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No To Mud-Walls For Flood Control In Bangladesh

By

Saleem Samad
Ro-to Mud-Walls for Flood Control in Bangladesh

Saleen Samad

Environmental and natural disaster are nothing new in Bangladesh. For example, Bangladesh floods get headlines in the international media and wildly discussed among the north nations. But, floods have been annual events in the region and, to a certain degree, are essentially beneficial for the ecosystem, crops, fisheries and groundwater recharge.

However, depending on the areas flooded, the period of inundation and the flood levels, they can also be immensely destructive phenomenon. Within the past 35 years, the region comprising Bangladesh has experienced some 28 major floods. In August 1987 and September 1988, Bangladesh was ravaged by the worst floods in its history.

BIGGEST DELTA DRAIN: Three of South Asia’s great rivers - the Brahmaputra, the Ganges and the Meghna - have their confluence in Bangladesh, the world’s largest deltaic region. Only 5 percent of the catchment areas of these rivers through which most of the rainfall and snow melt of the Himalayan mountains are drained into the Bay of Bengal, are within Bangladesh itself.

To start with the implications of the unique geographical location and hydraulic environment of the nation. Bangladesh is a deltaic flood-plain situated on the lower riparian of many rivers, and at the critical confluence of the three mighty rivers— the Ganges-Padma, the Brahmaputra-Jamuna and the Meghna. The country is vulnerable to "hydro-meteorological adversaries with headwaters of almost 56 rivers stemming across the international border with the neighbouring India".

However, it may be said that it is the three major rivers of the country - the Padma-Brahmaputra (Jamuna)-Meghna that, travelling Tibet (China), Nepal and India, bring in a combined water-flow of 120 million hectares-metres coupled with local precipitation (the average annual rainfall is near 2,320 millimetres) of which eight percent is confined to the entire country to an estimated depth of 10 metre. Water spilled over the banks of the rivers coupled with local run-offs owing to monsoon rains normally inundates 3.25-3.90 millions hectares of land, and in extreme instances, the figure may well shoot up as many as 5.45 million hectares.

What is also important as the cause of flooding and inundation is the very magnitude of sediment-load that is transported by these rivers - it is as much as 1.7 to 2.4 billion tons, a phenomenon experienced by no river-system of the world.
The cause of flooding in Bangladesh is not of course, confined only to the physical peculiarities of the country’s three major rivers; the unique dynamics of the wind blowing over the country may also be taken into consideration to account for the swelling of waters. For example, Prof M. I. Chowdhury a geographer with Jahangirnagar University, Dhaka and an ecologist, explains that during the summer and monsoon seasons, the wind constantly blows from the sea towards the coast, and as a result, the water-masses of the sea are winnowed towards the coast, getting swollen under the stress of the wind.

And during the monsoon, the tidal flow contributes to further increase of the sea-level which, subsequently and inevitably, penetrates in land. During the tidal ebb, however, the water recedes to the sea again. But the sea-level never dips below the height that is created by the almost unflagging, unremitting blowing of the wind. Under the circumstances, the possibilities of flooding are not really precluded, but accelerated. It should be noted here that the flow of tides not only creates a barrier to the deluge to discharge, but also increases the flood-heights quite alarmingly. The professor is a bitter critique of human-interference for controlling flood.

FLOOD ACTION PLAN (FAP): After the two consecutive floods of 1987 and 1988, the donor countries which are dubbed as G-7 has set forth an agenda of flood control investment for the next five years. At a meeting held in London in December 1989, the World Bank presented its Action Plan For Flood Control to representatives of the United States, Japan and European governments and also UNDP and US AID who are being asked to bankroll a major new initiative. The World Bank’s action plan, unveiled at the London conference, emphasizes possibilities for controlled flooding, that is, structural engineering works to reduce flood damages without eliminating beneficial effects of flooding.

The action plan proposed by the donor countries and international agencies can be interpreted as a first step towards large-scale embankments. Steve Jones, an EEC adviser on the World Bank team, says about 180,000 people living on 20,000 hectares of the land would have to be taught new skills and found alternative employment. The French team of 30 engineers, worked with Bangladeshi experts and in five months produced a comprehensive pre-feasibility study for 4,000 km of high embankments (mud-walls) along the rivers to channel floodwater through the country to the Bay of Bengal, with $2 billion proposals which would take 20 or more years to implement.

According to Bangladesh officials the 26 donor countries and international agencies recognized the gravity of effects of the perennial flood problem and agreed on the need for additional resources outside the annual development programme for solutions to the flood disaster.
The Flood Action Plan (1990-1995) is the flood control and drainage works to meet the government's long-term flood control objectives. The plan will be carried out in parallel with agricultural development and a programme of non-structural measures such as flood forecasting, flood warning, flood preparedness and disaster management. It includes high priority and first-stage flood projects to be initiated in the next two or three years. In addition, it includes studies leading to further projects in the near term and subsequent plan periods, as well as supporting technical, socio-economic and environmental studies. The Bangladesh government estimates US$ 500 million is urgently required for initial flood control plan.

