikipedia, 2007).

Zug (2006) stated that there are some interesting parallels between the famine and the *monga* phenomena. *Monga* is not caused by a shortage in available food, but by a weak access of rural poor to food.

There is a basic difference between famine and *monga*. During famine, shortfall in production combined with increased money supply created tremendous inflationary pressures on the economy that is people have enough money to buy a commodity but there is a less supply of a commodity in the market (Ifrat, 2006). But in *monga* condition people do not have any access to buy a commodity due to their scarcity of cash. This scarcity of cash leads to a fall of purchasing power, which ultimately leads to increasing acute poverty. Though *monga* and famine are not the similar term but it may be said that it is a continuation of past few famines. Poor become poor and rich become rich due to the past famines and they get the inherited poverty.

Modern achievements in science and technology and their subsequent impact on industry, agriculture, trade and transport brought a radical change both in the meaning and nature of famines. At present, it is accepted that famines originate mainly from 'entitlement failures' as Nobel laureate Professor A. Sen said, "Access to food is not only a function of food supply but it is influenced by a variety of factors that affect the capacity of particular households and social groups to establish entitlement over food" (Banglapedia, 2003).

2.1.4 Chronic poverty and *monga*

Monga is a cyclical food insecurity which occurs during the lean season and it directly affects those who are involved in agricultural activities. Zug (2006) made a distinction between *chronic food insecurity* –the inability to meet food needs on an ongoing basis, *temporary food insecurity* –when the inability is restricted to a specific shock like natural disaster or civil conflict and *cyclical food insecurity*-if there is a regular pattern of food insecurity every year.

World Bank (2005) provides a brief overview of the national and regional poverty profile. This poverty profile clearly indicates that 50% of the population is still living below the upper poverty line; 85% of the total poor live in the rural areas and with approximately 65-70 million poor, Bangladesh have the third largest number of poor people in the world. World Bank also found that there are large regional variations in the magnitude of rural poverty, ranging from 63% in the north-west region (highest) to 37% in the coastal areas (lowest) where 51% share of agriculture in rural household income in the north-west and 32% share in coastal areas.

About half of the total population in Bangladesh live in extreme poverty as their per capita income is less than $1 a day (Banglapedia, 2003). A key factor behind the high rate of poverty in Bangladesh is the increasingly insecure relationship between people and the land. Discrepancy in the land is one of the leading factors for poverty.

Bithi (2006) found that about 70% people of our country are landless or near landless and 36% people are agricultural labourer in the northern region. That is why; they are affected with the seasonal crisis like *monga*. Almost every year, a large number of marginal farmers become landless due to *monga* and river erosion.

Zug (2006) identified an important reason for chronic poverty is the local social system, which is strongly based on hierarchy. There are two classes in the northern rural community, rich who occupy huge land and poor who have no land other than homestead. The existence of middle class is hardly seen.

Economic viability can be seen as an indicator of '*monga*'. Greater Rangpur belongs to the regions where the GDP is comparatively low. In 1999/2000 Gaibandha was the district with the lowest GDP in whole Bangladesh. Taking only the GDP's component of manufacturing (BBS, 2004) into consideration, Bangladesh is very heterogeneous. Lalmonirhat, the weakest district

concerning manufacturing accounts for only 244 taka per year and capita. This is only 9% of the countries average and 1.6% of the strongest district Dhaka.

Rahman(2008) said that the incidence of poverty at the national level stands at 43.8%, while in the char areas the rate is 86.4%. He also said that in the char areas 61% people suffer from food insecurity occasionally while 31% people face food scarcity round the year. He urged the government to formulate a separate Poverty Reduction Strategic Paper (PRSP) for the well-being of char people, as the national PRSP fails to conceive the nature of their problems.

2.1.5 Effect *of monga* on households

What are the actual effects of *monga* on households had merely determined, rather some hypothetical occurrences are prepared and presented in different reports, seminars, round table talks etc. According to DER (2004b) the responses of households to *monga* are amongst the following:

i. Reduction in the size and number of meals prepared and consumed each day
ii. Recourse to the consumption of uncultivated foods from wild sources;
iii. Very low wage rates for day-labor (it is now as low as TK. 30 /day in the NW);
iv. Advance sale of labor (at a discount on the prevailing market rate);
v. Sale of fixed and moveable household assets, such as some land, livestock, jewellery, furniture, even pots and pans;
vi. Migration (especially of man) to other less affected rural areas, or to major cities;
vii. Taking advantage of repayment holidays on existing loans; and
viii. Contracting news loans, from micro-credit providers if possible, otherwise from village moneylenders at extremely high interest rates.

After CARE (2005) concrete manifestations of *monga* are

i. The poorest households are pushed into distress conditions, and become compelled to sell their assets for survival.
ii. *Monga* affected families are taking maximum one meal per day.
iii. Pregnant, children, lactating mothers including elderly people are suffering from malnutrition.
iv. Rate of diseases increase due to malnutrition and distressed life conditions.
v. Theft and hijacking increase in the *Monga* affected areas.
vi. Poor vulnerable people are changing their professions.
vii. Unrest and domestic violence tend to increase.
viii. Able-bodies boys and men migrate to cities and more resourceful rural regions of the country.
ix. Babies are born underweight and suffer malnutrition from their first days onward.
x. Child education stagnates.
xi. Loan from non-institutional sources increased.
xii. Disabled and elderly people of the families are neglected and suffer in particular.
xiii. Increased numbers of beggars.
xiv. Labor pledging in advance.

2.2. Causes of *monga*

2.2.1 Causes due to agricultural activities

Zug (2006) stated that agriculture in the affected regions mainly depends on paddy. The income of agricultural day-laborers is therefore strongly interlinked with the seasonality of paddy. There are two times in the cultivation process of paddy, which require a substantial number of laborers, first during transplantation of aman rice and second during cutting, transporting and husking of aman rice. In between transplantation and harvest, intercrop

activities can only provide little labor. And the seasonal poverty is dominant during this period.

Bithi (2006) found that only six cropping patterns are practiced in Northern Bangladesh. The farmers now follow diversified crops in boro season so *monga* was not found during the boro season, but in no way they give-up aman production during aman season. This causes joblessness in agricultural field in the month of September, October and November as aman is a long duration crop. *Monga* also appears during Chaitra-Bayshakh before harvesting of boro, but its severity remains relatively lower.

Unpublished data from the Sundarganj Upazila Agriculture Office stated that the diversification is comparatively high in boro season than in aman season. In 2005/2006 only 86.1%of the cultivated area in Sundarganj Upazila was planted with paddy, while the other area was planted with other grains(4.9 %, mainly wheat), vegetables (3.6%), potatoes including sweet potatoes(2.8%), and other crops like lentils and oil seeds(2.7%). So *monga* is a common phenomena in this area in aman season than in boro season.

Kabir (2005) described that Rangpur and Dinajpur is the important surplus regions concerning the production of rice and wheat. Rangpur has a cropping intensity of 200% which means, that in average people harvest two crops on one field per year. Although the intensity of agriculture is very high, the diversification of agriculture is comparatively low. Agriculture employment is therefore very much connected to the seasonality of rice that requires no labor during the problematic season.

Land distribution is the major problem in the *monga* regions. PKSF (2008) reported in a workshop that 23% of people have no household, 58% of people have 1-10 decimal of land, 18% of people have 11-50 decimal of land and only 1% of people have more than 50 decimal of land. While land is the vital

income generating source in rural areas, landlessness accelerates the severity of poverty.

2.2.2 Causes due to river erosion and flood

Char land and flood affected mainland in the northern districts are said to be the most *monga* affected area. The region is dominated by Jamuna River and its biggest contributor Tista (Zug 2006).

Sarker *et al.* (2003) found that Jamuna River grew bigger and its widening is not finished yet. In 1992 Jamuna was on average 11.2 km wide and widened on average 184 m per year in the period from 1983 to 1992. EGIS (2000) also found that the erosion in greater Rangpur district is roughly the same.

As the river beds are not very stable, the river erodes every year fertile land on the banks and washes some chars away while new ones emerge but the char area is not growing equally to the loss of main land. Sarker *et al.* (2003) found that the Jamuna River grasped nearly 260,000 ha of land and only in the last 28 years it destroyed about 70,000 ha of land. As a result many people are being displaced and lose their lands.

The affects of river erosion are a reason for the poverty of the individual. But as erosion affects a huge proportion of the population along the river, this is also a major reason why poverty in general is more prevalent there. A higher degree of poverty that is partly caused by erosion results in a higher vulnerability to seasonal poverty or *monga* (Zug 2006).

As Jamuna River mainly deposits unfertile course sands (Sarker *et al.*, 2003) in the northern districts and fertile smaller materials further south, the agriculture on the northern-chars is even worse than other chars in Bangladesh. Char dwellers are socially disadvantaged mainly due to a limited access to markets and services as they are sometimes more than two hours by boat away from the

mainland. People have to cover a long distance to sell and purchase products, which consumes time and money.

Rahman (1995) compared the situation of 1991 that had a big share of natural calamities with the normal year of 1990. Several parts of greater Rangpur experienced two rounds of floods in 1991 and according to local estimates 36% of cropped area was affected. In a rapid survey 94 households in Rangpur were asked on how many meals they had taken per day during natural calamities in 1991 and how many they took in the respective time during the last year. In 1991 59% of all households took only one meal per day on 4-7 days per week while this proportion was only 26% in 1990. Rahman sees the major reason for the worse situation in the natural calamities.

Zug (2006) found that the floods are a cyclical phenomenon in the *monga* affected area during the month of *Ashar* and *Srabon* (mid June to mid August) and therefore precede the plantation period of *amon* and *monga*. The floods can result in a loss of assets for the population. Houses are damaged and the unpredictability of the flood can harm agricultural activities. Therefore, many of them cannot build up enough cash or food reserves to get through the following lean season. It is therefore, more likely in the river basins that the lean season turns into food insecurity.

Bithi (2006) stated that there are 17 large and small rivers in this region all together and these rivers contribute a lot to the vulnerability of *monga*. In these areas flood occurs with full velocity. The floods determine and limit agricultural activities, as fields are not available for cultivation during certain periods. At that period there remains no works of cultivation in the submerged fields. The jobless day laborers become victim of *monga* in September to October and become vulnerable.

2.2.3 Causes due to price hike and low wage rate

Major seasonal patterns of market price fluctuations have impact in the *monga* period. These fluctuations are mainly accelerating the *monga* phenomenon (Zug 2006).

WFP (2005) describes that price hike is an outcome of complex interaction between natural calamities that damage crops and bring down the targeted crop production, artificial food crisis due to hoarding of food grain by the private traders and government interventions to stabilize prices etc.

Bithi (2006) stated that the poor people spend 86.7% of income for food. She observed in a report in June 2003, in comparison to 2001-2002, the price of ten essential goods increased 18.14% on average. But the labor wage rate remain almost static (TK 46 per day) during 1997-2002.

Rahman (2005) found a misappropriated price hike of essentials in 2005 which created an additional component of vulnerability for the rural poor. If the prices of essentials increase stronger than expected, affected people can only buy and consume less. The degree of price increase differs from year to year.

Rahman and Hossain (1991) compared the wage rates during the *monga* in 1991 with the average wage rates in normal periods when various agricultural activities are in full swing. They found that seasonal variation in agricultural wages were prevalent in nearly all regions of Bangladesh. For Bangladesh as a whole there was an average drop of 30% in the daily wage rate. The decline was biggest in greater Rangpur.

Rahman (2005) found that Day laborers earn only half of the money during the *monga* season than usually earn. He reviewed the data in 2005 that there is important changes which has taken place over the 1990-2005 period is the general reduction of the seasonal poverty problem across Bangladesh and its continued persistence in the ecologically vulnerable parts of northern districts.

The daily average wage for male laborers in greater Rangpur was TK 50.9 per day without meals only 68% of the average rate in Bangladesh (TK 74.5). Only greater Dinajpur had a similar low wage rate (TK 52.1). Agricultural laborers in all other greater districts were significantly higher paid with TK 60.7- 109 per day (BBS, 2004).

Micro-credit can turn into a big burden for those, who have to pay back their installments every week. As per CPD (2003) report loan disbursement was decreased while loan collection was increased in Rangpur area in 2003. In 2002 the loan disbursement was 16.87% of total loan, which decreased in 2003 to 13.02% as loan disbursement leads flow of money, increases economic activities and create job opportunities. CPD report also shows that in 2001-2002, during election, supply of cash money increased in rural areas as a result of *monga* was lower as speculated by the wise people.

2.3 Confrontation with *monga*

In times of shortage people try to sell various things they have. To obtain money for consumption, they need the money urgently and for this they often accept a lower price than the usual market price. Zug (2006) found that the price for chicken and cow decreases by 20-30% and 15-20% during floods and by 10-20% and 10-15% during *Ashwin* and *Kartik* respectively.

Bhattacharya (2005) found some people, who sold one mound of paddy for 175-200 taka in advance during *monga* 2004, which was worth about 350 taka during the following harvest period.

In times of crises people have the possibility to transform their assets into money to cover their daily expenses. Rahman (1995a) reported that families sold their land or took a mortgage. If people loss these asset, their livelihood capacity for the future strongly decreases. Other assets like livestock, trees, bamboo, jewelry, and furniture are sold as well.

Ali (2005) showed in his study area at Saturia Upazilla of Manikganj District, which is comparatively better-off (Bangladesh Planning Commission, 2005 and WFP, 2005), that people have to reduce the number of meals during the pre-harvest period and that they sometimes replace rice with root-crops like sweet potatoes, which is considered as 'poor men's crop'.

Zug (2006) showed that seasonal labor migration started some 10 to 15 years ago. There are mainly two situations that lead to seasonal migration: a lack of employment opportunities in the home regions of migrants or an employment surplus at the destinations. However, it is sometimes mentioned that seasonal migration has also some negative effects, like the insecurity of the remaining family concerning sexual harassment or other discrimination, and the risk of negatives impacts on the migrants like gambling and polygamy.

Hasan (2006) found in his study that community support plays a major role in supporting the weakest segments of the local community. People would not allow other people in the community starving to death. Even though most of them are very needy, the neighbors would share their scarece food with them.

2.4 Review of literature related to relationship between the selected characteristics of the monga affected people and their confrontation

2.4.1 Age and confrontation

Kashem (1977) in his study on the landless laborers on Barakhata union under Rangpur district examined the relationship between age of landless laborers and their problem confrontation. He found that there was no relationship between age of the landless laborers and their problem confrontation.

Hossain (1985) in a study on landless laborers in Bhabakhali union of Mymensingh district found that there was no relationship between age of the landless laborers and their problem confrontation. Similar findings were

obtained by Ali (1999), Rashid (1999), Pramanik (2001), Ahmed (2002), Hossain (2002) and Salam (2003) in their respective studies.

Rahaman (1995) in his study on problem confrontation by the pineapple growers in a selected area of Madhupur thana, under Tangail district. He found that there was no relationship between age of the pineapple growers and their problem confrontation.

Rahman (1995) conducted a study to identify the relationship between the personal characteristics and constraints facing in cotton cultivation of Muktagacha Thana under Mymensingh district. He found that there was no significant relationship between the farmers and their faced constrains in cotton cultivation.

Bhuiyan (2002) in his study found a positive and significant relationship between age of the farmers and their constraint in banana cultivation. Similar findings were obtained by Rahman (1996) in his study.

Rashid (2003) found that age of the rural youth had significant negative relationship with problem confirmation in selected agricultural production activities.

2.4.2 Level of education and confrontation

Akanda (1993), in his study on problem confrontation by the farmers in respect of cultivating BR11 rice found a significant negative relationship between education of the farmers and their problem confrontation.

Rahman (1995) in his study on problem confrontation by the pineapple growers in a selected area of Madhupur thana, under Tangail district found a significant

negative relationship between education of the farmers and their problem confrontation.

Rahaman (1995) in his study found that the education of the farmers had significant negative effective on their constraints confrontation in cotton cultivation. The findings indicated that the higher the education of the farmers, the lower was their constraints confrontation in cotton cultivation.

