

ARSENIC ALERT

Resolving the Problem: Private Sector Approach

by William H Derrenger

A Mass Awareness Campaign will make it possible for Arsenic Abatement Customers to make their decisions in the context of standards of service and competitiveness that are well understood by both the buying public and the product supplying business community.

FROM the very first day of my arrival in Bangladesh, more than eight years ago, I have visualised Bangladesh as a country well able to solve its own problems. And every day I see new signs that this is true. The capacity of the country to find a competitive place for itself in the global marketplace is evident everywhere: in its food production, industrial development, transportation, wealth creation/poverty reduction and most notably in its improved capacity to mitigate frequent natural disasters.

Don't misunderstand, there are still plenty of problems to resolve. The capital markets have collapsed, the banking sector is fundamentally unsound, SOEs are a persistent drain on the exchequer. These problems alone could perpetuate poverty for another generation. The overall trend, however, are very good. There are signs of progress and growing prosperity everywhere.

But a new course has been set. The nation has found its strengths and resources and is getting itself focused and organized in the context of these. There is no turning back now. Bangladesh is going to be a prosperous nation. The only question is how quickly it can earn this status. Successive governments will come and go, but the overall trend will be dangerous, costly, sad events will occur. But in the end, the capital market will be healed, the banking system salvaged and the nation will create new and unimaginable wealth in the hands of every citizen. The source of energy for this comes from the same engine that is powering wealth creation in other places — an independent market driven economy.

There is hardly any problem that Bangladesh will face and

cannot, somehow, be resolved or substantially mitigated in the context of its commitment to private sector approaches to "wealth creation." The question is whether Bangladesh can sustain its commitments to mobilise the necessary enabling resources through its ready and willing private sector or whether it will fall back on elaborate, costly, time consuming, ineffective public sponsored initiatives; immobilising its private sector in the process.

The growing problem of Arsenic contamination of its drinking water supplies is a good example of a problem that may best be resolved through private sector channels. The nation's Arsenic contamination dilemma will be a good opportunity for Bangladesh to flex its strengthening private sector muscles. Let's take a close look at the possibilities:

Using Readily Available Private Sector Networks and Resources

Sixty million people residing in the 30 western most districts are at risk of chronic Arsenic poisoning. The cause is tubewell supplied drinking water that has been contaminated by naturally occurring arsenic. The problem is especially painful because, over the last 20 years, hundreds of millions of dollars have been invested in bringing clean drinking water to nearly every household. Perhaps 10 million of the households (as many as 1/3rd of the national total) are consuming tubewell supplied drinking water from ground water sources contaminated by naturally occurring deposits of arsenic.

Widespread arsenic contamination of drinking water supplies is a massive, potentially explosive, problem. It will im-

pair every aspect of future development and could alter the nation's political and economic priorities. There may be a tendency, for this reason, to over-react and to think in terms of correspondingly massive public health programmes to counter the threat. A massive, public sector response could delay a really effective remedy for years, cost many lives and much money.

In the alternative, a "rapid reaction," response, targeted to mobilise private sector resources could save the day and perhaps many lives and a lot of money. Immediate steps can be taken to adjust the focus of the existing private sector, drinking water supply infrastructure (private manufacturers, dealers, installers and household level users) by accommodating the need for "water consumers" to reassure themselves of the safety of their own drinking water supplies. The existing commercial channels (private manufacturers, dealers and installers) can make the means for a user driven response available (detection and abatement products) and let market forces deliver the approved and recommended remedies according to the demands of individual households. This will be fast, efficient and cost effective and forestall a massive public sector (inevitably donor sponsored) initiative to create a clean water testing and delivery bureaucracy.

A public sector response would take a long time to configure, fund and launch and, in the end may not deliver the re-

quired remedies; i.e. a reduction in the effect of arsenic contamination on millions of people in Bangladesh.

The proposed initiative will mobilise existing private sector channels in the form of an Arsenic Abatement Network. It will deliver essential, affordable arsenic detection and abatement products and services into the hands of affected users and thus reduce suffering, save lives, save time and save money.

