

Institutional Roles in Effective Management of Flood Disaster Risks and Policy Implications in Bangladesh

S M Alauddin¹
Akbar Hussain²

1. Introduction and Background

Bangladesh is widely known as a disaster-prone country in the world and experiencing increased floods, cyclones, and droughts for hundreds of years resulting in huge damages to properties and loss of life. The geographical location, land characteristics, multiplicity of rivers, and monsoon climate render the country to frequent natural hazards and vulnerabilities. Causes of floods are natural and mostly human-induced (Nishat 2004, Brammer 2010:4, FFWC 2012, Zaman 2012, and Rahman, *et.al.* 2009). Natural and human induced causes include unplanned urbanization, riverbed aggradations, deterioration of drainage channels, soil erosion, deforestation in the upstream region, subsidence and compaction of sediments, impact of embankments constructed elsewhere, local relative sea-level rise, global climate change, tidal waves/effect, etc. IPCC (2007) considered anthropogenic causes for rapid climate change and increased climatic extreme causing damage/degradation to nature and the environment. Flash floods, river floods, rain floods, and storm surge floods are prevalent in Bangladesh, with different management approachesⁱ (NPDM 2010-2015, p-4). The Hyogo Framework for Action, UNFCCC, IPCC (2007) identified Bangladesh as one of the most vulnerable countries to climate change and ranked as the 1st country (among 162 countries) in the World Risk Index for flood. According to the World Risk Report Bangladesh is ranked as the 5th country in the World Risk Index (out of 162 countries) for floods in the world, while, 6th (of 89) for cyclones, 3rd (of 76) for Tsunami, and 63rd (of 184) for drought (WRR 2012). The disaster risk management/ reduction, mitigation, and adaptation to climate change are linked and should be effectively integrated in a planned way to reduce its risks/vulnerability.

This chapter is based on the study “Community Resilience in Disaster Risks Management and Policy Implications: An Anthropological Study in Bangladesh”. The fieldwork of the study was conducted in the central floodplains in Bangladesh. This chapter covered the recent devastating floods in 1988, 1998, and 2007 that caused severe damage to life and economic losses (Zaman 2012, FFWC 2010) showing increased frequency and reduction of time between two floods. The floodwater stayed for 1.5-2 months with little exception. On an average, over 10 million people were affected/year and estimated economic damage was over 17 million (at US\$ X1000) caused during the last thirty years (1980-2010) by major disasters (floods/cyclones) with an average economic loss over 0.5 million at the same cost/year.

The capacity and resilience of the disaster-affected community depend on how advanced the early warning system, preparedness, awareness, and training activities are improved

¹ Disaster Management and Climate Change Adaptation Specialist, and Adjunct Faculty, United International University, Dhaka. Email: smalauddin1964@gmail.com

² Professor, Department of Anthropology, Jahangirnagar University, Savar, Dhaka, Bangladesh

in the country. As per Disaster Management Policy (2010-2015), the Local Government Institutions (LGIs) including UP (Union Parishad), UzP (Upazila Parishad), and other line departments are responsible for capacity and resilience building of the affected community by sectors. They are also responsible to provide the input support services under sectoral policies (though none updated linking disaster/climatic disaster risks management) for necessary rehabilitation of the damage and loss caused by the disasters with relief, mitigation, and adaptation measures. This study has attempted in assessing the activities of LGIs at the Community, Union, and Upazila levels including the Union Disaster Management Committee (UDMC), Upazila Disaster Management Committee (UzDMC), and Community Based Organizations (CBOs), which are supposed to play the key institutional role regarding capacity and resilience building of the affected community and protection of their resources from the risks of disaster by the community themselves.

It also investigated the policy implications in capacity building of the affected people at the households/individuals, community, and institutional levels. The broad objective of this chapter is to assess the capacity and resilience of the flood-affected people of the central floodplains; how they were coping and managing the disaster risks by sectors; how the disaster policies contributed to building capacity and resilience in managing the risks of floods and protecting their resources by sectors effectively. The specific objectives are to investigate the household/community level coping capacity and resilience in reducing flood disaster risks by sectors, the roles (in general) of local institutions in resilience building of the households/community, and institutions, and the policy implications in resilience building at household/ community and LGIs levels.