Haque (1995) in his study on problem confrontation by the members of Mohila Bittaheen Samabaya Sammittee working under the Bangladesh Rural Development Board found a significant negative relationship between education of members and their problem confrontation.

Rahman (1996) in his study on farmers' problems in potato cultivation in Saltia union under Gaffargaon thana of Mymensingh district found a significant negative relationship between education of the farmers and their problem confrontation.

Haque (2001) found a significant negative relationship between education and problem confirmation of the farmers in practicing IPM.

The study of Ismail (2001) revealed that there was no significant relationship between education and problem confirmation of farm youth. Similar findings were obtained by Raha (1989) and Halim (2003) in their respective studies. Thus it could be concluded that an overwhelming majority of the researchers found a negative relationship between these two variables.

Islam (2003) found that there was a significant positive relationship between ages the beneficiaries of seed production program of Proshika and their living

status in terms of annual income, food consumption, housing condition household assets, drinking water source and Medicare facilities.

2.4.3 Family size and confrontation

Hossain (1985) found in his study there was no relationship between family size of the landless labourer and their problem confrontation.

Hauqe (1995) found that family size of the members of Mohila Bittaheen Samabaya Samity had no significant effect on their problem confrontation.

Salam (2003) in his study found a positive significant relationship between family size and their constraint in adopting environment friendly farming practices.

Ali (2003) conducted a study on impact of micro-credit in the poverty alleviation of BRAC women beneficiaries in a selected area of Dinajpur district. He found a significant positive relationship between family size of the beneficiaries of BRAC and their annual income and food consumption.

2.4.4 Farm size and confrontation

Mansur (1989) found that there was a significant negative relationship between the farm size of the farmers with their problem confrontation in feeds and feeding cattle. Akanda (1993) in his study found a negative significant effect with their problem confrontation.

Rahman (1995) found that farm size of the farmer had a significant negative influence on their confrontation constraints in cotton cultivation.

Rahman (1996) found that farm size of the farmers had a significant negative effect with their problem confrontation.

Ali (1999) found that family farm size of the rural youth had no relationship with their anticipated problem confrontation in self-employment by undertaking selected agricultural Income- generating activities. Saha (1997), Rashid (1997), Hossain (2002), Bhuiyan (2002) and Salam (2003) found in their respective studies.

Haque (2001) revealed that significant positive relationship between farm size and problem confirmation of the FFS farmers in practicing IPM.

Rahman (2003) found that farm size of the rural youth had no relationship with problem confirmation in selected agricultural production activities.

2.4.5 Annual family income and confrontation

Kashem (1977) in his study examined the relationship between income of the landless laborers and their problem confrontation. Though the relationship was not statistically significant, the data indicated an appreciable negative trend between the two variables.

Saha (1983) found a significant positive relationship between income of farmers and their poultry problem confrontation in his study.

Hossain (1985) found a significant positive relationship between income and constraints faced by the landless laborers.

Hossain (1989) in his study on landless laborers in Bhabakhali union of Mymensingh district found a significant positive relationship between annual income of the landless laborers and their problem confrontation.

Haque (2001) found in his study that Annual family income of FFS farmers had a positive significant effect on their problem confrontation.

2.4.6 Family assets and confrontation

No review was found on this topic.

2.4.7 Food security status and confrontation

No review was found on this topic.

2.4.8 Scope of work during *monga* period and confrontation

No review was found on this topic.

2.4.6 Credit availability and confrontation

Afrine (1998) studied the impact of microfinance through various NGO operated interventions with two programs in Ghana. He employed both quantitative and qualitative technique for impact assessment. In terms of data collection, four main survey instruments were used -questionnaire interviews, case studies, focus group discussion and field observation. The impact result shows some significant positive changes in all the sectors like business opportunity, market opportunity, quality of business of premiers, household assets, housing condition, health condition, participation in social activities etc.

Zebunnesa (1998) examined that micro-credit reduces poverty vulnerability through a case study of BRAC, one of the largest providers of micro-credit to the poor in Bangladesh. Data were collected from 1072 households and found that the largest effect on poverty arises when a moderate-poor BRAC lone borrows more that 10,000 taka (US$200) in cumulative loans.

2.4.10 Migratory behavior and confrontation

Ifrat (2006) found that 20% people who are not migrating during *monga* could eat thrice a day. On the other hand, 33.33% people who are migrating could eat thrice a day during *monga*. It can be stated in another way. 50% of the people who are eating thrice a day during *monga* are from non-migrated group. 66.67% people who are migrating could eat twice a day and 60% of non-migrated people could eat twice a day. She also reported that migration towards towns or cities was not a proper solution to confront *monga*.

2.5. Strategies and intervention for tackling *monga*

2.5.1 Individual perspective

People try to minimize the effect of the lean season on their livelihoods. In the local context different coping strategies were developed by the people themselves. Zug (2006) has identified four coping strategies for tackling *monga* i.e. a. *preventive strategies*- are applied before *monga* takes place, b. *resource opening strategies*- find new ways to allocate additional money or food c. *expenditure reduction strategies* – reduce their needs and d. *safety net strategies* – social or institutional set-up allow, they can fully or partly rely on.

Zug (2006) found that if people succeed to improve their livelihood by buying agricultural land or productive assets like a rickshaw or finding an appropriate work that brings them enough income, they can be strong enough to overcome *monga* or at least mitigate its impact on their livelihood. He also found that people involved in micro credit program have savings within their *samities*.

DER (2004b) report shows that some people try to receive loans from micro-credit providers, while most have to borrow money from local leaders with 10% interest per month.

Rahman (1995a) states for greater Rangpur that "there are relatively few resource-rich people, who could be a major source of crisis-period borrowing to tide over the deficit period". Therefore the number of money lenders and the amount of money that can be lent is limited. During *monga* many people need to take a loan, but the supply is not able to cover the demand. Thus it is possible for money lenders to take high interest rates.

RDRS in association with BRRI carried out an experiment on BRRI 33 *aman* variety. They claimed that *monga* might be eliminated in the northern districts through cultivating BRRI 33 *aman* rice as it is a short duration (118 days) crop. These will increase more jobs to the jobless agriculture laborers, specially the landless laborer (The Bangladesh Observer 11 December 2005).

2.5.2 National perspective

Food and nutrition security has to be a major focus for actors in the development process, as Bangladesh is one of the weakest nations in this aspect according to Human Development Report 2005 (UNDP, 2006).

VOICE in addition with Action aid Bangladesh conducted a research study entitled "*Monga* in Media: a Critical Analysis" in the context of *monga*, 2005 found media as an important role player to highlight issues around *monga*, such as the severity, level of vulnerability, role of government, opposition political parties, NGOs, donor groups, causes of *monga*, coping strategies, women's position and the success and failure, different initiatives, views and opinion etc. Bhattacharya (2006) wrote in his analysis of the Bangladesh economy that a fund was allocated in the budget of the fiscal year 2005/2006 to aid the seasonally disadvantaged poor, but the fund remained unused although *monga* took place within that period. Even the modality of expenditure has not been finalized yet.

Before commencing of *monga*, information should be sent to appropriate authority for speedy remedial measures. But Bhattacharya (2003) mention that some NGO workers indicated that since the government was not acknowledging the prevalence of *monga*, they did not dare to initiate any targeted program.

The government sometimes sells rice to targeted people for a rate far below the market price. Hasan (2006) reports that in Chilmari/Kurigram 900 families per union could buy 6 kg rice for 4 taka per kg for two times during the monga in 2005. This has been seen as relief activity rather than market stabilization.

The inclusion of the right to food in the constitution puts additional pressure upon the government to actively address all forms of food insecurity. The government knows about the problem and has put a focus on *monga* in the Poverty Reduction Strategy Paper (PRSP), which was published in 2005.

Government announced a "holistic approach to social protection (against) anticipated risks such as *monga* and seasonal poverty". The actions so far were very limited.

PKSF has taken a program 'Program Initiative for *Monga* Eradication (PRIME)' to make a sustainable development of the *monga* affected families with the collaboration of World Bank (PKSF brochure 2008). PKSF and BMET has also taken an initiative to eradicate *monga* through remittance earning by the *monga* affected people as this area is the most weaken part in Bangladesh as well as higher chronic poverty (The Daily Prothom-alo 19 May 2008).

2.6 Conceptual framework of the study

The purpose of the study is to investigate the confrontation with monga affected people within the framework of sustainable livelihoods. *Monga* situation emerges as a result of the trends, shocks and seasonality of vulnerability context and have a direct effect on people's asset status. It can also force people to abandon their home areas and dispose of assets prematurely. As the intensity of *monga* increases and destroys the livelihood asset base, the scope of livelihood maintenance activities becomes narrowed.

The conceptual framework of Rosenberg and Hovland (1960) was kept in mind while framing the structural arrangement for the dependent and independent variables. This study was concerned with the dependent variable is confrontation with monga by the people of Gangachara upazilla under Rangpur district and the selected characteristics of monga affected people as independent variables.

It is impossible to deal with all characteristics in a single study. It was therefore, necessary to limit the characteristics which include age, education, family size, farm size, annual family income, family assets, food security status, scope of work during *monga* period, credit received and migratory behavior.

For a more comprehensive idea, a schematic diagram has been presented in Figure 2.1 as a conceptual model of the study.

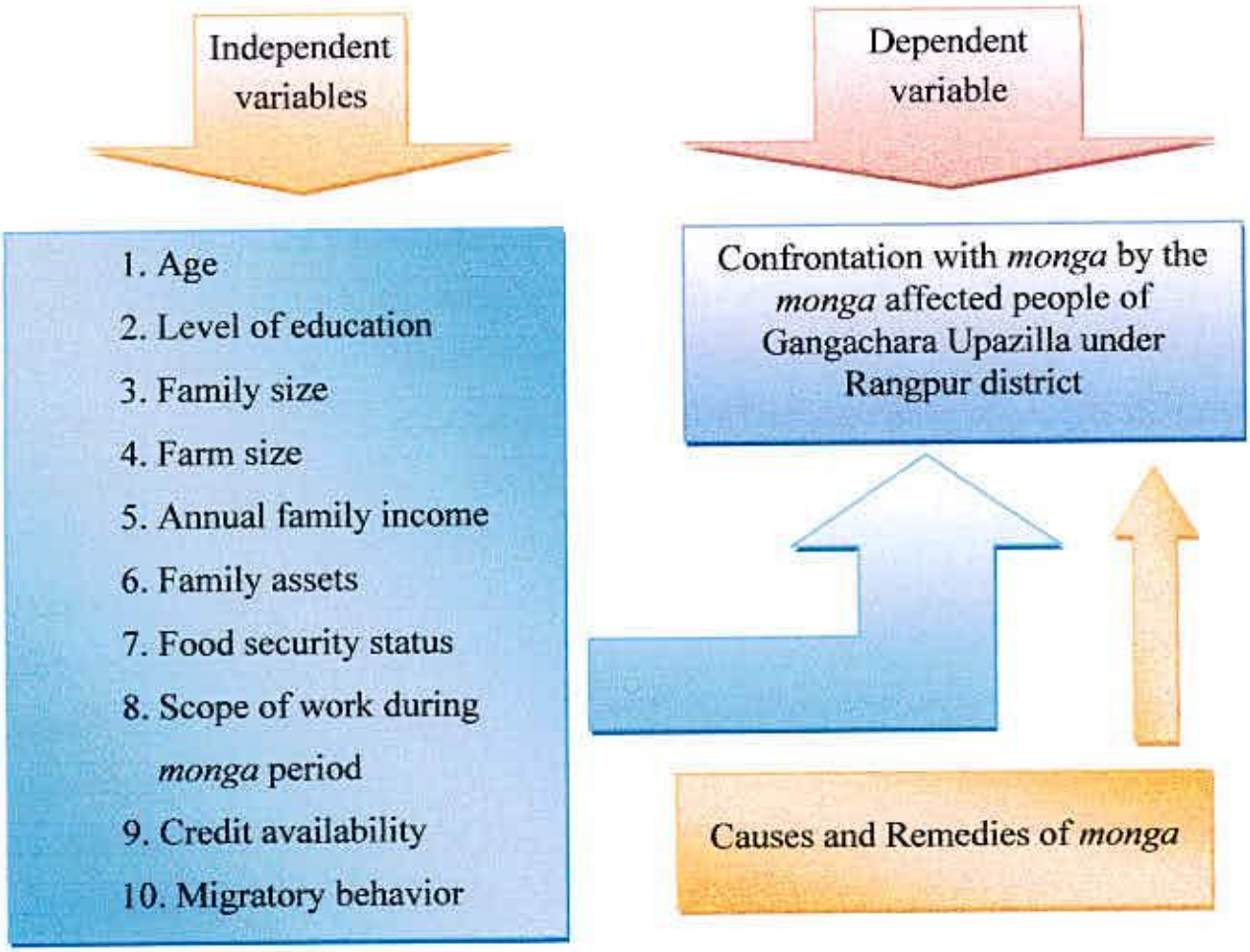


Fig. 2.1 The conceptual model of the study

Chapter III

METHODOLOGY

CHAPTER III

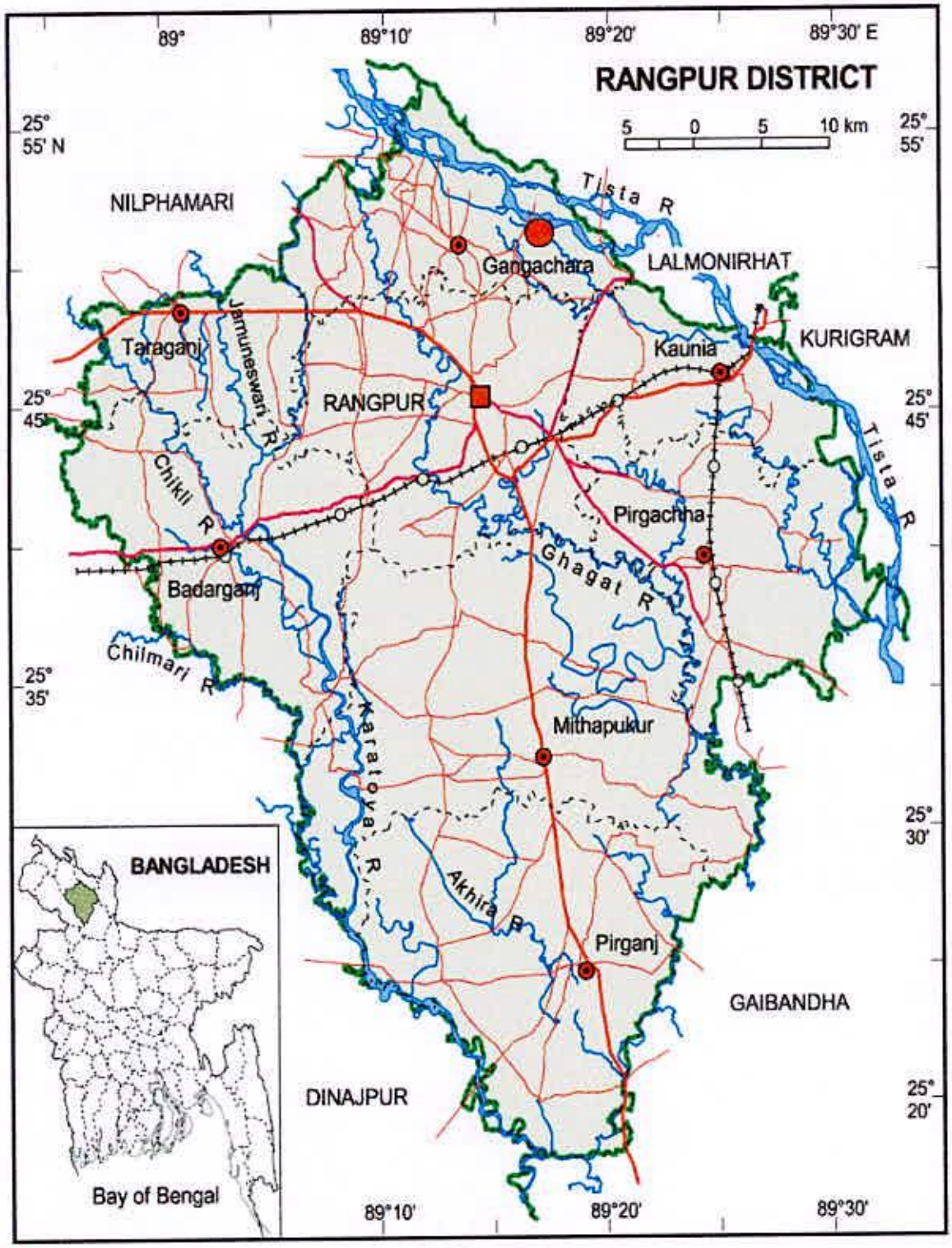
METHODOLOGY

Methodology leads the researcher to achieve his research objectives in a proper way. In social science it consists of section of locale of the study, population and sampling procedure, preparation of interview schedule, data collection procedure, measurement of variables and method of analysis. Every aspect of methodology acts as the vigor of the research. More the accurate methodology more the valid and reliable data and more appropriate research findings. So researcher was very much careful in selecting components of methodology.