The four major rivers, the Brahmaputra, the Ganges, Padma and Meghna have been envisaged in the plan to raise 'mud walls' on the river banks as high as 25 feet in some places. It also mentions that the flood control schemes will have to be planned, designed and operated to preserve and enhance groundwater recharge and river transport. The comprehensive system of flood and drainage works included in the Action Plan will be designed to have favourable environmental impact. It seeks to remove the harmful effects on the people, crops, livestock and building of overbank flooding and of excess rainfall. At the same time, great care will be taken to ensure that embankments and other flood control works do not upset the ecological balance, and in particular do not hurt fisheries which is a major source of protein for the poor in Bangladesh. Particular attention will also be paid to the sociological implications of the programme to ensure that the people affected are appropriately involved.

The French pre-feasibility study notes that maintenance of existing embankments in Bangladesh has been 'badly neglected'. Repairs are typically delayed until 'the situation has already become critical'. This policy would not 'be viable any more' under the proposed project, the French study team continues, since an 'unexpected failure' of embankments would expose people living in protected areas to sudden floods of catastrophic proportions.

The US. commissioned study, advocates for the people to "live with the floods" to mitigate the agonies of severe floods coupled with continued emphasis upon dry-season irrigation. This report antagonized the government and were left out of the flood action plan.

The UNDP report, prepared jointly with the government of Bangladesh, proposes large-scale flood control works but is more cautious than the French plan. The UNDP report notes that controlled flooding offers several advantages over total flood prevention.
Andrew Jenkins, a British agricultural engineer with ten years of experience in Bangladesh water control projects, terms it "the most expensive 'sand castle' ever imagined". He said that the 1988 flood waters had overtopped all the existing embankments meant to protect land, man and property.

BANGLADESH EXPERTS REACTION TO FLOOD ACTION PLAN: A massive flood control plan for Bangladesh could drastically change the environment. Critics of the plan fear, however, that the resulting environmental modification will threaten the livelihoods of millions of poor farmers and fishermen.

A multi-disciplinary discussion forum at the Bangladesh Agricultural Research Council (BARC) expressed a strong note of reservation by an independent group of Bangladeshi scholars with regard to the impact of flood control and drainage (FCD) projects versus other possible interventions on agricultural and fisheries in the floodplains of Bangladesh. It proposes that the transformation of Bangladesh's floodplains from "wetlands" to "drylands" requires more informed scientific and public opinion.

The earlier mud-walls had experienced serious environmental problems and EIA of flood control embankments was not been done. The social scientists in their evaluation studies claim that the people inside the embankments have not been duly compensated and instead have created more landless. Water-logging inside the embankments is a common phenomenon. The water are polluted due to over-use of agro-chemicals and unfit for domestic as well as for bathing purpose.

There are several incidents of peoples movement in rural Bangladesh against the mud-walls which are make-believe protection from floods in the monsoon and irrigation waters in the dry season. A massive flood control plan for Bangladesh could drastically change the environment. Critics of the plan fear, however, that the resulting environmental modification will threaten the livelihoods of millions of poor farmers and fishermen.

The people living outside the embankments specially in the char-lands (sand-bars caused by silts and river-bank erosion) will be directly effected. Massive river-bank erosion and inundation during monsoon is feared which will bring misery to 2.5 million people, a group of Bangladeshi researchers estimates.

The Flood Action Plan mentions very briefly regarding the ceaseless river erosion in all the rivers of the country. This phenomenon has been termed as a 'silent disaster'. Annually 100,000 people are displaced due to river erosion and properties worth several million Taka are washed away by the rivers. Dr Moudud Elahi of River Erosion Research Institute at Jahangirnagar University says the rivers system often shift and change course after each flood as the rivers are young and unstable.
Dr M. M. Rahman, the executive vice president of BARC stress his point that there should be no rush into massive investments in embankment-centered flood control, without more precise consideration of other alternative ways of coping with variable flooding patterns. Public opinion in Bangladesh thus has the incontrovertible right to know and consider the relative costs and benefits of investment in embankments vis-à-vis alternative means. Dr Rahman lost his job, because the government felt that the statement in fact embarrassed the nation’s effort to control flood with the international agencies assistance.

Dr Shapan Adnan in his recent book titled 'Flood, People and the Environment' writes that the intellectual dissent within the country was harshly repressed and individual professionals and leaders of the scientific community were victimized in certain instances. He had been vocal in demanding an independent commission drawn from professionals from home and abroad for a critical reappraisal of the flood control projects including the Flood Action Plan. “This should be accompanied by an interim moratorium on the construction of flood protection programmes which are likely to have adverse impacts on the environment and common property resources.”