This chapter, especially, dealt with how effectively the local government institutions (union, upazila, zilla/districts) were capable of disseminating Flood Early Warning (FEW); rescuing the affected people at risk; awareness education/training on capacity building of the affected households/community/local institutions; adopting strategies and options by sectors under-preparedness activities for effective disaster risks management and protecting different resources (crops, house/homestead/other properties).

This was an anthropological study conducted in Daskandi and Karmakerkandi villages of Boyra Union under Harirampur Upazila of Manikganj District- highly prone to riverine flood since its situation beside the bank of the mighty river 'The Padma' in the central floodplains. A qualitative approach was used mainly with little a quantitative approach. A total of 25 households with different occupationsⁱⁱ and social groups including key informantsⁱⁱⁱ were selected for the research, where 'household' was the study unit. Categories of respondents included both primary and secondary sources. The qualitative approach included 25 in-depth interviews, 16 case studies, and 03 focus group discussions (male/female/mixed). Quantitative methods included a survey of all 273 households (Daskandi-162, Karmakerkandi-111) to prepare the village profiles. In-depth interviews took 5-7 attempts/household on different days. Besides consulted representatives of LGIs^{iv} including several national-level researchers, academics, practitioners specialized/experienced in disaster risks management.

2. Local Institutional Roles in Disaster Risks Management

a) Awareness Building on Flood Early Warning

The ever-biggest floods of 1988 and 1998 drew the attention of the Government, its policymakers, academics, researchers, development professionals, and donor communities for disaster preparedness and management through capacity building. LGIs/(line departments), UDMCs/ UzDMCs, and CBOs are responsible for capacity and resilience building of local disaster affected people through disseminating flood early warnings (FEW) down to the local level (FFWC 2014:3, SODM 2010 and 2019); conducting awareness education and training; mitigation and adaptation measures towards disaster risks reduction and capacity building of affected households/community and institutions by sectors. The capacity of flood early warning, especially, after the flood of 1998 has been gradually increased. Flood Forecasting and Warning Center (FFWC) is able to forecast early warning in a 3-5 days' lead time through a wide range of mediums like bulletins- rainfall observation, river situation forecast, flood inundation map, floodwater levels and flows for internet upload by using Bangladesh Water Development Board (BWDB) gauge data. In recent years, access to early warning systems by ecosystems has increased due to the improvement of dissemination measures through electronic Media including mobile phones. The dissemination of FEW messages by the local government (UP/UDMC) representatives^v was reported as very poor by the affected people. A local political leader informed us of the non-dissemination of FEW during 2007, while they did it in the 1998 flood.

This research has shown a poor increase of awareness of people on FEW systems which is evident as most of the respondents (90%) were not conceptually aware of climate/weather. However, they rightly observed changes in weather patterns over the decades like increases in temperature; changes and variations in seasons; dense fog; etc. which they considered as the *jolbaayu poribartan* (Climate Change). Earlier, based on the indigenous knowledge, they could apprehend possible floods from 'very hot' or 'very cold weather for the seasons ahead, which now they cannot due to its erratic behavior.

Out of 25 households, only one respondent^{vi} of Daskandi took shelter on the *helipad*, while many people took their cattle on the *helipad* in 2007. Their family members stayed at home as peoples' resilience to living with floods for ages had increased gradually. Despite the improvement of dissemination measures, flood warnings still remained a challenge to both the flood forecasting authorities and affected communities. The current flood early warning lacks local-level interpretations and is not meaningful to the affected people. FFWC disseminates flood warning through email/fax/hard copy and the internet via its own dedicated website (www.ffwc.gov.bd).

There was no visible activity in the past years by the LGIs/UDMCs in the study villages except by a very few national Non-Governmental Organizations (NGOs) - BCAS and BARCIK^{vii}. The current and former representatives of the union informed through using hand mike and playing drum by the *gram* (village) police, which was not performed in the 2007 flood, but in 1998. In flood areas, community people with the technical assistance of NGOs have devised a mechanism of disseminating flood early warning by demonstrating yellow and red flags using the flood forecast signal during the flood. This has been more or less a common and effective practice that interprets local flood situations and their potential but this practice never took place in the study areas. The

legal and institutional frameworks have been apparently integral approaches to the disaster management system in Bangladesh. However, it is evident that Bangladesh is well ahead in disaster management laws, level of enforcement is not well-run regrettably (Islam and Karim, 2021).

