

Water: Life and death



MD. ASADULLAH KHAN

To us, water is the most precious substance, the substance from which all life upon the earth has sprung and continues to depend. If we have no clean, drinkable water, we are doomed. This is exactly what has happened in the country of late. With flood water inundating almost one third of the country affecting the lives of about 20 million people and surface water getting seriously contaminated by sewage flow from open outlets, the country now faces an environmental disaster that threatens public health in the flood affected areas. As flood water recedes from different parts of the country, the incidence of diarrhoea and even cholera has shot up to an astounding number. With about one thousand patients getting admitted to the Icdhrb hospital at Dhaka almost on a daily basis, the issue of drinking water pollution has featured most prominently.

While explaining the cause of such huge number of cases, doctors at the Icdhrb hospital pointed their fingers at the WASA water supplies being contaminated severely which the WASA authorities have consistently denied. Undeniably true, earlier studies indicated that the country's rivers were among the most polluted and contained ten times as many bacteria from human waste as waterways in any other country. Now with the sewage flow from open outlets containing human excreta compounding the water pollution crisis, the lives and livelihoods of millions are at risk and the nightmare has only just begun.

In the backdrop of the crisis now mounting up with abundance of water because of the flood, Dhaka and its periphery on the other hand routinely lives through water cuts from January to June every year. Rural Bangladesh, yet to be acquainted with the tap water culture is worse off as ground water levels have plunged in most of the districts.

Like so many of the earth's

The present government that has brought about many reforms in different sectors, may now be considering the modalities of raising external and internal funds on the lines of the World Bank aided programme for integrated countrywide tank and lake development for irrigation, ecological balance and aesthetic quality of the cities and countryside. Such development work can fruitfully be done when governmental efforts combine with individual civic initiatives.

bounty, water is unevenly distributed. Water covers 75 percent of the Earth's surface -- 97.5 percent of that is salty and only 2.5 percent is fresh water. Icecaps and glaciers hold 74 percent of the world's freshwater, almost all the rest is in deep groundwater aquifers, or locked in soils as moisture or permafrost. Only 0.3 percent of the world's freshwater is found in rivers and lakes. Less than 1 percent of the world's surface or below-ground freshwater is accessible for human use. At the dawn of the new millennium, more than

one billion people do not have access to safe drinking water, and 3.4 million die each year from water related diseases. Within the next 20 years, half the world's population could have trouble finding enough fresh water for drinking and irrigation. Currently over 80 countries, representing 40 percent of the world's people are subject to serious water shortages. Conditions may get worse as in the next few years as populations grow and as global warming disrupts rainfall patterns. Part of Asia faces the greatest

threat. Over 90 percent of the region's population is experiencing severe water stress, with water consumption exceeding 10 percent of renewable freshwater resources. In Bangladesh and adjoining areas, people living without access to adequate water and sanitation are the poorest and most vulnerable. The problem is particularly severe in remote rural areas and rapidly growing urban areas. As much as 90 percent of waste water in developing countries like ours is discharged into rivers and streams. Water-borne diseases are responsible for 80 percent of illnesses and deaths in the developing world, killing a child every eight seconds.

It is comforting to learn that per capita residential use in Europe runs as high as about 200 litres. This is not surprising in view of the fact that European commission made water protection and sustainable management one of the priorities of its environmental and research goals. In contrast, Bangladesh situation, especially the situation in big cities like Dhaka, Narayanganj, Chittagong, Khulna and Rajshahi in respect of water hazard and contamination is appalling. Factories in these big cities and also the city dwellers happily discharge harmful chemicals and toxic wastes into rivers while growing need for food induces farmers to use agrochemicals, insecticides and pesticides that further pollute the river water. Mentionably, ground water is the main source of supply through Deep Tube Well (DTW) either in the cities or for irrigation in rural areas. But the yearly recharge of the aquifer is less than the abstraction. Growing dependence on ground water for these needs is lowering the water table, making arsenic contamination the most pervasive health hazard the country has been experiencing now.

