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Monga vulnerability in the northern part of Bangladesh

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A study on vulnerability of '*Monga*' a *Bengali* term referring to the yearly cyclical phenomenon of poverty and hunger was conducted in the northern part of Bangladesh. The specific objectives of the study were to identify the factors promoting the causes of *Monga* taking place in a particular area and in a lean season of the year and also to assess its vulnerability. The study area included five northern districts of Bangladesh where *Monga* affected people were mostly concentrated. Multistage and stratified random sampling procedure was followed for selecting 900 households from all the five districts where 900 household heads were interviewed from March/2009 to November/2009 by the researcher himself. About 69.76% of the respondents opined that *Monga* happens in the greater Rangpur region because of frequently occurring natural calamities and having no work opportunity in the lean season. Over 60% viewed that the timing of *Monga* commences in mid September and ends in mid November and it happens almost every year. About 86% of the respondents reported *Monga* either as 'moderately vulnerable' or 'most vulnerable' and 62% noted it as 'increasing'. Almost 50% of the respondents could manage only one meal a day during the *Monga* period and 60% had to remain in occasional starvation very frequently because of lack of purchasing capacity. As a result, most of them adopted a number of coping mechanisms like taking loan, eating less, government relief etc. to encounter with *Monga.*

Key words: *Monga* vulnerability, lean season, natural disaster, coping mechanism.

INTRODUCTION

The economy of Bangladesh is largely dependent on agriculture. Nearly 19% of the gross domestic product (GDP) and 23% exports of the country come from agriculture. It provided employment to about 60% of the total labor force and it seems to have managed to feed 150 million people of the country. Within agriculture sector, food crops production accounts for 75% of the value added products. Among them, rice is the most dominant crop which occupies about 76% of the cropped area, and other crops included are pulses (5%), wheat (4%), jute (4%), oilseeds (4%), and the remainders (7%) produced by vegetables, fruits, sugarcane, cotton, tea and rubber. An estimated 9.30 million ha are under crop cultivation with cropping intensity of exceeding 175%. Among them, about 2.9 million ha or 31% of the

cultivated land is under irrigation coverage (BBS: Agriculture Census Report 2009). The concept of *'Monga'* is, in fact, a state of seasonal deprivation of food due to lack of access to income and employment opportunities especially for the rural agricultural workers/labors. As viewed by Zug (2006), *Monga* is a kind of seasonal food insecurity in ecologically vulnerable and economically weak parts of north-western Bangladesh caused by an employment and income deficit before Amon rice is harvested. The term *Monga* is commonly used only in the north-western region, specially in the greater Rangpur district. Historically, Rangpur region was never a food-deficit area. Food grain production over there is always surplus.

According to the Department of Agricultural Extension (DAE) during 2007 to 2008, the amount of food surplus was 220700, 243521, 129404, 197514 and 156282 metric tons in Rangpur, Nilphamary, Lalmonirhat. Kurigram and Gaibandha districts respectively; but there are certain pockets, which are food-deficit areas. These

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Table 1. The sample size of five districts.

Unit	Sampling method	Sample size
District	Purposive	5
Upazila	Stratified random sampling	5 × 2 = 10
Union	Stratified random sampling	5 × 2 × 3 = 30
Village	Stratified random sampling	5 × 2 × 3 × 3 = 90
Household head	Simple random	5 × 2 × 3 × 3 × 10 = 900
Total respondents		900

pockets are mostly located within the vulnerable grip of the mighty rivers like Padma, Jamuna, Teesta, Jamunashwari, Darla etc. As a result, food production varies across these vulnerable regions depending on the climate conditions and natural disasters. The unequal land distribution combined with the lacking alternatives results in a very high share of agricultural labors households in the region. Although, greater Rangpur is a food surplus area, agriculture cannot provide enough employment for the big agricultural labor force. This leads to a very low wage rate in greater Rangpur. A major reason for the low employment opportunities is the lack of agricultural diversification. Industrialization in the greater Rangpur is far below the national average. As a result, during the *Monga* period, non-farm activities also become almost absent or severally limited as the cash flow is very low for the poor as well as big landowners whose consumption or purchasing capacity becomes limited. An estimate made by Palli Karma Sangsthan Foundation (PKSF) as quoted by Mazid (2007) indicates that 25 out of 35 upazilas of these five districts are severely affected by *Monga*. Of them (25 upazila), more than 1.10 million households spreading over 212 unions are reported to be poor. Among them, almost 50% households are perennially affected by *Monga* every year. Out of these households, 50% are ultra poor, 25% moderately poor and the rest 25% are poor. Another estimate made by BBS (2005) as quoted by Mazid (2007) stipulated that there are about 596,645 *Monga*-affected agricultural labor households out of 2,038,130 households covering 35 upazilas of five districts of greater Rangpur region totaling of 2,684,903 affected people at 4.5 persons per household (596.645 × 4.5 = 2,684,903).

