

Flood and Riverbank Erosion Displacees: Their Indigenous Survival Strategies in Two Coastal Villages in Bangladesh

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Abstract

It is reported that flood and riverbank erosion together intensify the process of pauperization in rural areas of Bangladesh. Riverbank erosion often destroys cultivable land, dislocates human settlements and also at the same time, damages the growing crops; massively disrupts road-linkages and communication infrastructure in the country. With this situation, this paper generates empirical data on two coastal villages located in two different regions of the country showing evidence of displacement of the total way of life due to flood and riverbank erosion. Due to this natural calamity, the victims have to adapt to the changing environmental conditions, and consequently they adopt many socio-political, economic and cultural strategies in order to survive in the face of the plethora of problems. Flood and river bank erosion displacees try to gain control over their environment through their multi-dimensional adaptation strategies. This paper thus locates the indigenous strategies and mechanisms that the displacees usually adopt to grapple with the catastrophic effects of flood and erosion in the coastal areas of rural Bangladesh.

Keywords: riverbank, economic and cultural strategies, environment, erosion

1. Introduction and Background Information

Bangladesh is situated at the confluence of the Padma, the Brahmaputra and the Meghna rivers and it is one of the world's largest deltas. Bangladesh has a total area of about 143,999 sq.km including inland and estuarine water surfaces and it ranks as the world's most densely populated country of the world. It is located between 20°34'/N and 26°33'/N latitude and between 80°41'/E and 92°41'/E longitude (Gain, 2002). Its total population now stands at 114 million and the country's over-population and grueling poverty have been associated with numerous environmental disasters. Flood and riverbank erosion are two of the major environmental disasters that the country experiences recurrently and an estimated one million people are displaced every year due to riverbank erosion in the country (Elahi, 1990). This adversity is further worsened when the devastating flood and riverbank erosion together intensify the process of pauperization in rural areas in Bangladesh (Rahman, 1986; Karim, 1990; Islam, 1999).

It is estimated that about 85% of the people in Bangladesh live below poverty level having problems in food subsistence (Khandaker et al., 1995; Karim, 1998). The majority of the people in rural Bangladesh do not have access to proper nutrition, housing settlement and healthcare facilities. Poverty situation is further deteriorated because of natural hazards and calamities every year. Riverbank erosion often dislocates cultivable land and human settlements, and it destroys agricultural crops massively, disrupts road-linkages and communication infrastructure of the country.

Because of this critical situation, the displacees and victims of natural disasters face multi-dimensional environmental problems resulting from flood and erosion. They have to adapt to the changing conditions of many socio-political, economic and cultural strategies in order to survive in the face of the plethora of problems. The flood and riverbank erosion displacees try to gain control over their environment through their multi-dimensional adaptation strategies. While they adapt to their own environment, some of these displacees get shelter for a very short period of time from their relatives, neighbours and friends. Many of them build their huts temporarily on the riverbank along the flood and erosion-prone areas. It is also documented that a sizeable number of displacees often migrate to the adjacent villages or to the local towns in search of temporary work for their sustenance and shelter. Some of them try to build temporary houses and settlements on the charland with

their indigenous raw materials.

From an academic point of view, many aspects of these environmental issues of Bangladesh have remained understudied. In this regard, there have been few studies on riverbank erosion displacees from the socio-anthropological perspective. We do not even know as to what sort of strategies and mechanisms they usually apply to adapt for their survival in society. For that reason, this research has generated data on the flood and riverbank erosion displacement of the country and the pattern of institutional and community level responses the displacees receive for these natural calamities. This research specifically generated data on two villages named Notun Majbari and Jahanabad from Serajganj and Rajshahi districts, respectively. Based on field study, the research provides contextual socio-anthropological data at the empirical level. The general purpose of this study has been to generate data on the flood and riverbank erosion displacement and the indigenous strategies of the people's survival is the research question and objectives in two different riverbank areas of the country. The research is conceptualized from the holistic point of view that a sizeable number of the flood victims and erosion-displacees often migrate to the neighbouring areas, to nearby towns and cities in search of their livelihood, food and shelter. In this context, this research has identified the mechanisms through which the displacees migrate from their original riparian tract to the areas free from flood and erosion. It is learned that the displacees usually formulate and undertake indigenous strategies to overcome the catastrophic effects of flood and riverbank erosion. The main desire of our research is to know whether the displacees receive any responses or whether they receive any financial assistance whatsoever from the local and national governments or from any other institutional sources. It is also known that the displacees are affected by the socio-political and structural situations of the society in adapting to the precarious riverine environment and in formulating strategies for survival in their own ways.