Public Awareness is the Catalytic Force

The process can only be energized by creating mass awareness about arsenic contamination among the affected persons; its causes, effects and available remedies. Consumers of drinking water would be made aware of the prescribed remedies and the recommended standards of quality and service of products available through commercial channels. The marketplace has the capacity to deliver affordable, arsenic detection and abatement products and services (remedies) in the same way it has delivered the drinking water pumps and the other basic requirements of Bangladesh's massive rural population. Consumers need to know this. Linkages already exist between thousands of private tubewell manufacturers, distributors, dealers, installers and millions of tubewell user/consumers. The capacity is in hand to design, develop, assemble and supply Arsenic Test Kits according to international standards.

The Test Kits can be sold to dealers who will have been trained to use them. Persons living in the affected areas will be urged to bring samples of their drinking water to trained dealers for analysis (the proposed fee is Tk 20 to 40). The simple test will indicate the level of arsenic, if any, in each sample. If arsenic contamination is indicated, the user can elect to re-sink his tubewell into an uncontaminated, usually deeper, water bearing layer. In the alternative, affected persons can elect to buy a low cost filter, distiller or coagulator to decontaminate drinking water from an existing source. The network of private sector, non-government players and nationwide publicity can insure that test results are not falsified for the purpose of selling unnecessary or faulty products or services.

A Description of the Problem

The ground water aquifer which supplies most of Bangladesh's clean drinking water is being contaminated by naturally occurring arsenic compounds. The threat of arsenic contaminated drinking water is especially serious in densely populated Bangladesh where nature and poverty conspire to compound the problem. For the past fifty years, tens of thousands of tubewells have been introduced for the supply of safe drinking water and irrigation (both manually and mechanically operated). More than 90 per cent of the people in the country depend on drinking water supplied from ground water sources. Now the country's ground water reservoir is being contaminated to dangerous levels by naturally occurring arsenic. Increasing numbers of people are suffering from chronic arsenic poisoning. But Bangladesh has many problems and till now no comprehensive arsenic detection or abatement measures have been implemented. Actually, the problem is not well understood at all levels.

Bangladesh lies in the down stream of the river Ganges (called Padma in Bangladesh). Most of Bangladesh and West Bengal were formed by the deposition of alluvial fill from the rivers Ganges and Brahmaputra (called Jamuna in Bangladesh) over thousands of years. The Ganges originates in the Himalayas in an area rich in arsenic bearing rock. Possessing similar geological characteristics, it has been proved that this deltaic plain of shale, clay and stone are rich in arsenopyrite. Due to heavy ground water withdrawal and fluctuation of water table from pre monsoon to post monsoon and also due to thousands of bore-holes the underground aquifers have become aerated. This transforms an essentially anaerobic environment into an aerobic environment. The newly introduced oxygen oxidizes the arsenopyrite and releases free arsenic into the groundwater. The ingestion of arsenic

laden water causes a wide range of predictable, preventable health problems. The toxicity of arsenic compounds depends on the chemical and physical form of the compound, the route by which it enters the body, the dose and the duration of exposure, ingestion levels of interacting elements; the age and gender of the exposed individuals. According to WHO, the maximum permissible concentration of arsenic in water is 0.01 mg/litre (previously 0.05 mg/litre). Concentrations in the affected areas are known to range from a minimum of 0.05 mg/litre to 3.0 mg/litre; a range many hundreds of times beyond the maximum safe level.

It is variously estimated that up to 60 million people are exposed to chronic arsenic poisoning. In Bangladesh, the primary symptom of chronic arsenicosis is deformities in the skin. Clinical symptoms are divided into three stages. Arsenicosis can affect other organs; i.e. lungs, liver, kidney etc. Other than restricted ingestion of arsenic contaminated food and water, there is practically no specific treatment of chronic arsenic toxicity.

Private Sector Arsenic Abatement Network

Create Mass Awareness and Promote Detection and Decontamination: The "Network strategy" calls for an awareness campaign using TV, Radio, newspapers, signboards and posters to alert the public about the facts concerning arsenic contamination. It will explain the causes (sources) of the problem and the effects (symptoms) of chronic arsenic poisoning and dispel the irrational myths that have grown up around the problem. The mass awareness campaign will urge households in the affected area to have their drinking water supplies tested, to get second opinions and to shop around for the best most competitive arsenic abatement options. The Mass Awareness Campaign will make it possible for Arsenic Abatement Customers to make their decisions in the context of standards of service and competitiveness that are well understood by both the buying public and the product supplying business community.

