

## ***Loss Reducing Mechanisms of the Riverbank Erosion Displacees in Bangladesh : A Case of Environmental Disaster***

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**Abstract :** Riverbank erosion displaces millions of riparian inhabitants from their original homestead plots every year. It often dislocates agricultural land and destroys standing crops, roads and communications. As a matter of fact, it goads the rate of landlessness, and un- and under-employment. Nevertheless, the displacees have unflinching courage and resilience to confront with such adverse situations. In this critical and uncertain condition, they formulate and adopt multiple indigenous measures and techniques for reducing their enormous loss caused by the riverbank erosion displacement. The present paper is wedded to explore the mechanisms that the displacees of two Bangladeshi villages designed for demoting their socio-economic loss and consequent immense sufferings. They do it in their own ways as no institutional sources response to them. Finally, the paper frames some recommendations, which the policy planners and development organizations may consider in their future program content of planning for rural development in riverine Bangladesh.

### **Introduction**

Riverbank erosion is a recurrent environmental disaster in Bangladesh. It contributes directly to the process of rapid pauperization for the riparian people. It displaces millions of people from their riparian tract every year (cf. Elahi and Rogge 1990) and claims many lives and properties as well. The disaster often dislocates cultivable land and human settlements, and also it destroys standing crops, roads and communications. While the majority of rural people do not have access to food, housing, and medical facilities, the disaster of riverbank erosion further intensifies this alarming condition annually.

An estimate indicates that 85 percent people of Bangladesh live below the poverty line in 1970s (see FAO 1989; GPRB 1980). An extreme poverty level accounts 54 percent of the total population (BBS 1981). These proportions are decreased to 40 and to 25 percent respectively during the 1980s and in the early 1990s (GPRB 1992). Since land is the principal resource to the riparian people, this disaster aggravates the rate of landlessness, homelessness, and un and under-employment. As a matter of fact, the overall social and economic development of the country receives deterioration in such alarming condition.

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It is surprising but fact that the riverbank erosion displacees of Bangladesh have to adapt to the hazardous riverine environment. As a matter of fact, they have to formulate and undertake multiple measures and techniques for reducing their enormous socioeconomic loss induced by the riverbank erosion displacement. In devoid of administrative and institutional support, the displacee's position in the social hierarchy and low level technological know-how force them to do what is corrective in nature for minimizing their loss.

This paper is wedded to explore the mechanisms that the displacees design and undertake to curtail their loss and consequent immense sufferings as they could as possible. Finally, the paper wrapped up its job with some recommendations, which the policy planners and implementers may consider for their future planning of rural development.

### **Study Locale and Data Sources**

Sehala and Kaloni-two medium-sized villages of Nawabganj District in the northwestern region of Bangladesh are selected as study locale. These villages are covered by same mauza<sup>2</sup>. They are located in the physiographic and ecological setting. They have identical culture area and regional economy as they are adjoining each other. The geographical features of this thana<sup>3</sup> indicate that more or less half of the thana area amounting to 91,039 acres is charland<sup>4</sup>. The unstable characteristics of the Ganges (see Hossain 1991; Kalam and Jabbar 1991) and the Mahananda indicate that the north bank of the Ganges (Bangladesh) and the both banks of the Mahananda are more susceptible to erosion. It is one of the worst erosion affected thanas in the country (see Curry 1979; Nazem & Elahi 1990).

The principal rationale for selecting Sehala and Kaloni as study locale is that a sizeable number of displacees from different erosion-affected areas of Nawabganj District have settled in these peri-urban village in order to search for food, shelter, and employment. These two villages adjoin Nawabganj Town and the Barind Tract<sup>5</sup> as well. Both the villages provide the displacees with the access to the labor market of Nawabganj Town and also to the agricultural employment of the Barind tract. The catastrophic effects of riverbank erosion in Nawabganj and the sheer lack of social studies on this problem in the Ganges-Mahananda floodplain establish another point of rationale for selecting these study locales. It is quite disappointing that despite such devastating conditions of



Nawabganj and adjacent areas, no socio-economic research has, to date, been carried out on the problem. The choice of Sehala and Kaloni is thus justifiable from the methodological point of view.