The embankment scheme presents extraordinary risks and technical problems. The proposed mud-wall embankments would be constructed in one of the world’s most earthquake-prone locations. A century earlier, an earthquake caused major shifts in the course of the Brahmaputra and Teesta rivers in northwestern Bangladesh. The glossy summary version of the study, distributed to political leaders and the public, does not mention earthquakes.

Steve Jones, a socio-economist and an independent consultant with the action plan claimed ‘change of attitude’ which is being misinterpreted by ‘radicals’. The experts working with the action plan have evolved guidelines for project evaluation, which is comprehensive having social and environment components.

Dr Shapan Adnan, a teacher of economics at the Chittagong University, who walked out of the Task Force on Flood Action Plan argues that FAP was never ratified by the legitimate parliament. Nor has it ever been intellectually defended against the grave and disturbing reservations expressed by concerned academicians and professionals from both home and abroad.

Dr Atiq Rahman, an environmental researcher with Bangladesh Centre for Advanced Studies (BCAS) reacts strongly and says the World Bank action plan contradicts itself. The government officials responsible for FAP deliberately ignored the opinion of the agencies related to flood, agriculture and even the environment. "It is not a F(1)ood Action Plan rather it is a Food Action Plan."
The environmental activist Dr Atiq was outspoken enough to tell the Bangladesh high officials that there is nobody in the government as pious as Moses who could stop the flow of water. Terming the action plan as anti-people he said "it is a military solution to the water problem."

Farhad Mazhar, a policy researcher with UBINIG and an environment activists mentioned that the action plan must be looked at politically. Firstly, we see donors pressure in pushing their concept of protecting Bangladesh from floods are ignoring the people's perception of flood. Secondly, the contracts for the mud-walls will be used for political gains of the party in power.

FLOOD ACTION PLAN ALTERNATIVE: The agricultural losses caused by flood do not justify the massive expenditures needed for 'total flood protection'. Indeed after the 1987 and 1988 severe floods, Bangladesh produced bumper rice harvest. For Bangladesh rice farmers, too little water is a greater threat than too much. Drought causes more damage to crops than flood.

An important benefit of the annual floods, only recently recognized by soil scientists, is that the blue-green algae which thrive in the floodwater play a key role in the fertility of the rice fields. If these source are eliminated by flood prevention, very large quantities of chemical fertilizers would be required to offset the loss. The role of silt carried by floodwater in maintaining soil fertility remains poorly understood, underscoring the need for much more scientific research before drastic intervention are contemplated.

Some 'soft measures' would be far less expensive and environmentally disruptive than the high 'mud walls' proposed by the French engineers. These includes the excavation of ponds for surface water storage and fish culture, local improvements in drainage, submersible embankments which check flooding only during the crucial early weeks of the rice crop, and of course a flood preparedness programme during the high and rapid flooding.

So far, the supposed beneficiaries of flood control in Bangladesh - the country's poor majority - have been virtually excluded from the decision-making process. The World Bank action plan concedes that past embankment projects have been undermined by deliberate cutting of embankment by disgruntled farmers and fishermen, and hence calls for 'closer involvement of the beneficiaries' and 'more cooperation among the farmers'.

CONCLUSION: Bangladesh would eventually have to decide whether to divert funds to flood projects from other sectors, such as industry or social services, as the amount would be needed for perpetual maintenance, which could cost $165 million annually. Besides these financial considerations, many social and environmental problems would have to be faced. Development economists of the country interprets that such annual expenditure is the 'long-term investment trap'.

-6-
Apart from the ecological disaster, the socio-economic impact has not been exhaustively mentioned in the flood action plan as well as in previous proposal of flood embankments. The proposed action plan if implemented, will bring disaster to more than 200,000 people will be rendered landless and homeless, because their lands will be taken away for ‘mud wall’ construction.

The adviser with World Bank mentions that “180,000 people living on 20,000 hectares of the land would have to be taught new skills and found alternative employment”. The critics have termed the statement as illogical, and said the ambitious ‘mud wall’ project will in fact uproot not only thousands of poor from their hearth and home, they will be forced to give up their ancestral profession - farming and fishing.

From previous incidents the farmers rendered landless due to ‘mud wall’ construction, still have in their minds the bitter experience of receiving compensation in several installments. With the compensation money they could never buy lands either inside the embankments or outside it. Some of them will trek into urban squatters. The luckiest will survive at the mercy of the landlords who will be richer, being benefited from the embankments.

Many of the critiques dub ‘Flood Action Plan’ as a big-money game which was designed on behalf of the Bangladesh Government by the donor countries and agencies during the autocratic Ershad’s regime. The so called experts of the donor agencies did not recognize the indigenous technologies of the rural people in flood mitigation initiatives. Instead blames the farmers for damaging the structures for their selfish gain.

The Environmental Impact Assessment (EIA) study of FAP is yet to be completed. The environmentalists, engineers, agriculturists and environmental activists have already rejected the idea. The Flood Plan Coordination Organization (FPCO) responsible for Flood Action Plan deliberately avoided any public debate on the FAP.

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