

Water of Life or Death

Nearly two decades ago we made a massive shift from drinking surface water to ground water to save our people from waterborne and water-contaminated diseases. Now we have discovered, to our horror, that ground water, in some areas, contain arsenic at levels for higher than good for human consumption. How large is the problem, how extensive is arsenic contamination and how many people are affected because it takes 10-15 years for the symptoms to surface. Estimates suggest that nearly 75 million people are at risk. Nowhere else in the world has ground water consumption put such a large part of the population to such a slow but mortal danger. There is no parallel in the world of such a huge population being affected by supply of drinking water. Therefore we are unable to draw on the experiences of other countries. Along with us, the state of West Bengal in India has also shown to suffer from large scale arsenic contamination. The challenge for us now is to find a solution of this massive problem. The international conference, organised by Dhaka Community Hospital, that is being held in Dhaka now, will hopefully give us some useful clues as to what to do. We, in The Daily Star, commit to use all our energies to work with all concerned to find a timely solution of this huge problem. We must all work together to face this new and devastating challenge. With that end in view we organised a roundtable on 3 February '98 with nearly all organisations and expert working in this field.

Following is the full text of the discussions held. Transcript by PROBE News Agency.

Mahfuz Anam: A lot has been written and discussed about the arsenic problem, but we feel that it has not been sufficiently highlighted. Neither the government nor the public have shown sufficient awareness about the enormity of the problem, about the direct and indirect consequences of the problem, the public health issue and the safety issue involved. We really owe it to the public to bring the issue out into the open. That is the purpose of the roundtable today.

To start with, I request Dr. Mahmudur Rahman of Dhaka Community Hospital to tell us where we are today. What is the state of the whole problem?

Dr. Mahmudur Rahman: I'll give a little background on how we first encountered this problem and how we see this problem today.

Dhaka Community Hospital is a health organisation. We mostly work with the health delivery system for the lower income group of our community. In one such mission some months ago, in June or July 1996, our health workers came across patients who had toxicity from arsenic mostly from drinking water in some villages in Pabna district. Dhaka Community Hospital started probing into the matter. In the mean time, we got in touch with other organisations who were possibly working longer in this field and in the months following, we gathered a lot of information from our own and other sources.

In the course of work, we went to the field and started looking from the health point of view, locating and isolating patients, making identification of the tubewells which were contaminated with arsenic toxic materials. We also tried to find out what action on the government level was being taken and also what the national and international NGOs were doing about it.

We discovered that this problem was known to both the government and the international agencies since 1990. Possibly some patchy work was done, but not enough to make it a national issue of magnitude. In January last year, after working for a few months, not very extensive but patchy field work in seven districts, we had some data and with that data we had a small national-scale conference. There we really ventilated this problem in a bigger context and since then newspapers supported our cause and really made it an international concern.

Today the World Bank, UNDP, WHO all these international agencies have accepted that this is a problem of national importance, almost of a disaster scale and something has to be done.

Dhaka Community Hospital is possibly the organisation which has so far done 8000 water samples in 52 districts which show that in some districts the contamination is much higher than the WHO recommended level. In Bangladesh, the recommended level is a bit higher. The world recommended level is .01, for Bangladesh it is .05. Still 41 districts have a much higher level.

List of Participants

- Dr Mahmudur Rahman, Dhaka Community Hospital
- Afsan Chowdhury, Disaster Forum
- Deepak Bhattacharya, Unicef
- Alex Redekopp, WHO
- Babar Kabir, World Bank
- Atiqur Rahman, BCAS
- Mofazzel Hoque, WHO
- Dr Quazi Quamruzzaman, Dhaka Community Hospital
- Mohammad Zakaria, BRAC
- Khushi Kabir, Chairperson, Coalition of Environmental NGO
- Ashiqul Hasib, BRAC
- Dr Iftekhar Hossain, Project Director, Arsenic Mitigation Programme, Ministry of Health
- Badiul Alam Majumdar, Hunger Project
- Mr Farooq, Rotary Club
- Tanveer Ahsan, World Bank
- Kamrul Islam Chowdhury, Chairman, Forum of Environmental Journalists of Bangladesh
- Rafiqul Islam Sarkar, Programme Producer, Bangladesh Television

Mahfuz Anam
Editor, The Daily Star
Moderator



We know that this is basically a problem of water contamination. That is causing a health hazard. We have to get arsenic-free water for consumption. That is the key. We have to find alternatives.

