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Problems Confronted by the Displacees Due to River Erosion

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Abstract

The main focus of the study was to assess the problems confronted by the displacees due to river erosion and socio-demograpic factors affecting their problem confrontation. The study was conducted in Mehendigonj upazila of Barisal district. Data were collected by the researcher himself during May to June 2010 by using a pre-tested interview schedule. Eleven socio-demographic characteristics of the respondents were considered as the independent variables, while problem confrontation of the respondents due toy river erosion was the dependent variable of the study. Findings of the study reveal that majority of the respondents (76%) faced high level of problems due to river erosion. Correlation analysis evince that age, number of shifting and fatalism had significant positive relationship while total family member, earning family member, annual family income and extension contact had significant negative relationship with the respondents problem confrontation. Three leading problems were 'lack of housing facility', 'lack of hard cash' and 'lack of government incentive'. Education program and creation of IGA are highly recommended to lessen the miseries of the river erosion affected people.

Keywords: *Problem confrontation, displacee, river erosion, coping strategies.*

Introduction

Bangladesh is the part of world's most dynamic hydrological system. In fact, the country is a tender landmass framed by three major rivers and a fluid landscape. Due to its odd geographic condition Bangladesh always subject some degree of natural hazards. From1904 to 2007 about 63,923,520 people were affected by natural disasters (EM-DAT: The OFDA/CRED International database Jan: 2007). Emergency Data (EM-DAT) have had reported that natural disasters in 2007 killed 9718 people in South Asia; 58% of them belonged to Bangladesh, followed by India (26%), Pakistan (9%), Afghanistan and Nepal (3% each), and Sri Lanka (1%). In terms of number of people affected due to the natural disasters, Bangladesh and India occupied first two positions. Displacement due to flood and drought and erosion along with inadequate facilities/supports during and after major disasters creates hardship and life-threatening problems to the population, specially the poor, women, and children.

According to Islam (2009), when major forms of disasters occur due to flood, river bank erosion, drought, extreme temperature, wind storms, drought and earthquakes, water born diseases and mass internal displacement are inevitable consequence. Bangladesh is sited on the delta of the Ganges-Brahmaputra-Jamuna river systems, which has more than 300 perennial tributaries and distributaries; it is also highly vulnerable to the effects of flooding and river-bank erosion. The total length of the bank line of these major rivers does not

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exceed 2,000 kilometers; the interwoven complex system of the tributaries and distributaries has more than 150,000 kilometers of the total river-bank line. It has been estimated that between 2,000 to 3,000 kilometers of river-bank line experience major erosion annually (Islam and Islam, 1985). The rapid changes in river courses and lateral movement of the bank destroys valuable agricultural land, village settlements, markets and towns. Virtually all small and marginal landowners who lose their land and home become destitute and landless. In the country as a whole, from 15 to 20 million people are at risk from the effects of erosion (Rogge and Haque, 1987). Under the above circumstances, the present study aimed at assessment of the problems confronted by the Displacees due to river erosion and to determine and describe some selected characteristics of the Displacees of river erosion.

Methodology

The descriptive and diagnostic research design was applied in the present study. The present study was conducted at Ulania, Gobindopur and Bhasanchar union of Mehendigonj upazila under Barisal district. Considering the severity of river erosion five villages were selected as the locale of the study. All of the households of the selected upazila who shifts his/her house at least one time due to river erosion were the population of the study. Thus, an updated list of 956 river erosion affected households was prepared with the help of local leaders and professional leaders like union parishad chairman, members, SAAO and local NGO workers. Finally, 120 erosion affected household head (12.6% of the population) were randomly selected as the sample. A reserve list of 12 erosion affected household was also prepared so that the respondent of this list could be used for interview when a respondent in the original list was not available.

