

A permanent solution to floods

NAZRUL ISLAM

THE Prime Minister has called for a permanent solution to Bangladesh's flood problem. She is right. The experience of this year's flood, following so soon after the severe flooding of 1998, has heightened the awareness about the need of a permanent solution to the problem. However the important question is: how?

Actually, each episode of severe flooding leads to such talk of permanent solution and indeed to some efforts for that. For example, the flood of 1954 led to the Krug Commission and the projects that it recommended. Similarly, the flood of 1988 led to the Flood Action Plan. The experience, however, shows that such efforts did not yield the expected solution. Instead, with time, we see aggravation of the problem and advent of new problems.

So it is quite likely that this year's flood will also lead to some talk and actions for a permanent solution. However, unless it is understood why the previous efforts have failed, and appropriate lessons are taken from that failure, the future efforts are also very likely to prove futile.

Failure of the Cordon Approach

The main reason why Bangladesh's flood control efforts have failed so far is that these were following a wrong approach. This is best called the Cordon Approach. Under this approach, flood plains are cordoned off from the neighbouring river channels through construction of solid embankments. The Dhaka - Narayanganj-Demra (DND) project, the Brahmaputra Right Hand Embankment, etc. are all examples of the Cordon Approach. The approach was initiated in Bangladesh by the Krug Commission in the fifties, and since then scores of large, medium, and small scale cordon projects have been constructed all over Bangladesh. The Greater Dhaka Embankment Project is also a Cordon Project geared to seal off Dhaka city from the neighbouring rivers.

The reason why the Cordon Approach has failed to solve Bangladesh's flood problem is rooted in simple physics. Given a certain volume of water, its height will depend on the area over which it is allowed to spread. As more cordons are built, less area is left for the monsoon river-water to spread over, and hence higher is the flood level in these areas. Ironically, cordons do not serve the populace within them either. In every rainy season they have to panic about possible breaches in the cordons and thereby of *Kiyaamat* like deluges. In addition, lands within the cordons become waterlogged, and people living there have to confront in streets not only the stagnant rainwater but often also sewage water. The experience of the DND project has been illustrating these unwarranted outcomes for many years now. However, powerful vested interests continue to push the country toward more cordons and thus to more floods, waterlogging, and collapse of the sewage system. The Greater Dhaka

Fifty years of experimentation with the Cordon Approach has been enough! It is now time to correct the course. Instead of confrontation, we need cohabitation with the rivers. Instead of building cordons and raising barriers, we need to open up as many avenues as possible for rivers to reach us when they need to do so. Instead of the Cordon Approach, we need to adopt the Open Approach.

Embankment Project will only amplify the DND problems on a much larger scale. So 2004 may be just the beginning for Dhaka's inhabitants living with sewage in the streets.

The Cordon Approach is bound to fail in Bangladesh because of what is called the Fallacy of Composition. What may be true for a part cannot be true for the whole! A small part of Bangladesh can cordon itself off, leaving the rest of the country to bear the full burden of the monsoon river water. But what if all parts of Bangladesh try to do the same! Where will all the water go? If Dhaka city is to be "protected" from rivers, why should not other cities and towns be similarly "protected?" And if all towns and cities are to be "protected," why not offer similar "protection" to rural areas? Why should rural people drown in water in order to let urban people remain dry? Are they any less citizens of Bangladesh?

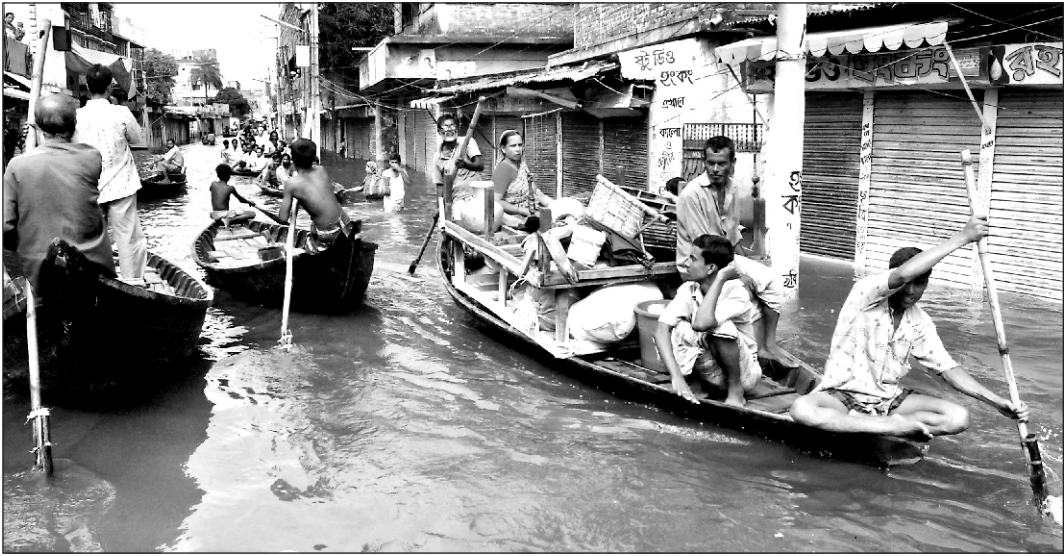
Thus the Cordon Approach is infeasible on technical grounds and it is indefensible on the grounds of social justice, both vertical and horizontal. The Cordon Approach is bound to generate conflicts. Such conflicts will arise between urban versus rural people, between one urban center