A clear understanding of the aforementioned causal factors or elements could be useful in identifying the key issues that manifest as *Monga* in the northern region of Rangpur district and its consequential impacts on the suffering people. However, the specific objectives of the study are to identify the factors promoting the causes of *Monga* taking place in a particular area and also in lean season of the year and to assess the vulnerability of *Monga.*

METHODOLOGY

The principal method employed was face-to-face personal interview using structured interview schedule. The study was conducted in five northern districts, namely Rangpur, Kurigram, Lalmonirhat, Nilphamary and Gaibandha where *Monga* affected people are mostly concentrated. The household heads of the poor and ultra-poor *Monga* affected population were the main focus or unit of analysis. The list of the population (poor and ultra-poor households) was collected from local-government office record book. Several sampling procedure (purposive, multistage stratified random sampling and simple random sampling) was followed taking two upazilas from each district, three unions from each upazila and three villages from each union. Ten households from each village were selected for determining the sample size. Accordingly, a sample size of 180 households (1 district × 2 upazilas × 3 unions × 3 villages × 10 household heads = 180) were randomly selected from one district. Likewise, similar proportion of upazilas, unions, villages and households were taken from other districts. Thus, the sample size of five districts stood at 900. This is illustrated in Table 1. Above these household heads (both male and female) were interviewed by the researcher himself from March/2009 to November/2010.

For conducting this work, while researcher did not get any fund from any source, he did it with self finance due to his personal interest. Besides, key informants and participants' observation, in-depth discussion was held informally to supplement the information collected through interview. Number and percentage distribution were mostly used to clarify the mentioned objectives and other phenomena of the research.

RESULTS AND DISCUSSION

Why does *Monga* occur in Rangpur region only but not in other districts?

A key aspect of this research was to specify why *Monga* occurs only in greater Rangpur region compared to other neighboring districts. Analysis of data indicated that of various causes resulting *Monga*, a majority of the respondents (22.53%) informed that no work opportunity is there in the lean season (from September to October prior to harvesting of Amon paddy). It was followed by about 18.48% who mentioned river erosion and, more than 12% as having no industrial enterprises or mills and factories for causing *Monga*. As perceived causes, 10.54% of the respondents mentioned it due to char lands and 9.33% as perennial floods zone causing crop loss. Another 6.15% viewed it having no scope of outside employment due to poverty, illiteracy, lack of skill and poor job opportunity (Table 2). Other groups, though small in size and percent provided very interesting

Table 2. Causes of *Monga* occur in only greater Rangpur region.

Perceived causes of *Monga*	Frequency of responses (number and percentage)					
	Rangpur	Lalmonirhat	Nilphamari	Gaibandha	Kurigram	All districts
No opportunity to work except agricultural activities	150 (5.66)	119 (4.49)	90 (3.4)	128 (4.83)	109 (4.12)	596 (22.53)
River erosion/floods	127 (4.79)	103 (3.89)	90 (3.4)	76 (2.87)	93 (3.5)	489 (18.48)
No industries/factories	75 (2.83)	63 (2.38)	63 (2.38)	57 (2.15)	68 (2.56)	326 (12.32)
Mostly char land	67 (2.53)	55 (2.07)	62 (2.34)	43 (1.62)	52 (1.96)	279 (10.54)
Perennial flood zone causing crop loss	37 (1.39)	40 (1.51)	32 (1.2)	56 (2.11)	82 (3.09)	247 (9.33)
No overseas employment scope	51 (1.92)	32 (1.2)	37 (1.39)	19 (0.72)	24 (0.9)	163 (6.15)
Loss of harvest due to floods and river erosion	30 (1.13)	19 (0.72)	45 (1.7)	13 (0.49)	21 (0.79)	128 (4.84)
Illiterate, so unemployed	17 (0.64)	36 (1.36)	30 (1.13)	13 (0.49)	27 (1.02)	123 (4.64)
Poverty stricken poor	12 (0.45)	28 (1.05)	39 (1.47)	18 (0.68)	10 (0.37)	107 (4.04)
Local leaders/well-off people do not support	18 (0.68)	20 (0.75)	22 (0.83)	11 (0.41)	13 (0.49)	84 (3.17)
No government help/support for skills training	15 (0.56)	13 (0.49)	16 (0.6)	19 (0.72)	23 (0.86)	86 (3.24)
Can not say/no response	5 (0.18)	4 (0.15)	2 (0.07)	4 (0.15)	4 (0.15)	19 (0.72)
Total	604	532	528	457	526	2647 (100)

Some respondents gave more than one response; figures within parentheses indicate percent.

information such as they faced loss of harvest due to flood and river erosion (4.84%) were illiterate so unemployed and jobless (4.64%), being poverty stricken poor resulted in *Monga* (4.04%). Besides, poor government help and support for skills development training gainful employment (3.24%) and inadequate support from local leaders/well-off people were mentioned by 3.17% of the respondents as perceived causes of *Monga*.