The sample size of Sehala is 36 displacee households (20.34% of the total) and its displacee population is 233 (23.49% of the total). Another village Kaloni contains 104 displacee households (55.03 % of the total with a population of 533 (57.68% of the total). The displacee households from different erosion-affected villages of Nawabganj Sadar Thana moved to Sehala and Kaloni and finally settled there. The present study considers all the displacee households of both the villages as the appropriate primary sampling units. The displacee household heads were directly interviewed and in this way respective household head represents each sampling unit.

The principal tools for collecting the primary data are questionnaire and interviewing—two techniques of survey method. The major sources of primary data, in addition, include observation, informal interview, case histories, and case studies of selected persons and notable issues. Additional sources of data used in this study are collections and analyses of local level office reports, evaluation of government and semi-government projects, programs and census reports, published reports and articles, etc.

### **Loss Acceptance**

The displacees of Sehala and Kaloni were forced to accept their loss due to riverbank erosion. They did not have any alternative choice of loss acceptance as they failed in protecting their cultivable land, homestead plot, and other valuable properties from the cataclysm of riverbank erosion. Their local initiative and indigenous technology of bamboo crates for preventing erosion-attack ended in failure. Their preventive strategies were found to be worthless and the erosion-attack went out of their control. Eventually, the displacees of Sehala and Kaloni accepted their loss due to riverbank erosion through formulating some corrective measures.

More than 69 percent displacees of Sehala and all the displacees from Kaloni undertook the corrective strategy of land desertion and they accepted their massive loss caused by riverbank erosion. Haque (1919) found in Kazipur that 63 percent of his respondents actually abandoned their original homestead. The highest level of their vulnerability to

riverbank erosion compelled them to desert their original homestead plot on the riparian tract. They left their original place without intending ever to return as they lost their homestead plot fully or partially. The desertion of land is an unequivocal acceptance of the loss caused by riverbank erosion (Haque 1991).

The displacees adopted another measure of loss acceptance. They started to pray to Allah as they found the prevention of erosion beyond their control. It is nothing but a negative acceptance of their loss in the name of praying to Allah. More than 72 percent displacees of Sehala and nearly one-fourth of Kaloni prayed to Allah for the prevention of riverbank erosion. This strategy has been made on the basis of their religious faith.

The displacement status predicates that the preponderant majority of twice (83.33%) and thrice (75%) displacees of Sehala deserted their original homestead plot and in this way they accepted their loss due to erosion. At the same time, the highest proportion of once displacees prayed to Allah for the prevention of erosion. In Kaloni, all the displacees of each group deserted their land and a considerable proportion of them prayed to Allah as well. The correlation between loss acceptance and displacement status is significant at 0.6768 level for Sehala and for Kaloni at 0.9783.

While the only one average peasant of Kaloni prayed to Allah and deserted original homestead as well. Two-third each of the poor peasants from Sehala adopted both the strategies and all of their counterparts of Kaloni only deserted their original homestead plot. All the marginal peasant and landless displacees of Sehala prayed to Allah and deserted their homestead plot respectively. The highest proportion of landless of Sehala and all of their counterparts from Kaloni deserted their land in accepting the loss due to riverbank erosion. The relationship is partially negative at -0.4982 level for Sehala and at -0.3985 for Kaloni.

In Sehala, all the displacees of upper income group adopted the strategy of land desertion and the highest percentages of lower (62.50%) and marginal (80%) income groups prayed to Allah. Simultaneously, all the displacees of all income groups from Kaloni deserted their original homestead plot and searched shelter in a safer place. The correlation is significant at -0.7784 level for Sehala and at -0.5825 for Kaloni.



The educational status indicates that all the displacees of all education levels from Sehala prayed to Allah and also deserted their original homestead. The highest percentage of illiterate displacees deserted their land for accepting loss due to erosion. On the other hand, all the displacees of all education levels deserted land in doing this. The relationship is significant at -0.5162 level for Sehala and at -0.4006 for Kaloni.

The preponderant majority of nuclear and joint families from Sehala prayed to Allah and that of nuclear one also deserted their homestead plot. In Kaloni, all the displacees of both the family types deserted their land and a considerable proportion of them also prayed to Allah. While the family type in Sehala shows perfectly (-1) correlation with loss acceptance, it is perfectly positive (+1) for Kaloni.

