ARSENIC

What Went Wrong And Why?

It is a disaster that could have been prevented. Millions of people in Bangladesh have been poisoned by arsenic contamination of groundwater. But, as Naimul Huq finds out, few are prepared to stand up and take the blame.

BANGLADESH faces its biggest environmental disaster — contamination of groundwater by arsenic — that has put millions of lives at risk while hundreds have already died of its poisoning.

But who is responsible for offering this poison in the form of arsenic contaminated water to the people for all these years, since we moved away from use of surface water to groundwater from hand-pumped tubewells for drinking and cooking?

During its four-month investigation, The Daily Star talked to government officials concerned and the UN bodies to find out what prompted the government to declare the issue a 'national disaster' in 1994-95.

The chief engineer of the Department of Public Health Engineering (DPHE), the government agency responsible for ensuring supply of drinking water to unserved and under-served regions, said, "Until 1989 we did not have any capacity to test quality of water properly. We had only one laboratory but it was not testing for arsenic."

Asked why not, he said, "Arsenic test is not a routine one, so we never looked for arsenic in drinking water. Usually we look for iron, chlorine, calcium and bicarbonates in drinking water."

Did the DPHE engineers know about the consequences of presence of arsenic in groundwater? "No. None of my engineers even suspected that arsenic could be found in groundwater," he replied.

Was it DPHE's responsibility to check presence of arsenic and warn the people? "We don't deal with other aspects of health. It is the Department of Environment that is supposed to deal with such warnings," he said.

Who is to be blamed for offering poison to the people without checking for harmful elements in drinking water? He said, "The circumstances are to be blamed for the consequences."

The capacity of the DPHE labs is very limited, which is why DPHE was unable to warn people about the hazardous effect of 'slow poisoning'.

DPHE suffers from shortage of equipment and manpower. Currently each of the zonal labs is capable of conducting analysis of only 200 water samples per month. This means DHPE has a capacity to analyse only 800 samples per month instead of the current requirement of about 6,000 sample tests.

Because DPHE has no provision for certain equipment it was not able to increase its water testing capacity. It still carries out data entry work manually.

Despite its handicap DPHE relies on its 19,000 field level water sample tests to design installation of new TWs while Unicef, that supports the DPHE activities, questions accuracy and reliability of DPHE's water sample test results. A Unicef spokesman said: "We do agree DPHE needs further strengthening to upgrade its quality of water tests. In such circumstances we are considering to opt for a third 'agent' which would be dependable for water quality tests."

Unicef that promises 'safe' drinking water by supporting DPHE's tubewell installation programmes partially takes the blame for having done the colossal damage to the people saying: "It is not Unicef alone which is responsible for the disaster."

Unicef's water and sanitation programme chief Dipak Bhajracharya, in an interview with The Daily Star recently, said, "I admit arsenic accumulation in the bodies of the patients is a long-term issue and we cannot deny the fact that we are partially responsible for the consequences."

Why did the Unicef not decide to investigate presence of arsenic in TW water despite positive survey results from bordering West Bengal? Bhajracharya said, "Geologists did not opt for such tests because there were no evidence of arsenic in the groundwater."

Out of the 19000 surveyed about 4000 TW pumped out contaminated water (>0.01parts per million).

The donor agencies like Unicef, the largest provider of aid for installing tubewells to improve the health of children and mothers, the World Bank and a number of other partners like UNDP, SDC and DANIDA, also showed grave concern at the scale of this disaster.

What they never unveiled was the reality of poisoning millions of human beings through their aid and support. Even the government failed to identify the calamity until an alarm came from the other side of the border.

The most puzzling thing about the whole issue is that till now no one knows precisely what causes the contamination.

According to a survey conducted by the Dhaka Community Hospital (DCH) hair, nail and skin samples taken from different villages showed very high level of arsenic toxicity. About 98 per cent nail samples out of 2,346 showed traces of arsenic more than the toxic level in human body while 89 per cent out of 2,342 hair samples showed similar symptoms.

The number of patients officially identified so far is 2,400. Since only a small area (200 villages) has been surveyed for patients we are not aware of the actual number suffering from the 'slow poisoning' in the country.

