

## ENVIRONMENT

# Save Rivers, Save Bangladesh

Ainun Nishat, Professor Emeritus of BRAC University, and water resource and climate change specialist, talks to The Daily Star's Naznin Tithi about the destruction of rivers in Bangladesh, its implications and ways to reverse this trend.



AINUN NISHAT

**Why are the rivers dying?**

Rivers in the country, mainly the small and medium sized ones, are being filled up from bank-side; land is developed for various purposes, mainly to build shops, construction yards, depot of sand, cement or lumber, homesteads, etc. Such processes of encroachment of the river are controlled mostly by the politically powerful.

From many such rivers, water is pumped out during the lean season, either to cultivate paddy, onions, or oil seeds on the bed of the rivers. Water is also pumped to irrigate nearby plots, drying up the rivers. This has been done all over the country.

Although we get some paddy out of the process, the natural production of freshwater fish is totally destroyed. These rivers remain dry till April and May - the breeding period of fish. Therefore, fish migration/spawning is obstructed. The same happens to the *beels* and *jheels*. Many wetlands in Tangail, Sirajganj, Pabna, Faridpur, and Gopalganj, once rich habitats of aquatic life, are now devoid of fish.

Untreated liquid industrial effluents are being discharged into rivers indiscriminately, especially around urban areas, leaving these rivers biologically dead as the level of dissolved oxygen -- a must for the survival of fish and other aquatic animals -- becomes very low.

**Impact of encroachment and drying up of rivers**

Encroachment has become a serious issue. All across the country, rivers have been converted into a series of ponds through the construction of cross-bunds. Thus, many free-flowing rivers have now become a series of stagnant water bodies.

Rivers follow some rules of nature. If the width of a river is reduced by encroachment, it may have an impact on the discharge it normally carries; natural volume of flow may reduce; as a response, the depth of the river lessens, thus permanently shrinking the river in terms of size and flow volume. If the river is a part of a network of streams, the flow will be diverted to some other channel. If the river is unconnected to any network, then floods will be generated in case of slightly high rainfall.

Many of our flood control projects have contributed to the dying of rivers and wetlands. The connectivity between

the rivers, wetlands and floodplains has been jeopardised because of improper functioning of the sluices or regulators. We need these appurtenant structures for effective flood management. They should be designed and operated in such a way that the wetlands remain connected to river networks and the ecosystem remains unharmed.

When we talk about rivers, we always think about mega-rivers like the Brahmaputra or the Padma which have huge flows. Large rivers are left undisturbed by locals, as the height through which water is to be pumped is rather high. Local people use 'low lift pumps', a technology that is readily available, that leads to the drying up of very small rivers.

**Illegal encroachment upon the Buriganga riverbank.****Industrial pollution and the quality of water**

Most of our industries do not have Effluent Treatment Plants (ETPs) though operation of such ETPs has been made mandatory by law. If these ETPs are properly installed and operated, industrial pollution could be contained. But who is going to stop the state which is itself a big polluter? Unlike every major city in the world, the storm sewer line and the domestic sewer line are all connected in Dhaka. Therefore, I would say that WASA is the major polluter of Buriganga.

When it flows naturally, every river would have dissolved oxygen that helps fish and other aquatic animals to survive. If the quantum of dissolved oxygen goes lower than 4 ppt, aquatic life cannot survive. In Buriganga, the dissolved oxygen level comes down to as low as zero in the dry season and therefore, no fish can survive at that time of the year.

When the level of pollution gets very high in Buriganga and Shitalakhya, the treatment of water (in order to turn it into drinking water) becomes very difficult.

**Can Buriganga be cleaned?**

I am often asked if the water quality of Buriganga can be restored. My answer is always in the affirmative. One hundred years ago, the condition of River Thames or the Clyde or the Rhine was as bad as the condition of the Buriganga today. But through proper enforcement of the law, it was possible to clean the effluents and bring the rivers to normal condition. We have the necessary laws, rules and regulations. We have the responsibility for the implementation of such laws, rules and regulations. If the government so

major works.

However, if we go for properly planned and designed 'river management' projects that include bank revetment, 'river training infrastructures' and plans to dredge in appropriate reaches, then we may find the right solutions. Again, this exercise should be carried out in a phased manner so as to enable the 'observe and learn' approach. Dredging of small rivers, however, poses much less of a challenge.

**Laws for river protection**

Article 18(A) of our Constitution clearly states: "The State shall endeavour to protect and improve the environment and to preserve and safeguard the natural resources, bio-diversity, wetlands, forests and wild life for the present and future citizens." The State has enacted a number of laws including Bangladesh Water Act 2013, National River Protection Commission Act, 2013, and The Environment Conservation Act, 1995 (upgraded in 2010) which have provisions for the protection of the environment, and control and mitigation of environmental pollution. In 1997, the State had produced the rules and regulations for environment conservation and promulgated the Environmental Quality Standard. Bangladesh is among the few countries that have a separate court on environment. So if a river is polluted or encroached upon, those affected by it should be able to go to court seeking remedial measures. However, I am not sure if the legal procedures are fully operational.

**Political commitment is a must**

We have the appropriate constitutional provisions and necessary laws for taking action against encroachers and polluters. I believe that it is possible to do so if the administration is fully committed to save our rivers. The governments of India and China are cleaning up their rivers; they are using modern technology such as Remote Sensing and Satellite Monitoring to monitor the conditions of the rivers. Developed countries are using proper monitoring mechanisms of maintaining the acceptable level of river water quality. I believe that we have the capacity to restore our rivers.

**"Save Buriganga, Save Dhaka"**

Raising public awareness is of utmost importance. When *The Daily Star* raised the slogan, "Save Buriganga, Save Dhaka," we suggested that it be changed to "Save Rivers, Save Bangladesh." This was before the insertion of Article 18(A) in our Constitution.

I believe that if we raise our voice for the right cause and tackle problems with technically sustainable solutions, policymakers will eventually respond.

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