From an in-depth analysis of all these statements provided by the household heads, two burning issues come to the fore: lack of work opportunity in the agriculture sector due to various kind of natural disasters that lead to create lean season, and illiteracy was very prominent in the region resulting in unemployment, joblessness, compounded with no industrial establishments (large or small) enabling them to find out alternative sources of employment opportunities and income earning and above all no government help or support for skills development training programs in order to make them technically skilled for outside employment. Zug (2008) conducted similar study and found also similar findings that most of the rural parts of Rangpur District, off-farm income for the unskilled rural poor was very limited in some brickfields, rice and saw mills, earth works and rickshaw pulling. Their major employment opportunity being agricultural labor and without an increase or involvement of off-farm IGAs, it is difficult to overcome *Monga* in that region.

Time of happening of *Monga* as perceived by the respondents

In order to identify the *Monga* event, the respondents were asked the real time of occurrence of *Monga*. About 60% of the respondents indicated that the timing of *Monga* commences from mid September and ends in mid November, while 21.1% considered six months of the year (March to May and September to November) as *Monga* while 12.76% considered the whole year as *Monga* for them and (5.9%) viewed March to April as the peak time for facing *Monga* (Figure 1). On reflecting of all these statements, it was resolved that the peak period of *Monga* varies from mid September to mid November which is also known as big *Monga*' in terms of severity and small *Monga* which takes place usually in the months of March to April. So it is quite logical to say that the actual *Monga* period runs up to 100 to 120 days (September to November and March to April) depending on the vulnerability of *Monga*. This was also supported by Zug (2006), PKSF (2008) and Ali (2008).

Karim (2010) in his study got similar findings and opined that the *Monga* in the months of mid September to mid November is very acute in nature and known as big *Monga*, but, many people in the study area mentioned that the little *Monga* (March to April) is also a problem for them as working opportunities reduce, but it is less severe.

What was the degree of *Monga* vulnerability in last year?

Degree of vulnerability was categorized into three groups such as 'most vulnerable', 'moderately vulnerable' and 'not so severe'. Based on this scale of vulnerability, the respondents were asked as to what level of vulnerability they were encountered during the immediate past year of this investigation which is furnished in Figure 2. A majority of the respondents (47.5%) reported that considering all districts, it was tolerable level or in other

Whole year   Six Months (March-May & Sept.-Nov.)   Mid Sept. - Mid Nov   March - April

All Districts (%)
12.76
21.1
60.22
5.9

Kurigram (%)
2.33
4.44
11.23
2

Gaibandha (%)
3.55
4.11
11.77
0.56

Nilphamari (%)
2.33
4.33
11.78
1.56

Lalmonirhat (%)
1.22
5.11
13
0.67

Rangpur (%)
3.33
3.11
12.44
1.11
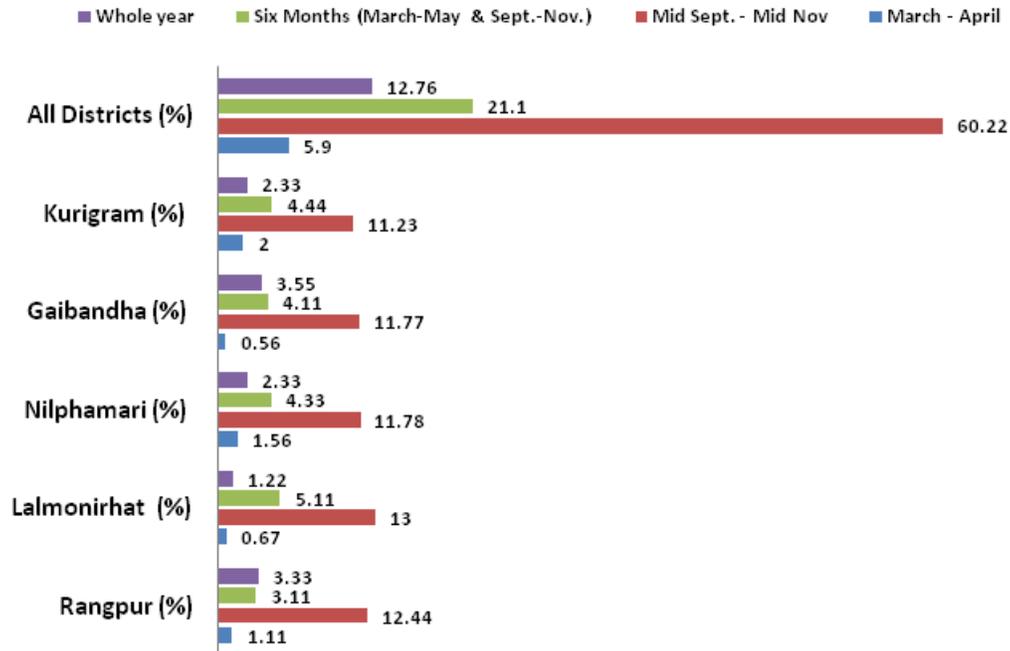
Figure 1. Time of happening *Monga* as perceived by respondents.