However, experts say the actual number of patients suffering from this poisoning could be in millions. "The number of people who are suffering from the 'slow poisoning' could be very frightening," said a physician.

Dr Quazi Quamruzzaman, chairman of the Dhaka Community Hospital Trust, is credited for his contribution towards first independent assessment of the affected tubewells and subsequently sending warning to the government on the grave consequences of arsenic poisoning. In an interview with The Daily Star, he said, "Hundreds and thousands of people could be suffering from arsenic toxicity. The policy makers in the donor agencies now disown designing the concept of drawing drinking water from underground sources decades ago. They had recommended to the government the option of groundwater without considering the resource of surface water."

Although late, measures have been initiated by the World Bank, UN agencies and the government to assess the cause of the contamination and identify the number of tubewells in the affected areas and the number of patients.

According to the director general of the Department of Environment, the biggest environmental disaster is not a headache of the department.

"We have not been given the responsibility to look into this problem," DOE director General told The Daily Star.

Dr Zaman, referring to this year's longest ever flood in the country said, "How many people died of diarrhoea during the flood? The people in the rural areas survived drinking treated surface water and there is not much of a hardship."

According to an official survey, of the 64 districts of Bangladesh, 42 are badly affected by arsenic contamination. Water samples tested from these districts show presence of higher level of arsenic than the WHO recommended value of 0.05 milligram per litre or 50 parts per billion.

Studies are underway by one British geological survey team to find out the exact cause of the contamination.

In 1996 the government formed the National Steering Committee headed by the then health minister to conduct investigations into the crisis.

However, Dr Zaman of DCH says, "There are millions of people exposed to contaminated water. Wherever you go, out of ten tests more than half show arsenic at more than the permissible level. What does it tell us then?"

The Problem

ACCORDING to experts, prediction that the geo-physical structure of certain areas of Bangladesh makes its groundwater vulnerable to arsenic contamination came a long time back. Tests showed that tubewells were the source of the poisoning. Reports on arsenic contamination were made as early as 1985 but no action was taken.

In the early sixties the donor agencies like the World Bank and Unicef suggested to the government that use of surface water to groundwater should be stopped to avoid extremely high rate of deaths from diarrhoeic infection. Massive social movement followed to convince people into using tubewell water. It was a strange thing to many and they refused to accept the method but soon the users realised that it was the only choice.

Many non-government organisations were involved to mobilise the new concept — drink water from tubewells.

By late seventies, due to successful social mobilisation each village had at least two tubewells, both at private and public initiative to offer 'safe' drinking water but the tragedy was no one objected and worse, none even imagined that the groundwater could contain harmful elements.

According to experiences of a number of NGOs it would be very difficult to convince people into going back to use of surface water again.

Donors' Response

The World Bank (WB) has recently reached an agreement with the government to execute a proposed fifteen-year arsenic mitigation water supply project which is already being implemented.

The prime objective of the project will be to provide emergency relief for the affected people. It will involve extensive survey of tubewells water and implementation of long-term sustainable solutions for the much-talked-about problem of arsenic contamination of underground water level.