Almost all the displacees of both villages deserted plot and it is their indigenous strategies for accepting their loss due to erosion. Also a considerable proportion of them prayed to Allah for preventing the erosion and it is nothing but a negative acceptance of their loss due to erosion. The strategy of praying Allah is not the outcome of their fatalistic attitude but of their religious faith. They made this strategy as believers in order to console themselves in accepting their prodigious loss due to erosion. The variable of educational status indicates that this strategy was not enveloped by their ignorance. As a matter of fact, it is found that most of the illiterate displacees do not have any practice of praying Allah in their everyday routine of works.

### **Mechanisms for Loss Reduction**

The displacees of Sehala and Kaloni formulated and undertook some strategies to reduce the quantity of their economic loss due to riverbank erosion. Nearly 2 percent displacees of Kaloni found their indigenous technology of bamboo crates and sandbag partially effective in protecting their land. The strategy of land protection minimizes the displacee's loss but it is not a long-run strategy. It may be partially effective in a season and may be eventually subjected to erosion in the next season as well.

A considerable proportion of the displacees sold their properties after displacement for reducing their loss. They adopted this strategy to procure some economic supports in adapting to the changing environment.

**Sale of the Title of Eroded Land**

It is found that one (2.78%) displacee of Sehala and nearly 38 percent of them were forced to sell the title of their land engulfed by riverbank erosion. They sold it to the wealthy landowners who can afford to wait for the reemergence of that land (Rogge 1991; see also Zaman 1987; Haque & Hossain 1987). Eventually, they rendered members of the large army of landless people in Bangladesh.

**Sale of Livestock**

It has been found that one (2.78%) displacee of Sehala and 29.81 percent of Kaloni sold their livestock in reducing loss. It was one of their means of livelihood in the pre-displacement period. It is empirically supported by the findings of Haque (1991) and of Rogge (1991). Haque (1991) predicated that 23 percent of the displacees in Kazipur reduced their loss through selling livestock. Rogge (1991) found that some 24 percent of the displacees in Kazipur, 37 percent in Chilmari, and 29 percent in Bhola sold their livestock at the time of displacement. It is, in rural Bangladesh, easier to sell livestock than other assets and to have cash with any degree of immediacy (Rogge & Haque 1987).

**Cutting Standing Crops**

Nearly 14 percent displacees of Sehala and about 8 percent from Kaloni cut and/or grazed their standing crops from their cropping field subjected to erosion. Many of these displacees also sold their remaining cultivable land. They procured money through selling these in order to purchase land and housing materials.

**Moving Properties**

The loss-reduction strategies of moving tangible properties accounted for 5.56 percent displacees from Sehala and for over 89 percent of Kaloni. They also sold many tangible valuable assets. These properties includes ornaments of female members, bicycle, bullock cart, plow, wooden furniture, corrugated iron sheet, utensils, etc.

**Salvaging Housing Structure**

The loss-reduction strategy of salvaging housing structure was widely practiced by the displacees of Sehala and Kaloni. They were nearly 90 percent from Sehala and more than 99 percent of Kaloni while it was 52.2 percent in Kazipur (Haque 1991), and 47 percent in Kazipur, 36 percent in Chilmari, and 2.5 percent in Bhola (Rogge 1991). This strategy promptly helps them to build a hut on the BWDB<sup>6</sup> embankment or on



*khasland*<sup>7</sup> or on the land owned by kin or neighbor after their displacement.

The structural pattern of residence of the displacees of Sehala and Kaloni on the original homestead was salvageable. All the households salvaged their mixed and/or cutcha houses except for houses built of rod cement concrete. Only one household of cutcha type failed to salvage its housing structure because it was engulfed by erosion at once.

### **Case # 1**

Md. Idris Hossain Gharami is a man of 32 years old. He has experienced the displacement status thrice in his lifetime. He lost all his land and now is landless laborer. During his last displacement, he and his family members were sheltered under his relatives' shed in Kaloni. His homestead was at a distance of 3 meters and the erosion-attack engulfed it in a night. As a matter of fact, he did not have any chance to dismantle his hut.

