

## Arsenic: PM's desire and reality

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How old is the arsenic problem of Bangladesh? What is its magnitude now? Though lots of funds have been made available so far by different aid agencies including World Bank, SDC, Danida, AusAID, DFID, etc. and a significant number of projects in the name of arsenic mitigation are also being implemented both by the government and non-governmental agencies throughout the country, how far have we been able to mitigate the sufferings of the arsenic affected people? Is it the proper time to evaluate the achievements so far in this regard?

Still there are lots of dense and uncertain issues in the field of arsenic mitigation. But when we notice our newly elected Prime Minister is considering the arsenic mitigation issue as one of her priority activities we see the ray of hope again. We firmly believe that her declaration won't remain limited in words only but will substantially mitigate the arsenic problem in addition to bringing smile on the face of thousands of arsenic affected people.

Inadequate coordination among different stakeholders has been in existence from the outset of the problem. In almost all the meetings, the participants raised their voices that arsenic related activities need to be coordinated. Coordination is specially required to avoid duplication of efforts. In recent years, it was observed that few agencies had the tendency to work in the same areas leaving the major portion of the arsenic affected areas un-intervened. Also it is very important to know who is doing what in identifying the priority areas especially in the case of setting up of hypothesis for research activities (though to finalise any hypothesis similar research can be repeated). Some but inadequate efforts were also made in the past by some organisations to document "who is doing what on arsenic". The National Arsenic Mitigation Information Centre (NAMIC) is the ideal platform to coordinate all these activities and they are currently doing it too. The most recent initiative of the present government officials is also hopeful.

But the problem with inadequate coordination is not only related to the central or concerned coordinating agency. Since coordination is a bilateral (or multilateral) process, all the stakeholders are also equally

responsible to make coordination efforts a success. In my point of view, are we equally concerned about our responsibilities or still love to blame others by ignoring our own duties? To my knowledge, till date it's really very difficult to get valid information from most of the organisations. A large proportion of the organisations/individuals think that data are their property and shouldn't be shared with others. They don't even document their works and information in the form of report or publish the information in any journal. Proper documentation is also a problem for our national level organisations preventing us to disseminate many good works and experiences. Even an extensive survey on arsenic contamination in ground water and arsenicosis patients among 500 arsenic affected villages was carried out by the Ministry of Health but no scientifically sound report was produced which could come of help to our policy makers. Two insufficient reports produced later on this survey rather revealed our poor analytical and research capacity. Surprisingly, the data of these two reports on the same survey differ significantly from each other! Thus, to make the coordination effort a successful one all the stakeholders must extend their hand of cooperation and perform their own duties before blaming others.

Being involved with this arsenic problem as a public health epidemiologist for more than five years, I still have the feeling that somewhere we are failing to understand the complicated nature of the problem and thereby to find out the best possible mitigation options. In 1998, the biggest project titled 'Bangladesh Arsenic Mitigation Water Supply Project (BAMWSP)' was launched with the main financial input from the World Bank where health aspect of the problem had been seriously ignored at the initial stage. Arsenic contamination of ground water has raised our concern due to its potential to cause different adverse human health effects ranging from skin lesions to cancer of different organs. The problem is now recognised as a public health problem. But it's very appalling to notice that only a negligible number of public health experts are involved in the whole process of mitigation. This is probably due to the lack of common understanding on the concept of public health. Attempt to mitigate a public health problem

ground water was first officially recognised as a national problem in 1996 by the then government and couple of high level committees were formed to address the problem. In response to then government's appeal, a significant amount of funds was also made available. The immediate past Prime Minister expressed her concern over this issue and directed the respective offices to solve the problem. But unfortunately all these efforts could not achieve most of its targets. I think all these previous activities should carefully be evaluated and

In Bangladesh, too much of politics is prevailing everywhere and arsenic is not an exception to it. Mainly by virtue of politics and lobbying, few less qualified organisations are making evil efforts to dominate the field, which in turn is adding another problem to this complicated issue. So to turn the Prime Minister's words into a reality we need to work carefully following appropriate scientific manner utilising all our resources in a more justified way.