No action, other than relief, rehabilitation, and publicity on FEW was visible by the UP. Bangladesh Hyogo Framework for Action Monitoring and Review Report (2015) mentioned most of the local Disaster Management Committees (UDMCs/ UzDMCs) as functional, which this study confirmed to be wrong. Out of 25 households, only two members knew of such UDMCs. Elected Chairmen of all the 16 Union Parishads^{viii} of Harirampur Upazila also informed that no UDMC is active. They just inherited it from the earlier term of UP but were not aware at all of its roles and responsibilities. Most of the representatives elected from the community did not know of their inclusion as members of the UDMCs. This evidence that the UDMCs were not active and the elected representatives of UPs were unwilling to accept the community representatives in the committees, which are supported by CDMP Assessment 2006 and 2007. Anil Chandra (*Gram Police*) was informed of collecting signatures of the community people to include as members in the committee as the Chairman instructed. He also did not know of any activity of the UDMCs except relief operations.

b) Institutional Roles in Community Capacity Building

Community capacity and resilience building through structural and non-structural approaches were found extremely poor by the LGIs except for very negligible initiatives by the NGOs^{ix}. Implementation of structural measures (embankment/ polder/ roads/ flood centers, etc.) and non-structural preparedness measures (awareness/education on weather/climate, early warning (EW), and training on disaster management strategies/options) are the main responsibility of the LGIs and to some extent, NGOs. After the 1998 Flood, two school-cum-flood centers were built by the local government (1/study village) with a capacity of 500 people/each that were used during the flood in 2007 but were very insufficient as per the local needs. The shelters were not gender-friendly in regard to space or sanitation options. Besides, about 1.5 Km embankment was constructed with 2-2.5 feet height from the ground level along the bank of the Padma which was not useful and flooded by a medium-size flood in 2007. Flood water entered the villages and damaged houses/homesteads, vegetation/crops, and other properties at a moderate level. Because the embankment was not constructed with adequate height, and width and analyzing past and future trends of flood water levels as confirmed by the PIO^x. No further construction of flood centers or *matirkella* (raised ground) took place till February 2015 after the flood in 1998.

Besides the structural measures, the flood-affected households received orientation on disaster preparedness and management training from 2-3 years before the 1998 flood to till February 2015. But, nobody from 16(64%) households received training from any quarter except only 9(36%) members who received training on different aspects of agriculture and livelihoods^{xi}. The training was mostly provided by BCAS and BARCIK and some by the Department of Agriculture Extension (DAE)^{xii} of Harirampur UZ, though they were supposed to play the key role in this regard. NGOs emphasized

women's capacity building along with the males. Despite very poor initiatives by LGIs/NGOs, the affected people developed their risks capacity and resilience by living and coping frequently with the risks of floods and improved their resilience gradually.

c) Emergency Rescue and Flood Shelter

i) Emergency rescue of the flood-affected people

In 2007, neither LGIs/NGOs nor any community leader performed the responsibility of rescuing the affected people for safe flood shelter except by a local elite (Canadian Immigrant)^{xiii}. He rescued only the severely flood-affected people of the remote char islands. But, in 1998, several persons^{xiv} including the same elite person, a local Member of Parliament, and a local political leader worked for rescuing the vulnerable char people to safe shelters at the Upazila Head Quarter along with emergency relief support to them. The local government joined much later with those local rescuers. They provided emergency humanitarian relief and some rehabilitation supports to the affected people.

There was no rescue initiative for the study villages' flood-affected people, as they were on the mainland inside the embankment. Nobody thought of their helplessness/vulnerability, except for rescuing the most affected char people which resulted in huge suffering to the study villages' people. An example of Rokhsana Kanchani of Karmakerkandi may better represent the extent of suffering.