Rivers in developed countries because of increased awareness and education of the citizenry have become much cleaner over the last two decades. On the other hand rivers in the poorest developing countries, by contrast have shown marked falls in levels of dissolved oxygen $\frac{1}{4}$ a key indicator of increased pollution by sewage.

The first signs of population boom and water stress were visible in the 1980s, but the water management board at that time focused on the immediate -- tapping groundwater resources in the whole country. Expectedly, the pressure on ground water has shown up. And as basins and rivers dry up, it also threatens the country's food security, because most of our freshwater is used to grow food. While the daily drinking water needs of every person is approximately four litres, between 2000 and 5000 litres of water are needed to produce an individual's food requirements. More importantly, agriculture accounts for over 80 percent of world water consumption. It is estimated that between 14 and 17 percent more water will be needed for irrigation by 2030 to feed the world's growing population.

With the level of groundwater dropping at an annual rate of nearly 15 feet as WASA sources say, supply of water would be extremely scarce within a few years. Experts argue that over-extraction, lack of retention points for recharging groundwater, pollution in the waterways adjacent to the cities and towns, and a natural impermeable clay layer have combined to further push the level down to an unreachable depth of the earth's crust. Water is being mined and pumps are being sunk three to six feet deeper every year.

Dhaka WASA supplies roughly 120 crore litres from its deep tube-wells against its daily requirement of 160 litres while its surface water treatment plants at Lalbagh and Godnail provides less than five crore litres. It is now trying to strike a balance between surface and underground water at least in the city. But that idea seems to be building castles in the air because Dhaka city is increasingly becoming "built up" with rapid depletion of open spaces, wetlands, canals and rivers and an annual growth of about eight lakh people leaving no space for the ground water to be recharged. With about 97 percent of the city's water supply coming from underground source, there is an imperative need to use surface water to have that balance. Because once a break is applied to



extraction, groundwater would automatically get recharged. But how can that be achieved?

With water of the Buriganga and the Shitalakhya being polluted at an alarming rate, experts are not sure if it could be treated at any of the plants. The Hon'ble Adviser in charge of the Ministry of LGED has been telling in meetings and seminars that efforts are underway to bring water from the river Jamuna to meet Dhaka city's water gap. Sensible citizenry feel that the cash starved Dhaka WASA can ill-afford the cost of such an endeavour. Shockingly, conservation has not figured in the government's scheme of things either during the past regime or even now when the government is run by a band of dedicated people with no political motive or agenda.

Leaving aside the Buriganga and the Shitalakhya that now symbolise little life, water in the Gulshan-Baridhara and Uttara lakes is now a receptacle of human wastes, raw sewage and toxic industrial effluents from various industrial units. According to a study conducted by the DoE in the recent past, these lakes' water carries a bacteria count of 1200 in place 200 or less that is considered to be a tolerable count in water bodies. Uttara Lake, once a vast transparent water body stretching from one end of sector no.3 to sector no.11 at least 5 km in length and 400 m wide is now a stagnant pool of polluted water because of

indiscriminate dumping of household garbage, wastes and raw sewage from the bustling residential buildings all around. Its width and length have shrunk with construction going apace and people coming in to settle.

Known to be the barometer of the ecological health of a city, water bodies, other than being sources of surface water, determine its climate. As experts explain, they help control humidity and temperature levels, recharge aquifers and also act as instruments of rainwater harvesting. With a little initiative, commitment and imagination these lakes could be formed into a hydrological chain and during monsoon, surplus water from the upstream lake could be flowed into the next lake.

The process of cleaning and recharging may undoubtedly be a long drawn one. The first step is to identify the sources and entry points of sewage discharge into the lakes and waterbodies and divert it to suitable place for safe disposal. It is worth mentioning here that under Indian government's National lake conservation project, the LDA (Lake Development Authority) has cleaned up in just about a year 12 odd lakes -- one of Bangalore's biggest lakes -- the 50 hectare Ulsoor -- was drained out and sewage lines were blocked. With funds from the donor agencies other than the government itself, Bangalore Water Supply and Sewerage Board started laying

pipes leading to the treatment plant. Now catch-water drains have to be built to collect water run-off. That done, water has to be purified using hydrophyllic plants that absorb dissolved pollutants and toxins.