Most Vulnerable (%)   Moderately vulnerable (%)   Not so severe (%)

All Districts (%)
38.8
47.5
13.7

Kurigram
7.3
9.4
3.2

Gaibandha
10.3
8.1
1.6

Nilphamari
7.2
10.5
2.3

Lalmonirhat
5.2
10.9
3.9

Rangpur
8.8
8.6
2.7
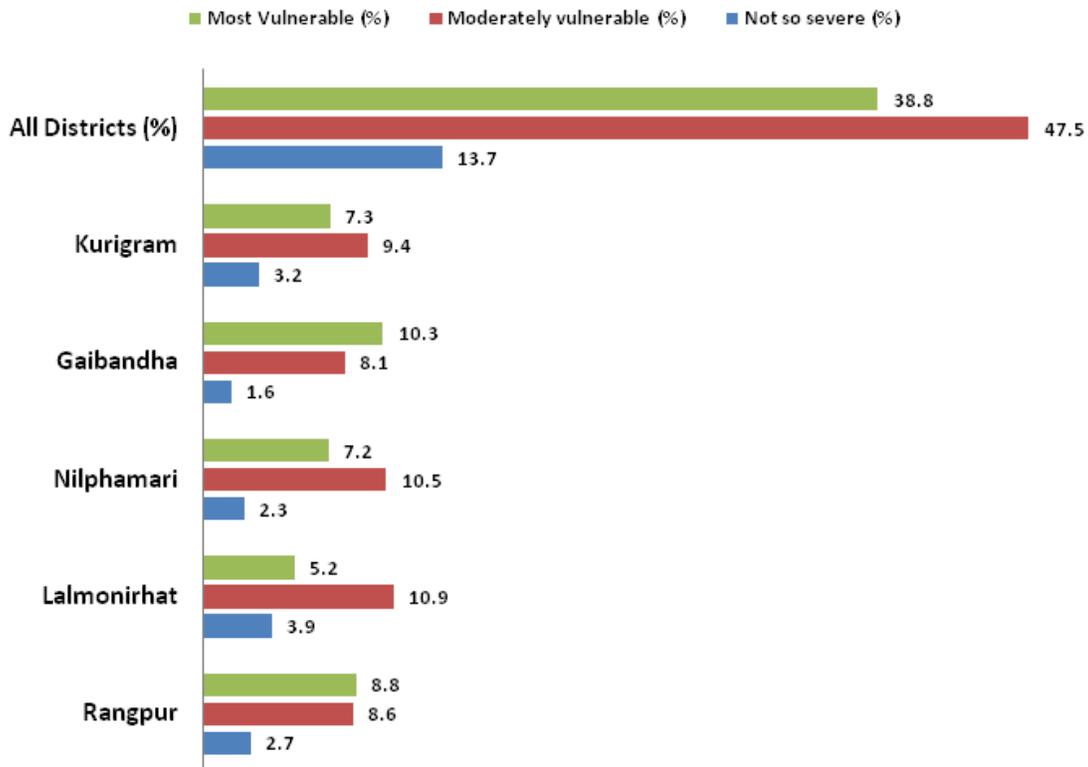
Figure 2. Degree of *Monga* vulnerability that happened last year (2008).