Variables of the Study and their Measurement

Selected demographic characteristics of the respondents were measured by using standard measurement procedures. Problem confrontation of the respondents was computed on the basis of their intensity of difficulty faced by the respondent. Fourteen probable problems which the respondents might face in respect of river erosion have been considered in this study. For each of the fourteen problem statement a 5-point rating scale namely 'very high', 'high', ' moderate', 'little' and 'very little' was used and a weightage of 05, 04, 03, 02and 01, respectively were assigned to measure the problem. Weights for responses against all the fourteen problem-items of a respondent were added together to obtain the respondents problem faced score. Therefore, the problem faced score of a respondent could range from 14 to 70, where '14' indicated very little problem confrontation and '70' indicated very high problem confrontation. To have an understanding about comparative severity among the problems, Problem Confrontation Index (PCI) was computed for each problem-item with help of the following formula used by Sonia (2009):

$$PCI = P_{vh} x 5 + P_h \times 4 + P_m \times 3 + P_l \times 2 + P_{vl} \times 1$$

Where,

PCI = Problem Confrontation Index
P_{vh} = No. of respondents faced very high problem
P_h = No. of respondents faced high problem
P_m = No. of respondents faced moderate problem
P_l = No. of respondents faced low problem
P_{vl} = No. of respondents faced very low problem

Thus, PCI of a problem could range from 120-600, where the higher the value of Problem Confrontation Index (PCI) of a problem the greater the magnitude of the problem. Rank order also made with the descending order of the PCI of the problem-items.

Statistics like range, mean, number and percentage distribution, standard deviations were used to describe and interpret the data. For exploring relationships between strategies practiced by the river erosion displaces against river erosion and their selected characteristics co-efficient of correlation were computed .Throughout the study 5% level of significance was used as a basis for rejecting null hypothesis. Data were collected from the sample river erosion affected people using a pre-tested and structured interview schedule through personal door to door visit and contact by the researcher himself during 15 May 2010 to 25 June 2010.

Findings and Discussion

Socio-demographic Profile of the Respondents

Study of the socio-demographic features of the respondents reveals that most of the respondents (80%) belonged to middle to old aged category and most of them (67%) had mere signature ability or were illiterate. It was also observed that the most of the respondents (74%) had been living in the concerned locality for about 50 years and major portion of them (85%) shifted their house within the range of 3 to 6 times (Table 1).

Table 1 Socio-demographic characteristics of the respondents

Characteristics	Categories	Basis of categories	Respondents		Mean	SD
			Number	Percent		
Age	Young (up to 35 years)	Year	25	21	48.98	13.24
	Middle age (36-50 years)		51	42		
	Old (51 and above years)		44	37		
Education	Illiterate or having ability to signature (< 1)	Year of schooling	80	67	1.98	2.93
	Primary education (1-5)		24	20		
	Secondary and above (above 6)		16	13		
Duration of living in the area	Short term (up to 24 years)	Year	40	33	34.7	23.65
	Medium term (25-50 years)		49	41		
	Long term (above 50 years)		31	26		
Number of shifting	Low (up to 3times)	Year	85	71	3.22	1.94
	Medium (4-6 times)		17	14		
	High (above 6 times)		18	15		
Year of shifting	Very recent (2009-2010)	Year	85	71	-	-
	Recent (2005-2008)		17	14		
	Recent past (<2004)		18	15		
Family size	Small (up to 4 members)	No.	32	27	5.88	2.04
	Medium (5-7 members)		64	53		
	Large (above 7 members)		24	20		
Earning member	Small (up to 2 members)	No.	114	95	1.37	0.81
	Medium (3-4 members)		5	4		
	Large (< 5 members)		1	1		