Rokhsana (37), got married fourteen years back to Abul Kalam of a neighboring village. She has three daughters- one aged 12 and the other twins 9yrs studying in classes V and II, respectively. The elder daughter lives with her grandfather. Her husband was a cook at Dhaka but traceless for over nine years. She, thus, came back to her father's house and lived with her old-aged mother. Her father died earlier. Rokhsana's household was badly affected by the first spell of 2007 floods and took shelter at a neighbor's house. But, during the second spell, the neighbors' house was also flooded. They took shelter in the helipad along with her.

The floodwater level in 1998 was higher than in 2007 on the adjacent road to her house. But, the waves and speed of current were almost similar. During the flood in 2007, she prepared kalarbhela (with banana plants) to transport household goods (utensils/ firewood/earthen woven, hens' cage with 6-7 chickens) at a safe shelter. Due to heavy waves and currents, it was very hard to move with the bhela and one of her twins fell down in the water along with household goods. She was able to rescue her daughter somehow, while the goods were washed away by the speedy waves. There was nobody nearby to help her. She became able to reach the helipad by pushing the bhela. Rokhsana received a tent from an NGO for temporary shelter at the helipad. This NGO provided her with a tin house also.

The case of Kanchani reveals the suffering of the flood-affected people in absence of any rescue effort by the LGIs (UP/UDMC/UzDMC) who were supposed to carry on the emergency rescue for the flood affected people.

d) Emergency Relief and Rehabilitation Supports

i) Government relief and emergency services

All flood-affected households received enough relief in 1998 and 2007 provided by the UP/LGIs and NGOs. Few people claimed of getting a higher preference in receiving relief support by the members closed to the UP representatives. Around 80-90% of households received relief as informed by the two former and current UP Members. At best 10-12% of households did not receive relief in 2007 as they were well enough and considered it a prestige issue. The relief supports, provided by the UP/UDMC during and after the flood included cash taka, food, candle, medicines, etc., and seeds, fertilizer, tin for house building, etc. The supports were moderately sufficient and higher in 1998 than in 2007. The affected households of 2007 received rehabilitation support in the following two years from the LGIs as of the Flood of 2004 and 1998.

The community representatives in UDMC/UzDMC had no participation in the decision process like an assessment of damages in households and providing support for rehabilitation which the UP representatives did by themselves. Based on the assessment report, the UP representatives got allocation from the PIO for support. The top-down process was followed in the damage assessment.

Emergency relief and rehabilitation supports were provided under special allocation and mostly, under safety net programmes (SNP) like *Kabita* (money for work) and *Kabikha* (food for work) to mostly the vulnerable women^{xv}. But there were unfair means by the PIO as claimed by the union representatives. Further, the PIO was blamed for interfering with the work of the union representatives in their own areas often ignoring the most feasible location.

As per government rule, Union Chairman and the Secretary play the roles of Project Chairman and Secretary, respectively to implement projects. But, bypassing the UP representatives, the PIO allocate wheat/money for projects that hampered the role of the local government/UP/UZ revealing UDMC/UzDMC out of the work.

In the study villages, around 80-90% of households received food support under VGF program after the flood of 2007. Out of 25, 20 (80%) of flood-affected households received food support under VGF program, while the rest 5 (20%) of well-off people did not receive that. A number of 10-12 households from each village had been receiving 30 KGs of wheat/month under the VGD program in 2014. Cash taka 1,000-2,000/- was also provided by UP in 2007 as a rehabilitation program. A total of 25-30 and 15-20 households of Daskandi and Karmakerkandi received cash Tk.1,000-2,000/- respectively, which was very inadequate as informed by the affected households. Besides food and cash taka, the UP also provided some input/material supports, which included seeds of paddy (5-10 KGs), vegetables, peanuts, fertilizers, and cattle fodder to the affected households in both the 1998 and 2007 floods.

As per the Upazila Report (2013-2014)^{xvi} a total of Taka 96,74,768 was allotted for the construction of 4 bridges in Hariampur Upazilla those excluded from the study Union. Under VGF Program, a total of 13,502 and 8,558 Cards, respectively, were given for food support to the extremely poor people. Every Card Holder received 30 KGs of wheat/month. A total of 1,14,200 beneficiaries received a total amount of 48,89,724 metric tons of food support under *Kabita* and *Kabikha* Program. Under the risk reduction

program, an amount of taka 50,000,00/- was spent on different projects that included repairing and maintenance of small roads in the Upazilas connecting many of those with Upazila road.