3.1 The Locale of the study

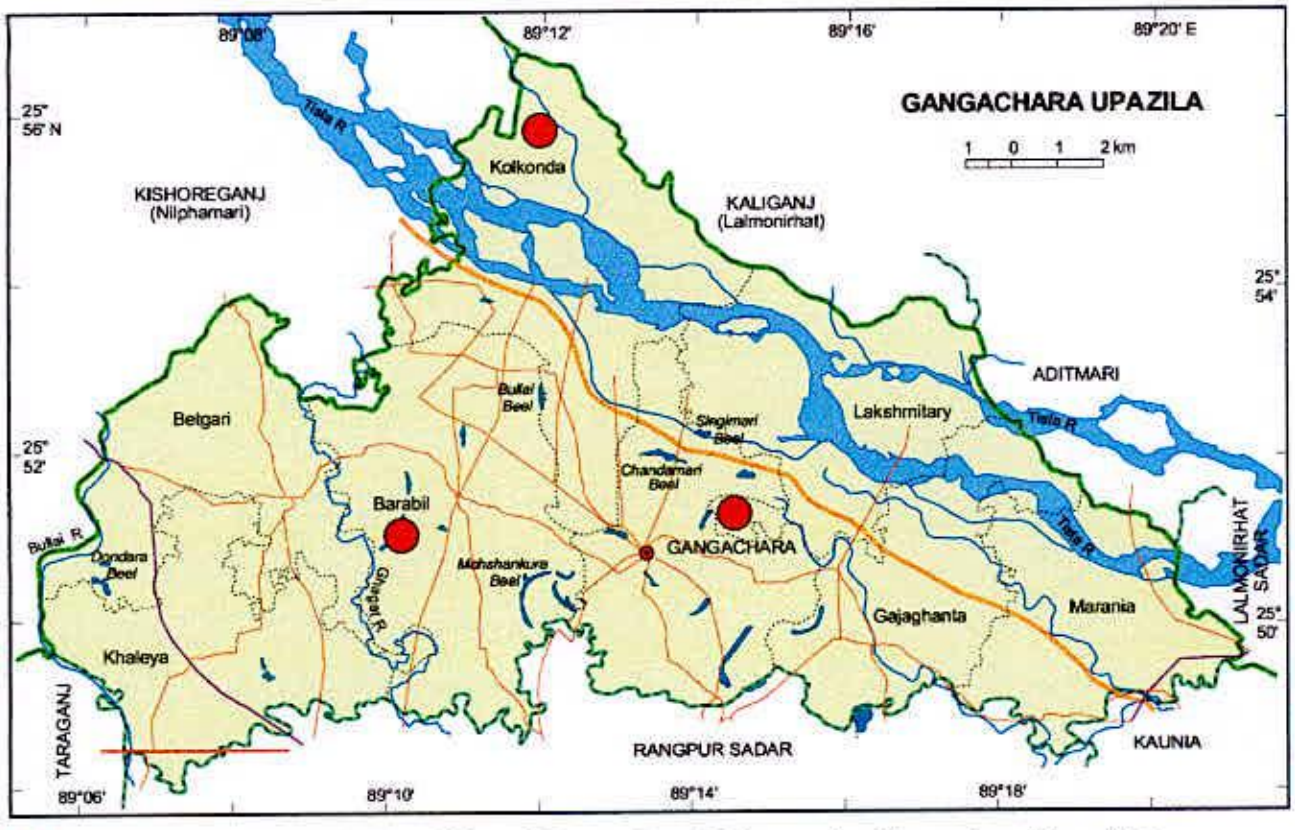
In broader sense, the purpose of the study is to document the process of confrontation with *monga* by the *monga* stricken people of Bangladesh. The *monga* hit districts are Kurigram, Gaibandha, Lalmonirhat, Nilfamari, and Rangpur. Almost, all the districts are confined with complex river network. Flood visits every year with varying degrees of magnitude and duration. Majority of the population of that area are functionally landless and earn their livelihoods with misery and hardship. Their livelihoods are vulnerable to stress and shocks and they drive to find the way to escape out.

The study was conducted with consultation of PKSF personnel at three villages of Gangachara upazilla under Rangpur district namely Changmari, Uttar Kolkonda and Thakurdoho under the union of Gangachara, Kolkonda, and Barabil respectively. One village in each union was considered as the locale of the study. The study was conducted purposively in these areas. The sites of Gangachara upazilla were at the north of Rangpur district. Agriculture was the major occupation of the people in the study area. The location of the study area is shown in Fig. 3.1 and Fig. 3.2.



Study area (Gangachara Upazilla under Rangpur District)

Fig 3.1 The map of Rangpur district showing the study area



Study area (Kolkonda, Barabil, and Gangachara Union under Gangachara Upazilla)

Fig 3.2 The map of Gangachara *upazilla* under Rangpur district showing the study area

3.2 Population and sample of the study

Monga affected people of Changmari, Thakurdaha and Uttarkolkanda village of Gangachara *upazilla* were population of the study. Selection of sample was done in several stages. There were various GOs and NGOs working in the study area to address the livelihood and confrontation with monga affected people.

An up-to-date list of *monga* affected people of the study area was made with the help of PKSF in June, 2008. The total *monga* affected population was 1748. Six percent of the population was selected at random. Thus the sample size of the study became 105. In addition the researcher made a reserve list of 17 respondents (1% of total population) with a view that due to absence of the selected respondent's interview could be made from the reserve list. The distribution of selected *monga* affected people along with reserve list is shown in Table 3.1.

Table 3.1 Distribution of the *monga* affected people along with sample and person included in the reserved list

Upazilla	Union	Selected villages	Population	Persons included in the sample	Persons included in the reserved list
Gangachara	Gangachara	Changmari	896	54	9
	Kolkanda	Uttar Kolkanda	349	21	3
	Barabil	Thakurdaha	503	30	5
Total			1748	105	17

3.3 Instrument of data collection

In order to collect relevant data for the study, a structured interview schedule was carefully prepared keeping the objectives in mind. The questions and statements contained in the schedule were simple, direct and easily understandable to the respondents. The schedule contained both open and closed form of questions.

The draft interview schedule was prepared in advance before finally using the same for collection of data. The draft schedule was pre-tested with 10 respondents selected from the study area. This pretest facilitated the researcher to identify faulty questions in the draft schedule and hence necessary correction, addition and adjustment were made in the schedule accordingly. Then it was finalized, multiplied and ready for data collection. An English version of the interview schedule can be seen in Appendix I.

3.4 Selection of the variables of the study

A variable is any characteristics of the respondents of the study that can assume varying or different values in successive individual cases. The researcher keeping all these in mind took adequate measurement in selecting the dependent and independent variables of the study. Before setting the variable of the study, the researcher himself visited the study area and talked to the *monga* affected people and he was able to observe the selected characteristics of the people (in the study area) which might have influence on the confrontation with monga. Based on this experience, review of literature, discussion with the relevant experts and academicians and also with the research supervisor, the researcher selected the dependent and independent variables. An independent variable is that factor which is manipulated by the researcher in his attempt to ascertain its relationship to an observed phenomenon. A dependent variable is that factor which appears, disappears or varies as the researcher introduces, removes or varies the independent variables (Townsend, 1953).

However, this section contains procedures for measurement of independent variables (age, level of education, family size, family income, food security status, scope of work during *monga* period, credit availability, migratory behavior and dependent variable (Confrontation with *monga*) and the measurements about causes and remedies of *monga* of the study.

3.5 Measurement of variables

In order to conduct the study in accordance with the objectives, it was necessary to measure the selected variables. This section contains procedures for measurement of both independent as well as dependent variables of the study. The procedures followed in measuring the variables are presented below:

3.5.1 Measurement of independent variables

3.5.1.1 Age

The age of a respondent was measured in terms of actual years from his/her birthday to the day of interviewing on the basis of his/her response. A score of one (1) was assigned for each year of age. It was measured in complete years as reported by a respondent. For example, a respondent of 26 years of age scored 26.

3.5.1.2 Level of education

Education was measured on the basis of ability of a respondent to read and write or formal education received up to a certain standard. A score of one was assigned for each year of formal schooling completed by the respondent or same score was given for equivalent level of education. If a respondent passed the final examination of class V in the school, a score of five was taken for calculating his education score.A score of 0.5 and zero (0) were given to the respondents who could sign only and who could not read and write, respectively.

3.5.1.3 Family size

Family size was measured by the total number of members in the family of a respondent. The members included his wife, children and others fully or partially depended on the respondent's income. A score of one (1) was assigned for each member of the family.

3.5.1.4 Farm size

Farm size of a respondent referred to the total area of land on which his family carried out farming operations. The area was being in terms of full benefit to his family. It was measured in hectares for each respondent using the following formula:

$$FS = F_1 + F_2 + \frac{1}{2}(F_3 + F_4) + F_5 + F_6$$

Where,

FS = Farm size

F_1 = Land under homestead

F_2 = Own land under own cultivation

F_3 = Land taken from others as *borga*

F_4 = Land given to others as *borga*

F_5 = Land taken from others on lease

F_6 = Others (Garden, fallow land etc.)

3.5.1.5 Annual family income

The family income of a respondent was measured on the basis of total yearly earning both from agriculture and non-agricultural sources (business, service, day *labor* etc.) earned by the respondent himself and by other family members. The income from agriculture and other sources of a respondent were added together to obtain his total family income. Family income was initially measured in '000' taka, however a unit scores of 1 (one) was assigned for each '000' taka.

3.5.1.6 Family assets

Family assets were measured by computing a family asset score which was operationalized through 40 household assets. The market prices of each of these assets were separately worked out and eventually each of these prices was summed up to make a composite family asset price. Family assets were measured in '000' Tk, however a unit scores of 1 (one) was assigned for each '000' taka.

3.5.1.7 Food security status

Food security status of a respondent was measured on the basis of availability of necessary food throughout the year. Month wise information was collected on food security status of the *monga* affected people throughout the year and following measure was used to assign scores for food security status.

Monthly availability of food	Score assigned
Adequate	3
Inadequate	2
Scarce	1

By summing up 12 months scores of food security status of a respondent was measured. Thus food security status score could vary from 12 to 36, where 12 indicate less food security and 36 indicates very high level of food security throughout the year.

3.5.1.8 Scope of work during *monga* period

Scope of work during *monga* period was measured on the basis of scores using a four point rating scale. The scope of work includes 10 kind of opportunities through which the respondents used to earn cash. Each respondent was asked to indicate the extent of employment opportunity in each of the 10 opportunities by checking level of opportunity of the 4 responses *i.e.* high, medium, low and no scope of work.

Scope of work during *monga* period	Score assigned
High scope of work	3
Medium scope of work	2
Low scope of work	1
No scope of work	0

These responses were assigned a score of 3, 2, 1 and 0 respectively. The score of the respondents could range from 0 to 30. A score of '0' indicates no scope of work and '30' indicates very high scope of work during *monga* period.

3.5.1.9 Credit availability

Credit availability of a respondent refers to the amount of credit actually received by him or his family member. During interview each respondent was asked to indicate the amount of credit received from various governmental and non-governmental sources. Credit availability was initially measured in taka, however, a unit score of 1 (one) was taken for each Tk. 1000.

3.5.1.10 Migratory behavior

Migratory behavior was expressed as the mobility of people away from social system with varying period of migration to earn their livelihoods. Each respondent was asked to indicate the period of migration to different places (Other village/union of the same upazilla, other upazilla, other district and capital/divisional city) denoting year round, seasonal, occasional and non-migrant for different migration spans. These responses were assigned score as follows:

Pattern of migration	Assigned Score
Year round	3
Seasonal (2 months or more)	2
Occasional (Less than 2 months)	1
Non-migrant	0

Place of migration	Assigned Score
Other village/union of the same upazilla	1
Other upazilla	2
Other district	3
Capital/divisional city	4

The 4 x 3 matrix was used to calculate the respondents' migratory behavior scores. Hence, the migratory behavior score of a respondent could range from 0 to 12, where 0 indicating non-migrant and 12 indicating frequent migrant throughout the year.

3.5.2 Measurement of dependent variable

Confrontation with *monga* by the affected people was the dependant variable of this study. It was measured on the basis of how the fected people confront the situation of *monga*. It may be mentioned here that affected people might confront the *monga* in a wide variation. But the researcher acquired the experience on the most common confrontation strategies by the people in the study area. Besides personal conversation with them, the researcher borrowed the experience from the PKSF personnel, officers of Podokhep Manabyk Unnayan Kendra who were working at PRIME program and other experts in this respect during discussion with them. Finally, the researcher selected 22 confrontation strategies to face *monga* by the affected people in the study.

Score of confrontation with *monga* by the affected people was measured by their strategies for combating *monga*. The *monga* affected people were asked to express their opinions by choosing 22 confrontation strategies to face *monga* by their degree of confrontation. The four point rating scale was used to measure the confrontation with monga. Scores were assigned as follows:

Degree of confrontation	Scores assigned
High confrontation with monga	3
Moderate confrontation with monga	2
Less confrontation with monga	1
Not at all	0

Confrontation with *monga* scores was determined by summing up the scores obtained against all the 22 selected statements under serial no. 12 of the interview schedule. Confrontation with *monga* scores of the respondent could range from 0 to 66, where 0 indicating no confrontation and 66 indicating very high confrontation with monga.

3.6 Causes of *monga*

Causes of *monga* apprehended by the affected people were measured on the basis their severity. The people were asked to give their opinions about the causes with the degrees of severity of the causes. The four point rating scale was used to measure the causes of *monga*. Scores were assigned as follows:

Degree of severity	Scores assigned
High severity of *monga*	3
Moderate severity of *monga*	2
Less severity of *monga*	1
Not at all	0

Causes of *monga* scores were determined by summing up the scores obtained against all the 22 selected statements under serial no. 11 of the interview schedule. Causes of *monga* scores of the respondent could range from 0 to 66, where 0 indicating no severity of the causes of *monga* and 66 indicating very high severity of the causes of *monga*.

To compare the severity among the causes of *monga* rank order was accomplished by using the causes of *monga* index (CMI). CMI was calculated by,

$$CMI = C_{hs} \times 3 + C_{ms} \times 2 + C_{ls} \times 1 + C_{ns} \times 0$$

Where

C_{hs}= Total no. of respondents indicate high severity

C_{ms}= Total no. of respondents indicate moderate severity

C_{ls}= Total no. of respondents indicate less severity

C_{ns}= Total no. of respondents indicate no severity

Causes of *monga* index for each cause could range from 0-315, while 0 indicate no severity and 315 indicate high severity.