Characteristics	Categories	Basis of categories	Respondents		Mean	SD
			Number	Percent		
Farm size	Landless (up to 0.2 ha)	Hectare	113	94	0.06	0.12
	Marginal (0.21 – 0.60 ha)		5	4		
	Small (0.601- 1.00 ha)		2	2		
Organizational participation	Low (up to3)	Score	111	93	1.68	2.70
	Medium (4-6)		4	3		
	High (above 6)		5	4		
Extension contact	Low (up to 5)	Score	34	28	7.36	3.18
	Medium (6-9)		56	47		
	High (above 9)		30	25		
Annual family income	Low (up to50 thousand)	"000" Tk.	60	50	84.96	101.59
	Medium (50-150 thousand)		47	39		
	High (above 150 thousand)		13	11		
Fatalism	Low (Up to 13)	Score	4	3	25.3	5.67
	Moderate (14-25)		61	51		
	High (above 25)		55	46		

The largest part of the respondents (80%) possessed medium to small family but overwhelming majority (95%) had small earning family member. It is clear that a big majority of the respondents (89%) maintained their life with small to medium income (Tk. 84.96 thousands on an average/ annum). Regarding the farm size, a big mass of the respondents (94%) was landless followed by marginal (4%) and small (2%). Ninety three percent of the respondents had low organizational participation with medium to low extension contact (76%). Almost all the respondents (97%) are found moderate to highly fatalistic (Table 1).

Problem Confrontation of the Respondents

The computed problem confrontation scores of the respondents ranged from 31 to 65 with a mean and standard deviation of 47.21 and 7.34, respectively. Based on the observed scores the distribution of the respondents has been presented in Table 2.

Information presented in the Table 2 leads to illustrate that more than three-fourth of the respondents (63%) belonged to high problem confrontation category while rest of them faced medium problem (37%) and none of them belonged to low problem confrontation category. This might be led to conclusion that all the respondents confronted medium to high problems.

Table 2 Distribution of respondents according to their extent of problem confrontation

Categories	Respondents		Mean	SD
	Number	Per-cent		
Low (score up to 23)	0	0	47.21	7.34
Medium (score 24-46)	44	37		
High (above 46 score)	76	63		
Total	120	100		

Rank Order of the Problems Confronted

The community respondents confronted with a copious of problems due to river erosion. They apply utmost effort to become resilient. But in many cases they failed to do so because of the prevalence and emergence of untoward situation. In order to understand the comparative importance of the different problems and to identify their severity, the selected fourteen problems were assigned rank order.

Findings displayed in Table 3 reflect that the most crucial problem confronted by the respondent was lack of housing facility. The

second key problem in the study area was lack of hard cash. The third significant problem respondents faced was insufficient government incentive in due course of time. However, the 4th, 5th, 6th, 7th, 8th, 9th, 10th,11th, 12th ,13th and 14th problems based on the respondents evaluation were exorbitant labor wages, high interest on personal level credit, damaged transport facility, limited ability of buying food stuffs, unavailability of institutional credit facilities, lack of cooperation from neighbors, inadequate health facilities, limited ability of buying cloth, insecurity in all aspects of life, unavailability of labor and absence of alternative livelihood.

Table 3 Rank order of the problems according to their problem confrontation index (PCI)

Problems	PCI	Rank order
Lack of housing facility	516	1st
Lack of hard cash	506	2nd
Insufficient government incentive	470	3rd
Exorbitant labor wage	467	4th
High interest on personal level credit	456	5th
Damaged transport facility	447	6th
Limited ability of buying food stuffs	417	7th
Unavailability of Institutional credit facilities	406	8th
Lack of cooperation from neighbors	373	9th
Inadequate health facilities	370	10th
Limited ability of buying cloth	330	11th
Insecurity in all aspects of life	326	12th
Unavailability of labor	316	13th
Absence of alternative livelihood	287	14th

PCI-Problem Confrontation Index

The respondents of the study area live along the river embankment. Due to poor forecasting mechanism they do not get any information about erosion pattern and intensity ahead. Besides, erosion is a sudden event which cannot be predicted. Shifting of house and building new house require much time and labor provided that if land is available for him to a suitable place. On the other hand, due to lack of government shelter, they do not get any place where they can put their head. So, the very first problem they faced might be lack of housing facilities.