2. An Overview of the Relevant Literature: Reviews and Comments

Most of the studies on flood and riverbank erosion and consequent population displacement in Bangladesh have been conducted by geographers who mostly obtained data from the Riverbank Erosion Impact Study or REIS (Note 1). REIS study had been done in Kazipur Thana of Serajganj, Chilmari Thana of Kurigram and Bhola Thana of Bhola District.

A. T. M. Nurul Amin (1991) has used secondary data on settlement strategies for riverbank erosion displacement and adopted 'human resource development approach' in dealing with the settlement strategy for the displacees in Bangladesh. At the theoretical level, Kazi Sadrul Hoque, Ishrat Shamim and A. H. M. Zehadul Karim in their second and revised edition in December 1992, have outlined important environmental issues in the Bangladesh context. In this study, the researchers have identified 36 important environmental research studies and also at the same time, provided a brief discussion on them, which has been used as a guideline for future researchers in the context of the environment. Among the various environmental issues, the research specifies erosion as an important aspect of environmental degradation in Bangladesh.

Atiur Rahman (1986) conducted a short field survey in Bhuapur Thana of Tangail District and Hizla Thana of Barisal District in order to identify the possible economic strategies of the displacees in Bangladesh. Meanwhile, Alam (1990) identifies socio-economic and political dynamics of charland settlement using secondary data.

It is clear from the above-mentioned studies that the erosion victims face multiple socio-economic and environmental problems. It is quite likely that it requires proper institutional and community level responses during the crisis period. But there has not been any considerable number of integrated and comprehensive nation-wide studies in this particular field of research. While talking about the gap of knowledge on flood and riverbank erosion displacement in Bangladesh, we may mention here that the Report of the Task Forces on Bangladesh Development Strategies for 1990s (UPL, 1991) in its volume on "Environmental Policy: Environment and Development" took only nine pages in discussing natural hazards in Bangladesh with no significant attention on our research topic. A study (e.g., Hoque, Shamim, & Karim, 1992) identified 36 recent environmental studies in Bangladesh and it is interesting to note that only two of them (viz., Elahi, Ahmed, & Mafizuddin, 1991; Mahbub & Islam, 1990) have dealt specifically with the issue of flood and riverbank erosion displacement. Due to the sheer lack of knowledge we have undertaken this research on flood and riverbank erosion in two specific regions of Bangladesh.

Excepting a few studies (e.g., Zaman & Weist, 1991; Elahi, 1990; Nazem & Elahi, 1990; Islam, 1995), most research on flood and riverbank erosion displacement deal with geomorphic phenomena in a very particularistic manner. For that reason, our research has given an emphasis on an integrated approach, focusing on socio-anthropological perspective. In this context, it is pertinent that this research is conducted in two different flood plains of Jamuna and Padma Rivers.

The research conceptualizes from the holistic point of view that a sizeable number of the flood victims and erosion displacees often migrate to neighboring areas, to nearby towns and cities in search of their livelihood, food and shelter. In this context, this research identifies the mechanisms through which the displacees migrate from their original riparian tract to areas free from flood and erosion. It is learned that the displacees usually formulate and undertake indigenous strategies to come to terms with the catastrophic effects of flood and riverbank erosion. The main desire of our research is to know whether the displacees receive any responses or whether they

Receive any financial assistance whatsoever from the local and national governments or from any other institutional sources. It is also known that the displacees are affected by the socio-political and structural situations of the society in adapting to the precarious riverine environment and in formulating strategies for survival in their own ways.