Some 30 years ago, the majority of our people used to drink surface water, either from ponds or rivers. And this country is blessed with this and a tremendous amount of rainfall. So there is no dearth of fresh water in our country. But, for some reason, mostly to combat diarrhoeal diseases, the prescription put forward to Bangladesh was to bring up underground water.

About 95 per cent of the population has access to tubewell water which is supposed to be safe. Unfortunately, some of the districts, and quite a large area of Bangladesh, is now having arsenic poisoning in that safe water. That is the main point.

For the future, for the long-term, we have to think very carefully at how we are going to use our water sources. We must look to our own resources, our own expertise and also go back 50 years to find what should have been done to avert this problem we are facing now.

The arsenic which some people are drinking is absolutely camouflaged. It doesn't have any smell or taste. It affects you after 15 years or ten years according to your ability to cope with it.

There is no easy arsenic chemical treatment available that we know of. There is no treatment for arsenic toxicity after a level. The only treatment we know is arsenic-free water, safe water and to get that water from alternative sources.

Bangladesh is possibly the largest affected part in the world. The next is West Bengal in India. The other affected areas of the world start from USA up to Taiwan, Mongolia and Japan. Some countries can afford to take the whole population out of the area and resettle elsewhere. But that is not the case with Bangladesh.

A large area in Bangladesh is affected. A lot of people are suffering. The underground water from which we are drinking is contaminated. We have to find alternatives.



Dr Mahmudur Rahman
We are going to stage an international conference from 8 to 12 February where we have invited scientists and workers from all over the world to discuss their experiences.

We will try at the conference to focus on Bangladesh mostly and try to gather all the information and try to find the solution suitable and affordable for Bangladesh.

Mahfuz Anam: As the title of our conference goes, we are seeking your views and guidance on a set of immediate tasks and a long term vision.

Basically, to prevent diarrhoeal diseases, we went for tubewells and tried to give safe water to the population. Is it the result of that this problem emerged?

Mahmudur Rahman: As I understand, diarrhoeal diseases are mostly from water contamination or organisms. The terms water-borne and water contamination are two different terms. The only water-borne disease I know of is cholera. The majority of diarrhoeal diseases are water contaminated.

It was to prevent diarrhoea that the ground water was tapped. But there are other means of using surface water to make it safe as well. The point is to make it cost effective.

This is not present all over Bangladesh. No proper geological survey has been made yet. It is the hand tubewell depth which is contaminated at the moment, not the deep tubewell. But, a point of caution, in West Bengal some of the deep tubewells are showing arsenic at a toxic level now. So it may possibly be a matter of time that different aquifers at different levels are getting contaminated.

Afsan Chowdhury: Disaster Forum is not an operational agency, it is a network working with disaster issues. One of the leading members of the network is Dhaka Community Hospital.

What has concerned us increasingly is the lack of participation and the lack of dialogue that exists between the policy makers and the people. Decisions have been taken over the years without consulting the people, without any accountability. It frightens us.

With all good intentions, tubewells were installed to prevent water-borne or water-contaminated diseases. But now it is no longer safe. An enormous amount of money has to be spent to find out what went wrong and also to find out a solution.

What frightens us is that another set of solutions is being suggested and this depends on deep tubewells. We know of at least three deep tubewells that have shown instances of ar-



Afsan Chowdhury
senic in Bangladesh. The falling water table is a very major issue here. Deep tubewells will exacerbate the problem more.

Similarly, the management of arsenic sludge, separation of arsenic from the water, will cause another problem. We do not have any coverage to protect people from this.

The government knew of this problem from as early as 1993. The government did not inform the people. What do the experts know that they are keeping away from us? What is happening to our lives that we don't know? Unless there is a process of accountability, then we are stepping into danger again. If any solution is suggested by the 50-million dollar project coming in, it must go through the people who are affected. They must agree to the solution. It cannot be taken at Hotel Sheraton.

The alternative strategy that was worked out in West Bengal as well as in Bangladesh is proving to be more effective than thought before. Rainwater harvesting is extremely successful. The pond-side filter is extremely successful. There should work on sub-surface and surface water.