It is well known that money starts everything. Due to low income and poor savings they do not had enough money from which they can prepare for the pre disaster situation and cope with post disaster devastation. Resultantly, 'lack of hard cash' might rank second as the problem regarding river erosion.

The community residents live with a little income and savings. So after any catastrophe, they cannot afford themselves by their own assets. It is very hard for a poor country like Bangladesh, to support her huge vulnerable people. Due to corruption, political affinities, poor compositeness adequate amount of government incentives do not reach to the affected people. So it ranked third among the respondents.

The study area is surrounded by rivers where most of the people depend on income from fishing. Most of the respondents were middle to old aged category that may not have skills in other activities. Besides, the young may move to towns for better income. This may be the reason of low awareness about additional income generating activities. This is why problems like absence of alternate livelihood stood last position in problem ranking.

Relationships between the Selected Characteristics of the Respondents and their Problem Confrontation

Attempt has been made to find out the relationships between the selected characteristics of the respondents and their problem confrontation. The results of correlation test between the concerned variables and the problem confrontation index of the respondents reveals that the larger or the more the age, number of shifting and fatalism the more problem faced by the respondents (Table 4).

Table 4 Relationship between selected characteristics of the respondents and their problem confrontation

Selected personal attributes	Computed 'r' value
Age	0.242*
Level of education	-0.192
Locale orientation	-0.082
Number of shifting	0.310**
Total family member	-0.252*
Earning family member	-0.213*
Farm size	-0.154
Annual family income	-0.231*
Organizational participation	-0.120
Extension contact	-0.429**
Fatalism	0.403**

* Significant at 0.05 level of probability
** Significant at 0.01 level of probability

Because the aged and fatalistic person is likely to believe that he/she is unable to do something to decrease the hazards of a disaster (Sakroglu, 2005). This finding confirms the previous results of Akhter (2008), Hossain (2002) and Rahman *et al.* (2008). On the other hand, total family member, earning family member and extension contact had significant negative relationship with total family member, earning family member and extension contact. In large families more members can participate in disastrous situation by muscle and/or money. Besides, higher income households were more likely to be prepared and have the resources necessary to conduct preparedness activities (Edwards 1993). Contact with the information sources may play a vital role in raising awareness and taking necessary precautions. This result is consistent with Akhter (2008), Roy (2007) and Nahid (2005).

Suggested Solutions

Some solutions were suggested by the respondents which they think helpful to lessen their sufferings to some extent. Among the problems related to river bank erosion, lack of housing facility, lack of hard cash, insufficient government incentive and exorbitant labor wage were vital. And the major leading suggested solutions of the problems related to river bank erosion were: distribution of *khash* land; provision of additional IGAs, undertaking social safety net programs like Vulnerable Group Feeding, Vulnerable Group Development and Open Market Sale round the year; helping by provision of tools and equipments; making embankment across the river; and sharing more media coverage with them (Table 5).

Table 5 Distribution of the respondents according to their suggested solutions

Possible solutions	SI	Rank Order
Distribution of khash land	390	1st
Provision of additional income generating activities	387	2nd
Vulnerable Group Feeding/ Vulnerable Group Development/ Open Market Sale round the year	376	3rd
Helping by provision of tools and equipments	366	4th
Making embankment across the river	349	5th
More sharing of media coverage	302	6th
Credit scheme with easy terms and conditions	291	7th
Arrangement of shelter	284	8th
Equitable distribution of relief goods	282	9th

SI = Solution Index

Conclusion

Socio-demographic features of the respondents reveal that most of the respondents were middle to old aged and were mostly illiterate. The respondents maintained medium to small family but unfortunately they had low family income with small number of earning family members and most of them are landless. The sufferer had meager organizational participation and maintained skimpy extension contact and most of them were found moderate to highly fatalistic. Age, number of shifting, total family member, earning family member, annual family income, extension contact and fatalism are likely to influence problem confrontation significantly. Therefore, it may be recommended that provision of functional education, arrangement of suitable IGAs and increased access to information sources may lessen their miseries.

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