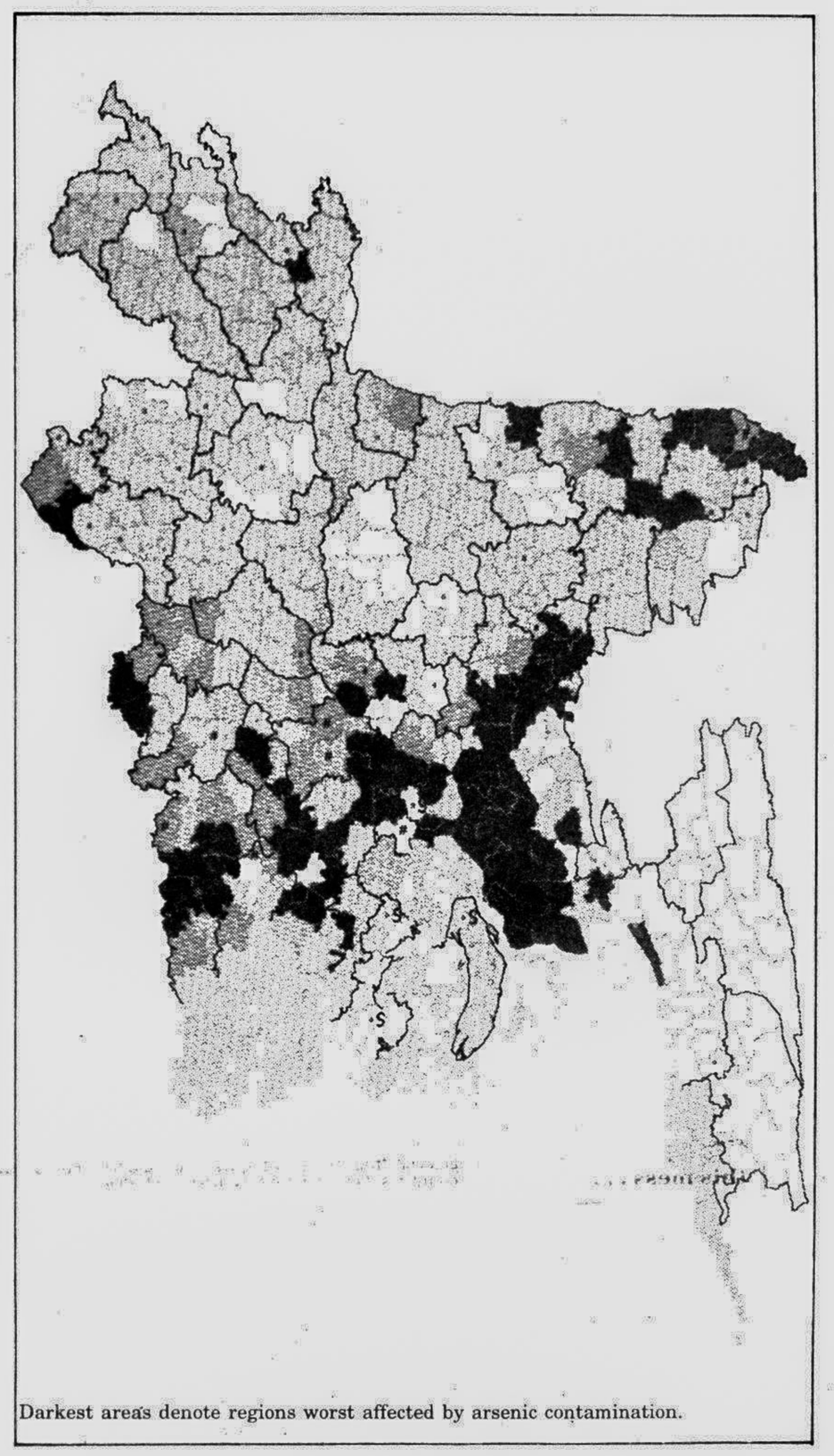
The Tk 205 crore (US$ 44 million) project will broadly look into alternative ways of water resource management in 4,000 severely affected villages and in some 64 municipalities.

It will also help build capacity to develop water resource management at community, gram parishad and union level. In the meantime, for the first time, a draft National Drinking Water Supply and Sanitation Policy was formulated in view of the problem.

The project will also involve new constructions, rehabilitation and augmentation of water supply and development of the existing ones.

"The aim of the project is to provide 'safe' or arsenic-free water to the people living in the affected regions. For a better understanding of the arsenic problem, the field surveys will yield baseline data on arsenic contamination and set in place a mechanism for continued monitoring," an official, involved in the preparation of the project, told the Daily Star recently.

A National Arsenic Mitigation Centre (NAMIC) will be set up to collect data on the grievousness of water contamination. NAMIC will also look into the management, interpretation and dissemination of all relevant hydrogeological, water quality, health, socio-economic and technical information necessary for the project management unit (PMU) to devise strategy and design action plans.



Darkest areas denote regions worst affected by arsenic contamination.

A People Poisoned: Effects of Arsenic Contamination

Drink safe water from tubewells, they were told; it saves you from diarrhoeal, intestinal and other water-borne diseases. What they were not told, however, is that there might even be bigger a threat in the water from the tubewells.