### **Cutting and Selling Trees**

The cutting trees is one of the loss-reduction strategies for environmental adaptation. It was undertaken by more than 11 percent of the displacees of Sehala and nearly 9 percent from Kaloni. They cut their standing trees and saved it from the attack of riverbank erosion. They reduced their loss through adopting this strategy to a smaller extent.

All the social variables of displacement status, landholding, annual income, educational status and family type make known the fact that the highest proportions of the displacees of each group of each variable widely practiced the loss-reduction strategy of salvaging housing structure. This strategy promptly helped them to build a hut on the BWDB embankment or on *khasland* or on the land owned by kin or neighbor after their displacement. The correlation with displacement status is significant at -0.3557 level for Sehala and at -0.2977 for Sehala and at 0.9894 and at 0.7327 respectively, with annual income of -0.2977 for Sehala and at 0.3197 for Kaloni, with educational status at 0.9659 and at 0.6868 respectively, and with family type at -0.3849 level for Sehala and at -.01291 for Kaloni.

### **Shift of Lives and Properties**

The shift of lives and properties from erosion-threatened homestead to a safer place is another corrective strategy undertaken by the displacees of Sehala and Kaloni. It encompasses some measures: the shift of family, of livestock, and of tangible goods from erosion affected area to erosion free

area. These are dominant measures adopted by the sample population. It has been found that all the displacees of both villages shifted their family from the riparian tract affected by riverbank erosion to the BWDB embankment, relative's shed, neighbors' land, khasland, etc. and to other villages as well. The measure of shifting livestock accounted for 19.44 percent displacees of Sehala and 18.27 percent from Kaloni. Another proportion of them (27.78% from Sehala and three-quarters of Kaloni) moved their tangible assets from erosion-attacked riparian tract to the places of their temporary shelter.

The statistical analyses reveal that the displacement status and family type partially positively correlated with their measures for shifting of lives and properties. The other variables of land ownership, annual income and educational status show partially negative correlation.

The proportion of the displacees of Sehala and Kaloni adopted the strategy of location change are more than two times multiple of that of the displacees of Kazipur (Haque 1991). Haque (1991) found that 43.5 percent of the displacees moved family, 9.3 percent livestock and 15.5 percent shifted their belongings from erosion-affected areas to comparatively safer places. It can be inferred from the field data that the displacees of Sehala and Kaloni adopted multiple strategies in accepting loss, in reducing loss, and in shifting their lives and properties due to riverbank erosion. It has been predicated that the dominant strategies are land desertion (100%) for loss-acceptance, salvaging housing structure (88.89% for Sehala and 99.04% for Kaloni) for loss-reduction, and shifting family (100%) for location change. The strategies of loss-acceptance, loss-reduction, and shifting of lives and properties contribute crucially to the process of displacees environmental adaptation to their precarious habitat caused by erosion.

### **Use of Movable Housing Materials**

The use of movable housing materials is widely practiced by the displacees on their riparian tract. It is an incidental rather than purposive type of adaptation strategies (Haque 1991). It has been known that it is not a sheer incidental strategy in situation and in case of each respondent. More than one-quarter of the displacee households of Sehala and Kaloni reported that they had economic solvency for building pukka house on their original homestead plot but they did not do the same. According to them, "nadikatar bhoie paka ghar karini, kokhon sarbonash hoy ke jane" (the threat of riverbank erosion prevented them from building pukka



house). They were compelled by the threat of riverbank erosion to use movable housing materials. In addition to this fact, many of the displacees built movable housing structure because they did not have any money for building concrete structure of dwelling unit.

The strategy of using movable housing materials is incidental to a large extent and also purposeful to a considerable extent. Their original housing structure prior to displacement was usually traditional. This housing structure were constructed of mud-dough, thatch, bamboo, tarja, wooden plank, tile, corrugated iron sheet, etc. These materials are easily movable and less susceptible to the damage caused by riverbank erosion. Not only that, the displacees of Sehala and Kaloni procured the resalable value of these housing materials immediately after displacement. They used this money in rebuilding their hut on the BWDB embankment or on khasland or on any other land owned by anybody, or beside the highways.