The discussions clearly revealed that the relief and rehabilitation support under the emergency humanitarian program by the LGIs was the major focus instead of capacity-building activities *i.e.*, awareness education/training, adaptive livelihood options in agriculture, and other sectors under-preparedness program-which was very poor except negligible structural works.

ii) Emergency relief and rehabilitation support from NGOs

A good number of NGOs *i.e.* Caritas Bangladesh, CARE, SODA, VERC, CCDB, and Bureau Tangail (now Bureau Bangladesh) provided emergency relief and rehabilitation support including necessary items with food to the flood-affected people^{xvii}. All the flood-affected households received relief support (except 10-12% solvent households) from more than one NGOs, mostly 2-3, even four NGOs in 1998 and 2007 as confirmed by the former union representatives JibonSarker, Dabir Uddin and other respondents.

Different studies have found significant role of NGOs in disaster management in collaboration with government in Bangladesh. Presently, NGOs are emphasizing on preventive measures as a strategy of disaster risk reduction (Hossain 2020, P-2, 3), while number of NGOs and their activities have been drastically reduced over the 1.5 decades due to lower middle-income status of Bangladesh causing most donors to leave for Africa- the most poverty-stricken region.

From the discussions, it is revealed that emergency relief and rehabilitation support received by the affected people in 2007 and 1998 Floods from the local government/UP, NGOs and individuals was remarkable. There was no report of extreme crisis of food/seed problem from any affected household.

e) Role of Union/Upazila Disaster Management Committee

As per National Plan for Disaster Management (NPDM, 2010-2015; SOD 2010 and 2019), Union/Upazila Disaster Management Committee (UDMC/UzDMC) are the mandated local organizations for disaster preparedness and management activities. The activities, plan, and work procedure have been assessed with special focus and importance. The SODM 2019 and Disaster Management Act 2012 have also clearly described the roles and responsibilities of the UDMC/UzDMC headed by the UP and Upazila Parishad Chairman, respectively, along with government official at UP level (1/department) and all the UP representatives with 2/3rd community participation of different groups/occupations with gender inclusion. The local government committees are responsible to carry on various disaster preparedness, awareness, education and training and management activities with support from the UzDMC (SOD, 2019). But the research found no activity of the local UDMCs/UzDMC except negligible participation in relief and rehabilitation after the disasters. Islam (2018) has apparently found effective coordination as an essential ingredient for Disaster Management, where Bangladesh has gained credibility and repute across the world, although, the research found no such evidence at all in the study area.

Chairman and Secretary of the Union act as the President and Member Secretary of the committee and supposed to meet bi-monthly meeting during normal period and as and when necessary, in emergency situation. Each union mandatorily supposed to have a Union Disaster Management Plan comprising disaster risk reduction and emergency response plan. But there was no such plan in the Boyra Union or in any of the other 15 unions of the Upzila. Emergency rescue and response management system plans and procedures are also important. But, due to multiple limitations and constraints of the UDMC/UzDMC, it cannot perform their responsibilities independently. Limitations include dependence all the way on District Disaster Office through Upazila Office. The UDMCs have no pre-disaster activity *i.e.*, preparedness, mitigation and management of disaster risks (Islam 2018). It is for lack of awareness on UDMCs' roles and responsibilities, problem of fund and dependency on decisions, which are the major barriers and challenges to perform disaster preparedness, emergency rescue, relief and rehabilitation activities. This is similarly true to the UzDMC as well. Despite financing mechanism exist as Budget code for DRR/CCA activity; dedicated "DRR/CCA Fund" at National, Local and Community level along with provision of allotment of fund from annual development budget (NPDM, 2021-2025, p-47), there is no allocation of budget for UDMC's disaster preparedness activity or other supports. Such acute problem has made the UDMC/UzDMC crippled and inactive. The Department of Disaster Management and Relief is supposed to provide technical advice and capacity building services to all Disaster Management Committees (NPDM 2021-2025), which were not found in the study Union. They, always bypassed the UP/UDMC and made it fully meaningless/inactive, which Shah (2022) found in Pakistan as well where dependency syndrome in institutional mechanism and mainstreaming DRR into development is undervalued in development projects. But there is much successful evidence of such community-led disaster risk management programs with the effective engagement of a well-informed multi-stakeholder governance process (Khan 2011).