the solution

The permanent solution to Bangladesh's flood problem lies in the adoption of the Open Approach. This approach is rooted in the basic realisation that in a delta, like Bangladesh, the floodplains and river channels are inseparable parts of one organic whole system. It is therefore futile and counterproductive to forcibly separate the two. Instead, the floodplains should be kept open to the river channels and the connection between the two should be expanded and extended as much as possible. Only following this approach can we mitigate flood, avoid waterlogging, and benefit from the recharging and cleansing effects of regular river inundation. The Open Approach also allows more of monsoon river flow to be held in water bodies inside the floodplain, and this stored water can be used for irrigation in the dry season. It also enhances the fresh water fish stock potential and facilitates water navigation. The recharged water bodies of the floodplains help minimise the temperature and moisture imbalance between the rainy and dry seasons and thus help to have a more balanced seasonal weather

pattern and greenery throughout the year. It does not create any *Kiyaamat*-like deluge danger for some people while increasing flood intensity for others. The Open Approach makes all citizens of the country equal with respect to river flow and thus takes away a burgeoning source of conflict in society. Thus, while the Cordon Approach engenders conflict, the Open Approach facilitates social harmony.

It is to be noted that the Open Approach is what our ancestors followed in settling down and living in the great Bengal delta. They did not try to shun the rivers and raise cordons against them. Instead they tried to live with them and make the most of them. In doing so, they followed the time tested "dig-elevate-and-dwell" formula of living in a delta. They dug ponds, lakes, khals, etc. and used the earth obtained there from to elevate the ground level of their dwellings. Thus they allowed the rivers to reach their door steps without drowning them. They made the best use of the rivers as a source of soil nourishment, drainage, recharge of water bodies, fisheries, transportation, etc. To protect the townships from erosion,



Flooded neighbourhood, suffering humanity

versus another, between one village versus another, between one part of a city and another, etc. Already there are numerous press reports of such conflicts, often leading to bloodshed. With further moves along the Cordon Approach, such conflicts will spread and intensify. There is therefore no permanent solution to Bangladesh's flood problem following the Cordon Approach.

The Open Approach is

Making markets work for the poor ITDG's perspective

VEENA KHALEQUE

WORLD poverty and inequality continues to prevail, despite efforts to redress them. While some countries have been able to overcome them, most are still struggling, and there is a danger that many countries, which hitherto, enjoyed high standards of living, are likely to slip into poverty. The reasons are obvious gross disparity in wealth and asset between rich and poor countries -- wars, civil conflict, disease, natural disasters, food insecurity and malnourishment, global economic policies and systems have all contributed to this state of affairs.

Against this backdrop, ITDG, a relatively small UK-based international organisation, has dedicated itself to the task of addressing the technological needs of the poor to improve their livelihoods and root out poverty. Its work goes back more than three decades, to its founder Schumacher, a proponent of small-scale, appropriate and sustainable technological interventions as a solution to the increasing problems of the world, much of which have been created by humans.

In Bangladesh, ITDG has specifically focussed on making markets work for the poor. Any intervention, be it the application of new technology, availability of credit for investment, development of infrastructure has implications for enhancing productivity, livelihoods opportunities and other basic needs. For this to be effective and meaningful to the poor, it is important that issues of accessing market or making the necessary market linkages are adequately addressed.