3. Field Sites and Methodology

This research on population displacement due to flood and riverbank erosion has been conducted in two different regional riverine areas of Bangladesh. These two riverine zones are the Ganges Mahananda floodplain in Nawabganj District and the Jamuna floodplain of Sirajganj District. Two small villages from two different floodplain areas have been identified for extensive investigation. One of the villages has been chosen from Nawabganj belt which comprises the Ganges-Mahananda floodplain where many of its riparian villages are severally affected by riverbank erosion. It is one of the worst flood erosion affected areas of the country (Nazem & Elahi, 1990). Both the Ganges and Mahananda in the last 15 years have dislocated 39 villages and 250,000 households (Islam, 1995). Similar to this zone, we also have evidence that the right bank of the Jamuna has eroded westward as much as 8.0 km or more annually at certain points since 1936 (Alam, 1986). The displacement of these villagers creates enormous sufferings for them and it is quite likely that they expect some kind of institutional support and community responses from around them. But it is predicted that many of them receive only very few and minimal cooperation and help from their surrounding community and organizations/institutions. This research thus has attempted to identify the displacees and to explore the survival strategies of these people which they find from their surrounding community.

3.1 Notun Maijbari and Jahanabad: The Two Villages

Notun Maijbari and Jahanabad, the two villages are chosen purposefully from two riverine areas of the country. Notun Maijbari is located at Kazipur Upazila of Sirajganj District and is situated at the bank Jamuna River. On the other hand, Jahanabad is situated at the bank of Padma located at Godagari Upazila of Rajshahi District. Both villages were surveyed during the months of February through May 2011. The communication in the village Notun Maijbari was extremely poor; on the other hand, because of a strategic location, the communication in Jahanabad was much better. Excepting the presence of a few UP members, there was no significant elite-people living in the villages. Prior to providing the basic socio-demographic data, we shall briefly describe the historical background of the two villages.

1) Notun Maijbari

This is a village at the bank of Jamuna. Thirty to 40 years ago, Maijbari union was the name of a union consisting of a few villages located at the bank of Jamuna. Most of the people living in those villages were farmers depending absolutely on agriculture. The villagers inherited their land from their forefathers. Since the villagers were living at the riverside, it was very thinly populated. People were reluctant to settle in those villages and for that reason, land occupied by a few big landowners were abundant for daily living. A diversified occupation groups with their own specialization were living very comfortably side by side with the peasant-farmers. People were living their lives comfortably in a network of village-based community life. But suddenly around the year 1970, there was a severe flood which caused heavy erosion and land sliding and as many as six villages of Maijbari were totally submerged under flood water (Note 2) causing tremendous loss of life and living. Many people died while many of the villagers took shelter at the neighbouring villages after being displaced from their original land.

Initially, the displacees from these villages took shelter by the side of the riverbank and later they resettled in a charland, naming their village as Notun Maijbari. Many rich landowners became totally landless and finding no other alternatives, accepted other occupations for their survival. After their resettlement in the *char* areas, many people held new land while more powerful person was able to be in possession of more land.



Notun Majbari

Figure 1. Kazipur Upazila showing the location of village



Figure 2. Godagari Upazila showing the location of Village Jahanabad

2) Jahanabad

This village is located near Padma River. It is situated at the bank of Padma located at Godagari Upazila of Rajshahi District. Jahanabad Village is also known as 'Melagram'. (Note 3) The place where the villagers have now settled was established only a few years ago. Every year, a village fair is held in this place, but was stopped for an unknown reason and the displaced people found it a vacant land which they took for their settlement. Initially, a few families started settling and finally after a few years, it emerged as a village under the name of Jahanabad. Interestingly, this village is located within the peripheral area of Godagari Poursabha. Although the village is located near the Padma, the river is 6 to 7 kilometers away from the village. Since the village is located within the *poursabha* areas, people from outside may very conveniently reach the village with local transportation.