words it was 'moderately vulnerable', while 38.8% of them described it as 'most vulnerable' and a small group (13.7%) termed it as 'not so vulnerable'. This implies that during the *Monga* period of 2008, the degree of vulnerability was 'moderate' to the 'most vulnerable' level' as perceived by majority of the respondents. The district-
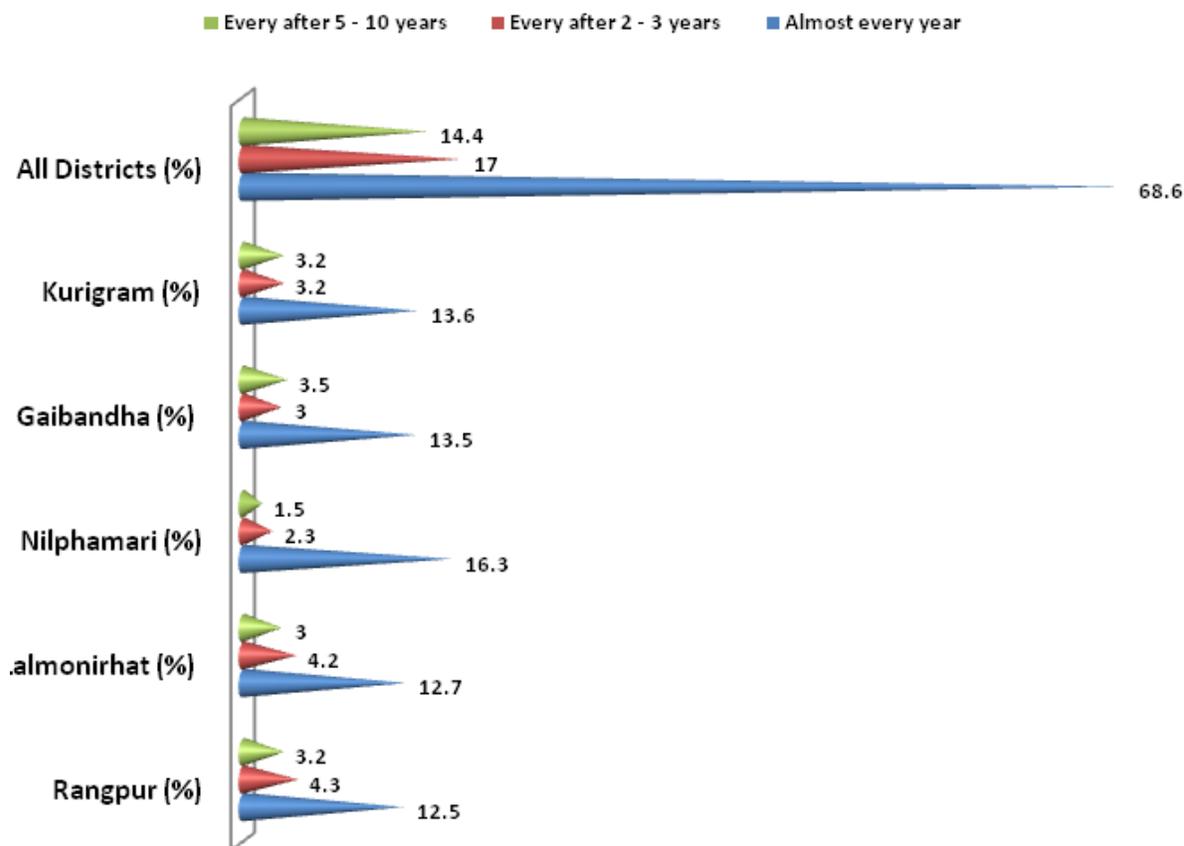
Figure 3. Perceived occurance of *Monga* by year in Gratter Rangpur Region.

wise distribution of vulnerability index appeared more or less like the trends of all districts. Similar findings were also received by Rahman (1995). He also identified that the degree of severity varies from family to family within the same place. The reasons included illness, a disproportional big loss of assets during floods, indebtedness because of dowry, etc.

How often does *Monga* occur in the locality?

The perceived occurrence of *Monga* frequency in all districts showed that majority of the respondents (68.6%) interviewed indicated occurrence of *Monga* in almost every year followed by 17% termed it every 2 to 3 years and 14.4% perceived it happening in every after 5 to 10 years (Figure 3). It is true that *Monga* occurs in greater Rangpur region almost every year (Hasan and Monirul, 2010). This is because of its topographical locations engulfed by the big rivers like Teesta, Brahmaputra, Jamuna, Padma, Jamunashwari, Darla, Ghagot, Dudkamal and their tributaries, as well as natural calamities such as floods, river erosion, droughts, hailstorms, cyclones, excessive rainfall, causing flash floods, droughts, severe cold, etc. because of its typical geographical characteristics and natural disasters. But

contrary result has also been found by European Commission in 2009 where they mentioned that *Monga* occurs year after year during the agricultural lean seasons.

Whether incidence of *Monga* is increasing/ decreasing every year?

The extent of incidence of *Monga* was categorized as increasing,' 'decreasing' and remaining the 'same as before' in order to get their feedback about its real situation as perceived by them. About 62% of the respondents taken from all districts reported it 'increasing' as opposed to 20.1% considering it 'decreasing' and 18.2% viewed it remaining 'the same as before' that is no change (Figure 4). It seems however that there has been some over statement regarding increased percent (%) of *Monga*. This over statement may be attributed to the fact that the respondents expect a big volume of relief materials or cash money if they provide a rosy picture of *Monga* increasing which is often far from reality. Anonymous (2005) found that in 2004 several people in the study areas already predicted the *Monga* to be more problematic, as there was a lack of rain during the transplantation time, which led to a total loss of crops for
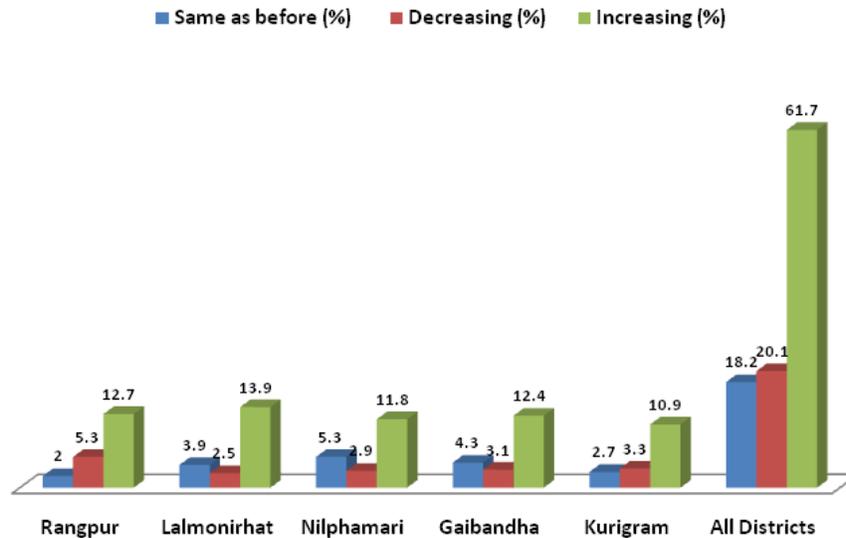
Figure 4. Extent of *Monga* increasing/decreasing as perceived by the respondents.