The displacees of both villages used corrugated iron sheet, tile, thatch, and rod cement concrete as roof materials prior to their displacement. It has been found that more than 44 percent displacees from Sehala and nearly 53 percent of Kaloni used corrugated iron sheet as roof material. It accounts for the highest proportion of the displacees. This roof material has resalable value through which the displacees reduced their loss. They were economically supported by this value in adapting to the changing riverine environment. The use of corrugated iron sheet is followed by that of thatch in covering roof of residential houses of the displacees. More than 36 percent displacees of Sehala and more than 22 percent of Kaloni had traditional housing structure covered by the roof material of thatch. It has no resalable but reusable value in rebuilding housing structure.

A considerable proportion of them also used burnt mud tile in covering their roof. The roof material of thatch is cheaper than tile, tile than corrugated iron sheet and corrugated iron sheet than rod cement concrete. More than 97 percent displacees of Sehala and 94 percent of Kaloni used the salvageable roof materials of thatch, tile, and corrugated iron sheet. At the same time, only 5.77 percent of Kaloni had rod cement concrete roof materials on their housing structure. The corrugated iron sheet has salvageable and reusable value; thatch and tile are only movable and reusable while rod cement concrete is neither salvageable nor resalable in the immediacy of riverbank erosion.

The wall materials used by the displacees of Sehala Colony prior to their displacement include brick, bamboo, thatch, and mud-dough, more than 22 percent displacees of Sehala and 47.12 percent of Kaloni used brick as wall material. Most of them jointed brick together by mud and they dismantled it in the cataclysm of riverbank erosion.

The following wall materials used are bamboo and/or thatch. It accounts for a considerable proportion (44.44% of Sehala and 17.31% of Kaloni) of the displacees while more than 33 percent of them from Sehala and 35.58 percent of Kaloni built wall of their residential houses with mud-dough. Except for mud-dough, all wall materials have salvageable and reusable value. Moreover, only the wall-material of brick has salvageable, reusable and resalable value.

The displacement status marks out the fact that the highest proportions of once, twice, thrice, and more than thrice displacees used corrugated iron sheet as roof materials and bamboo and thatch as wall materials.

### **Means of Transportation**

The displacees used means of transportation in reducing their loss due to erosion. Nearly 17 percent displacees of sehala and more then 68 percent from Kaloni were incidentally helped by their means of transportation in adapting to the changing environment. Nevertheless, more than 83 percent from Sehala and nearly 32 percent of Kaloni did not possess any means of transportation. They possess indigenous means of transportation. These are bullock cart, dingi (country boat), and bicycle. They used these in carrying dismantled housing materials, wood, livestock, and other tangible goods during the onslaught of riverbank erosion and high flood. This task of shipping goods is not manually manageable and they used their means of transportation they possessed in doing this. The displacees with no means were helped and supported by their counterparts in carrying their goods from the erosion-affected homestead to safer places.

A perusal of data reveals that the highest proportion (nearly 14% from Sehala and 33.65% of Kaloni) of displacees owned bullock cart. They usually used this means in carrying harvested crops from the field to house. In the immediateness of riverbank erosion, the used it for carrying their salvaged housing materials and other weighty tangible goods. The means of bicycle and country boat, locally known as dingi or nouka, accounted for 5.56 percent displacees of Sehala and 17.31 percent of



Kaloni. The country boat is a very suitable transport during abnormal flood. More than 17 percent displacees of Kaloni possessed it in their pre-displacement period.

The displacement status shows that the highest proportion (15.38% of Sehala and 30.77% of Kaloni) of once displacees did not have any means of transportation. More of the once displacees of both the villages had poor economic standing and proportionately smaller homestead plot than their counterparts on their original place. While their counterparts larger homestead plots were dislocated by more than one attack of erosion, their smaller plots were engulfed by one erosion attack. The highest proportions of twice, and of thrice displacees of Kaloni possessed bullock cart and used it in reduction the hazard loss. Moreover, the highest proportion of more than thrice displacees of the same village had country boat for carrying salvaged housing materials and other necessary goods from the erosion-affected homestead to the places of shelter.