Unlike Maijbari village, Jahanabad has the existence of four *samaj* (Note 4) under the leadership of four local *pardhan* (Note 5) and *parmanik* (Note 6) in the village. Although the village does not have any organization or institution, there is a *dakhil madrasha* (Note 7) and a *Jumma* mosque (Note 8) in the village for Friday prayer. Apart from this, Jahanabad has a number of micro-credit programmes run by BYES, BRYDA, Grameen Bank and ASHA who sponsor formal credit to the villagers. Jahanabad is also politically oriented and administratively connected, having strong link with the local government organization.

3.2 Socio-Demographic Features, Landownership Pattern and Occupational Status of the Villagers

The total population of Maijbari is 283 in 52 households and Jahanabad has a population of 407 residing in 99 households (Note 9). The age distribution of the population of the villages is depicted in Table 1. It is evident from the table that 19.08% of the total population at Maijbari and 21.87% at Jahanabad were below the of age 15. It implies that a certain number of under-aged children were dependents who were supposed to attend schools at this age. But in reality, it did not happen in the case of these villagers because many of these families were riddled with problems due to flood and riverbank erosion. The majority of the people i.e., 74.56% at Maijbari and 67.32% at Jahanabad belonged to an age-range of 15 to 49 years of age. These young and middle-aged persons had become the young working force. The adults formed 16.96% at Maijbari and 10.81% at Jahanabad when males and females are compared.

Table 1. Socio-Demographic data of the villages' distribution of the total population according to age and gender

Age Category	Notun Maijbari Village (N=56)			Jahanabad Village (N=99)		
	Male	Female	Total	Male	Female	Total
Up to 14 years	24 (8.5%)	30 (10.6%)	54	49 (12.04%)	40 (9.83%)	89
15-34	60 (21.20%)	61 (21.55%)	121	105 (25%)	86 (21.13%)	191
35-49	30 (10.6%)	30 (10.6%)	60	50 (12.28%)	33 (8.11%)	83
50-59	11 (3.9%)	16 (5.65%)	27	19 (4.67%)	7 (1.72%)	26
60+	16 (5.65%)	5 (1.77%)	21	14 (3.44%)	4 (0.98%)	18
Total	141 (49.82%)	142 (50.18%)	283	237 (58.23%)	170 (41.77%)	407
Level of Education of the Family Heads						
Level of Education						
Illiterate	46 (82.14%)			91 (91.92%)		
Read up to Class VIII	8 (14.29%)			3 (3.03%)		
passed SSC	2 (3.57%)			2 (2.02%)		
Passed HSC	--			2 (2.02%)		
Graduation	--			1 (1.01%)		
	56 (100.0%)			99 (100.0%)		
<i>* It may be noted here that female literacy in both the villages was simply zero.</i>						
Principal Occupations of the Household Heads						
Occupation						
Agriculture	44 (78.57%)			69 (69.69%)		
Business	3 (5.36%)			12 (12.12%)		
Laborers	1 (1.78%)			4 (4.04%)		
Service-holders	1 (1.78)			6 (6.06%)		
Carpenter/Mason	3 (5.36)			4 (4.04%)		
Housewife	4 (7.14)			2 (2.02%)		
Quack (<i>Kobiraj</i>)	-			1 (1.01%)		
Boatmen	-			1 (1.01%)		
Land Ownership Pattern in Maijbari and Jahanabad						
Land Ownership Pattern	Number of Household and Percentage		Total Land in Occupation	Number of Household and Percentage		Total Land in Occupation