Number of meals taken by the respondents during *Monga*

Number of meals taken daily by the respondents of all the districts during the *Monga* period showed that about half of the respondents (49.9%) took only one meal a day. Besides, about 26% people did not have any surety to take meal every day, they survived on others' mercy or alms and also relief materials provided by GOs, NGOs and donor agencies, about 16.3% took two meals a day. Only an insignificant proportion (7.9%) enjoyed three meals a day. This scenario thus entails a gloomy picture of the poor households who lead a very precarious life and livelihoods during the time of *Monga* (Figure 5). Similar findings were located by Zug (2006) who found that in *Monga* period people reduced the amount of food by taking fewer meals per day or by reducing the quantity per meal. Interviews with different families showed that food intake was reduced to one or two meals per day and sometimes they were not eating at all.

Daily requirements and buying capacity of rice/wheat per family

Perceived daily requirements and buying capacity of main food per family in a day for all the districts showed that about 60% of the household representatives could not buy their main food specially rice or wheat according to their requirements. This implies that they had to be in occasional starvation and they were subject to be vulnerable at the time of *Monga* which affected their physical as well as mental health and moral and economic deprivation (Figure 6). Similar findings were identified by Zug (2006) who found that in *Monga* period people stop buying comparatively expensive items for their meals. They consume less milk, eggs and vegetables. Meat is out of reach for most of the rural poor also during good times. People reduce the quality of their foods and buy unclean broken rice which is about 25% cheaper on the local market.

How much food stock at the respondents' disposal to overcome *Monga* for the remaining days?

To this question, 25.4% family representatives informed that they had food stock only for 1 to 5 days followed by 9.5% for 6 to 20 days and 4.6% for above 20 days, while majority of the respondents (60.7%) had no stock or had stock for less then one day. This implies that those respondents who had food stock for 01 to 20 days (34.9%), they are likely to be under the occasional food deprivation during the time of *Monga*. Those who had stock less then one day, it seems, they are likely to go hungry without any single meal a day or may have a meal on every alternate day (Figure 7).

While going through *Monga*, what coping strategies did they adopt to face it?

Data in Table 3 indicate that in case of going through *Monga*, different people have different coping mechanism.
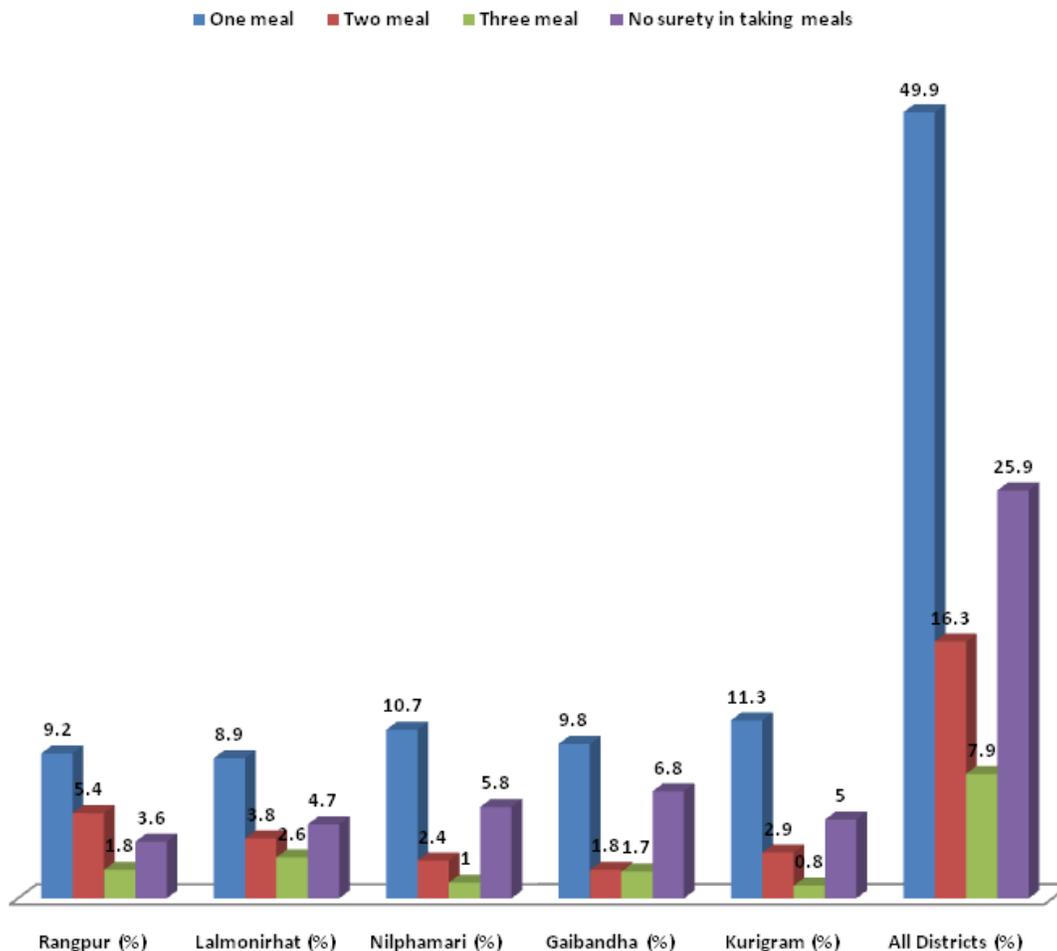
Figure 5. Number of meals taken daily by respondents during the *Monga* period.