3.7 Remedies of *monga*

Remedies of *monga* opined by the *monga* affected people were measured on the basis of nature of remedies that removes *monga*. In order to know about the remedies of *monga* from the respondent 18 statements were constructed. Then the farmers were asked to give their opinion about remedies of *monga*. The four point rating scale was used to measure the remedies of *monga*. Scores were assigned as follows:

Nature of remedies	Scores assigned
High effect of *monga* remedy	3
Moderate effect of *monga* remedy	2
Less effect of *monga* remedy	1
Not at all	0

Remedies of *monga* scores was determined by summing up the scores obtained for all the 18 selected statements under serial no.13 of the interview schedule presented in Appendix-I. Remedies of *monga* scores of the respondent could range from 0 to 54, where 0 indicating no ideas about remedies of *monga* and 54 indicating very high ideas about remedies of *monga*.

To compare the effectiveness of the remedies of *monga* rank order was accomplished by using the effect of *monga* remedy index (MRI). MRI was calculated by the formula-

$$MRI = R_{he} \times 3 + R_{me} \times 2 + R_{le} \times 1 + R_{ne} \times 0$$

Where

R_{he} = Total no. of respondents indicate high remedy effect

R_{me} = Total no. of respondents indicate moderate remedy effect

R_{le} = Total no. of respondents indicate less remedy effect

R_{ne} = Total no. of respondents indicate no remedy effect

Monga remedy index for each remedy could range from 0-315, while 0 indicate no remedy effect and 315 indicate high remedy effect.

3.8 Statement of hypothesis

Defined by Goode and Hatt (1952), "A hypothesis is a proposition which can be put to a test to determine its validity. It may be true or false, it may seem contrary to, or in accord with common sense. However, it leads to an empirical test". According to Kerlinger (1973), a hypothesis is a conjectural statement of the relation between two or more variables. Hypotheses are always in declarative sentence form and they relate either generally or specifically variables to sentence form and they relate either generally or specifically variables to variables. Hypothesis may be broadly divided into two categories, namely, research hypothesis and null hypothesis.

3.8.1 Research hypothesis

The following research hypotheses were put forward to know the relationships between each of the ten selected characteristics of the *monga* affected people and their confrontation with monga. Each of the ten selected characteristics of the *monga* affected people will have significant relationships with their confrontation with monga.

3.8.2 Null hypothesis

For the statistical test of the research hypotheses they were converted into null form. The null hypotheses were as follows, "There is no relationship between the selected characteristics of the *monga* affected people and their confrontation with *monga*." The selected characteristics were age, education, family size, farm size, annual family income, family assets, food security status, scope of work during *monga* period, credit availability and migratory behavior. If the null hypothesis is rejected on the basis of a statistical test, it is assumed that there is a relationship between the concerned variables.

3.9 Collection of data

Data for this study were collected through personal interview by the researcher himself. All possible efforts were made to explain the purpose of the study to the respondents in order to get valid and pertinent information from them. Interviews were usually conducted with the respondents at their homes. While starting interview with any respondent the researcher took all possible care to establish rapport with him so that he did not hesitate to furnish proper responses to the questions and statements in the schedule. However, if any respondent failed to understand any question the researcher took care to explain the issue. He received excellent co-operation from the respondents and others concerned during the time of interview. The entire process of collecting data took place during 23 June to 24 July, 2008.

Before starting the collection of data, the researcher approached NGO personnel of Padakhep Manabyk Unnayan Kendra (PMUK) of the study area. The researcher also discussed the objectives of the present study with PKSF personnel working in the study area.

3.10 Data processing and analysis

3.10.1 Data processing

After completion of field survey, all the data were processed according to the necessity. Local units were converted into standard unit. All the individual responses recorded in the interview schedule were transferred to master sheet assigning suitable score. Then they were organized for categorization and tabulation to the objective of the study. In case of qualitative data, appropriate scoring technique was followed to convert the data into quantitative form. Data were transferred to coding sheet with numerical scores given to each question. The procedure for categorization of data of different variables has been discussed in Chapter IV.

3.10.2 Statistical analysis of data

The data were analyzed in accordance with the objectives of the study. The SPSS (Statistical Package for Social Science) computer package was used to perform the data analysis. Various statistical measures such as range, mean, number, percentage, standard deviations and co-efficient of variation were used to describe the selected characteristics of the respondents of the study area.

In order to explore the relationships of the selected characteristics of the *monga* affected people and their confrontation with *monga*, the Pearson's Product Moment Correlation Co-efficient (r) was computed. Five percent (0.05) and one percent (0.01) level of significance was used as the basis of rejecting any null hypothesis. If the computed value of co-efficient of correlation "r" was equal to or greater than tabulated value at designated level of significance for the relevant degrees of freedom, the null hypothesis was rejected and it was concluded that there was a significant relationship between the concerned variables. However, when the calculated value of co-efficient of correlation was found to be smaller than the tabulated value at the designated level of significance for the relevant degrees of freedom, it was concluded that the null hypothesis was accepted and hence, there was no relationship between the concerned variables. Co-efficient values significant at 0.05 level is indicated by single asterisk (*) and at 0.01 level by double asterisks (**).

Chapter IV

RESULTS AND DISCUSSION

CHAPTER IV

RESULTS AND DISCUSSION

The findings of this study and their logical interpretations have been systematically presented in different sections of this chapter. Data obtained from respondents by interview were measured, analyzed, tabulated and statistically treated according to the objectives of the study.

The ***first*** section deals with the process of confrontation with *monga* by the *monga* affected people of Gangachara upazilla under Rangpur district. The ***second*** section deals with the selected characteristics of the people of *monga* affected area. The ***third*** section deals with the relationships-between selected characteristics of the respondents and the process of confrontation with *monga* by the people. And the ***fourth*** section deals with the causes and the remedies of *monga*.

4.1 Confrontation with *monga*

The major variable of the study was the process of confrontation with *monga* by the *monga* affected people. In the study the process of confrontation with *monga* was measured by computing two confrontation strategies namely personal confrontation and organizational confrontation. Confrontation with *monga* scores was determined by summing up the score obtained from all the 22 selected statements.

The total score of confrontation with *monga* by the people could range from 0 to 66. The observed *monga* confrontation score ranged from 11 to 35 with a mean of 25.64 and standard deviation 7.251. Based on the confrontation with *monga* scores the respondents were classified into three categories: "low confrontation" (upto15), "medium confrontation" (16-30) and "high confrontation" (above 30) as shown in table 4.1.

Table 4.1 Categorization of the respondents according to the confrontation with *monga* by the monga affected people

Dependent variable	Range		Categories	*Monga* affected people (N=105)		Mean	Standard deviation
	Possible score	Observed score		No.	%		
Confrontation with *monga* by the monga affected people	0-66	11-35	Low confrontation (up to 15)	29	27.62	25.64	7.251
			Medium confrontation (16-30)	69	65.72		
			High confrontation (above 30)	07	6.66		
Total				105	100		

Data presented in Table 4.1 show that 65.72 percent of the respondents had medium confrontation with *monga* while 27.62 percent of them had low and 6.66 percent of them had high confrontation with *monga*.

It is because Bangladesh has stepped in towards development process steadily since 1990s. In the mean time a considerable infrastructural changes had been taken place in *monga*-prone districts. Along with the growth of GDP peoples' income has been increased though prices of essentials went beyond their limit. Remembering the famine of 1974, Government of Bangladesh (GoB) and different NGOs have been trying to alleviate the *monga* problem. Different innovations were introduced for the well-being of *monga*-hitted people by those agencies. Recognizing *monga* as a prevailing issue GoB added it to the Poverty Reduction Strategy Paper (PRSP) and they are trying to attain a sustainable development through the Millennium Development Goals (MDGs). GoB has announced 400 crore taka for the *monga* victims in this fiscal year (2008-2009) and they have initiated a 100 days social safety net program in all over Bangladesh including *monga* prone districts during the month of

September-November. It is also said that *monga* affected people in the study area have been changed their cropping pattern by cultivating BRRI dhan 33, that is a short duration (115-120 days) variety than the traditional *aman* variety. So, it is quite logical that the situation is improving. Now people in this area face *monga* with medium confrontation.

4.2 Selected characteristics of *monga* affected people

This section deals with the *monga* confrontation behavior by the *monga* affected people according to their various characteristics. In the study, ten selected characteristics of *monga* affected landless rural people such as age, level of education, family size, farm size, annual family income, family assets, food security status, scope of work during *monga* period, credit availability, and migratory behavior. The composite findings of the selected characteristics of the *monga* affected rural people in the study area are presented in Table 4.2 and have been discussed in subsequent sections.

Table 4.2 Descriptive statistics and salient features of the *monga* affected peoples' selected characteristics

Characteristics	Scoring system	Range		Category	Respondents		Mean	SD
		Possible	Observed		Number (n=105)	%		
Age	Years	-	25-59	Young (up to 35)	33	31.43	41.74	8.546
				Middle (36-50)	55	52.38		
				Old (Above50)	17	16.19		
Education	Year of schooling	-	0-10	Illiterate (0)	12	11.43	0.781	1.596
				Can sign only (.5)	53	50.47		
				Primary level (1-5)	32	30.48		
				Secondary level (6-10)	08	7.62		
Family size	Number	-	2-11	Small (up to 4)	20	19.05	5.65	1.86
				Medium 5-6)	62	59.05		
				Large (Above 6)	23	21.90		
Farm size	Hectare	-	.00-0.28	Landless (< .02)	58	55.23	.0659	.0819
				Marginal(.02-.2)	36	34.29		
				Small (Above .20)	11	10.48		
Annual family income	Assigned score	-	15-48	Very low (up to 25)	39	37.14	31.48	6.799
				Low (above 25)	66	62.86		
Family assets	Assigned score	-	0.6-9.8	Very low (up to 5)	47	44.76	3.933	2.963
				Low (above 5)	58	55.24		
Food security status	Assigned score	12-36	16-32	Less secured (up to 20)	42	40.00	22.43	4.19
				Moderate secured (21-30)	52	49.52		
				Highly secured (Above 30)	11	10.48		
Scope of work during *monga* period	Assigned score	0-30	0-9	No scope (0)	30	28.57	3.51	2.162
				Very less (1-3)	45	42.86		
				Less (4-6)	19	18.10		
				Moderate (above 6)	11	10.47		
Credit availability	Assigned score	-	0-10	No availability (0)	21	20.00	3.40	2.874
				Very low (1-4)	56	53.33		
				Low (5-8)	24	22.86		
				Medium (above 8)	04	3.81		
Migratory behavior	Assigned score	0-12	0-8	No migration (0)	14	13.33	2.89	2.016
				Less frequent (1-3)	54	51.43		
				Moderately frequent (4-6)	32	30.47		
				Frequently (above 6)	05	4.77		

Followings are the findings of each of the selected characteristics of the respondents in separate table along with the interpretations.

4.2.1 Age

Age of the respondents was found to vary from 25 to 59 years with a mean of 41.74 years and standard deviation of 8.546. Based on their age distribution the respondents were classified into three categories as young, middle aged and old as shown in Table 4.3.

Table 4.3 Distribution of *monga* affected people according to their age

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Young (up to 35)	33	31.43	41.74	8.546
Middle (36-50)	55	52.38		
Old (Above50)	17	16.19		
Total	105	100.00		

Data contained in Table 4.3 indicated that the majority (52.38 percent) of the people fell in the middle aged category, while 31.43 and 16.19 percent belonged to young and old categories, respectively.

However, the data also revealed that 83.81 percent of the respondents of the study area were young to middle aged category. According to development psychologists, these categories of people have more physical and mental abilities and also are more innovative. Generally younger farmers trend to have broader outlook due to contact with mass media and become more aware about the recent innovations. They also tend to shift or migrate singly or along with their families in search of better living place. Thus farmers belonging to this age group might be confronted less problem compared to the old farmers. Similar finding was observed by Shahidullah (1987) and Rashid (2003).

4.2.2 Level of education

The education score of the respondents ranged from 0 to 10 with a mean of 0.781 and standard deviation of 1.596. On the basis of educational qualification scores, the respondents were classified into four categories as shown in Table 4.4.

Table 4.4 Distribution of *monga* affected people according to their education

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Illiterate (0)	12	11.43	0.781	1.596
Can sign only (.5)	53	50.47		
Primary level (1-5)	32	30.48		
Secondary level (6-10)	08	7.62		
Total	105	100.00		

It is evident from the Table 4.4 that 11.43 percent of the respondents were totally illiterate and 50.47 percent of the respondents could sign their names only. So, it could be said that 61.90 percent of the respondents in the study area were more or less illiterate. On the other hand, 30.48 percent of them had primary level academic qualification and 7.62 percent had secondary level education. This means that only 38.20 percent of the respondents had primary and secondary level academic qualification. The literacy rate of the country is 66.5 (Anonymous, 2005). However, this findings revealed that the literacy rate in the study area were extremely lower than the national average.

Education helps individual to become rational, conscious and to get useful information to solve their every day working problem. Education broadens the power of understanding and develops the ability of analyzing facts and situation to take rational decisions. But approximately 61.90 percent of the people in the study area are quite illiterate. This is not encouraging for any development intervention.

Afique (2006) found that 68.3 percent of the respondents were literate. Rokonuzzaman (2004) found 71.3 percent of the respondents to be literate. But findings of the present study are simply reverse.

4.2.3 Family size

Family size of the respondents ranged from 2 to 11 with a mean of 5.65 and standard deviation of 1.86. On the basis of family size scores the respondents were classified into three categories, namely small, medium and large as shown in Table 4.5.

Table 4.5 Distribution of *monga* affected people according to their Family Size

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Small (up to 4)	20	19.05	5.65	1.86
Medium (5-6)	62	59.05		
Large (Above 6)	23	21.90		
Total	105	100.00		

Data presented in the Table 4.5 show that the highest proportion (59.05percent) of the respondents fell under medium family compared to 19.05 and 21.90 percent under small and large family respectively.

This indicates that average family size (5.65) of the respondents of the study area was higher than that of the national average of 4.9 (BBS, 2003). The findings indicate that three fourth (78.10 percent) of the respondents had small to medium family size. The findings remind similar about Bangladesh. Intervention of family planning was weak in the study area thus keeping the family size medium. Another reasons might be that people did not compensate their proneness to hardships (*monga*, flood, etc.) separating them from elderly parents along with brothers and sisters.

4.2.4 Farm size

The Farm size score of the respondents ranged from 0 to .280 with a mean of 0.0659 and a standard deviation of .0819. On the basis of Farm size the respondents were classified into three groups as shown in Table 4.6.

Table 4.6 Distribution of *monga* affected people according to their Farm Size

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Landless (< .02)	58	55.23	0.0659	.0819
Marginal(.02-.2)	36	34.29		
Small (Above .20)	11	10.48		
Total	105	100.00		

Data presented in the Table 4.6 show that the highest proportion of the respondents (55.23 percent) were landless while only 34.29 and 10.48 percent of the respondents had marginal and small farm size respectively in the study area.

Discrepancy in the land ownership is one of the leading factors for poverty as well as *monga* in the study area. The average farm size of the farmers was 0.0659 ha, which is lower than the national average (0.81 ha).This may indicate that the socio-economic levels of the farmers in the study area are poorer than a typical farming community of Bangladesh. Almost every year, a large number of marginal farmers become landless due to *monga* and river erosion. While land is the vital income generating source in rural areas, landlessness accelerates the severity of poverty.

4.2.5 Annual Family income

The annual family income score of the respondents ranged from 15 to 48 with a mean of 31.48 and a standard deviation of 6.799. On the basis of family income the respondents were classified into two groups as shown in Table 4.7.

Table 4.7 Distribution of *monga* affected people according to their annual family income

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Very low (up to 25)	39	37.14	31.48	6.799
Low (above 25)	66	62.86		
Total	105	100.00		

Data presented in the Table 4.7 show that the highest proportion of the respondents (62.86 percent) had low family income while 37.14 percent of the respondents had very low family income. The average family income of the respondents was 31.48 thousand, which is lower than the national average family income (106.36 thousand) (BBS, 2004).