Community people did not know of the provision of their representation in the committee. The Elected Representatives (often the rural elite) did not like the community peoples' participation/representation in the Union/UZ Committees as they felt challenges, or, more appropriately, apprehended the problem of engaging the community people regarding the questions of transparency and accountability of the committee, which, in turn, might interrupt their vested interests or create a problem for them which is supported by a number of studies (CDMP 2007, 2006 and Oxfam 2010).

f) Role of Local Community Based Organizations

There was no community-based organization (CBO) in the study villages. However, a number of Adaptation Groups formed by BCAS under its climate project implemented during 2008-2014 provided orientation and training to its most of the group members related to coping mechanisms; climate change, its causes and consequences; disaster risk reduction and adaptation to climate change; risk assessment, action planning and their implementation. The training included livelihood options also.

The groups gradually turned into cooperative with regular savings provision inconvenience of continuing the groups and savings generation in helping the poor. The groups developed a sense of collective cooperation, strengthened unity, commitment and

are capable to cope with the risks of flood and help each other though their activity remained limited amongst the group members only. Despite developing coping capacity of disaster risks, they were helpless to protecting their field crops from the risks of flood as most of their agricultural lands were charland on the beds of the Padma River outside the embankment.

3. Conclusion

From the above discussions, it is revealed that local government institutional role in disaster risk reduction through awareness raising and capacity building with adequate preparedness activity; education and training; demonstration of mitigation measures; dissemination of flood early warning and emergency rescue with providing safe flood shelters were very poor than that of the actual needs. The local government institutional (UP/UDMC/UzDMC)' support for capacity and resilience building of households/ community and institutional levels were also found negligible except relief and rehabilitation work under emergency relief service and safety-net programme. Capacity and resilience building of flood affected people is also very limited by NGOs. After both the flood of 1998 and 2007, most of the affected households received relief goods (food and other daily essentials) to a satisfactory level. Beside the government relief operations, NGOs also provided significant emergency relief and rehabilitation supports to the affected households. The local government institutions lacked capacity, independent decisions and funding problem. They could not play effective role in disaster preparedness, dissemination of emergency FEW and rescue of the affected people. The CBOs were absent in the study villages and in the union except the 'adaptation groups' formed by BCAS. Collective action by the community was also absent except for initiatives by some local individuals, who were often affiliated with local and national politics. The UDMCs/ UzDMCs as per NPDM (2021-2025) is supposed to play the major roles in disaster preparedness/ management as part of the local government are only in the paper/policy, but they have no functions at all rather are fully inactive. They lack awareness of the roles and responsibilities of UDMCs/UzDMCs, capacity, and resilience along with their integration, funding problems, and dependency on decisions on the district level through Upazila Office, and as a result, they remained inactive. Community people's participation in the disaster management process through UDMCs are totally absent because of the non-cooperation of the elected UP representatives- mostly the rural elite who do not want to accept the community participation in the UDMCs and apprehend conflict of interest as the development work/relief and rehabilitation work mostly are non-transparent. Until this attitudinal problem of the UP representatives is changed, funding problem, capacity, and resilience, dependency on decisions and resources on the district disaster office are removed, the UDMCs/UzDMCs won't be functional to perform disaster preparedness and management activity at household/community and institutional levels. Rather, it will remain in policy and paper only.