What happened in Bangalore was that in 1995 a sudden rise in the death of freshwater fish in lakes like Sankey and Lalbagh sounded an alarm and the government then took comprehensive plan for restoration of such lakes. Unhappily in our country mass death of fish in the Baridhara-Gulshan lake in 2002 and also in recent time could not sensitize much the administration that other than being an aesthetic and ecological utility the lakes could be a vast source of poor man's protein.

Like the one that our neighbouring country had taken up, the present caretaker government that has brought about many reforms in different sectors, may now be considering the modalities of raising external and internal funds on the lines of the World Bank aided programme for integrated countrywide tank and lake development for irrigation, ecological balance and aesthetic quality of the cities and countryside. Such development work can fruitfully be done when governmental efforts combine with individual civic initiatives.

Md. Asadullah Khan is a former teacher of physics and Controller of Examinations, BUET.

Modhupur: The banana war

After a pause of few months, the Forest Department has resumed its war against banana in Modhupur. The solution that the FD is willing to give after removing banana makes Garos worried. Eminent environment activist Philip Gain reports:

THE war against "illegal" banana plantation in the Modhupur sal forest has been resumed from August 1, 2007. Throughout August, the Forest Department (FD), with support of the security personnel, has engaged hundreds of non-local labourers everyday in chopping down the banana gardens and planting acacia.

The Forest Department (FD) carried out the first round of its war against banana on 13, 14, 15 and 22 February, and 7 March. After 7 March, the government gave time to the banana cultivators and advised them to voluntarily stop banana plantation on the forestland after the harvest of their standing crops.

In a meeting on 9 March, the forest and environment adviser Dr. C.S. Karim, formed a 12-member committee (two chairmen of two union councils in forest area were later co-opted to the committee) including the Garos and sought suggestions from the committee as regards eco-park, protection of sal forest, land use practices, etc.

On the day of the first meeting of the committee, on 18 March, the alleged killing of Chalesh Ritchel took place. Four meetings of the committee took place ever since. However, none of the members from among the Garos and NGOs got minutes or report of any meeting.

A high official in the Forest Department (FD) said on 17 August, "Illegal banana gardens are being cut again and plantation is being carried out on land where illegal banana gardens were cut months ago. Such land amounts to 3,600 acres. Our target of chopping banana plantation this year will be fulfilled by the end of August."

"In our current raid against banana plantation the main targets are the Bengalis who have engaged the Garos in illegal cultivation on the forestland. We will not spare any marauder on the forestland," warned the FD official. "We want the Adivasis to participate in forestry programmes and stay protected. A Garo household participating in the forestry will get one ha of land and share benefits from plantation. We are yet to work out the details of the participation mechanism. We will consider the suggestions from the committee and experts in this regard."

In the war against banana, the Garos find themselves in an inept

condition. In the recent years, they have been indeed got heavily engaged in banana plantation that brings them quick and handsome cash. However, the top players behind the banana cultivation are the Bengali traders who brought the idea of banana cultivation on a massive scale. They also provided cash. The Garos in most of the forest villages in Modhupur even replaced their age-old gardens of pineapple, jackfruits, lemon, etc. with banana. Now they find that hope for big and quick cash banana further complicates their land questions.

With typical vegetation disappearing with the invasion of banana, the Garos are in real difficult situation in establishing their traditional rights over the high land. They normally have title deeds for the low land (baid) but in most cases, they do not have title deeds for the highland they have been occupying from time immemorial. These highlands with native vegetation were gradually declared as protected or reserved at different times after the abolition of the Zamindari system.

The Garo representatives on the committee to resolve the problem in the Modhupur sal forest say they were surprised when the raid against banana resumed on 1 August. As the days passed by the

intensity of raid increased and the number of hired labourers raised.