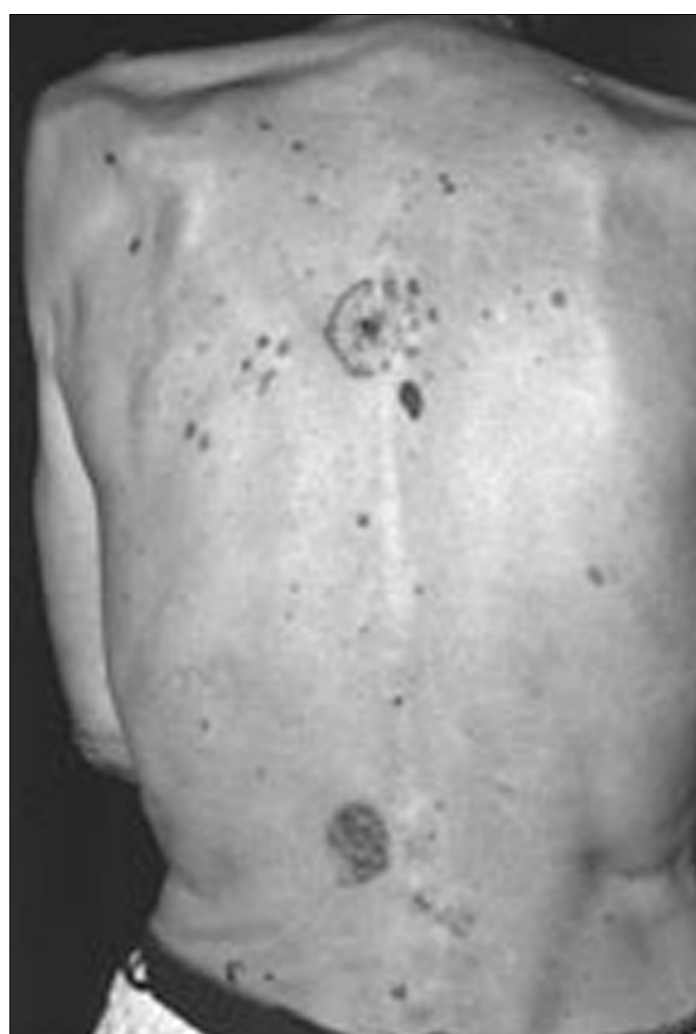
without involving adequate public health experts is unlikely to succeed. The public health experts should play the lead role in the whole process to solve the problem. Days have changed and today's health aspect does not only mean doctors and hospitals. The definition of health and its scope is now much wider. Epidemiology has now emerged as one of the most important disciplines of medical sciences, which is playing very crucial role globally in controlling the public health problems. In Bangladesh, we are lacking grossly in epidemiological capacity especially in the arsenic field. We need to strengthen our public health capacities and link up the epidemiological expertise on urgent basis not only to solve the arsenic problem but also to improve the overall health situation of the country.

This arsenic contamination of



Affected hand

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Affected back

pitfalls, both in terms of institutions and individuals, should be identified before the work of the next phase starts, so that we can move on the right track keeping in mind our previous learning. A poor country like Bangladesh with very limited resources cannot afford so much of unnecessary experimentation.

Since we don't have much resource, we need to plan our activities prioritising our different needs. Recently a trend is being observed in the name of evaluating the arsenic removal technology. For example, a number of arsenic

removal technologies, both at community and domestic levels, are currently available in the market. These are mostly based on chemical formulas. We know that under identical condition, chemical properties of any filter remain the same in any good laboratory. After going through a long chemical experimentation, an agency decides to develop a filter on commercial basis. So when any arsenic removal technology is available in the market, should we again go for laboratory based evaluation? If we have to, which are the technologies need

to be validated in the laboratory, will it include all the filters whoever bring it to the market? So an initial screening process should be there in writing to select any technology for evaluation at the laboratory. I don't think it would be worthwhile to evaluate all the removal technologies entering into the market wasting the project's money. We should further concentrate on our natural resources of drinking water while approving only a few arsenic removal technologies for the time being. Bangladesh should not be made widely open for marketing of foreign technologies, as we have plenty of natural water resources. A national water-shed management is much more needed at the moment rather than evaluating so many arsenic removal technologies.