The findings indicate that the socio-economic status of the landless rural people in the study area were very poor than a typical social system of Bangladesh. They didn't have enough scope of earnings. People of the study area were mainly agricultural laborer, fishermen, etc. and lack skills, education and material assets used to earn small. Wage rate in the study area was very low compared to other regions of the country so annual family income of the farmer was very low. Due to advance sale of labor at half price the income of day laborer went down and caused cash inadequacy and low savings which ultimately led to *monga*. If the wage were higher, income level could be raised and that could lead higher savings and investment for further incomes.

4.2.6 Family assets

Family assets score of the respondents ranged from 0.6 to 9.8 with a mean of 5.933 and a standard deviation of 2.963. On the basis of their family assets score the respondents were classified into two categories as shown in Table 4.8.

Table 4.8 Distribution of *monga* affected people according to their farm size

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Very low (up to 5)	47	44.76	5.933	2.963
Low (above 5)	58	55.24		
Total	105	100.00		

Data presented in Table 4.8 show that majority (55.24 percent) of the respondents had low family assets, 44.76 percent had very low and there were no medium or large family assets holder in the study area. Rahman (2005) also found similar result in his study.

The findings reveal almost all of the respondents had very low to low family assets. This might be due to the fact that most of the people in the study area were poor to ultra poor and hence their family income was very low. In addition to that, people living in a flood prone area cannot build-up much family assets as they were not secured in vulnerable flood condition.

4.2.7 Food security status

The food security status of the respondents ranged from 12 to 36 out of the range of 16 to 32 scores with a mean and standard deviation of 22.43 and 4.19 respectively. Based on the food security status score, the respondents were classified into three categories as shown in Table 4.9.

Table 4.9 Distribution of *monga* affected people according to their food security status

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Less secured (up to 20)	42	40.00	22.43	4.19
Moderately secured (21-30)	52	49.52		
Highly secured (Above 30)	11	10.48		
Total	105	100.00		

Data presented in Table 4.9 show that majority (49.52 percent) of the respondents was moderately secured during *monga* condition where 40.00 percent was less secured and only 10.48 percent was highly secured. The findings indicate that nine-tenth (89.52 percent) of the respondents were less secured to moderately secured at the time of *monga* in the study area.

The findings reflect the insecurity of food (throughout the year) of the respondent of the study area irrespective of households. It was a common phenomenon in the study area. It was possibly because of the chronic poverty of the distress livelihoods and the *monga* affected people were remaining within the poverty trap from generation to generation.

4.2.8 Scope of work during *monga* period

Score of work during *monga* period the respondents varied from 0 to 9, against a possible score range 0 to 30. The mean and standard deviation were 3.51 and 2.162 respectively. Based on the scope of work during *monga* period, the respondents were classified into four categories namely no scope, very less scope, less scope and moderate scope as shown in Table 4.10.

Table 4.10 Distribution of *monga* affected people according to their scope of work during *monga* period

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
No scope (0)	30	28.57	3.51	2.162
Very less scope (1-3)	45	42.86		
Less scope (4-6)	19	18.10		
Moderate scope (above 6)	11	10.47		
Total	105	100.00		

Data presented in the Table 4.10 indicate that 42.86 percent of the respondents had less scope of work where 28.57, 18.10 and 10.47 percent of the respondents had no scope, less scope and moderate scope of work during *monga* period respectively.

The findings indicate that agricultural activities were very limited during the months of *Ashar*, *Srabon* and *Vadro* because the study area remained under water for at least these months in every year. This year (2008) Tista River flooded six unions of the Gangachara upazilla. In this area only transplanting existed between 2nd half of *Vadro* to 1st half of *Ashwin*. Except this there were no other opportunities left for the month of *Ashwin* and *Kartik* people had to travel a long way in searching of work. But, they couldn't earn better, because hundreds of them were flocking to the nearer town at a time.

4.2.9 Credit availability

Credit availability score of the respondents ranged from 0 to 10, with a mean of 3.4 and standard deviation of 2.874. Based on the credit availability score, the respondents were classified into four categories as shown in Table 4.11.

Table 4.11 Distribution of *monga* affected people according to their credit availability

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
No Credit availability (0)	21	20.00	3.4	2.874
Very low Credit availability (1-4)	56	53.33		
Low Credit availability (5-8)	24	22.86		
Medium Credit availability (above 8)	04	3.81		
Total	105	100.00		

Majority of the respondents (53.33 percent) were of the category very low credit recipient, while 20, 22.86 and 3.81 percent of the respondents were found to be no credit recipient, low credit recipient and medium credit recipient categories respectively. So, it was observed that majority (80 percent) of the respondents have access to micro-credit either from NGOs and local money lenders. Islam (2005) found opposite result in his study.

This was possibly because of the fact that there had been large credit schemes of GOs and NGOs due to most affected regions by river erosion and frequent flood every year. In this area PKSF and DFID have organized huge loans for the *monga* affected people.

4.2.10 Migratory behavior

The migratory behaviour score of the respondents ranged from 0 to 8 with a mean of 2.89 and standard deviation of 2.016. On the basis of migratory behaviour the respondents were classified into four categories as shown in Table 4.12.

Table 4.12 Distribution of *monga* affected people according to their migratory behavior

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
No migration (0)	14	13.33	2.89	2.016
Less migration (1-3)	54	51.43		
Moderate migration (4-6)	32	30.47		
Frequent migration (above 6)	05	4.77		
Total	105	100.00		

Majority of the respondents (51.43 percent) were found to be less migration, while 17 percent of them were moderate migration and 13.33 percent of them were no migration category. And a small proportion (4.77 percent) was frequent migration during *monga* period.

The findings reflect that most of the people in the study area were migrated during *monga* period. This is due to the fact that this area is a most disaster prone area so people had to migrate other villages or unions during flood or river erosion. But the *monga* affected people did not use to go capital or other divisional cities as they did not have the ability to meet up the transport charges. They usually migrate in the Rangpur district which is about 12 km from their villages. However, it is sometimes mentioned that seasonal migration has also some negative effects like sexual harassment or other discrimination, and the risk of negative impacts on the migrants like gambling and polygamy. Ahmed (2004) noted opposite findings in his study.

4.3 Relationship between the selected characteristics of mongn affected people and confrontation with *monga*

Pearson's Product Moment Correlation Coefficient (r) was computed in order to explore the relationship between the selected characteristics of the *monga* affected people and confrontation with *monga*. The relationship between the dependent and independent variables have been presented in Table 4.13.

However, the interrelationships among the different variable have also been computed by using Pearson's product moment correlation co-efficient. The co-relation matrix has been presented in Appendix-II.

Table 4.13 Relationship between characteristics of *monga* affected people and confrontation with *monga* by them

Dependent variable	Independent variable	Value of 'r'	Table value of 'r' with 103 df	
			0.05 level	0.01 level
Confrontation with *monga* by the *monga* affected people	Age	0.306**	0.197	0.257
	Level of education	0.224*		
	Family size	0.158^{NS}		
	Farm size	0.417**		
	Annual family income	0.354**		
	Family assets	0.455**		
	Food security status	0.178^{NS}		
	Scope of work during *monga* period	0.182^{NS}		
	Credit availability	0.198*		
	Migratory behavior	0.338**		

* Significant at 0.05 level of probability
** Significant at 0.01 level of probability
^{NS} Non-significant

4.3.1 Age and confrontation with *monga*

The relationship between age of *monga* affected people and confrontation with *monga* was examined by testing the following null hypothesis: *"There is no relationship between age of the farmers and their confrontation with monga."*

The observed correlation co-efficient between the concerned variables was found to be 0.306** as shown in Table 4.5. Based on the computed 'r' value the relationship between age of the respondents and confrontation with *monga* was found the following observation.

- *The relationship showed a positive tendency between the concerned variables.*
- *The computed value of r (0.306**) was greater than the table value (r=0.257) with 103 degrees of freedom at 0.01 level of probability*
- *The concerned null hypothesis was rejected.*
- *The correlation co-efficient between the two concerned variables was significant.*

The findings indicate that age of the farmers had significant relationship with their confrontation with *monga* during *monga* period. The main reason of this result might be that young people were less affected because of their enthusiasm, innovativeness arid migration mindedness. But middle aged and old people were less innovative and not used to migrate. Their workability also decreased with the increase of age. Old were also more affected by *monga*. It was because average life span of the people in chars or villages was short and lack of proper health and welfare facilities. Their life span is much lower than that of the national average 63.3 (UNDP, 2006). Therefore middle to old aged was more affected by *monga*.

Rahman (2005), Mortuza *et al.* (2004) and Rokanuzzaman (2004) observed similar kind of result in their research study related to livelihood status of the respondents.

4.3.2 Level of education and confrontation with *monga*

The relationship between level of education of *monga* affected people and confrontation with *monga* was examined by testing the following null hypothesis: *"There is no relationship between level of education of the farmers and their confrontation with monga."*

The observed correlation co-efficient between the concerned variables was found to be 0.224* as shown in Table 4.5. Based on the computed 'r' value the relationship between level of education of the respondents and confrontation with *monga* was found the following observation.

- *The relationship showed a positive tendency between the concerned variables.*
- *The computed value of r (0.224*) was greater than the table value (r=0.196) with 103 degrees of freedom at 0.05 level of probability*
- *The concerned null hypothesis was rejected.*
- *The correlation co-efficient between the two concerned variables was significant.*

The findings indicate that level of education of the farmers had significant relationship with their confrontation with *monga* during *monga* period. It means that, a person having more education used to be more susceptible to *monga* effect. But from the findings of the present study it may be concluded that people having education within secondary level were not satisfied with locally available job could not deserve any kind of satisfactory job. On the other hand, their ego and sentiments prevented them to engage themselves in lower occupations. Therefore, it was quite logical that this class suffer severely in *monga* period.

Rahman (2005) and Kabir (2003) found the opposite results in their study.

4.3.3 Family size and confrontation with *monga*

The relationship between family size of *monga* affected people and confrontation with *monga* was examined by testing the following null hypothesis: *"There is no relationship between family size of the farmers and their confrontation with monga."*

The observed correlation co-efficient between the concerned variables was found to be 0.158^{NS} as shown in Table 4.5. Based on the computed 'r' value the relationship between family size of the respondents and confrontation with *monga* was found the following observation.

- *The relationship showed a positive tendency between the concerned variables.*
- *The computed value of r (0.158) was smaller than the table value (r=0. 196) with 103 degrees of freedom at 0.05 level of probability*
- *The concerned null hypothesis was accepted.*
- *The correlation co-efficient between the two concerned variables was non-significant.*

The findings reveal that confrontation with *monga* was found irrespective of family size. This might be due to the fact that the farmers having medium family size did not have any effect in their *monga* confrontation. Studies of Kashid (2001), Islam (2002), Rahman (2002) and Kabir (2003) showed that there were no significant relationships between family size and livelihoods of beneficiaries of BRAC, Grameen Bank, RDRS and PDBF respectively.

4.3.4 Farm size and confrontation with *monga*

The relationship between farm size of *monga* affected people and confrontation with *monga* was examined by testing the following null hypothesis: *"There is no relationship between farm size of the farmers and their confrontation with monga."*

The observed correlation co-efficient between the concerned variables was found to be 0.417** as shown in Table 4.5. Based on the computed 'r' value the relationship between farm size of the respondents and confrontation with *monga* was found the following observation.

- *The relationship showed a positive tendency between the concerned variables.*
- *The computed value of r (0.417**) was greater than the table value (r=0.257) with 103 degrees of freedom at 0.01 level of probability*
- *The concerned null hypothesis was rejected.*
- *The correlation co-efficient between the two concerned variables was significant.*

The findings indicate that farm size of the farmers had significant relationship with their confrontation with *monga* during *monga* period. Ownership of land is an important determinant of poverty as well as *monga*. About 70% people were landless or near landless in the *monga* prone districts. While land is the vital income-generating source in this area, landlessness accelerates the severity of poverty. It can be concluded that marginal/small farmers confronted more problems than large farmers.

Similar finding was observed by Haque (2001).

4.3.5 Annual family income and confrontation with *monga*

The relationship between annual family income of *monga* affected people and confrontation with *monga* was examined by testing the following null hypothesis: *"There is no relationship between annual family income of the farmers and their confrontation with monga."*

The observed correlation co-efficient between the concerned variables was found to be 0.354** as shown in Table 4.5. Based on the computed 'r' value the relationship between annual family income of the respondents and confrontation with *monga* was found the following observation.

- *The relationship showed a positive tendency between the concerned variables.*
- *The computed value of r (0.354**) was greater than the table value (r=0.257) with 103 degrees of freedom at 0.01 level of probability*
- *The concerned null hypothesis was rejected.*
- *The correlation co-efficient between the two concerned variables was significant.*

The findings indicate that annual family income of the farmers had significant relationship with their confrontation with *monga* during *monga* period. This implies that farmers having very low income ultimately they become the victim of *monga*. It was possibly because the small income of the landless poor did not have any savings during their good times so they could not confront *monga* efficiently.

Mortuza *et al.* (2004) found family income had no significant relationship with livelihood status on respondents, Kabir (2003) and Rahman (2002) found opposite result in their study.

4.3.6 Family assets and confrontation with *monga*

The relationship between family assets of *monga* affected people and confrontation with *monga* was examined by testing the following null hypothesis: *"There is no relationship between family assets of the farmers and their confrontation with monga."*

The observed correlation co-efficient between the concerned variables was found to be 0.455** as shown in Table 4.5. Based on the computed 'r' value the relationship between family assets of the respondents and confrontation with *monga* was found the following observation.

- *The relationship showed a positive tendency between the concerned variables.*
- *The computed value of r (0.455**) was greater than the table value (r=0.257) with 103 degrees of freedom at 0.01 level of probability.*
- *The concerned null hypothesis was rejected.*
- *The correlation co-efficient between the two concerned variables was significant.*

The findings indicate that family assets of the farmers had significant relationship with their confrontation with *monga* during *monga* period. This implies that *monga* affected people sold their household assets at nominal price to confront *monga*. If people lose their assets, their livelihood capacity for the future strongly decreased. Other assts like livestock, trees, bamboo, jewelry, and furniture were sold as well.

Rahman (2005) found that family assets of flood affected farmers had no relationship with their vulnerability effects on human capitals.

4.3.7 Food security status and confrontation with *monga*

The relationship between food security status of *monga* affected people and confrontation with *monga* was examined by testing the following null hypothesis: *"There is no relationship between food security status of the farmers and their confrontation with monga."*

The observed correlation co-efficient between the concerned variables was found to be 0.178^{NS} as shown in Table 4.5. Based on the computed 'r' value the relationship between food security status of the respondents and confrontation with *monga* was found the following observation.

- *The relationship showed a positive tendency between the concerned variables.*
- *The computed value of r (0.178^{NS}) was smaller than the table value (r=0.196) with 103 degrees of freedom at 0.05 level of probability*
- *The concerned null hypothesis was accepted.*
- *The correlation co-efficient between the two concerned variables was non-significant.*

The findings reveal that confrontation with *monga* was found irrespective of food security status. It seems to be very reasonable because maximum of the people in the study area were facing insecurity of food. Therefore, the food status of them couldn't lessen their sufferings from hardships of *monga*, flood, etc.

4.3.8 Scope of work during *monga* period and confrontation with *monga*

The relationship between Scope of work during *monga* period of *monga* affected people and confrontation with *monga* was examined by testing the following null hypothesis: *"There is no relationship between scope of work during monga period of the farmers and their confrontation with monga."*

The observed correlation co-efficient between the concerned variables was found to be 0.182^{NS} as shown in Table 4.5. Based on the computed 'r' value the relationship between scope of work in *monga* condition of the respondents and confrontation with *monga* was found the following observation.

- *The relationship showed a positive tendency between the concerned variables.*
- *The computed value of r* (0.182^{NS}) *was smaller than the table value (r=0.196) with 103 degrees of freedom at 0.05 level of probability*
- *The concerned null hypothesis was accepted.*
- *The correlation co-efficient between the two concerned variables was non-significant. However, the variables were very close to be significant*

The findings reveal that confrontation with *monga* was found irrespective of scope of work in *monga* condition. The main reason of this result might be that *monga* is the phenomenon of seasonal unemployment of agricultural day laborer. The findings reveal that there had been almost no scope of work. While there had been no scope of work, how it could reduce the sufferings of the *monga* hit people. It could be concluded that more the scope of work in the *monga* affected region less the suffering of the people.