Age Category	Notun Maijbari Village (N=56)			Jahanabad Village (N=99)		
	Male	Female	Total	Male	Female	Total
Landless Peasants (possessing no land)	7 (12.50%)	--		59 (59.60%)	--	
Marginal Peasants (Owning 1 acre and less)	32 (57.14%)	14.38 (23.65%)		32 (32.32%)	6.69 (25.%)	
Poor Peasants (1.01-2.50 acres)	9 (16.0%)	13.41 (22.05%)		5 (5.05%)	8.94 (34.24%)	
Middle Farmers (2.51-7.50 acres)	7 (12.50%)	20.66 (33.99%)		3 (3.03%)	10.48 (40.14%)	
Rich Peasants (7.51 acres and above)	1 (1.78%)	12.34 (20.34%)		--	--	
Landownership and Family Typology						
Family Types	Nuclear		Joint	Nuclear		Joint
Landless (possessing no land)	5 (10.20%)		2 (28.57%)	56 (62.92%)	3 (30.0%)	
Marginal (up to 1 acre land)	29 (59.18%)		3 (42.86%)	29 (32.58%)	3 (30.0%)	
Poor (1.01-2.50 acres)	7 (14.29%)		2 (28.57%)	2 (2.25%)	3 (30.0%)	
Middle (2.51-7.50 acres)	7 (14.29%)		--	2 (2.25%)	1 (10.0%)	
Rich (7.51 and above)	1 (2.04)		--	--	--	
	N=49 (100%)		N=7 (100%)	N=89 (100%)	N=10 (100%)	

Separately, 49.82% were males compared to 50.18% females at Notun Maijbari. But at Jahanabad, the male ratio was slightly higher (58.23%) compared to females (41.77%)⁹. Based on our field-based survey data, it is evident that for Jahanabad, it differs sharply. It means that there occurred radical decrease in the number of population in these villages for the last quinquennium period which certainly had been due to riverbank erosion and flood in the villages. The population of the Kazipur Upazila according to the 1991 census was 23, 4804 and for Godagari Upazila, the information was missing. According to the Census Report of 2001, the population of Kazipur is: 2266950, and for Godagari, it is 279545 (Government of Bangladesh, 1991).

Like gender, age and family types, education is also another important variable to know about the present socio-cultural and demographic information about the villagers. They have been grouped broadly as non-lettered or illiterate and literate. It has been found from our data that as many as 46 (82.14%) family-heads at Notun Maijbari and 91 (91.92%) at Jahanabad were illiterate. Being at the *char* areas, these villages do not have good access to schools or any educational institution and for that reason, literacy in the villages was very low.

A more or less diversified occupational pattern is evident from Table 1 in this section. According to the livelihood classification of the households, it has been found that a preponderant majority of the people were engaged in agricultural occupations cultivating their own land and or working for others as well. The predominance of agricultural occupation in the study villages may be explained because of their location in the *char* areas and having cultivated may vacant land in the riverside areas.

Looking more closely at the occupational section in Table 1, a few interesting features of these villagers become clear to us. There were some non-agricultural people who inhabit these villages doing business, service and other activities. But through our informal conversation, we have ascertained the tendency of the whole family to be dependent on a single-earner, and effectually for that reason, the per capita subsistence level becomes quite low.

3.3 Land Ownership and Class-Based Economy

In order to ascertain the economic status of the total population, we have particularly emphasized on the land ownership pattern of the villagers. Data regarding availability of land in the villages surveyed is shown in Table 1. A general hypothesis is confirmed that most of the lands in the villages were held by some rich and middle class farmers whose numbers seemed to be quite high compared to other villages in Bangladesh (Karim, 1990). We find some justification for such differential situation. It is learned that a few rich and powerful peasants often buy land in these villages when many people lose their homes due to flood and riverbank erosion.

Landownership pattern has been related to the family typology in Table 1. It is clear from this table that there exists a significant correlation between land and family typology. The number of nuclear family was quite high compared to joint family in both the villages. Economic differential in family types plays an important role in Maijbari and Jahanabad. Where a particular type or joint family occurs, it results in the fusion of three or more nuclear families with a change in its economic status. It has been found true in the case of the village study conducted by Karim (1990) in the northern part of Bangladesh.