Once again, as per my experience, in majority of the cases



Affected feet

arsenic removal efficiency of any particular technology is not the main problem, rather its interaction with the users at the community level is most important. Acceptability, affordability and accessibility of the arsenic removal technologies are of more importance and these need to be tested at the community level. Unless we test these technologies with statistically significant sample size, the result might get biased. And then, it's not only the arsenic removal efficiency, another important aspect of the evaluation of any drinking water sources should

include health aspects. Whether the recommended water options are increasing the frequency of water borne diseases or not? For these, periodical monitoring of water quality and diseases frequency is also essential. These are very basic for any water option's evaluation and we have to go through it. Did we follow all these recognised procedures earlier properly?

We need to consider some other important issues too. So far, all the tubewells of more than 50 upazilas have been tested for arsenic but in most of the upazilas, alternative water options are not yet provided. This long time gap of around a year between tubewell screening and offering of solutions is creating confusions and frustration among the arsenic affected population. Concerned authorities should pay attention to this issue. Decision making process in arsenic mitigation process should be more prompt at all levels.

We have more questions than answers. To get all these answers research is the recognised way. So, we need to identify the priority research areas and conduct the studies as early as possible to find out the better solutions. We need to identify the appropriate water technologies suitable for specific regions and also the treatment options for the arsenicosis patients. Extensive review of the existing papers and reports from all over the world can help us find out many essential guidelines in this regard. Besides advising for safe drinking water, doctors of Bangladesh are now prescribing either anti-oxidant vitamins or spirulina as the main drugs for treatment. But unfortunately till now no methodologically sound randomised clinical trial has been conducted to determine the efficiency of these drugs in treating the arsenicosis disease. These studies also need to be conducted by competent researchers, as some expertise is needed to conduct the studies. Also no treatment of arsenicosis patient is likely to succeed unless s/he has access to arsenic free safe water for drinking and cooking. All the tubewell screening data should be made available to the local union and upazila health complexes where the doctors have to diagnose the disease by looking mostly at the skin lesions, which have many other differential diagnoses. Water data might help them in diagnosing arsenicosis patients more accurately. Patients screening by the

field workers at the field level also need to be thoroughly examined as I have seen lots of wrong diagnosis of the arsenicosis patients at the field level. I am sure any epidemiological evaluation of patient screening by the field workers will reveal the diagnosis of patients as less specific with more false positives.

We should also maintain uniformity in information dissemination. Even after five years of official recognition of the arsenic problem, we don't know from how many districts arsenic contamination of ground water has been reported. According to the survey jointly carried out by the School of Environmental Studies of Jadavpur University and Dhaka Community Hospital, arsenic contamination above 0.05 mg/litre, recommended level of arsenic in drinking water for Bangladesh, was found among the water samples of 47 districts out of 64. I prefer to cite this report as all the water samples of this report were tested using Atomic Absorption Spectrophotometry - Flow Injection Hydride Generation method, a highly sophisticated laboratory method for measuring arsenic in drinking water. But many other reports including the government ones mention the number of districts from time to time either 59 or 61, none of which is correct. Unless we know the magnitude of the problem, planning will always have a potential to be inappropriate. Similar discrepancies are also observed while mentioning the number of arsenicosis patients and other information. We should have consensus on the size of the problem and other relevant issues.

In Bangladesh, too much of politics is prevailing everywhere and arsenic is not an exception to it. Mainly by virtue of politics and lobbying, few less qualified organisations are making evil efforts to dominate the field, which in turn is adding another problem to this complicated issue. So to turn the Prime Minister's words into a reality we need to work carefully following appropriate scientific manner utilising all our resources in a more justified way. Otherwise sufferings of the affected communities will be prolonged.

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## Endangered Sundarbans

BADIUL ALAM

PEOPLE'S cry to protect the Sundarbans from the onslaughts of the international oil companies (IOC) has gone unheeded. Ignoring their protest, both at home and abroad, the government has decided to go ahead with the PSC (production sharing contract) deal on block 5, covering the Sundarbans and its adjacent areas, which had been initiated some one and a half years ago.