4.3.9 Credit availability and confrontation with *monga*

The relationship between credit availability of *monga* affected people and confrontation with *monga* was examined by testing the following null hypothesis: *"There is no relationship between Credit availability of the farmers and their confrontation with monga."*

The observed correlation co-efficient between the concerned variables was found to be 0.198* as shown in Table 4.5. Based on the computed 'r' value the relationship between credit availability of the respondents and confrontation with *monga* was found the following observation.

- *The relationship showed a positive tendency between the concerned variables.*
- *The computed value of r (0.198*) was greater than the table value (r=0.196) with 103 degrees of freedom at 0.05 level of probability*
- *The concerned null hypothesis was rejected.*
- *The correlation co-efficient between the two concerned variables was significant.*

The findings indicate that credit availability of the farmers had significant relationship with their confrontation with *monga* during *monga* period. This implies that people had a strong access to micro-credit to confront *monga*. Thus it might be said that credit availability of the respondent had an important effect for their betterment. These systems are mainly exploitive and can lead to indebtedness and dependency in a long term run.

4.3.10 Migratory behaviour and confrontation with *monga*

The relationship between migratory behaviour of *monga* affected people and confrontation with *monga* was examined by testing the following null hypothesis: *"There is no relationship between migratory behavior of the farmers and their confrontation with monga."*

The observed correlation co-efficient between the concerned variables was found to be 0.338** as shown in Table 4.5. Based on the computed 'r' value the relationship between migratory behaviour of the respondents and confrontation with *monga* was found the following observation.

- *The relationship showed a positive tendency between the concerned variables.*
- *The computed value of r (0.338**) was greater than the table value (r=0.257) with 103 degrees of freedom at 0.01 level of probability*
- *The concerned null hypothesis was rejected.*
- *The correlation co-efficient between the two concerned variables was significant.*

The findings indicated that migratory behavior of the farmers had significant relationship with their confrontation with *monga* during *monga* period. Migration is a means to confront *monga*. Thus, it might be said that, in *monga* period due to absence of work in the locality and increased intensity of *monga* at home to a great extent people were forced to migrate. And as the region was more disaster prone by flood and river erosion people used to migrate other places.

4.4 Causes of *monga*

The purpose of this section was to have an understanding about the causes of *monga*. Causes of *monga* scores were determined by summing up the score obtained from all the 22 selected statements.

The total score of causes of *monga* by the people could range from 0 to 66. The observed causes of *monga* score ranged from 15 to 43 with a mean of 25.49 and standard deviation 7.14. Based on the causes of *monga* scores the respondents were classified into three categories: "less severity" (up to 20), "moderate severity" (21-40) and "high severity" (above 40) as shown in table 4.14.

Table 4.14 Categorization of the respondents according to the causes of *monga*

Categories	Range		*Monga* affected people (N=105)		Mean	Standard deviation
	Possible score	Observed score	No.	%		
Less severity (up to 20)	0-66	15-43	31	29.52	25.49	7.14
Moderate severity (21-40)			66	62.86		
High severity (above 40)			08	7.62		
Total			105	100		

Data presented in Table 4.14 show that 62.86 percent of the respondents had moderate severity about the causes of *monga* while 29.52 percent of them had less severity and 7.62 percent of them had high severity about the causes of *monga*. Thus it might be said that most of the respondents of the study area were moderately affected by *monga* and they had positive feeling towards the causes of *monga*.

Causes of *monga* index (CMI) were prepared by using 22 statements ranged from 64 to 256 against the possible range on 0 to 315 have been arranged in rank order according to their CMI which appears in Table 4.15.

Table 4.15 Ranking of the responses regarding the causes and severity of monga

Sl. No.	Causes of *monga*	Respondents (N=105)				Causes of *Monga* Index (CMI)	Rank order
		High (3)	Moderate (2)	Low (1)	Not at all (0)		
1	Landlessness	66	22	14	03	256	1
2	Lack of non-agricultural work	68	17	11	09	249	3
3	Low wage rate	53	24	18	10	225	5
4	Low diversity of crop	24	19	34	28	144	14
5	Low intensity of crop	14	13	31	47	099	20
6	Less scope of work due to natural calamities (flood, draught etc.)	56	28	18	03	242	4
7	Decrease of agricultural production due to natural calamities (flood, draught etc.)	47	26	18	14	211	6
8	Advance sell of crop	30	19	29	27	157	12
9	Advance sell of labor	28	22	26	29	154	13
10	High money lenders interest	40	29	21	15	199	7
11	Increased price of food including rice	68	20	08	09	252	2
12	Land lord deceived the share croppers	34	21	45	05	189	8.5
13	Non-cooperation of local elites	28	31	27	19	167	11
14	Inadequate role of GOs and NGOs	42	16	31	16	189	8.5
15	Less opportunity for poultry farming	17	13	37	38	114	17
16	Less capital for cattle rearing	16	16	28	45	108	18
17	Less scope for fishing/fish cultivation	11	28	17	49	106	19
18	Lack of Food for work (FFW), Cash for work (CFW)	40	15	34	16	184	10
19	Lack of education	22	18	21	44	123	15.5
20	Leading ease loving life	14	26	29	36	123	15.5
21	Stock business	08	22	37	38	083	21
22	Cultivation of tobacco	06	17	12	70	064	22

From the above findings, it was evident that landlessness of farmers causes the highest severity of *monga* as indicated by its CMI of 256 while cultivation of tobacco causes the lowest severity of *monga* as indicated by its CMI of 64. Thus it might be said that landlessness was the main problem of the farmers regarding *monga* where as tobacco cultivation was not a serious problem in the study area. The main reason of this result might be that most of the people in the study area were landless and their main occupation was agriculture so they did not have any activities other than agricultural day laborer. So land distribution was a major problem in the study area. As they did not possess land, they could not earn enough money as well as made any savings for their bad times. On the other hand tobacco was the main crop in the study area for the last few years but now paddy is being cultivated instead of tobacco due to higher food security. And tobacco is mainly a *rabi* season crop so it could not be the severe reason for *monga*.

4.5 Remedies of *monga*

The purpose of this section was to have an understanding about the remedies of *monga*. Remedies of *monga* scores were determined by summing up the score obtained from all the 18 selected statements.

The total score of remedies of *monga* by the people could range from 0 to 54. The observed remedies of *monga* score ranged from 18 to 40 with a mean of 28.72 and standard deviation 5.08. Based on the remedies of *monga* scores the respondents were classified into three categories: "less effect" (up to 20), "moderate effect" (21-30) and "high effect" (above 30) as shown in table 4.16.

Table 4.16 Categorization of the respondents according to the remedies of *monga*

Categories	Range		*Monga* affected people (N=105)		Mean	Standard deviation
	Possible score	Observed score	No.	%		
Less effect (up to 20)	0-54	18-40	09	8.57	28.72	5.08
Moderate effect (21-30)			67	63.81		
High effect (above 30)			29	27.62		
Total			105	100		

Data presented in Table 4.16 show that 63.81 percent of the respondents had moderate effect about the remedies of *monga* while 27.62 percent of them had high effect and 8.57 percent of them had less effect about the remedies of *monga*. Thus it might be said that majority of the respondents of the study area had moderate to high effect about the remedies of *monga* because they had been affected by *monga* in the long past.

In order to rank the remedies of *monga* farmers were asked a closed form questionnaire by using 18 statements. The computed MRI of the 18 statements ranged from 59 to 250 against the possible range on 0 to 315 has been arranged in rank order according to their MRI which appears in Table 4.17.

Table 4.17 Ranking of the responses regarding the remedies of *monga*

Sl. No.	Remedies of *monga*	Respondents (N=105)				*Monga* Remedy Index (MRI)	Rank order
		High (3)	Moderate (2)	Low (1)	Not at all (0)		
1	Creating permanent work opportunities by the government and other agencies	57	31	17	00	250	1
2	Properly distribution of khas/char land among the landless people	60	29	08	09	246	2
3	Cultivation of early crop variety	33	19	25	28	162	10
4	Diversification of crop	21	31	32	21	156	11
5	Setting up agro based and food processing industry	51	32	15	07	230	4
6	Creating professional mobility of work	13	18	29	45	104	15.5
7	Preventive measure to protect *monga*	30	26	21	28	163	9
8	Fair price market system of agricultural product	53	25	18	09	227	5
9	Creating more income generating activities	29	26	35	15	174	8
10	Increasing cropping intensity	18	27	36	24	144	13
11	Rehabilitation of distressed people due to river erosion	13	19	27	46	104	15.5
12	Government intervention between land lord-tenant partnership	16	23	37	29	115	14
13	Providing training for different Income Generating Activities (IGA)	26	37	19	27	145	12
14	Providing micro-credit with low interest	51	20	27	07	220	6
15	Year round VGF, VGD and FFW program	48	33	23	01	233	3
16	Protection and repairing of Tista barrage	09	11	10	75	59	18
17	Selling of food including rice in OMS	38	33	17	17	197	7
18	Creating employment opportunities abroad	09	17	28	51	89	17

From the above findings, it was found that creating permanent work opportunities by the government and other agencies would be the best remedy of *monga* as indicated by its MRI of 250 while protection and repair of Tista barrage would be the lowest remedy of *monga* as indicated by its MRI of 59. Thus it might be concluded that strengthening small, medium, and large scale industries could bring employment alternatives that is it would create permanent work opportunities for the people. So industrialization would be the most effective way to reduce the pressure on land and as a labor force was absorbed by industries the surplus concerning the agricultural laborers might decline as well. On the other hand protection and repairman of Tista barrage would not be so far important in the study area because a very few people mostly the fishermen were directly involve with it. But it would be effective if the distressed people were being rehabilitated adjacent to the Tista barrage and work there on co-operative basis.

Chapter V

SUMMARY, CONCLUSIONS & RECOMMENDATIONS

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

5.1.1 Introduction

Nowadays, the term *monga* is widely known in Bangladesh. It is said that the term *monga* originates from the northern districts. *Monga* is a popular expression for a severe food crisis. In other parts of the country other expressions like *akal* or *ovab* are used for the same or similar situations.

Monga is a cyclical food insecurity which occurs during the lean season and it directly affects those who are involved in agricultural activities. The agriculture in 'the *monga* region' is mainly based on paddy cultivation. The employment opportunities for agricultural day-laborers therefore mainly depend on seasonal labor requirements for this crop. In-between transplantation and harvest only little labor is needed and as result the income of day- laborers is low. Labors are available in agricultural sector due to lack of opportunity in other non agricultural sectors (industries, poultry, dairy or collage industry etc.). Due to the low labor wage people's purchasing power become low as they do not have any access to the market. With the meager income, they cannot buy enough food to fulfill their requirements.

In this context of vulnerability, seasonal food insecurity manifests itself in all three of its dimensions: availability; access and utilization. The shocks that trigger food insecurity are usually local natural disasters, aggravated by the specific vulnerability that the hard-core poor endure in economic, social, health, and governance factors.

In view of forging discussion the researcher undertook a study entitled "Confrontation with *Monga* by the *Monga* Affected People of Gangachara Upazilla under Rangpur District".

In view of the consideration stated above the following specific objectives were formulated for giving proper direction to the study.

1. To determine and describe the confrontation with *monga* by the people of Gangachara Upazilla under Rangpur district
2. To determine and describe some selected characteristics of the people of *monga* affected area. The selected characteristics were as follows:

i. Age	vi. Family assets
ii. Level of education	vii. Food security status
iii. Family size	viii. Scope of work during *monga* period
iv. Farm size	ix. Credit availability
v. Annual family income	x. Migratory behavior

3. To explore the relationship between the selected characteristics of *monga* affected people and confrontation with *monga* by the people of Gangachara Upazilla under Rangpur district
4. To identify and describe the causes and the remedies of *monga*

5.1.2 Major findings

5.1.2.1 Confrontation with *monga*

The total score of confrontation with *monga* by the people could range from 0 to 66. The observed *monga* confrontation score ranged from 11 to 35 with a mean of 25.64 and standard deviation 7.251. Highest proportion of the respondents (65.72 percent) had medium confrontation with *monga* while 27.62 percent of them had low and 6.66 percent of them had high confrontation with *monga*.

5.1.2.2 Characteristics of the farmers

Age

Based on age, the majority (52.38 percent) of the people fell in the middle aged category, while 31.43 and 16.19 percent belonged to young and old categories respectively.

Level of education

Among the respondents 11.43 percent of the respondents were totally illiterate and 50.47 percent of the respondents could sign their names only. On the other hand, 30.48 percent of them had primary level academic qualification and 7.62 percent had secondary level education.

Family size

Highest proportion (59.05 percent) of the respondents fell under medium family compared to 19.05 and 21.90 percent under small and large family respectively.

Farm size

Highest proportion of the respondents (55.23 percent) was landless while only 34.29 and 10.48 percent of the respondents were marginal and small respectively in the study area.

Annual family income

Majority of the respondents (62.86 percent) had low family income while 37.14 percent of the respondents had very low family income.

Family assets

Majority (55.24 percent) of the respondents had low family assets, 44.76 percent had very low and there were no medium or large family assets holder.

Food security status

Majority (49.52 percent) of the respondents was moderately secured during *monga* condition where 40.00 percent was less secured and 10.48 percent was highly secured.

Scope of work during *monga* period

Highest proportion of the respondents (42.86 percent) had less scope of work where 28.57, 18.10 and 10.47 percent of the respondents had no scope, less scope and moderate scope of work during *monga* period respectively.

Credit availability

Majority of the respondents (53.33 percent) were of the category very low credit recipient, while 20, 22.86 and 3.81 percent of the respondents were found to be no credit recipient, low credit recipient and medium credit recipient categories respectively.

Migratory behavior

Majority of the respondents (51.43 percent) were found to be less frequently migrant, while 17 percent of them were moderate frequently migrant and 13.33 percent of them were no migrant category. And a small proportion (4.77 percent) was frequently migrated during *monga* condition.

5.1.2.3 Relationship between the selected characteristics of *monga* affected people and confrontation with *monga*

Out of 10 selected characteristics of the *monga* affected people age, level of education, farm size, annual family income, family assets, credit availability and migratory behavior had positive and significant relationship while family size, food security status and scope of work during *monga* period had non-significant relationship with confrontation with *monga*.

5.1.2.4 Causes of *monga*

The computed CMI (Causes of *Monga* Index) of the 22 statement ranged from 64 to 256 against the possible range on 0 to 315 have been arranged in rank order according to their CMI.

According to CMI, landlessness of farmers causes the highest severity of *monga* as indicated by its CMI of 256 while cultivation of tobacco causes the lowest severity of *monga* as indicated by its CMI of 64.

5.1.2.5 Remedies of *monga*

The computed MRI (*Monga* Remedy Index) of the 18 statement ranged from 59 to 250 against the possible range on 0 to 315 has been arranged in rank order according to their MRI.

According to MRI, creating permanent work opportunities by the government and other agencies would be the best remedy of *monga* as indicated by its MRI of 250 while protection and repair of Tista Barrage would be the lowest remedy of *monga* as indicated by its MRI of 59.

5.2 Conclusions

A meaningful conclusion and clarification about the findings is very important task of any scientific research. The researcher studied the confrontation with *monga* by the *monga* affected people at Gangachara upzilla under Rangpur district. On the basis of the findings and their logical interpretation the following conclusions have been drawn:

1. The findings of the study revealed that majority of the respondents had medium confrontation with *monga*. It may be concluded that people were trying to combat *monga* with a good care and boldness in the study area. This area was the most vulnerable to *monga* so that development organizations (both GOs and NGOs) have taken initiatives to increase income generating activities through micro-credit and proper VGF and VGD program.