More than 39% of the poor households reported that their coping mechanism to survive was by taking loan from others at an exorbitant rate of interest or advance labor selling at low rate, while 19.21% coped by eating less or no eating and thus going hungry without meals, 9.78% by earning little income through non-farm activities or spending small business profit, 6.33% by selling valuable household goods, trees, cattles, etc. and 6.12% were fatalists who depended on God's help and blessings, respectively. The remainders (14.12%) faced *Monga* by the help of external supports like relief materials, old age allowance, widow allowance or spending hard-earned saving or hidden stock of farm products stored secretly to cope with *Monga*. Contrary result was also located by Zug (2006) who found that people usually do not rely on one or single coping strategy, but try to find various strategies to overcome or to minimize the impact of *Monga*. He also found that an independent accumulation of savings for the *Monga* season was only rarely done in the study area.

They frequently mentioned that having adequate savings

was very difficult as they lived from hand to mouth.

CONCLUSIONS AND IMPLICATIONS

Monga takes place in the greater Rangpur region due to a variety of reasons such as perennial floods being a riverine zone, river erosion, drought, hailstorms, excessive rainfall, severe cold, cyclones, water surges because of climate change and environmental effects, illiteracy, unemployment, no industrial establishment for employment etc. Actual duration of *Monga* ranges from 3 to 6 months based on the frequency of natural disasters per year. The vulnerability of *Monga* was not so severe in research conducting year compared to the previous years, though it is occurring in greater Rangpur region almost every year. An unusual reply of 'increasing' the extent of *Monga* seemed to be an overstatement of facts mainly to attract government relief. During the *Monga* period, majority of the households could eat once or twice a day with few of them going hungry without a single
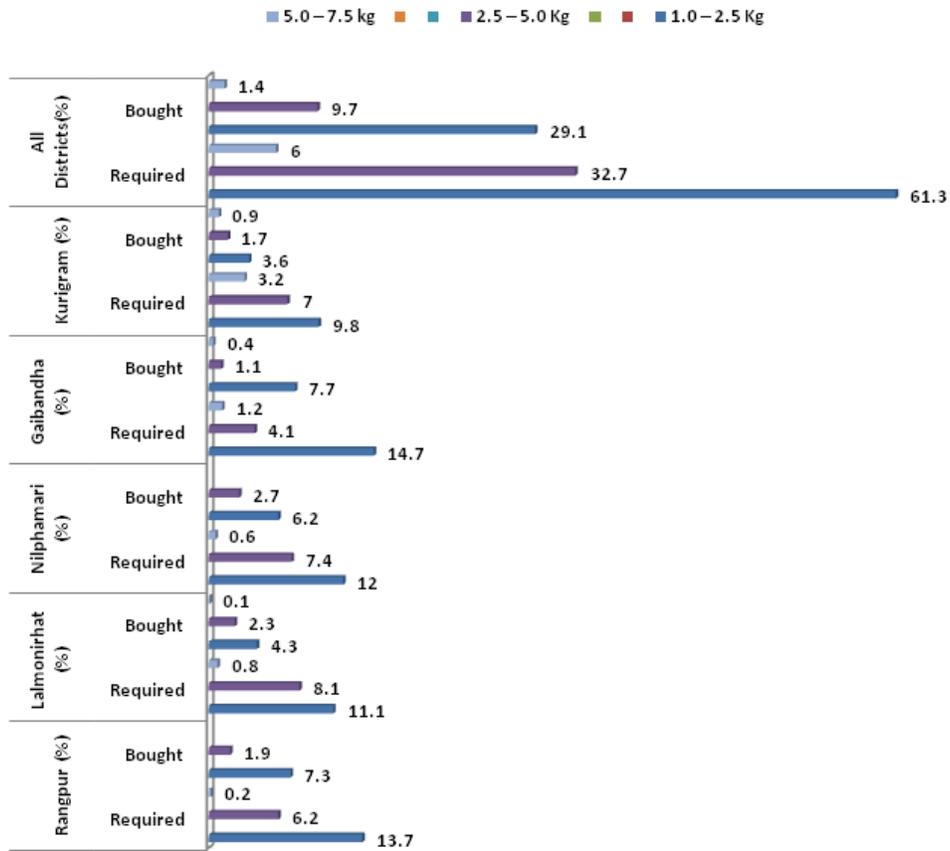
Figure 6. Perceived daily requirements and buying capacity of main food per family in a day.
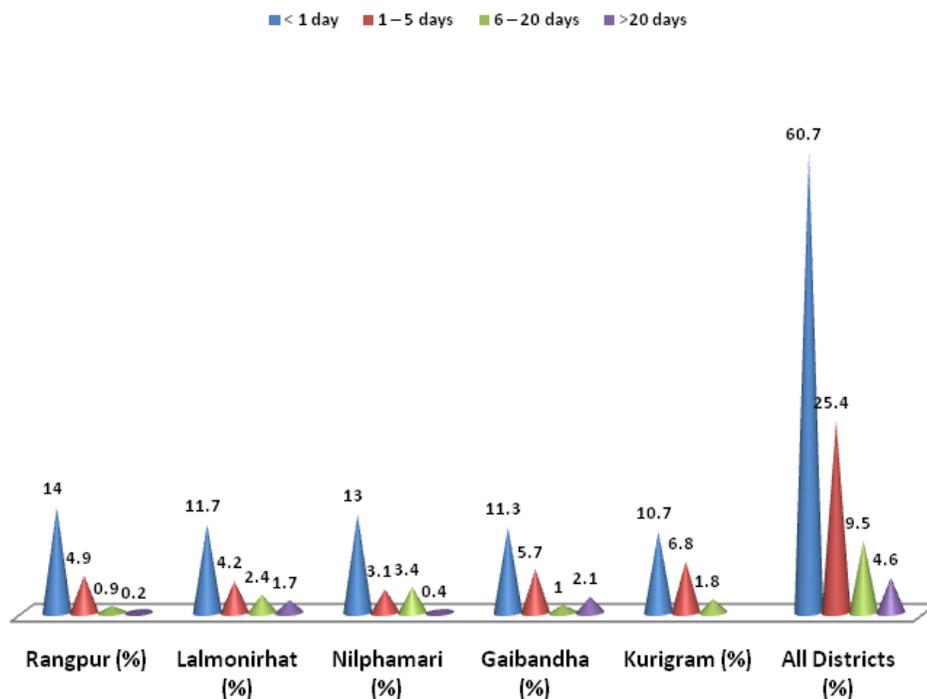
Figure 7. Food stock at disposal to overcome *Monga* during the remaining period of *Monga.*