The "Strategy" calls for a simple, one-step, two-step remedy: Step #1) TESTING: Every household in the affected area will be urged to test the safety of their drinking water source by taking a ground water sample to their local tubewell dealer. There are thousands of such dealers in western Bangladesh. A contracting agency will supply interested tubewell dealers with the necessary testing equipment, chemical reagents and training to use them. 2,000 (two thousand) participating dealers will undertake to test 1,000,000 drinking water tubewells for the presence of dangerous concentrations of arsenic.

Step#2) DECONTAMINATION: When a sample tests positive for arsenic contamination,

the householder can learn about available options from the mass awareness campaign and purchase the remedy believed to be the most suitable in each case from known dealers in the area. Supporting installation contractors will be prepared to re-sink existing tubewells into deeper, arsenic free layers of the aquifer or sell low cost, household oriented, decontamination appliances (filters, distillers or coagulators).

Detection and Abatement Product Development and Distribution

An "Arsenic Detection and Abatement Network" can immediately distribute up to 10,000 locally assembled, Arsenic Test Kits which meet international standards. Each Test Kit should contain sufficient chemical reagent to test 100 samples of drinking water for the presence of arsenic contamination. The test kits would be distributed from bonded warehouses, strategically located in the worst affected areas of Bangladesh's 30 western most districts, to dealers authorised to use them. The test-kits would be sold to authorised dealers for approximately Tk 880. The mobilisation of test kits at this rate would require private sector investments from the suppliers concerned and dealers of approximately Tk 88 lac.

Authorised dealers, in turn, will charge Tk 30 per water sample test. Thus a dealer investment of Tk 880 in a test kit will return Tk 3000 in test revenue or a return of nearly 3:1. Accordingly, consumers will invest approximately Tk 2.2 crore in testing their own tubewells for arsenic contamination. A positive test result (one indicating a dangerous level of arsenic contamination) will require a householder to choose from an assortment of remedial options:

1) The easiest and, most likely the preferred option, will be the re-sinking of contaminated tubewells into a deeper, uncontaminated ground water layer. The cost of this option (approximately Tk 4,400) will be borne individually or in groups and will depend on access to professional services or established NGO sources. Approximately 10,000 households may elect to re-sink their tubewells. This will require a market driven investment of nearly Tk 4.4 crore.

2) A second option is for consumers to invest in one of several other low cost, household oriented, decontamination appliances (a filter, distiller or coagulator). These options may have a lower initial cost, but may also be substantially more tedious, complicated or costly to operate. Funding arrangements are likely to be the same as for the tubewell option. The marketplace, in collaboration with internationally recognised public health authorities, is fully capable of delivering products and services according to accepted standards of quality. Arsenic detection and abatement products can be produced, packaged and supplied through local, commercial channels and could be expected to generate the following private sector inputs:

Consumer Supported Investment in Arsenic Abatement:	
1) Production and Sale of 10,000 Arsenic Test Kits (Tk 880)	Tk 88 lac
2) Consumer Testing of 1,000,000 Drinking Water Samples: (Tk 22-27)	Tk 22 lac
3) Installation of 10,000, Arsenic Free Tubewells (Tk 440)	Tk 440 lac
Total Private Sector Investment in a Market Driven Response:	Tk 750 lac
Time Required to Implement:	Immediate

Monitoring and Evaluating the Outputs

The Network's monitoring and evaluation responsibilities go beyond simple assurances of cost effectiveness. Since public health and safety are at issue, an Arsenic Detection and Abatement Network must systematically and rigorously monitor its own performance in order to insure the following:

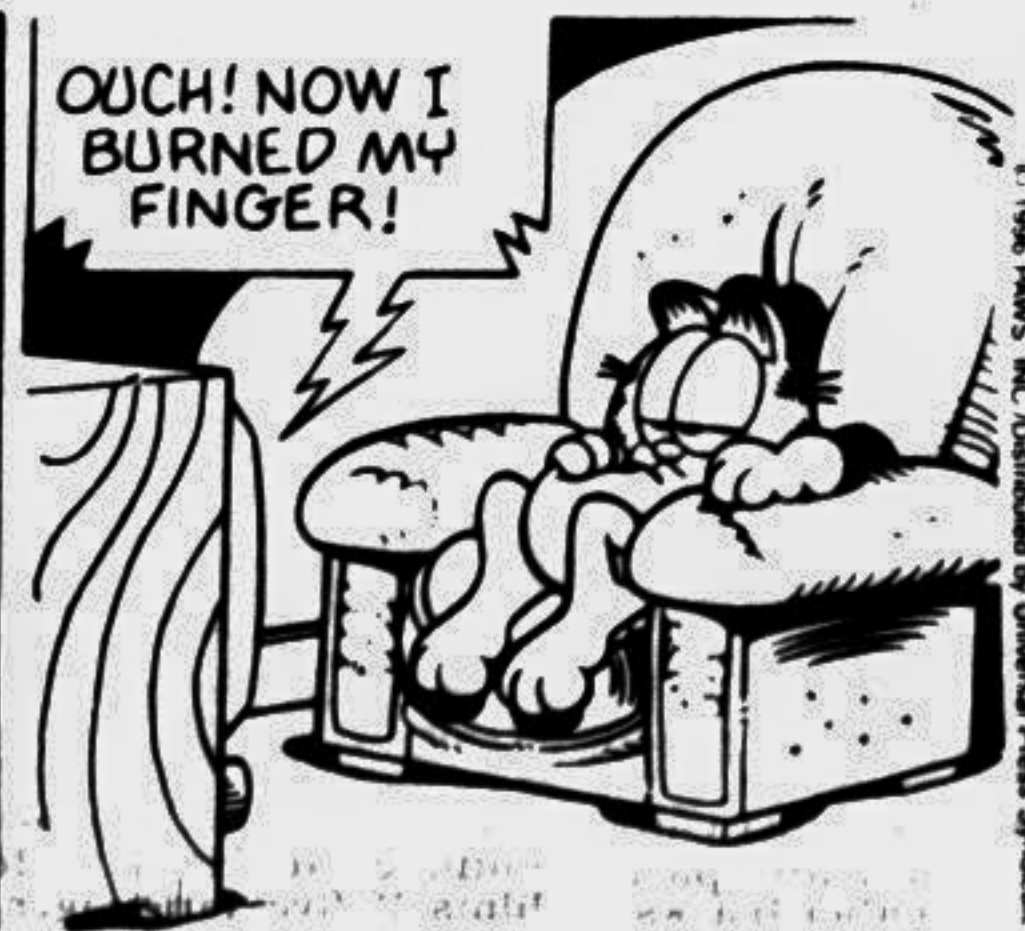
- 1) That Arsenic Detection and Abatement Products are being produced, supplied and used according to advertised standards.
- 2) That Arsenic Detection Tests are giving uniformly accurate results.
- 3) That Arsenic Abatement Products and strategies are being fairly represented, sold, installed and operated.

The Arsenic Detection and Abatement Network is not a research initiative. The strategy intends, primarily, to deliver cost-effective means of mitigating arsenic contamination in an impoverished environment. Nevertheless, in the course of its primary work, the network will endeavour to monitor the spread and severity of arsenic contamination and to report accurately findings and conclusions about the network's impact on the overall problem. A material part of the network's monitoring and evaluation responsibility is to maintain a document file regarding the production, purchase, delivery and sale of Arsenic Detection Kits and Arsenic Abatement Products, i.e., purchase orders, shipping documents, invoices and sales receipts (names, addresses, dates and frequency thereof), for testing kits, deep aquifer tubewells, filters, distillers, coagulators and other household oriented arsenic abatement appliances.