3.4 Flood and Riverbank Erosion Displacees and Their Indigenous Survival Strategies

This section provides us with detailed information about the loss and damages incurred by the people in the villages due to severe flood and riverbank erosion. Additionally, this section also gives us an idea about the strategies and techniques the villagers usually adopt during these catastrophes.

It is important to know about the timing of flood in both the villages and accordingly, the research has gathered brief historical occurrences of it in the villages for the past 20 years. It is documented that Maijbari village has faced several severe flood during this period. Due to its close location to the riverside, Maijbari has to face frequent flood almost every year. We learned from our interviews that the village has faced eight severe floods during the last 20 years. Compared to Maijbari, Jahanabad has had fewer occurrence of flood as the village is located further from the main river. Yet, the villagers told us that Jahanabad has faced at least four severe floods in the last 20 years.

3.5 Reasons for Settlement in the Villages

There are several reasons for which the villagers settle down in these villages at the initial stage. We asked the villagers to indicate the reasons which are mostly responsible for such initial settlement in these areas. It has been found from our data that most of the villagers (53.85% in Notun Maijbari and 100% in Jahanabad) had settled in these villages because they had been affected by riverbank erosion see Table 2).

Table 2. Causes of settlement in the villages

Causes of Settlement	Notun Maijbari	Jahanabad
Due to riverbank erosion	35 (53.85%)	99 (100. %)
After selling of all properties	2 (3.57%)	3 (3.03%)
Buying new land and making homes	28 (50%)	44 (44.44%)
Making a temporary settlement at the initial stage	44 (78.57%)	68 (68.68%)
Others	39 (69.64%)	4 (4.04%)

3.6 Economic Damages during Flood and Riverbank Erosion

It is important to assess the economic damages during flood and riverbank erosion. Table 3 shows the total economic loss of the villagers based on total calculations in this context.

Table 3. Economic loss of the villagers in the last flood

Type of Damages	Notun Maijbari			Jahanabad		
	Number of Families Affected	Total loss (in taka)	Economic loss (in terms of taka)	Number of Families Affected	Total Economic loss (in terms of taka)	Economic loss (in terms of taka)
Cattle and Birds	53	87,8900		72	1745500	
Damaging of Life in Cottages and Huts	52	Tk. 518600		68	Tk. 444700	
Pond	02	Tk. 20,000		01	Tk. 4000	
Cultivable land	54	Tk. 1496200		77	Tk. 1919500	
Grains and cereals	51	Tk. 605300		64	Tk. 631300	
Others	34	Tk. 322300		25	Tk. 319700	
Total		Tk. 3841300			Tk. 5064700	

After a severe flood occurs, it is quite likely that villagers expect some social and economic support from the local people and institutions. Initially, the villagers sought help from their community and kin. The villagers told us that after severe flood and riverbank erosion, they did receive economic assistance and logistic support from their kin and community. Institutional support came quite late and they did not respond instantly to help the people. A few NGOs and government institutions however, came up with some help, but these did not seem to be sufficient to meet their needs. To learn about this situation we interviewed the villagers and 98.22% of the people from Maijbari village reported to us that the relief they received from any source was fully insufficient. Similarly, 99.90% of the respondents from Jahanabad village were unhappy about the organizational and institutional relief-support, saying that the relief materials provided by these institutions were not sufficient for them. Due to such problems, the villagers often had to adopt their own techniques for survival. In this context, they often sought loans from their relatives, kin and wealthy villagers at a higher rate of payment.

Table 4. Respondents' views regarding relief situation

Satisfactory level regarding relief	Notun Maijbari	Jahanabad
Not sufficient	55 (98.22%)	90 (99.90%)
More or less sufficient	1 (1.78%)	9 (9.10%)

At the time of such natural calamities, it is quite likely that people will seek relief to meet their emergency needs. It has been learned that a few people received emergency relief during the flood and riverbank erosion. It is however, true when the situation was highly publicized after severe flood, a few NGOs came in help to the victims and needy persons of the affected villages.