To give an idea how the daily raid against banana takes place let us see the picture of one day. On 17 August, approximately 500 labourers, with dao (homemade chopper) and spade in hands swooped on banana gardens in Atashbari-Nayanpur area. The security personnel were present on the spot. Present on the spot were also officials of the Forest Department and administration. Few hundred Garos, most of them women, assembled and helplessly appealed to the government officials to spare the banana gardens. Their appeal was ignored and the banana plants in the area were felled.

On the same day, a similar group of hired labourers was reportedly engaged in another part of the forest to clear banana gardens. The top cats behind the banana plantation, the Bengali traders who make heavy investment in banana, remained largely unseen.

The government officials were telling the Garos that they were recovering forestland and planting trees with the consent of their leaders on the committee. However, one Garo leader on the committee refuted the claim. "The FD has not followed our decisions

about planting trees in place of banana gardens," said the leader. He complained that he has not received any reports of any of the meetings although he has asked for it repeatedly. "We agreed to plant trees ourselves; not the way it is being done now". He also complained that no village demarcation or survey was conducted.

A high official in the FD says it is because of dearth of saplings of local species that acacia is being planted. He claims some local species have also been planted. "From next year we will plant more local species," says the FD official.

Bringing back the forest: A tough task

Ideally, the forest of native species, especially sal, must be established after the termination of banana plants. Why? Because the exotic species -- acacia and eucalyptus (planting of this alien was stopped after the first rotation) -- in particular planted under "social forestry" in Modhupur have proven to be politically and ecologically mistaken. The "social forestry" itself has been blamed to be a sugarcroft for plantation.

The Garos who are seemingly innocent victims of commercial banana plantation, now find that after chopping down of banana plants acacia is being planted. The environmentalists are also very unhappy. Although some FD officials would call acacia a "soldier tree" meaning it can survive tough climate condition, this alien is

perhaps good for fuelwood but cannot be a replacement for the native sal or other local species. The ADB and World Bank that funded massive-scale plantation of this alien species have withdrawn from the forestry sector altogether leaving the Forest Department and other stakeholders on a hotspot, very difficult to manage.

Therefore, while the government officials keep telling the Garos that they are out there to protect them and bring back the native vegetation, the first people of the forest who have the knowledge of traditional forest management see no direction and become even more worried.

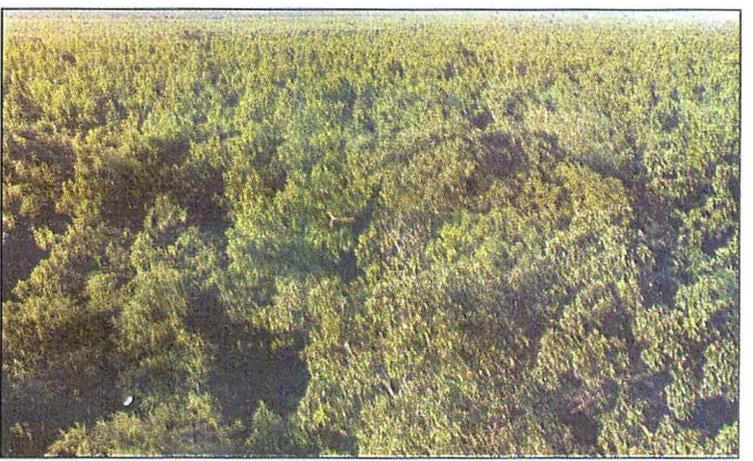
The participation of the Garos in afforestation proposed by the FD is also not welcome by the Garos. They have the bitter experience of woodlot and agroforestry that have rapidly eaten up the native forests. Almost the same model the FD talks about brings no better option for them.

Invasion by banana

Many see the massive-scale banana plantation on the forestland as a multiplier effect of manmade "forests" among other things. The idea of this so-called manmade forest sugarcroft as "social forestry" came along the loans from the concessional window of the Asian Development Bank. In Modhupur monoculture plantation of primarily exotic acacia and eucalyptus took place under two ADB funded projects -- Thana Afforestation and Nursery Development Project (TANDP) and Forestry Sector Project (FSP). TANDP with two major components -- woodlot and agroforestry -- started in 1989 and ended in 1995. When monoculture started with the ADB loan, the local people were appalled to see that the native sal coppices were indiscriminately cut to prepare grounds for the manmade forests.