Notes

- ⁱ Flash flood caused by overflowing of hilly rivers in eastern and northern Bangladesh (in April-May and September-November); monsoon floods caused by major rivers usually in the monsoon (June-September); rain floods caused by drainage congestion and heavy rain; while coastal floods caused by storm surges (NPDM 2010:4).
- ⁱⁱ Occupations included (agriculture, aquaculture, livestock, small-business, day-laborers, rickshaw-pullers, etc.)
- ⁱⁱⁱ Key Informants included local government representatives from Union Parishad (UP), Sectoral Departments *i.e.* Agriculture, Fisheries, Forestry, Youth, Social Welfare and Women Affairs, etc. along with community based organizations like Disaster Management Committees, NGO representatives, etc.
- ^{iv} The Local Government Institutions (LGIs) are the sectoral departments/offices (like Agriculture, Fishery, Youth, Women and Social Welfare, LGED, Forestry, etc. at Union, Upazila and District levels including Union, Upazila and District Councils. It included different Committees *i.e.*, Union Disaster Management Committee (UDMC), Upazila Disaster Management Committee (UzDMC) and District Disaster Management Committee (DDMC), mainly.
- ^v Mr. Mohidur Rahman, a Local Awami League leader informed of doing no dissemination of flood early warning during the flood in 2007, while they did it in 1998- the ever-largest flood.
- ^{vi} Rokhsana Kanchani of Daskandi took shelter at Helipad, while flood affected many like Hatem Ali Matbor, Montaz Mridha, Amir Biswas of Daskandi took their cattle in the helipad in 2007.
- ^{vii} BCAS stands for Bangladesh Centre for Advanced Studies and BARCIK stands for Bangladesh Resource Center for Indigenous Knowledge.
- ^{viii} Had scope to sit for a meeting with all the 17 UP Chairmans of Harirampur Upazila, who all confirmed that none of the UDMCs are active at all. They inherited the Committees from their earlier tenure with no clear responsibility of these committees. Further, they informed of sitting for meeting with once or twice but no fruitful discussion took place as they did not know of its responsibilities. They did not have any budget for even tea and biscuits that is required if they sit for a meeting. They did not ever receive any orientation from either UzDMC or DDMC/District Relief and Rehabilitation office.
- ^{ix} BCAS and BARCIK – two national NGOs had been working for community capacity building in relation to DRR and Climate Change Adaptation Options by sectors, mostly agriculture, vegetables and horticultures with non-structural approaches mainly like awareness education, training and input supports with few plinths raising activity in the local community.
- ^x PIO (Project Implementation Officer) at Upazila is responsible for implementation of mainly structural project, who informed of following no scientific needs assessment and or trend analysis process for construction of embankment or Flood Shelters.
- ^{xi} The training aspects included disaster risk reduction and climate change adaptation in agriculture, alternative flood tolerant paddy cultivation, integrated cultivation of paddy and peanut, cattle fattening, seed preservation, integrated pest control and other income generation trainings.
- ^{xii} Mr. Shafiqul Islam, Agriculture Extension Officer of Harirampur Upazila informed that ‘grow more food’ is still their major objective. Mainstreaming Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) is not yet their concern. Agricultural Sector Policy yet not included DRR and CCA in the policy as to mainstream it with importance.
- ^{xiii} Mr. Saidul Dewan of Karmakerkandi Village- a Local Elite and a Canadian Immigrant performed rescue the severely flood affected people from the *Char* Islands with engine boats.
- ^{xiv} Persons included the earlier one *i.e.*, Mr. Saidul Dewan, the local Parliament Member and one Mr. Mohidur Rahman, Local Awami League leaders carried out the rescue of the affected people from the severely flood affected *char* islands.
- ^{xv} The supports included the old aged and widow allowances and vulnerable group feeding (VGF) for the extreme poor women. Creation of special work for the extreme poor for 60 or 90 days under safety net support in the monsoon season included road repairing and maintenance, re-excavation of canals, repairing and raising play grounds of schools, madrasas and local playgrounds.

- xvi HarirampurUpazila Development Report (2013-2014) stated of those supports. Of the sampled 25 households, Sheikh Mirza, Tamser Ali, Sultan Fakir, Abdul Mannaf from Daskandi and Habibur Rahman, Sheikh Shahjahan and RokhsanaKanchani from Karmakerkandi villages worked as laborers for the earth work under these program as informed by them.
- xvii Amongst supports provided by NGOs, Caritas Bangladesh provided 1,100 houses after the flood with food support in the entire HarirampurUpazila during the 1998 Flood. Caritas provided with the cost of construction of all houses. In 2004 flood, CARE Bangladesh provided 100 houses in the Upazila along with raising grounds of school/mosques and general playgrounds. Red Crescent also provided 30-32 tents (cost taka 28,000/each) in 2004. The other supports included mainly food items and household essentials like water purifying tablet, alum/(fitkiri), candle, matches, etc.

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