# REPORT ON
# COMMUNITY - BASED FLOOD MANAGEMENT PILOT PROGRAMME IN BANGLADESH

## INTRODUCTION

Floods are common in Bangladesh, where floodplains constitute about four-fifths of the landmass. The floodplains are formed by sedimentary deposits that are carried by three of the largest rivers of the world, e.g., the Ganges, the Brahmaputra and the Meghna (GBM), and their numerous tributaries and distributaries. The country is situated at the end of catchment area of the GBM river systems, occupying only about 7.5 percent of the combined catchment area. Since the small fraction of the catchment area has to manage drainage of over 92 percent water volume, over 80 percent of it being discharged in about five months period during monsoon, floods frequently hit and cause havoc in the deltaic plains. Impediments to drainage caused by both natural and man-made factors decelerate recession of floodwaters, thereby prolong duration of floods.

Bangladesh's low-lying areas use to get inundated by seasonal floods. From time immemorial, people living in the delta have been experiencing '*barsha*'. People have adapted to such annual events over the centuries and found ways to take advantage of it.

The magnitude of adverse impacts of floods becomes manifold when the effect of drainage congestion is combined with several other factors including excessive rainfall in the GBM basin, rise in river beds due to gradual sedimentation, development and mal-development practices concerning use of water resources, synchronisation of peak discharges in the major rivers, backwater effect of spring and neap tides, and other climatic factors. In 1998, the people of Bangladesh have experienced the worst-ever flood in the recorded history and suffered colossal losses and damages. The 1988 and 1998 floods in Bangladesh were the two most severe in living memory when over 60 percent of the total land area suffered flooding and about half the population was directly affected.

### Managing Floods with an IWRM Framework

Since flood has always been a recurring hazard, during the past four decades there have been deliberate attempts to control floods. These attempts, primarily undertaken by the authority in charge of water resource development, often considered structural measures with a narrow sectoral focus. There have been growing criticisms in the recent past that sub-sectoral approach to water development most often, if not always, impairs the growth of other water using sub-sectors. Therefore, the first imperative in IWRM is the pursuit of coordinated development of water resources and equitable allocation of water to all relevant sectors and sub-sectors, all in harmony avoiding conflicts and harnessing beneficial complementarily. This principle should be applied, as far as practicable, in flood management too. Because, prolonged stay in disastrous situation might make people accustomed to certain ways of life, which may cause the emergence of narrow self-interest on the part of some of them, especially among the socio-economically more powerful. For example, blocking of a culvert or outfall channel for holding back fish should not be allowed as it might aggravate the drainage problem and consequently flood depth. Numerous examples may be cited to demonstrate that pursuit of narrow benefit for some may be detrimental to the large segment of the affected community.

Besides, all non-structural and appropriate structural measures during and post-disaster phases should be undertaken with careful coordination to avert losses and improve benefits for all concerned. These measures relate to floodplain zoning, subsequent land-use, agriculture, fisheries, road communication, country boat operation, health, and sanitation including potable water supply, protection of infrastructure

etc. Such a holistic approach to integrated water/flood management should be infused among vulnerable communities through a series of training programmes for awareness raising, capacity building, enhanced preparedness and institutional strengthening of local government institutions (LGIs) and community-based organizations (CBOs).

**The project**

In order to enhance local capability to better cope with floods, involving local organizations, initiatives and LGIs, a pilot action research project on Community-based Approaches to Flood Management (CAFM) was launched on a pilot scale simultaneously in Bangladesh, India and Nepal in 2002 with support from WMO and Associated Programme on Flood Management (APFM) of Global Water Partnership (GWP). It has been executed by BUP of Bangladesh as regional coordinator, IRMED of India and JVS of Nepal.

While the goal of the study was to reduce flood vulnerability and mitigate adverse impacts, specific objectives included:

- facilitating local level institutions to engage in self-help activities;
- local level capacity building;
- needs assessment;
- co-ordination with external agencies (GO, NGO);
- formulation of practical self-help codes in the form of manuals;
- improvement of forecasting and warning etc.