Ten years later people found most of the plantation stolen or officially harvested. The land became vacant, perfect ground for invasion by banana and papaya plantation. Pineapple was already there. Outsiders invaded the forestland for large-scale banana and papaya plantation. They lured the Garos even to convert their home gardens into banana gardens. This process started largely due to ADB's investment strategies in the forestry sector, it is generally believed.

After the first rotation of plantation, the government awaited another loan from ADB for the



Part of the Modhupur National Park. This is the forest many would like to see throughout Modhupur.

Forestry Sector Project (FSP). The project that was supposed to start in 1997 was much delayed. In the meantime, ADB made Bangladesh Government to amend the Forest Act of 1927 in favor "social forestry" that is essentially plantation. The delay caused the forestland to remain vacant for a longer period. The banana, papaya and pineapple cultivators took control of the forestland and spoiled it thoroughly in a short period. The allegation that the corrupt FD officials turned out to be accomplices for extra cash is not unfounded.

For the last few years, the Modhupur Salbon (sal forest) has gained an infamous image as Modhupur Kalabon (banana forest). According to a top FD source, the sal patches in the Modhupur survive only on 6,000 acres today (2007). According to the DFO of Tangail (in 2004) who is now hiding with corruption charges, out of 46,000 acres in Tangail part of the Modhupur sal forests 25,000 acres had gone into illegal possession and the FD controlled only 9,000 acres by 2004.

How come such massive-scale grabbing of the forestland occurred? Why did the FD [that now takes advantage of the state of emergency in recovering the forestland] stay passive? These questions need to be seriously addressed in understanding what have gone wrong in Modhupur.

The FD has apparently targeted 3,600 acres of forestland for recovery and plantation this year. What

about the bigger chunks of the forestland illegally grabbed? There are many evidences how the forestland given out for plantation has been abused by the banana and papaya cultivators. There are indeed many papaya gardens illegally established on the forestland. In the war against banana, papaya plantations also illegally established on the forestland, remain unattended for now.

However, a top FD official says that they will deal with the illegal papaya plantation at a later stage.

What really need to be done?

A look over the protected parts of the Modhupur National Park from the two towers recently built in Dokhoola and Lohoria gives us a ray of hope. The monsoon greenery of the native vegetation is absolute. This is what we want gradually expanded in other parts within the forest boundaries. For that, here are some suggestions to ponder.

Thorough inventories:

Inventories as regards exactly how much of the Modhupur sal forest is left today and how much of the forestland has been illegally occupied can provide handles for right direction in saving native patches and expanding them. It is not just the banana, an inventory of papaya and pineapple gardens need to be done. A complete list of the marauders on the forestland should be made public. Then the crusade against them will become

transparent and effective with public support. Different stakeholders, environmentalists, and experts should participate in inventory exercise without fear.

Caution about choice of exotic species: One harsh reality about forests is that man can plant trees, but cannot create a native forest. In the Modhupur sal forest area, native vegetation had been cleared for planting exotic ones such as rubber, acacia and eucalyptus. External resources played an important role in it. While eucalyptus plantation was stopped after the first rotation of plantation, acacia continued in the second rotation that started around 2002. The invasive acacia remains to be a dominant species in plantation to date. For the sake of creating some forests, which is difficult indeed, local species -- sal and others -- must be preferred. In plantation efforts, seeds of local species must be fully utilised from the next season. The forest professionals including those in the Forest Department say, "complex" or mixed plantation must be preferred to "simple" or monoculture plantation.

Protection of Adivasis: The Garos and the Koch are the original inhabitants of the Modhupur forest. Their traditional rights over highland need to be recognised. What the authority says overtly about their protection and that of the forest, must be materialised concretely. The Adivasi communities cannot survive without state protection. If they are protected, the forests are better managed.



Banana garden on the forestland after felling.

PHOTO: PHILIP GAIN