Table 5. Emergency relief received by the villagers during flood and riverbank erosion

Relief Items Received	Notun Maijbari	Jahanabad
Dry food	35 (62.05%)	55 (55.55%)
Pure drinking water	25 (44.64%)	35 (35.35%)
Emergency drugs	25 (44.64%)	35 (35.35%)
Baby food	42 (75%)	42 (42.42%)
Money	None	None

3.7 Problems Faced by the Villagers in Regard to Their Health Care during Flood and Natural Calamities

During severe flood and riverbank erosion, the villagers faced many problems in regard to their health. Due to the abnormal situation, people suffered from many chronic diseases. We have ascertained the health care seeking behaviour of the villagers during the critical period.

Table 6. Class and health seeking behavior of the people (Village: Notun Maijbari)

Class	Caring Sector	Folk Healer		No treatment		Local Opportunity		Medical (City)	
		Frequency	%	Frequency	%	Frequency	%	Frequency	%
Landless		07	100	01	14.28	06	85.71	07	100
Marginal		31	93.93	05	15.15	30	90.90	25	75.76
Poor		09	100	01	11.11	08	88.89	06	66.67
Middle		06	85.71	0	0	07	100	06	85.71
Rich		01	100	-	-	01	100	01	100

Table 7. Class and health seeking behavior of the people (Village: Jahanabad)

Class	Health Care Type	Folk Healer		No treatment		Local Opportunity		Medical (City)	
		Frequency	%	Frequency	%	Frequency	%	Frequency	%
Landless		49	84.48	08	13.79	50	86.20	35	60.34
Marginal		22	66.67	03	9.09	27	81.82	23	69.70
Poor		04	80	01	20	05	100	05	100
Middle		02	66.67	-	-	03	100	03	100
Rich		-	-	-	-	-	-	-	-

3.8 Strategies Adopted by the Villagers to Cope-Up with Post Flood Damaging Situation

Post-flood situation is the most crucial stage for the villagers as they face tremendous problems relating to food and shelter. At the initial stage, the victims asked for social and economic support from their people. Relatives and kin gave them shelter for a few days and then they had to find their own alternatives. Many poor and the destitute set up tents on the bank of rivers, or move to other places seeking shelter in government and *khas* land. Being economically poor and socially helpless, the villagers had to adopt many strategies to cope with the emerging problems.

Table 8. Strategies adopted by the villagers to cope with the new environmental problems

Strategies Adopted by the Villagers	Notun Maijbari	Jahanabad
Self-help or debt	52 (92.86)	98 (98.98)
Relatives' help	47 (83.93)	90 (90.90)
Selling domestic cattle and properties	33 (58.93%)	39 (39.39%)
Money spent from savings	48 (85.71%)	85 (85.85%)
Adapting to a new profession in a new village	38 (67.86%)	66 (66.66%)
Taking loans from the NGOs	14 (25.0)	16 (16.16)
Governmental help	24 (42.86)	11 (11.11)
Economic assistance from local leaders	14 (25.00)	14 (14.14)

In Table 8, we find that the villagers had adopted diversified strategies for their initial adaptation to the physiographic, economic and social-cultural situation in the villages. We have listed as many as eight diversified strategies. It seems to us that the most important way of dealing with it is to get help through debt. They also obtained help from relatives. A few of the villagers however, admitted receiving some kind of government help or assistance from the local NGOs. But they rarely got any help from the local leaders and UP members.

4. Concluding Discussion

On the basis of our preceding evidence, we will provide an analytical discussion in this concluding section. In the foregoing sections, we have clearly mentioned that the villages identified for this research have been taken from two flood-affected areas of Bangladesh located at Serajganj and Rajshahi districts. Purposively, two villages named Notun Maijbari from the bank of Jamuna and Jahanabad from the Padma were chosen for intensive study.