Table 3. Coping strategies to adopt or planning to adopt to face *Monga* (number and percentage).

Coping strategy	Rangpur	Lalmonirhat	Nilphamari	Gaibandha	Kurigram	All districts
By taking loan/advance labor selling	72 (8)	70 (7.77)	98 (10.89)	64 (7.11)	48 (5.33)	352(39.1)
Less eating/no eating or go hungry without meal	40 (4.44)	29 (3.22)	21 (2.33)	35 (3.89)	48 (5.33)	173 (19.21)
Government relief/old age allowance/whatever savings left	15 (1.67)	25 (2.78)	30 (3.33)	24 (2.67)	33 (3.67)	127 (14.12)
Earn little income through non-farm activities/small business	12 (1.33)	25 (2.78)	3 (0.33)	33 (3.67)	15 (1.67)	88 (9.78)
Selling household goods/trees/other valuable items	18 (2)	10 (1.11)	11(1.22)	8 (0.89)	10 (1.11)	57 (6.33)
Fatalist/God will help/no advance preparation	15 (1.67)	8 (0.89)	10 (1.11)	5 (0.56)	17 (1.89)	55 (6.12)
No response	5 (0.56)	13 (1.44)	7 (0.79)	10 (1.11)	4 (0.44)	39 (4.34)
By spending savings business profit/selling farm stock, etc.	3 (0.33)	0	0	1 (0.11)	5 (0.56)	9 (1)
Total	180	180	180	180	180	900 (100)

Figures within parentheses indicate percent.

meal per day. A major portion of the respondents had no food stock or had stock for less than one day and most of them adopted a number of coping mechanisms to face *Monga*. This study helped to identify the probable factors promoting the causes of *Monga* and its level of vulnerability. The findings of the study directly can help to make strategy to overcome the *Monga* vulnerability. There should be some special strategies from GOs and NGOs for both off-farm and on-farm activities to tackle *Monga* vulnerability in the study areas. Besides, appropriate technology need to be used and productivity need to be increased per unit basis.

The ultimate goal is to improve the *Monga* situation by increasing employment opportunities and alternative sources of income and provide greater access to adequate food and guidance for better livelihood through diversified and multi-dimensional programs. Above all, the strength of the people needs to be improved through enhancement of PKSF by the combined efforts of both GOs and NGOs.

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