### **Investment Pattern**

The displacees during the pre-displacement period invested their capital in purchasing land in Sehala and Kaloni, and other movable assets. They purchased these assets purposefully because in the desolation caused by riverbank erosion they have been supported by these assets. They purchased land in Sehala and Kaloni for resettling their habitat after displacement. This type of investment is nothing but their precautionary measure to adopt to the changing environment.

More than 83 percent displacees of Sehala and more than 70 percent of Kaloni purchased land for resettlement in Sehala and Kaloni respectively. The rest of them resettled on khasland or on the land owned by others in Sehala and Kaloni. The strategy of purchasing land in Sehala and Kaloni prior to their displacement played an effective and prompt role in the process of environmental adaptation. In the catastrophic situation caused by riverbank erosion, they migrated to Sehala and Kaloni. It is a purposeful strategy. It is found that 2.78 percent displacees of Sehala and more than 40 percent of them from Kaloni invested capital in purchasing livestock. The shift of dismantled materials and other goods were operated by the livestock. It has also been found that 2.78 percent displacees from Sehala and 69.23 percent of Kaloni purchased other movable assets, which have resalable and reusable values.

The variable of displacement status indicates that the preponderant majority of once, twice, thrice, and more than thrice displacees of both

villages incidentally invested their capital in purchasing land. This incidental strategy is followed by another purposeful strategy of purchasing movable assets. The correlation is significant at 0.9826 level for Sehala and at 0.2982 for Kaloni.

### **Stay in the Place of Shelter**

The displacees of Sehala and Kaloni were on the riparian tracts of the Padma and of the Mahananda. The catastrophic attack of riverbank erosion engulfed their houses and homestead plots. They were rendered distress and compelled to find shelter either temporary or long-term. A radical change has been occurred in the course of their life and settlement due to riverbank erosion. The displacees of Sehala and Kaloni found shelter on the flood-protecting embankment, on neighbor's land, on khasland, beside the roads and highways, and under the shed of kin or neighbors.

It is noticeable that 5.56 percent displacees of Sehala and nearly 80 percent of Kaloni were sheltered on the BWDB embankment (Figure-9). They rebuilt their small hut on both side of the embankment and took shelter in squatting dwelling situation. They were suffered from the lack of drinking water, sanitation facilities, and emergency health care service. The following proportion of them took shelter beside the road. They were 16.67 percent displacees of Sehala and 10.58 percent of Kaloni. They were also compelled to confront with what their counterparts on the embankment faced up to. Two small proportions of the displacees were sheltered under their kin's shed and on their neighbor's land. They were 38.89 percent each from Sehala and 3.85 percent respectively. They were also supported by their kins or neighbors in having drinking water and sanitation facilities to some extent. They reported that they were in the places of shelter for a period of three months at lower limit and of one year at the higher limit. After this period, they left these places and migrated to Sehala and Kaloni for developing their settlement.

### **Clustered Settlement Pattern**

After the displacement due to riverbank erosion, most of the displacees have migrated to Sehala and Kaloni from their places of temporary shelter. They started to settle themselves in Sehala and Kaloni closely together. They form a cluster and/or contiguous settlement in the study villages. They were also clustered into a major squatting on the flood-protecting embankment (cf. Zaman 1986b).



The western part of Kaloni was a mango-orchard. It was deserted due to their clustered settlement. Their settlement in a cluster and contiguous pattern is a corrective type of strategy for adapting to a new social environment. This is an incidental measure of reducing hazard loss due to riverbank erosion. The clustered settlement pattern builds a bridge between the displacees settled in Sehala and Kaloni.

### **Concluding Remarks**

The loss reducing mechanisms of the riverbank erosion displacees of two northern Bangladeshi villages show a sheer corrective type in their nature. It is because that the devoid of administrative and institutional support and the low level their socioeconomic and technological capacity as well failed to prevent the attack of riverbank erosion and consequent massive loss. This adverse and critical situation intimidates them to design and undertake corrective rather than preventive measures for trimming down their loss.

The displacees of Sehala and Kaloni embark on selling the title of their eroded land, taking to pieces of housing structure, and cutting trees in order to shrink their loss. Also they transfer their livestock, tangible goods and budging the family members from erasing threatened homestead plot to safer places. In the same way, an ample section of them prayed Almighty Allah in addition. It is because that they have spiritual belief on Him and in fact, the prevention of erosion went out of their control as they have no adequate large-scale engineering technology and socio-economic capacity. As a matter of fact, they are compelled to desert their riparian homestead plots and are migrate to safer places. This is nothing but a negative acceptance of their loss.