Rainwater harvesting is basically collecting rainwater and preserving it, using it specially during the dry months and during the other months. Pond-side filter is a bit of an elaborate process of taking water from a pond, cleaning it and using it.

Mr. Deepak Bhattacharya: We have a responsibility to make whatever information is available. This is our public responsibility. We try to accelerate some of the assessment about what is going on in relation to arsenic and, in a rather rudimentary way, whether the water has more than .05 milligrams of arsenic per litre or less. This will be a kind of threshold level, five parts per million. This is using yes-no-kits.

One conclusion we can draw from the information received so far is that even in one district there may be a variance of population at risk. One thana may be heavily contaminated and others that are not.

The World Bank appraisal mission indicated that there



Deepak Bhattacharya
could be Type A, Type B and Type C. What we could determine with a type of consensus of all the people here is, what is under Type A? Is it up to 20 per cent that we call Type A? Or is it above 80 that we call Type C? I think that in relation to Type A, Type B and Type C, we have different types of responses. In the Type A problem is where one thana needs attention, but the rest of the thanas need not panic.

So one aspect I find very important is the need to communicate. Communicate the message that would pertain to the district in the way that they deserve to know.

Mahfuz Anam: At this stage, is any one of us in a position to say that we know the extent of the problem?

Dr. Deepak: No, these are very, very rough figures. We are just getting an inkling of the problem. So a lot of effort will

have to be spent on trying to assess the extent of the problem.

Mahfuz Anam: How many years did it take you to get these 19,000 samples.

Dr. Deepak: Well, we started last year.

Mahfuz Anam: So we can perhaps have one resolution out of this meeting, that a massive effort need to be made to find out the extent of the problem.

Khushi Kabir: There needs to be much more awareness on the issue, much more concern. In certain thanas and districts there is some awareness of the arsenic problem, but it is not uniform all over the country. The lack of awareness of the person about the kind of water he or she is drinking is something that needs to be highlighted.

People like us sitting here



Khushi Kabir
who make plans in the name of the people and for the people and go ahead with the programmes, are often so short-sighted. This problem of arsenic has really brought this to our notice very dramatically. We think we have solutions for the people.

We were discussing the question of diarrhoeal diseases and people were giving us figures about the number of people dying because of diarrhoeal diseases. My statement has been very clear. If health has a class bias, you and I, if we get diarrhoeal diseases, we don't die because we have the nutrition level and the ability to overcome it. So the questions is much more of economics, of the well-being of the nation, of the kind of position that people are in.

But when arsenic affects us, the question of class doesn't come in. It cuts across class. It is much starker.

So I have two questions. One is to both the Unicef representative and the Public Health Engineering, have we put an embargo on tubewell sinking at present. Or do we have any plans on putting an embargo on tubewell sinking in the future?

Another question I wanted to ask is, why is the arsenic level so high in Bangladesh? Is our tolerance level much higher than the rest of the world?

I think this needs an all out alert. I don't think we are creating a panic by talking about arsenic. An area not affected today, maybe affected tomorrow. When the issue began of bring-

ing the arsenic problem up, it was in a few neighbouring districts of West Bengal because West Bengal has first brought it to focus. But it has now cut across the whole country. You cannot say it is just in the mid or the southern belt because we have seen pockets in the north and north east also. So if an area is not contaminated today, there is no guarantee that it may not get contaminated tomorrow.

We have to have to have an all out national campaign where everybody gets involved, trying to look at the tubewells. We can use the local government, the NGOs, schools, community services, philanthropic bodies and all kinds of institutions. It is something of an emergency nature.

It is not a health problem. It is much beyond a health problem. It is an environmental problem. It is a developmental problem. It is a whole question of faulty planning processes.

About participation, if we had taken cognizance of local knowledge, of local systems and improved on that with people's participation, maybe this problem would have not been raised today.

In many areas in the south, in Mongla and other areas, I still see people collecting rainwater as their only source because from the tubewell, the salty water that is coming out is so severely salty, that their only source of drinking water is from rain water collection. So we haven't lost it completely.

People have said that the

contamination of water in irrigation of crops has not been found. But I don't know in the long run whether there is a possibility that irrigating crops with contaminated water may have an effect on the crops. I have no idea. I am no scientist. This is just a question that I have.