Summary of a Private Sector Network Approach

The truth is that there are sufficient private sector resources in place, today, to fully restore public confidence in the deteriorating condition of the nation's drinking water supply. The alternatives are to mobilise available, private sector resources immediately in the context of implementing a consumer funded option or waiting years, for a public/donor funded programme, losing perhaps thousands, if not tens of thousands of lives, wasting crores of Taka in the process. Harun-Ar-Rashid is a leading expert on the subject of Arsenic Contamination Abatement. His information concerning the spread of Arsenic Contamination in the 30 western districts most affected by the disaster is the basis for this article. Harun welcomes the interest of potential Arsenic Abatement Network partners and can be contacted at phone: 818-521, 912-7992.

Garfield



Metropolitan

N'ganj BNP leaders blame ruling party MP for unleashing terrorism

BNP leaders from Narayan-ganj yesterday accused Awami League MP Shamim Osman and his gang of unleashing a reign of terror in the town, reports UNB. They alleged that "Shamim Bahini" with the help of local administration has been perpetrating repression on the commonmen, particularly on his (Shamim) political opponents. Addressing a press conference at Jatya Press Club, BNP convener Advocate Taimur Alam Khandaker alleged the entire administration, including the lower courts, have become hostage in the hands of Shamim Osman and the officials are working as his idolaters. "Not only the BNP supporters, but also the workers of ruling party who oppose Shamim

are being fallen prey to his Bahini's terrorist acts," he told the newsmen. Advocate Taimur said 30 people were killed by the Shamim Bahini in last few years and in some cases Shamim himself is the main accused.

"Nowadays women and young girls cannot move freely in the town as they are afraid of Shamim Bahini," he said.

Referring to capturing of land and extortion by the Shamim Bahini, Taimur said: In many areas of the town one will find signboards read "This land owned by Shamim Osman" or his brother "Nasim Osman". He accused the ruling party MP of winning the election from Narayan-ganj-4 constituency by massive rigging.

Sajeda inaugurates electrification programme

Minister for Environment and Forest Sajeda Chowdhury yesterday inaugurated an electrification programme under the Palli Bidyut Samity of Gatri union under Nagarkanda thana in Faridpur, reports BSS.

Addressing a function in this connection, the minister said the government was pledge-bound to bring the far flung areas of the country under electrification network. "The rural electrification programme contributes significantly towards development of infrastructure and creation of jobs in rural areas," she observed.

The function was also attended by the chairman of Rural Electrification Board Brig Enamul Huq.

Earlier, the minister addressed a rally at Bakunda Bazar where she called for vigorous afforestation programme in the rural areas to protect the environment and hasten socio-economic development in the country.

Bangladeshi boy gets scholarship to Harrow School

Ridaa H Murad, son of Mahmood Hossain Murad and Zarina Hossain, has been awarded a scholarship to Harrow School, UK, to do his 'A' levels, says a press release. Ridaa recently completed his GCSE 'O' level exams from Chittagong Grammar School and is the first student to receive a scholarship for his 'A' levels from one of the oldest and most prestigious Public Schools in the UK.



Bangladesh Karma Songsthan Sangstha brought out a procession protesting alleged threat to Bangladesh Bank Governor in the city yesterday. — Star photo

Weather

Day temperature may fall

Moderately heavy to heavy fall is likely at places over Barisal, Chittagong and Khulna divisions is the next 12 hours till 6 pm today, reports UNB.

Met Office also forecast moderate to moderately heavy rain or thundershower accompanied by temporary gusty or squally wind at most places over Khulna, Chittagong, Barisal and Sylhet divisions and at many places over Dhaka and Rajshahi divisions.

Slight fall in day temperature is likely during the period across the country.

In its outlook for subsequent two days weathermen predicted increase in rainfall activities and little change in the following five days.

Country's highest temperature 36.5 degree Celsius was recorded at Bogra and Dinajpur and the lowest 24.4 degrees at Kutubdia. The sun sets today at 6:39 pm and rises tomorrow at 5:30 am. Maximum and minimum temperatures and humidity recorded in some major cities and towns yesterday were:

City/Town	Temperature in Celsius		Humidity in percentage	
	Max	Min	Morning	Evening
Dhaka	35.0	28.3	76	67
Chittagong	35.5	27.0	71	71
Rajshahi	33.6	27.4	89	-
Khulna	34.0	27.8	77	-
Barisal	33.8	27.0	82	-
Sylhet	35.2	27.5	81	86
Cox's Bazar	32.0	26.5	71	93

Railway gets Tk 274 cr to implement 23 projects

Bangladesh Railway has got Tk 273.5 crore to implement 19 investment projects and four technical projects in this fiscal, reports BSS.