### **Policy Recommendations**

The policy implications claimed by the research findings prefigure that the government and non-government organizations should respond to the prodigious needs of riverbank erosion displacees. This response should be made in the immediacy of erosion attack for aiding them in their environmental adaptation on the hazardous riparian tract. The research findings set down some recommendations for future planning which are coming next after.

1. The government should undertake large-scale engineering works and allocate financial cost for preventing the riverbank erosion.

2. In the immediateness of erosion, the displacees need to be sheltered at any cost. The government should provide them with adequate assistance of shelter.
3. The displacees have to grapple with food crisis and thus the emergency food ration may lessen their sufferings. They expect that the food ration should be pressed into service by the government in onslaught of riverbank erosion.
4. The displacees are subject to health hazard and its ultimate result is epidemic. The government should provide them with health care and low-cost house with sanitary latrine and arsenic-free drinking water facilities. This assistance will aid them in adapting to their hazardous riverine environment.
5. The homestead plot, housing materials and financial support are crucial to their resettlement. They receive skimpy financial assistance from their neighbors and/or kins but from any institutional sources. They expect that the government and non-government organizations should do this job in time.
6. The displacees look forward to their employment by the government and non-government organizations in non-agricultural sector for their survival.

### **Endnotes**

<sup>1</sup> The riverbank erosion displacees are those who are displaced from their riparian homestead plots due to riverbank erosion at least once. The shifting of major rivers of Bangladesh and their unstable character cause this environmental disaster. Consequently, thousands of people are compelled to leave the erosion-threatened areas every year. Riverbank erosion renders people homeless and helpless offering them a desolate state of livelihood. The displacees are categorized as 'displaced once,' 'displaced twice,' 'displaced thrice,' and 'displaced more than thrice.'

<sup>2</sup> A geographically defined land revenue unit. The land revenue survey undertaken by the government of British India coined the term mauza for revenue purposes. Mauza was the unit of this survey. This was defined in the note of directions for settlement Officers, 1849 as a parcel of land which had a separate name in the revenue records, i.e., practically a local subdivision of an estate or mahal (Nelson 1923; Wilson 1855).

<sup>3</sup> It is a higher tier of the local government administration in Bangladesh. It has been positioned in third step of administration, i.e., Division,



District, and then Thana. It comprises two or more unions and district is consisted of two or more thanas.

<sup>4</sup> A mid-channel islet in the riverbed. It is any accretion in the river which may be seasonal or may survive for several decades. Charlands are abundantly found in the large rivers of Bangladesh, such as the Padma. The intense competition among floodplain inhabitants to cultivate these charlands and/or to settle on it creates social clash in terrible form. These lands were regulated in the British India by Bengal Regulations XI, 1825 (Wilson 1855).

<sup>5</sup> A tract called varendra in the Sanskrit literature, which means a part of Bengal north of the Ganges/the Padma, designating especially one great division of the Brahmans of Bangal (Wilson 1855). This tract is one of the terrace areas of Pleistocene age within the Bengal Basin. It has two terrace levels—one at 39.7m and the other between 19.8m and 22.9m (Rashid 1977). It is divided into five sections, viz., North-Eastern outlier, Eastern Barind, East-Central Barind, West-Central Barind. The district of Nawabganj includes parts of the West-Central Barind and of the Western Barind.

<sup>6</sup> Bangladesh Water Development Board.

<sup>7</sup> Khas is an Arabic term used to mean select, eminent, noble and also private, peculiar, etc. (Wilson 1855). Khas as a revenue term is applied to lands held by Zamindars and cultivated by themselves for their own benefit (Wilson 1855) The term of khasland is considered by the present study as unused land owned by the government.

<sup>8</sup> It is an indigenous village social organization. It is not organized by the government. It is a village council which may be compared with parea of Punjabi village in Pakistan (Eglar 1960). Samaj performs religious, ritual, ceremonial, and adjudicative functions (for more, see Karim 1990).

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