The study was carried out in two locations each in Bangladesh and Nepal and in three locations in India.

**The Outcome of the Pilot Implementation in Bangladesh**

The action research was followed by pilot implementation phases. The conceptual research had been completed by the end of year 2003. The pilot implementation at the field level was approached during the flood of 2004 and subsequently in 2005. The BUP deployed its field supervisors and experts in the two locations to interact with communities extensively and intensively to cover the entire cycle or process. The process has been iterative. In every stage discussion was held with local stakeholders and necessary modifications carried out. The field testing of manuals has been successful in both the locations. With small investments, damages were minimized to the least compared to earlier severe floods.

The BUP provided material to the Water Supply Sub-Committee of the CFMC at the both the locations and the respective CFMC Sub-Committees prepared sachets with water purifying chemicals (e.g., lime, bleaching powder and alum) and distributed those to households where they had no other alternatives but to drink from contaminated sources. The 2004 was a severe flood year and there had been only 6 cases of diarrheal disease in the locality. Given the paucity of funding, it was considered to be a great success by the local CFMCs.

In each of the locations heights of about 10 tube wells have been increased by adding tubes and those have been made flood free. The simple solution allowed continued operation of the tube wells even under flood conditions and a large number of families received non-contaminated water from these tube wells. Following the flood period, the extra tubes were taken out and those have been handed over to the CFMCs.

In 2004, the marooned people of char (sand bar) no. 5 under the Nayanagar Union were provided with a boat. The entire cost of boat-making was borne by BUP. It helped maintain mobility of people, especially

that of the day labourers and school-going children and benefited a large number of people living in the char. Moreover, the boat was used for relocating marooned old people during the onrush of flood waters, while during non-flood period, the same boat was used a boatman to earn his livelihoods.

Inspired by the early success, the BUP Team provided two smaller boats in 2005 to two other boatmen, again under the supervision of the CFMC at Nayanagar Union. Similar to that provided in 2004, the two boats helped a large number of people to maintain their mobility during the monsoon period.

In 2004, about 100 poor farmers in each locations were given 50~100 grams of brinjal/green chilli seeds with a vision to restore their lost agricultural potential. Instead of paddy, those poor farmers could grow brinjal and chilli, which helped them earn livlihoods following the high flood. In 2005, it was a less severe flood year and the local people decided not to go for such crops and they did not require assistance for non-paddy crops.

In both the flood years, at least 2 Primary Schools in each Union have been identified by the local CFMCs as ‘flodd shelters’. The approach roads had been identified and duly marked. At the advent of flood waters in the locality, especially in 2004, local youths cleaned the premises and prepared the flood shelters. During 2004, one shelter was used by local people for a few days, while the other flood shelter could not be accessed because of its poor connectivity from the main local road. Before the 2005 monsoon season, the BUP Team and the CFMC in Palabandha decided to repair the access road to the apparently non-accessible flood shelter. The local day labourers came forward and took only 60% wages and helped repair the road by earth filling. The height of the access road seemed higher than the worst flood level recorded in the locality. This was how the non-accessible flood shelter has been made accessible by retrofitting and through local participation.

In the two locations, a total of 33 shanty houses were brought under flood proofing programme. Those houses belonged to the poorest of poor families and local people/CFMC identified the houses. The house-owners could not have avoided flood waters, as the plinth heights were far below the average flood level in the locality. At 50% subsidized cost, local people were engaged in earth filling of the households and the houses were rebuilt through local participation (neighbours helping each other). These 33 houses are now free from the risk of being flooded in a regular flood.

The CFMCs have identified roadsides where people could take shelter during a high flood. They also have identified fields where they could relocate their livestock if the houses were to be inundated. Fortunately, the 2005 monsoon was not a severe flood year and the local people did not require relocation of their livestock. In general, the combined efforts of BUP and CFMCs have generated interests among local people.