It is reflected from our data that both villages are agricultural communities and severe flood has dislocated the original settlement of these villages. Being dislocated, the villagers have taken shelter in new places and adopted indigenous techniques for their survival in critical situation. While depicting a brief history, it has been learned that during their crisis, they sought help from their relatives and kin. When they moved from their flood-affected areas, many of their kin had helped them to carry their old houses and rebuild their new settlement. During flood and riverbank erosion, the villagers became fully homeless because they had lost all essential items in their life. So, it is quite likely that they would require essential help during those critical moments.

It is learned that people who had some savings somehow can manage their initial problems during the natural

calamities. But the poor peasants had to seek help and economic assistance from their neighbors and relatives. Government assistance and NGO help reached the villages quite late. For example, some of the villagers told us that a few families received some rice from the Union Parishad but was quite insufficient for their survival. It is suspected that due to dishonesty and insincerity, government assistance did not often reach properly to all the villagers. Many villagers opined this view and expressed their utmost dissatisfaction in regard to government help at the time of a natural disaster. The same view is true for the Union Parishad as well; people did not receive good response from the UP though it is the local government institution through which resources are expected to be channeled to the villages. People in both villages also complained that they never got any support from the elected members in the higher bodies of the National Parliament. Many villagers sold their cattle and household utensils to make up for their subsistence at the critical situation of flood and riverbank erosion.

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Notes

Note 1. Ethnologically, the word ‘*notun*’ means ‘new’ which is taken from the Bangla word. When the union and Maijbari village was washed away due to flood and riverbank erosion, people mainly from Maijbari settled in this *char* area and renamed the village as Notun Maijbari.

Note 2. A total of six villages from Maijbari Union were inundated and submerged under water due to heavy flood and riverbank erosion. These villages were: Maijbari, Dhekuria, Polashpur (partly), Beel Chital, Ujan Maiakhola and Bhati Maiakhola.

Note 3. The word *mela* in Bengali means exhibition. In the past, people in the rural areas had annual exhibition on a special occasion usually based on Bengali calendar. People assembled in the *mela* with multifarious business and other activities where the villagers came together for recreation and fun. For that reason, people still today call the Jahanabad village as Melagram as well.

Note 4. The term *samaj* literally means the group whose derivation may carry the connotation of a community. The proximity of the homesteads influence interaction and promotes a sense of community. The *samaj* is not recognized by the government, but it is a corporate social organization which performs religious, ritual, ceremonial and adjudicative functions and acts as the protector of norms and values (Karim, 1990).

Note 5. The word *pardhan* is corruptly used in Rajshahi villages and vernacularly it is *pradhan* which comes from Hindi to designate a chief or an eminent person. The word was used as a common title of military officers in the Indian state of Maratha. O’Malley (1916, p. 60) reports that “the members of the governing body of the Muhammadan functional group of Dhanas are called *pardhan* or *parmanik*”. Each village in Bangladesh has its own *pradhan* and *pramanik*.

Note 6. The word *parmanik* (vernacularly, it is *pramanik*) is also used to mean the sub-chiefs in a *samaj*. The word *pramanik* comes from Sanskrit, meaning authoritative or an authority established by proof, a person whose authority is to be respected (Wilson, 1855).

Note 7. *Dakhil* madrasa is a religious school which enrolls students up to SSC level and provides education based on the Madrasa Curriculum Board.

Note 8. The *jumma* mosque is a Muslim religious prayer house which is entitled to hold prayers five times a day and the weekly prayer on Friday.

Note 9. There is no official statistics for a village named ‘Notun Maijbari’, because during the 1990s, the village was called Maijbari, which was later washed out due to flood and erosion. People who survived this severe flood resettled in an area, renaming it, ‘Notun Maijbari’ etymologically signifying ‘New Maijbari’.

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