Alex Redekopp: The question of allowable concentrations is always raised and I guess we should touch on that.

The 0.01 milligram per litre is a provisional level that has been suggested by WHO. In most countries, 0.05 is still quite acceptable including the US. The limit there is 0.5. In Canada, where I come from, it is 0.25. So .01 is a provisional level suggested by WHO and, if you can afford to go to that level, fine, but .05 is still acceptable. It's a question of how many cancers you can tolerate in a population of 100 thousand.

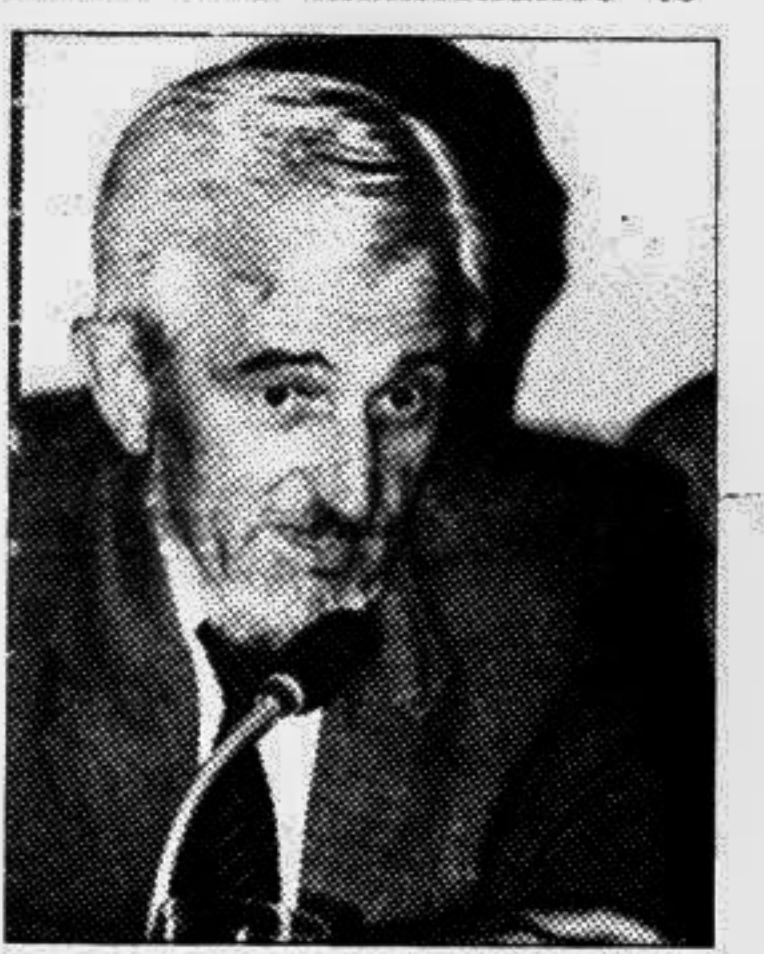
Mahfuz Anam: Is arsenic present in ground water all over the world?

Alex Redekopp: It is a global problem. Many countries, including Canada, have arsenic problems, arsenic in ground water. Austria has some serious problems.

There are treatment methods to remove arsenic which is practised in Chile. There are large water-treatment plants that can and do remove arsenic. The question is, where to dump the sludge. But that is a different issue.

The question of ponds and filters were raised. You can treat surface water protected using pond sand filters.

The bid problem is operation and maintenance. Things have to maintain things. This is a problem in this country and others. But this applies to tubewells. The maintenance is



Alex Redekopp
minimal. It can be done and is being done effectively.

Mahfuz Anam: What is the relationship between the use of chemical fertiliser for soil cultivation and ground contamination.

Redekopp: I am not sure if we have an answer for this. That is an area that needs to be investigated, the impact of fertilisers on ground water and perhaps in this upcoming project of the World Bank and my colleague here, there will be a provision to investigate that. I hope there will be. There is an area there that needs to be looked at very carefully.

Babar Kabir: I would like to clarify the World Bank position on how we are approaching this problem and how we are seeing this problem.

The number of people affected in Bangladesh by far out numbers anything seen in the

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Arsenic Affected Areas/Districts