There are hundreds and thousands, small-scale farmers, non-farm entrepreneurs, food processors, artisans, fisher-folks and other service providers in Bangladesh. Some market a small amount for generating cash income, others sell their entire produce on which their livelihoods depend wholly. They operate at low levels of skill, technology, capital and productivity, and are unorganised, facing markets that are under developed, while at the same encountering competition from large producers and importers, who are selling at cheaper prices. Lack of access and linkage with markets, often distorts prices with influential and exploitative middlemen taking advantage. These small scale producers hardly receive any government support, but have to face many impediments, and not to mention, an insecurity environment, dominated

and controlled by extortionists and other unauthorised rent seekers. The situation often leads to shortages, hoarding by middlemen and spiralling inflation, which result in further difficulties for ordinary consumers to access the basic commodities they need for survival.

What is ITDG-Bangladesh doing?

ITDG Bangladesh is implementing projects and programmes that primarily aim at promoting and building the capacity of NGO's, private sector organisations, government bodies and individuals to develop and implement financially viable and sustainable small enterprises. To undertake this, ITDG has developed some strategic interventions and activities, which are explained below:

First and foremost, it is attempting to develop a full understanding of the market and livelihood context, to address issues of regulatory, trade and economic policy constraints on small producers and the social, institutional and technological constraints, and service needs of this group. The need to develop in-depth understanding in this field is critical, as it will be able to throw light on key aspect of the issues involved, the relevant groups who have to be targeted and the necessary interventions that have to be put in place.

An essential element of small enterprises to thrive is to ensure that there is continuous access to relevant and improved extension and business services. To ensure this, ITDG is pursuing on building technological capabilities, delivering technical and market information, supporting producers groups and organisations, enabling greater access to up-to-date market intelligence, understanding and building supply chain linkages, and promoting market oriented supply chain linkages.

Through sustainable training, technology transfer and development, product diversification, information publication and ICTs, capacity-building interventions that help small producers to collaborate, understand and analyse market structure and trends and responding to it, on an ongoing basis is facilitated. All these initiatives are expected to demonstrate successful and proven approaches and methods of promoting market oriented small business enterprises, so that the poor can benefit from and improve their livelihoods.

they dug canals to take off the water pressure. Dhaka itself had numerous canals crisscrossing through it allowing free and even flow of river water and also ensuring quick drainage of water of local precipitation source. The inhabitants of Dhaka could see river water, but they did not have to wade through sewage water.

We need to revert back to this time-tested Open Approach to rivers. Rivers need not be seen as enemies from which we have to "protect" ourselves. We need to embrace the rivers as the mother of this land. We do not need engineers from the US or France to tell us what to do with our rivers. Coming from very different physiographic conditions, foreign engineers do not usually have an adequate understanding of the land and rivers of Bangladesh, which represents the worlds most active delta having the widest (and wildest) amplitude of water flow. They are therefore prone to give wrong advice. That's what happened with the Krug Commission. However fifty years have passed since this commission set Bangladesh on a wrong course. Fifty years of experimentation with the Cordon Approach has been enough! It is now time to correct the course. Instead of confrontation, we need cohabitation with the rivers. Instead of building cordons and raising barriers, we need to open up as many avenues as possible for rivers to reach us when they need to do so. Instead of the Cordon Approach, we need to adopt the Open Approach.

The adoption of the Open Approach does not mean inaction. Instead, implementation of this approach requires a huge effort. The rivers (the small and medium sized ones) and other surface water bodies generally need to be re-excavated. New canals and other surface water bodies need to be dug in order to prevent erosion at high value points and to extend the area over which monsoon river water can spread. The channels of the large rivers need to be stabilised, to the extent possible, through other means than constructing cordons. The existing solid embankments need to be transformed from cordons into embankments with enough breaks allowing easy flow of water on the two sides. All across the country sluice gates will be needed to hold the monsoon water collected in the re-excavated and newly excavated surface water bodies. If necessary, at places even new embankments may be constructed, not as cordons, but as means to regulate the timing and volume of water passage. Thus engineers of Bangladesh Water Board will still have a lot of work to do even after abandoning the Cordon Approach and adoption of the Open Approach.

The flood is an issue on which it is necessary and possible to have a national consensus. Different political parties should rise above partisan interests and try to forge a national unity on this vital issue. Let us rally the entire nation behind the Open Approach and deal with our rivers ourselves!

Nazrul Islam, Ph. D. is a Research Professor at ICSEAD and Vice Chairman of Bangladesh Pontesh Andolon (BAPA).

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