2. The findings of the study indicate that age of the farmers had significant relationship with their confrontation with *monga* during *monga* period. The main reason of this result might be that young people were less affected because of their enthusiasm, innovativeness arid migration mindedness. Thus young farmers might be confronted less problem compare to the old farmers.

3. Level of education of the *monga* affected people had a significant positive relationship with their confrontation with *monga*. It was also found that 61.90 percent of the respondents were illiterate or they could sign their name only. Education helps individual to become rational, conscious and to get useful information to solve their every day working problem. Education broadens the power of understanding and develops the ability of analyzing facts and situation to take rational decisions. All these facts lead to the conclusion that higher level of education of the respondents could increase their confrontation with *monga*.

4. Farm size of the respondents had significant relationship with their confrontation of *monga* during *monga* period. Almost all the respondents had posses below 49 decimal of land with an average of 0.0659 ha. While land is the vital income-generating source in this area, landlessness accelerates the severity of poverty. It can be concluded that marginal/small farmers confronted more problems than large farmers.

5. Annual family income of the respondents had significant positive relationship with their confrontation with *monga*. Again, the average family income of the respondents was only 31.48 thousand, which was far beyond our national average family income (106.36 thousand, BBS, 2004). People of the study area were mainly agricultural laborer, fishermen, etc. and lack skills, education and material assets used to earn small. This implies that farmers having very low income probably they fall prey to *monga* very much.

6. Family assets of the respondents had significant relationship with their confrontation with *monga*. The findings also revealed that almost all of the respondents had very low to low family assets. This might be due to the fact that most of the people in the study area were poor to ultra poor and hence their family income was very low. Thus facts lead to the conclusion that *monga* affected people sold their household asset at nominal price to confront *monga*.

7. Credit availability of the respondents had significant relationship with their confrontation with *monga*. It was also observed that majority (80 percent) of the respondents had access to micro-credit either from NGOs and local money lenders. This was possibly because of the fact that there had been large credit schemes of GOs and NGOs due to most affected region by river erosion and frequent flood every year. Thus it may be concluded that people had a strong access to micro-credit to confront *monga*.

8. Migratory behavior of the respondents had significant relationship with their confrontation with *monga*. Again most of the people (86.66 percent) in the study area were migrated during *monga* period. This is due to the fact that this area was the most disaster prone area so people had to migrate other villages or unions during flood or river erosion. Thus, it might be said that, in *monga* period due to absence of work in the locality and increased intensity of *monga* at home, people were forced to migrate and confront *monga*.

9. The statistical analysis revealed that the selected characteristics such as-family size, food security status and scope of work during *monga* period had non-significant relationship with confrontation with *monga*. This indicates that confrontation with *monga* and above characteristics of the respondents was independent to each other. This fact leads to the conclusion that confrontation with *monga* may be influenced by family size, food security status and scope of work during *monga* period to some extent but not significantly.

10. Landlessness and increased price of food including rice were the vital cause of *monga* according to CMI rank order which were 256 and 252 respectively. Landlessness was the common feature due to river erosion and consequence of chronic poverty in the study area. Now a day's food price also increased all over the country where inflation was more than 10 percent last few years. So it was likely to result in severe food insecurity in *monga* prone areas.

5.3 Recommendations

5.3.1 Recommendations for policy implications

Recommendations formulated on the basis of experience, observation and conclusions drawn from the findings of the study and have been prescribed to the concerned authorities, planners and executioners are given below:

1. A majority of the respondents were found to confront monga moderately during *monga* period. In this case policy development is needed for increasing income generating activities by the development organizations (both GOs and NGOs). Though maximum respondents have no work in hand during off-season, so steps should be taken to reduce the effect of *monga*. It may be recommended that the following steps could minimize the disorder of *monga*.

   - setting up agro-based and food processing industries that could bring employment alternatives;
   - setting up small and cottage industries considering the use of locally available raw materials;
   - leasing out the khas/char lands, rivers and ponds to the *monga* affected people for increasing their income generating activities through fisheries, forestation, poultry and dairy farming by the government;
   - popularizing BRRI dhan 33 or early rice variety in direct sowing method by dram seeder instead of present variety and method during *aman* season;
   - strengthening 'kabikha' and 'kabita' activities in the *monga* prone areas during off season;
   - extending VGF, VGD program and provide relief before beginning of *monga* to the *monga* affected people;
   - selling out food materials including rice at lower price in the *monga* affected area and
   - Finally strengthening extension activities by the GOs and NGOs to create awareness among the *monga* prone area beforehead.

Actually strong desire of government and NGOs is sufficient for alleviation of *monga*. There is no alternative of a concerted effort to face such seasonal crisis. It is expected that both government and NGOs will come forward with effective plans to eradicate *monga*.

2. As a large number of farmers are illiterate, arrangement should be made by concerned authority to provide non-formal education as well as provide training for different income generating activities to the *monga* affected people. This will help them to improve knowledge, skills, and general abilities so as to enable them to confront *monga*.

3. Farm size is one of the leading factors for poverty as well as *monga* in the study area. The proportion of landless people is very high. A land reform could make them owners of land, which would profit them far better than cultivating land of others. So the government could lease out the khas/char lands, rivers and ponds to the *monga* affected people for increasing their income generating activities through fisheries, forestation, poultry and dairy farming. It is also recommended that government should make shelter houses for the flood or river erosion victim people. In addition attempts should be taken to control flood and river erosion.

4. Wage rate in the study area was very low compared to other regions of the country so annual family income of the farmer was very low. If the wage were higher, income level could be raised and that could lead higher savings and investment for further incomes. So in this aspect government should provide the legal framework in terms of establishing rules concerning a minimum wage rate and labors should be organized, who jointly refuse to work for minimal wages during *monga* season.

5. It is quite logical that money begets money. Micro-credit and similar programs offer big opportunities to increase the cash availability and thus involving different income generating activities. Credit availability of the *monga* affected people was found positive and significant relationship with confrontation with *monga*. This means that more the access of farmers in credit,the more confrontation with *monga* by the *monga* affected people. So NGOs and government institutions should give out different short and long term loans with less or no interest rate to the *monga* affected people to confront *monga*.

6. Migratory behavior was significantly related with the confrontation with *monga*. In view of the above fact, it may be recommended that government should carries out construction works at migration destinations and give some short term loans for covering travel costs and some money for the remaining family. And there should be an easy banking system to send money to the families by the migrated *monga* affected people.

5.3.2 Recommendations for further study

On the basis of scope and limitations of the present study and observation made by the researcher, the following recommendations are made for future study.

1. The scope of the present available knowledge on *monga* has not been used for assessing the local situation. There is neither a common understanding concerning the question which circumstances provoke *monga*, nor has there been an attempt to formulate indicator to analyze the situation. So research on *monga* has to be continued and to be intensified to understand it, to develop strategies, and to evaluate these strategies.

2. This study was conducted in Gangachara upazilla of Rangpur district. Similar studies are required to be conducted in other sites of the country where similar organizational, socio-economic and physical conditions exist to compare the findings.

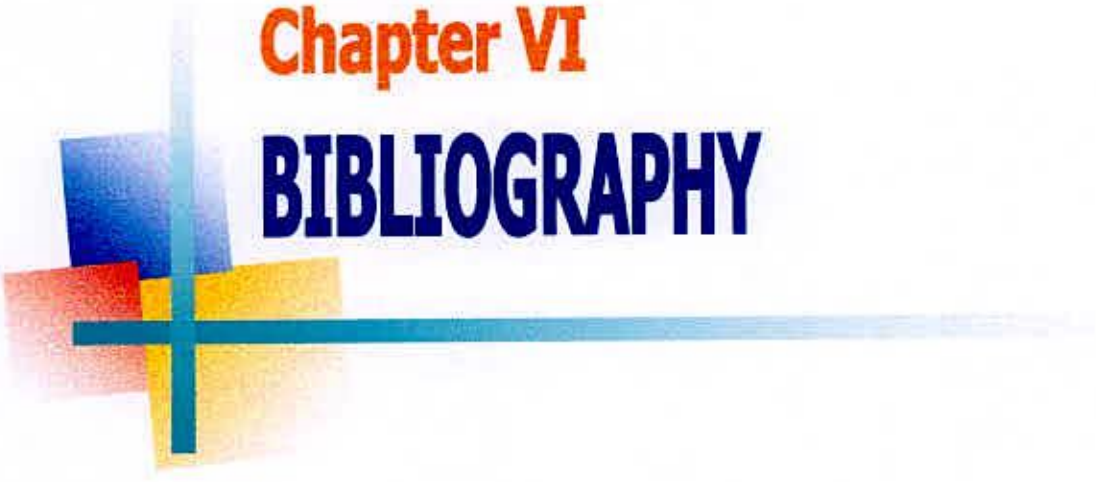
3. This study investigated the relationship of ten characteristics of the farmers with their confrontation with *monga* as dependent variables. Therefore, it is recommended that further study be conducted with other independent and dependent variables.

4. A non-significant positive relationship between family size of the farmers and their confrontation with *monga* was found. Generally a non-significant negative relationship was expected between family size and their confrontation with *monga*. Hence, further studies are necessary to find out the relationship between the concerned variables.

5. The present study has been carried out in order to determine the confrontation with *monga* by the landless marginal and small farmers.

Further, studies may be conducted to determine the confrontation with *monga* by the medium and large farmers.

6. A mapping of those regions that are vulnerable to seasonal poverty in Bangladesh has not been done so far. So mapping should be done to indicate the *monga* affected regions by the government or other agencies.



Chapter VI

BIBLIOGRAPHY

BIBLIOGRAPHY

Afique, A. A. 2006. Rural Women Perception of Benefit from Agricultural Model: Farm Project of SUS. *M.S. (Ag. Ext. Ed) Thesis*, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Afrine, S. 1997. Impact Assessment of Microfinance Intervention in Ghana and South Africa. Journal of Microfinance, 4(1): 37-58.

Ahmad, N. 2005. Slip Trip Tumble - Determinig Landlessness in Rural Bangladesh, Dhaka.

Ahmed, S. S. 2004. Uttar Bonge Monga: Artho Samajik Koronio o Protirod Kowsal. Bangladesh Economics Teachers Association, Dhaka.

Ahmed, S. 2002. Problem Confrontation of the Contact Growers of BADC in June Seed Production *M.S (Ag. Ext. .Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Akanda, M. W. 1993. Problem Confrontation by the Farmers in Respect of Cultivating BR 11 Rice in Two Selected Villages of Mymensingh District. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Ali, A. 2005. Livelihood and Food Security in Rural Bangladesh - The Role of Social Capital. PhD Thesis, Wageningen University.

Ali, M. J. 2003. Impact of Micro-credit in the Poverty Alleviation of BRAC Women Beneficiaries in a Selected Area of Dinajpur District. *M.S. (Ag.*

Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Ali, M. A. 1999 "Opinion of Unemployed Rural Youth on Self Employment by Undertaking Selected Income Generating Activities". *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Anonymous, 2005. Professor's Current Affairs, Dhaka: Professor's Publications.

Anonymous, 2008. Budget of This Fiscal Year 2008-2009. The Daily Prothom-alo. June 10, 2008.

BBS. 2004. Statistical Yearbook of Bangladesh. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the Peoples' Republic of Bangladesh, Dhaka.

BBS. 2003. Statistical Yearbook of Bangladesh. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the Peoples' Republic of Bangladesh, Dhaka.

Bangladesh Planning Commission (BPC) and WFP, 2005. The Food Security Atlas of Bangadesh.

Banglapedia: National Encyclopaedia of Bangladesh 2003. Famine. eds: Islam, S & Miah, S. Dhaka: Asiatic Society of Bangladesh. Retrieved August 15, 2007, from http:/en.banglapedia.org/bangla/ famine/.

Bhattacharya, D. 2006. "State of the Bangladesh Economy in the Fiscal Year 2006-Early Signals and Immediate Outlook". CPD, Dhaka.

Bhattacharya, D. 2005. "State of the Bangladesh Economy in the Fiscal Year 2003-2004-First Interim Report (July-December 2003)". CPD, Dhaka.

Bhuiyan, M. A. S. 2002.Constraints Faced by the Farmers in Potato Cultivation in Kuliarchar upazilla under Kishorgonj District, *M. Sc. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Bithi, M.K. 2006. *Monga* in North Bengal: Causes and Remedies. North Bengal Institute, RDRS Bangladesh, Rangpur.

CARE. 2005. *Monga* in Northen Bangladesh. CARE, Bangladesh.

CPD. 2003. State of the Bangladesh Economy in the Fiscal Year 2003-2004. First Interim Report (July-December 2003).Dhaka.

DER. 2004a. Minutes of the DER Sub-Group Meeting, 8 November 2004. Dhaka, Bangladesh.

DER. 2004b. Report from the Special DER Meeting on '*Monga*', 2004. 10 November 2004, Dhaka, Bangladesh.

Elias, Sahiduzzaman, M. and Muhammad, S. H. 2000. Dynamics of Vegetable Production Distribution and Consumption in Asia.

EGIS. 2000. Riverine Chars in Bangladesh. Dhaka.

Goode, W.J. and Hatt, P.K. 1952. Methods in Social Research. New York: McGrow-Hill Book Company, Inc.

PRSP. 2005. Government of the People's Republic of Bangladesh. Bangladesh Poverty Reduction Strategy Paper: Unlocking the Potential. National Strategy for Accelerated Poverty Reduction. IMF.

Halim. MA. 2003. Constraints Faced by the Farmers in Adopting Crop Diversification. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Haque. M. A. 1995. Problem Confrontation of the Members of Mohila Bittaheen Samabaya Samittee working under the Bangladesh Rural Development Board. *M. S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Haque. M.K. 2001. Environmental Awareness and Problem Confrontation of the FFS Farmers in Practicing IPM. *M.S. (Ag Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Hasan, A. A. M. 2006. "Looking into the Institutional Response to Monga". BLAST, Dhaka.

Hossain, A. 1989. Constraints Faced by the Researchers and Extension Personnel in Technology Generation and Transfer. *M. S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Extension and Teacher's Training, Bangladesh Agricultural University,Mymensingh.

Hossain, M.S. 2002. Resource Poor Farmers Problem Confrontation in Using Manures towards Integrated Plant Nutrition System. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Hossain, S.M.A. 1985. A study of the Landless Labourers in Bhabali Union of Mymensingh District. *M.S. (Ag. Ext. Ed.) Thesis,* Department of

Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Ifrat. J. 2006. Socio-economic View of *Monga* and its Financial Aspect of Eradication-Selective Case Studies. Department of Business Administration Jahangirnagar University, Savar, Dhaka-1342.

Islam, M.O. 2005. Poverty Alleviation of the Rural Women Through Some of the Selected Activities of Grameen Bank. *M.S. (Ag. Ext. Ed.) Thesis.* Dept. of Agricultural Extension Education, Bangladesh Agricultural University Mymensingh, Bangladesh.

Islam. A. 2003. Proshika Farmers knowledge and Adoption of Ecological Agricultural Practices. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Ismail, S.M. 2001. Agricultural Problem Confrontation of the Farm Youth in a Selected Block of Haor area of Mohanganj Upazilla under Netrokona District. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Kabir, M. 2005. "Conceptualization and Measurement of Food Insecurity: The Context of Bangladeh". *BIISS Journal*.26 (1):55-90.

Kabir, M.F. 2003. Effect of PDBF on Reducing the Level of Poverty of Landless People. *M.S. (Ag. Ext. Ed.) Thesis,* Dept. of Agricultural Extension" Education, Bangladesh Agricultural University, Mymensingh, Bangladesh.

Kashem, M.A. 1977. Small Farmers Constraints to the Adoption of Modern Rice Technology. *The Bangladesh Development Studies*, 15 (4): 119-130.

Kerlinger, F. N. 1973. Foundations of Behavioural Research. 2nd Edn. Delhi : Surjeet Publications.

Mansur, M. A. 1989. Farmers Problem Confrontation in Feeds and Feeding Cattle in Sonapur Union of Raipur upazilla under Lakshmipur District, *M. S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Extension and Teacher's Training, Bangladesh Agricultural University, Mymensingh.