Recently, the cabinet committee on the finance and financial affairs has given its nod to PSCs initiated earlier on the blocks 5 and 10. Anglo-Dutch oil company Shell and its British partner Cairn Energy Plc won exploration contracts for the two blocks under the country's second round bidding.

Earlier, the government had signed another PSC on block 7, adjacent to the Sundarbans, with Unocol, the US oil company, for exploration of oil or gas, ignoring the consequences on the ecosystem of the Sundarbans forest area.

According to the Ecofile, a periodical on life and nature, the Sundarbans spans over an area of about 5,77,000 hectares of which 70 per cent is on land and 30 per cent in water bodies. Some 62 per

cent of the total Sundarbans area lies in Bangladesh, constituting about 51 per cent of Bangladesh's reserved forest.

The Bangladesh area of the Sundarbans offers habitation to 425 species of wildlife, which include 49 species of mammals, 315 of birds, 53 of reptiles and eight kinds of amphibians. More than 120 species of fish are also available in the different rivers in and around the Sundarbans area.

The Sundarbans deserves conservation attention from the economic point of view. Besides contributing four per cent forest revenue, it is the source of livelihood for about 0.5 to 0.6 million people. These people enter the Sundarbans almost every day from its surrounding villages under five upazilas to catch fish fry, collect honey, fuel, wood timber resources and for other economic purposes.

The Sundarbans is not only the world's largest mangrove forest, some 139,700 hectares area of the Sundarbans east, south and west have been identified as the World Heritage Site by the UNESCO.

Considering the great importance of environment and other related issues, people in general, and environmentalists and civil societies in particular, have raised their voice against the opening of the Sundarbans and its adjacent

The Friends of Earth, UK its Netherlands chapter in recent past staged demonstration in front of the Shell's office in London demanding stoppage of exploration activities in the Sundarbans and its adjacent areas. A two-member delegation of the Friends of Earth also visited Dhaka and expressed their concern to the government and the non-government officials.



The Sundarbans : World Heritage Site

areas for hydrocarbon exploration activities.

A national conference to protect the Sundarbans held in Khulna on February 14-16, 2001 expressed concern that exploration of oil and gas in blocks 5 and 7 may endanger the world's largest mangrove forest and the World Heritage site.

Not only the environmentalists and civil societies, the Ministry of Environment and Forests (MOEF) has also expressed concern at the possible negative impact on the Sundarbans, if it is opened for hydrocarbon exploration. The MOEF's position is that the entire Sundarbans and its adjacent areas up to 20 kilometers should be kept

out of any exploration activities.

If the position of the MOEF is taken into consideration then there should not be any PSC deal on block 5 and the deal on block 7 should not be allowed to proceed in its present form.

But the cabinet committee on finance and financial affairs did not

endanger the bio-diversity of the Sundarbans forest.

It seems that the government has accepted the position of the IOCs and ignored the counter-argument though it has signed the World Bio-diversity Convention. The Prime Minister and the Environment Minister, in their messages on the world environment day early this year, made firm commitments to protect the country's environment. The Environment Minister told a discussion meeting on the environment day that exploration activities would not be allowed within 20 kilometers of the Sundarbans.

But the actions of the Cabinet committee on finance and financial affairs with regard to the approval of the PSC deal on block 5 did not reflect the commitment made by the Environment Minister. Under the circumstances, the question has been raised whether the govern-

ment leaders are providing only lip service to the environmental issues.

The Prime Minister is the Chairman of the National Environment Council. But she did not consider the environment and bio-diversity aspects while approving the second round bidding proposal for exploration of oil and gas in different blocks.

Thus the government appeared to have ignored both national and international concerns about the Sundarbans forest. The Friends of Earth, UK its Netherlands chapter in recent past staged demonstration in front of the Shell's office in London demanding stoppage of exploration activities in the Sundarbans and its adjacent areas. A two-member delegation of the Friends of Earth also visited Dhaka and expressed their concern to the government and the non-government officials.

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