Mortuza, M.G., Kashem, M.A. Islam M.M., Halim A. and Ahmed S.. 2004. Determination of Factors that Enhancing Sustainable Livelihood of Group Members of Krishak Samabay Samity (KSS) of BRDB. Paper Presented at Symposium on Sustainable Livelihood Improvement, 21-22 January, Bangladesh Agricultural Extension Society (BAES) and Department of Agricultural Extension (DAE).

PKSF. 2008. PRIME Brochure. Palli Karma Sahayak Foundation (PKSF), Dhaka.

Pramanik, N.K. 2001. Crop Cultivation Consraints of the Farm Youth in A Selected Block of Muktagacha Upazilla under Mymensingh District. *M.S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Raha, A. K. 1989. Deep Tube well Irrigation Problem of the Farmers in Cultivation of Modern Variety of Boro Paddy in Selected Blocks of Muktagacha *Upazilla* Under Mymensing District. *M. S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension and Teacher's Training, Bangladesh Agricultural University, Mymensingh.

Rahman, A. 2008. Provide Job Opportunities for Char Dwellers. The Daily Star, May 30, 2008.

Rahaman, H. Z. 2005. "*Monga* Forecast 2005 – Field Assessment and Action Plan". PPRC.

Rahman, M.M. 2005. Vulnerability Effects on Human and Physical Capitals of, Flood Affected Farmers in an Area of Naogoan District. *M.S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh, Bangladesh.

Rahman, M. 2003. Growth of poultry industry in Bangladesh: poverty alleviation and employment opportunity. Proceedings of the 3rd International Poultry Show and Seminar. The World's Poultry Science Association-Bangladesh Branch, Dhaka, Bangladesh. pp: 1-7.

Rahman, S. M. M. 2002. Seed Uptake Programme of RDRS : Its Impact on Livelihood Asset Building of Resource Poor Farmers. M.S. (Ag. Ext. Ed.) Thesis, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh, Bangladesh.

Rahman, M.S. 1996 Farmer's Problems in Potato Cultivation saltia Union Uder Gafforgaon Thana of Mymensingh District. *M.Sc. (Ag. Ext. Ed) Thesis*, Department of Agricultural Extension Education Bangladesh, Agricultural University, Mymensingh

Rahman, M. F. 1995. Problem Confronted by the Pineapple Farmers in a Selected Area of Madhupur thana under Tangail District, *M. Sc. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Rahaman, H. Z. 1995a. "Morakartik: Seasonal Deficits and Vulnerability of the Rural Poor".Case study. Dhaka, Bangladesh. pp 234-253.

Rahaman, H. Z. 1995b. "The Political Economy of Poverty Alleviation". Dhaka, Bangladesh. pp 274-279.

Rahman, H. Z. and M. Hossain. 1991. The Anatomy of Mora Kartik: An enquiry into the Economic Health of the Countryside. BIDS. Dhaka.

Rashid M. H. 1999. Willingness of Drop out Rural Youth for undertaking Selected Agricultural Entrepreneurship in their Self- employment *M.S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Education, Bangladesh Agricultural University, Mymensingh.

Rashid, M. H. 1997. Agricultural Constraints of the Farmers in Madhupur Union of Tangail District. *M. Sc. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension and Teacher's Training, Bangladesh Agricultural University, Mymensingh.

Rashid, M.Z. 2003. Participation of school Dropout Rural Youth in selected Agricultural Activities in two Villages of Mymensingh district. *M.S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Rokanuzzaman, M. 2004. Impact of Community Based Fisheries Management Project on Livelihoods of a Fishing Community in Haor Area of Sunamganj District. *M.S. (Ag. Ext. Ed.) Thesis,* Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensmgh, Bangladesh.

Rosenberg, M, J. and C. I. Hovelamd. 1960. Research on Communication and Attitude quoted in Triandis, H. C. 1971. Attitude and Attitude Change. John Wiley Publisher, New York.

Saha, B. K. 1983. Farmers Problem Confrontation in Respect of Breeding of Poultry through Cockrel Exchange Program and other Related Dimensions in Dewkhali Union of Phulbaria Thana under Mymensingh District. *M. S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension and Teacher's Training, Bangladesh Agricultural University, Mymensingh.

Saha, N.K. 1997. Participation of Rural Youth in Selected Agricultural Activities in the Villages of Muktagacha Thana under Mymensingh District. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Salam, M. A. 2008. The Constitution of Bangladesh. Centre for Policy Information and Justice. 3rd print: March 01, 2008.

Salam, M.A. 2003. Constraint Faces by the Farmers Adopting Environmentally Friendly Farming Practices. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Shawkat, A. M. M., Sarker, H., Huque I. and Alam, M.. 2003. Research on Selected Poverty-Stricken Areas in Bangladesh, RIB.

The Bangladesh Observer. 2005. "Tackling *Monga* in the Northern Region in Bangladesh".

The Daily Prothom Alo. 2008. "Remittance Earning and Its Contribution in *Monga* Affected Area".

The Food Security Atlas of Bangladesh, 2005. Towards a Poverty and Hunger Free Bangladesh (1st ed.). [Atlus]. Dhaka: United Nations World Food Programme.

Townsend, J. C. 1953. Information to Experimental Methods. International Student Edition, New York: McGraw-Hill Book Company, Inc.

UNDP, 2006. "Human Development Report 2005:7. Water, Sanitation and Nutritional Status 2006". Dhaka, Bangladesh.

VOICE, 2006. *Monga* in Media: A Critical Analysis. Dhaka, Bangladesh.

WFP. 2005. Bangladesh Food Security Brief. Dhaka, Bangladesh.

Wikipedia. 2007: The Free Encyclopaedia (n.d.). Bangladesh Famine of 1974. USA: Free Software Foundation, inc., Retrieved August 15, 2007, from http:/en.wikipedia.org/wiki/bangladesh_famine_of_1974/.

Wilkinson, T. S. and Bhandarkar, P. L. 1977. Methodology and Techniques of Social Research, Bombay: Himalaya Publishing House. p.77.

World Bank. 2005. Revitaizing the Agricultural Technology System in Bangladesh : Bangladesh Development Series Paper-7. The World Bank Office, Dhaka.

Zebunnesa, R. 1998. Impact of Selected Rural Development Programs of BRAC on Household Income Generation Through Increased Women Participation in a Selected area of Mymensingh District. *M.S. Thesis*, Department of Agricultural Economics, Bangladesh Agricultural University, Mymensingh.

Zug, S. 2006.Monga- Seasonal Food Insecurity in Bangladesh: Understanding the Problem and Strategies to Combat it. Sundarganj, Dhaka.

Appendix I

Interview Schedule
Department of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University
Dhaka-1207
Interview schedule for data collection for the research on

"CONFRONTATION WITH *MONGA* BY THE *MONGA* AFFECTED PEOPLE OF GANGACHARA UPAZILLA UNDER RANGPUR DISTRICT"

Sl. No. .....
Date: .....

Name of the respondent: .....
Village: .....
Union: .....
Upazilla: .....
District: .....

(Please answer the following questions. Secrecy would be maintained strictly)

1. Age

How old are you? .....years

2. Level of education

Please indicate your educational qualification.

a) Can not read and write.....
b) Can sign only.....
c) Studied up to .....class

3. Family size

How many members are there in your family (including yourself)?
.....persons

4. Farm size

Please give particulars of your farm size as follows:

SL. No.	Type of land	Area (decimal)	Area (Hectare)
1.	Landless		
2.	Own Homestead		
3.	Own land under own cultivation		
4.	Own pond and garden		
5.	Land taken from others on lease		
6.	Land given to others on borga		
7.	Land taken from others on borga		
8.	Others (fruit garden, pond etc.)		
	Total		

5. Annual family income

Please mention about your annual family income from the following sources.

Sl. No.	Source of income		Total production Kg/Mon	Price per unit Kg or Mon/ha.	Total price (Tk.)
1.	Agricultural sources	Rice Wheat Maize Sugarcane Oil seeds Pulses Fruits Vegetables Poultry Livestock Fisheries Others.....			
	Sub-total				
2.	Non-agricultural sources	Service Business Day labor Others.....			
	Sub-total				
	Total				

6. Family assets

Please give information about your family assets.

Sl. No.	Assets name	Number	Estimated price (Tk.)
a) House			
1.	Thatched house		
2.	Tin shed house		
3.	Polythene roof house		
4.	Semi-brick built house		
5.	Brick built house		
6.	Other.....		

Sl. No.	Assets name	Number	Estimated price (Tk.)
b) House assets			
7.	Chouki/Bed		
8.	Box		
9.	Trunk		
10.	Chair		
11.	Table		
12.	Lamp		
13.	Bench		
14.	Wooden/Steel almirah		
15.	Radio		
16.	Television		
17.	Table clock		
18.	Wrist watch		
19.	Wall clock		
20.	Bicycle		
21.	Rickshaw/Van		
22.	Torch light		
23.	Sewing machine		
24.	Jewelry (gold/silver)		
25.	Showcase		
26.	Others.....		
C. Livestock Related			
27.	Ox/Bullock		
28.	Heifer/Calf		
29.	Milch cow		
30.	Goat/Sheep		
31.	Duck/Hen/Cock		
32.	Buffalo		
33.	Others.....		
D. Agricultural Implements			
34.	Country plough		
35.	Spade		
36.	Hand sprayer		
37.	Ladder		
38.	Hand tube-well		
39.	Shallow tube- well		
40.	Others.....		
	Total		

7. Food security status

Please mention the months during which household foods are adequately available.

Sl. No.	Month	Availability of food		
		Adequate	Inadequate	Scarce
1	Baishakh			
2	Jaistha			
3	Ashar			
4	Srabon			
5	Vadro			
6	Ashwin			
7	Kartik			
8	Agrahaon			
9	Pous			
10	Magh			
11	Falgun			
12	Chaitra			

8. Scope of work during *monga* period

Please mention your work opportunities at the time of *monga* in your locality.

Sl. No.	Sectors	Level of opportunity			
		High	Medium	Low	No
1.	Farming				
2.	Agricultural labor				
3.	Rickshaw pulling				
4.	Cow/Goat/Poultry rearing				
5.	Fish culture				
6.	Handicrafts manufacturing				
7.	Business				
8.	Services				
9.	Industry labor				
10.	Others				

9. Credit availability

Did you take loan for various purposes? Yes .....No .....
If "yes", please mention the source and amount of loan taken by you.

Sl. No	Sources of credit	Credit refund system	Amount of credit received
a. Non-government sources			
1.	Padakhep		
2.	RDRS		
3.	BRAC		
4.	TMSS		
5.	Grameen Bank		
6.	ASODE		
7.	Others		
b. Government sources			
1.	RAKUB		
2.	Karmasansthan Bank		
3.	VGF/VGD		
4.	Food for Work (FFW)		
5.	Cash for work (CFW)		
c. Friends/Relatives			
d. Rich man of village/Local money lender			
Total			

10. Migratory behavior

Do you go to other places during *monga*? Yes..... / No.....
If yes, please mention the place and types of migration.

Sl. No.	Place of migration	Pattern of migration		
		Year round	Seasonal	Occasional
1.	Other village/union of the same upazilla			
2.	Other upazilla			
3.	Other district			
4.	Capital/divisional city			

11. Causes of *monga*

Please mention the causes and severity of *monga*

Sl. No.	Causes of *monga*	Degree of severity			
		High	Moderate	Low	Not at all
1.	Landlessness				
2.	Lack of work at non-agricultural sector				
3.	Low rate of wage				
4.	Low diversity of crop				
5.	Low intensity of crop				
6.	Less scope of work due to natural calamities (flood, draught etc.)				
7.	Decrease of agricultural production due to natural calamities (flood, draught etc.)				
8.	Advance sell of crop				
9.	Advance sell of labour				
10.	High money lenders interest				
11.	Increased price of food including rice				
12.	Land lord deceived the share croppers				
13.	Lack of cooperation of local people				
14.	Lack of responsibility of GOs and NGOs				
15.	Less opportunity for poultry farming				
16.	Less capital for cattle rearing				
17.	Less scope for fishing/fish cultivation				
18.	Food for work (FFW), Cash for work (CFW)				
19.	Lack of education				
20.	Leading ease loving life				
21.	Stock business				
22.	Cultivation of tobacco				

12. Confrontation with *monga*

How do you confront *monga*?

Sl. No.	Items of confrontation with *monga*	Degree of confrontation			
		High	Moderate	low	Not at all
A	Personal confrontation				
1.	Have tendency to save money during good times				
2.	Participate in Food for Work				
3.	Seek job at non-agricultural sector				
4.	Seek job at agro-based industry				
5.	Change food habit				
6.	Produce vegetable and sell in the market				
7.	Sell milk, eggs and poultry birds				
8.	Social assistance				
9.	Seek help from NGOs				
10.	Seek help from government				
11.	Migration at other places				
12.	Seek alternative generation activities				
13.	Sell out house assets				
14.	Work as day laborer				
B	Organizational confrontation				
15.	Arrangement of khash/char land for landless people				
16.	Launching of development activities e.g. Repairmen of roads, re-excavation of canals and tree plantation				
17.	Launch flood control activities				
18.	Co-ordination of Go and NGO activities				
19.	Creating scope of permanent work by the GOs and NGOs				
20.	Providing subsidies in agricultural inputs (Seeds, fuel, fertilizers)				
21.	Increasing VGF, VGD and Food for Work (FFW) program				
22.	Arrangement of open market sale				

13. Remedies of *monga*

Please respond the following statements regarding the remedies of *monga*.

Sl. No.	Remedies of *monga*	Degree of effect			
		High	Moderate	Low	Not at all
1.	Creating permanent work opportunities by the government and other agencies				
2.	Properly distribution of khas/char land among the landless people				
3.	Cultivation of early crop variety				
4.	Diversification of crop				
5.	Setting up agro based and food processing industry				
6.	Creating professional mobility of work				
7.	Preventive measure to protect *monga*				
8.	Fair price market system of agricultural product				
9.	Creating more income generating activities				
10.	Increasing cropping intensity				
11.	Rehabilitation of distressed people due to river erosion				
12.	Government intervention between land lord-tenant partnership				
13.	Providing training for different Income Generating Activities (IGA)				
14.	Providing micro-credit with low interest				
15.	Year round VGF, VGD and FFW program				
16.	Protection and repairmen of Tista Barrage				
17.	Selling of food including rice in OMS				
18.	Creating employment opportunities abroad				

Thank you.

Date:

Signature of the interviewer

APPENDIX II

Correlation Matrix

Inter-correlation between 10 characteristics and the dependent variable (N= 105)

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	Y
X_1	1.000										
X_2	.387**	1.000									
X_3	.218*	.251*	1.000								
X_4	.668**	.596**	.207*	1.000							
X_5	.405**	.431**	.202*	.653**	1.000						
X_6	.591**	.556**	.381**	.848**	.725**	1.000					
X_7	.263**	.289**	.602**	.341**	.279**	.516**	1.000				
X_8	.028NS	.311**	.228*	.246*	.230*	.387**	.429**	1.000			
X_9	.188 NS	.196*	.299**	.289**	.430**	.411**	.370**	.329**	1.000		
X_{10}	.390**	.423**	.501**	.577**	.440**	.740**	.697**	.481**	.481**	1.000	
Y	.306**	.224*	.158NS	.417**	.354**	.455**	.178NS	.182NS	.198*	.338**	1.000

* Correlation is significant at the 0.05 level (2- tailed)
** Correlation is significant at the 0.01 level (2- tailed)
NS Not Significant

Legends:

Independent Variables		Dependent variable
X_1 =Age X_2 = Level of education X_3 = Family size X_4 = Farm size X_5 = Annual family income	X_6 = Family assets X_7 = Food security status X_8 = Scope of work during *monga* period X_9 = Credit availability X_{10} = Migratory behavior	Y = Confrontation with *monga* by the *monga* affected people of Gangachara Upazilla under Rangpur District