This was disclosed at a review meeting held at the Railway Bhavan yesterday with Communications Minister Anwar Hossain in the chair.

The projects include installation of railway track on the Jamuna Bridge, collection of 66 coaches, construction of Tongi-Bhairab Bazar double line, railway connection between Madhyapura hard rock site and Barapukuria coal mine, opening of Jessore-Benapole line, extension of Dhaka internal container depot and initiation of computer controlled wagon system.

A total of Tk 2,350 crore has been allocated for the Railway in the draft fifth five year plan.

3 alleged terrorists arrested

The detective branch (DB) of Police yesterday arrested three alleged terrorists and recovered 11 rounds of bullet from their possession, reports BSS.

A team of DB police led by assistant commissioner Mia Abus Salam arrested Mohammad Alamgir Bepari, Mohammad Abus Salam alias Shameem and Mohammad Shahidul Islam alias Lavlu from a sweetmeat shop at North Brook Hill Road. Police recovered a 22 bore revolver loaded with 11 rounds of bullet from their possession. Police said the arrested persons are alleged to be the members of an organised gang of extortionists and involved in extortion in the city for a long time.

A case was registered with Sutrapur Police Station in this connection.

HERE and THERE

Proshika Manabik Unnayan Kendra

A total of seven million seedlings and saplings have so far been planted by "Proshika Manabik Unnayan Kendra" since inception of its tree plantation programme in 1989, reports BSS.

In the current monsoon, the organisation has planted over 75 lakh saplings across the country. A few more lakh saplings are expected to be planted during the last part of the current season, Proshika sources said.

The trees were planted under its various schemes including homestead gardening, nursery development, forest protection, strip plantation, agro-forestry, wood-lot forestry and social forestry.

The species of trees planted include mahogany, sissoo, rain-tree, mango, jackfruit, neem, eucalyptus, ipil-iplil, segun, gaam, akashmoni, korol, bala, chambol, arjun, chhatina, jalpai, amloki, gamar and amra.

Kushtia Zilla Samity

Kushtia Zilla Samity, Dhaka, held an emergency meeting on the recent hooliganism and vandalism at the Islamic University campus which led to the closure of the university, says a press release.

The samity strongly condemned the incident and demanded immediate reopening of the university. They also urged the government and authorities concerned to restore normal academic life on the campus immediately.

DBC of ICMA

A discussion session on National Budget 1997-98 was organised under the auspices of the Dhaka Branch Council (DBC) of the Institute of Cost and Management Accountants of Bangladesh (ICMA) on July 31 at the ICMA auditorium in

the city, says a press release.

It was presided over by AKM. Delwer Hussain, Chairman, DBC of ICMA, while Shah Abdul Hannan, Chairman, National Board of Revenue, was present as chief guest.

Among others, Habibur Rahman, President of ICMA, Prof. Abu Ahmed, Dept. of Economics, DU SH Kabir, Chairman, Reneta, M. Delwer Hussain, Commissioner of Taxes, Abdul Quayyum, Director General, DEDO, spoke on the occasion.

Sangbadik Oikya Andolan

Sangbadik Oikya Andolan has urged the newspaper owners to implement the Fifth Wage Board Award, reports BSS.

A meeting of the working committee of the Andolan yesterday observed that the Fifth Wage Board Award has not been implemented in most of the newspapers, though it was published in May.

The meeting was addressed by Nazrul Islam, Harun Ar Rashid Bhuiyan, Mojibur Rahman Ashra Alam and Kazi Enamul Rashid Palash.

63 bottles of phensidyl seized at Savar

A special detective squad of the directorate of drug control Sunday seized about 7.5 kilogramme of ganja from a slum at Keranirkut under Tongi thana and arrested one person in this connection, reports BSS.

A case was filed with Tongi thana in this connection. The same squad seized 63 bottles of phensidyl from house at Savar and 138 bottles of phensidyl from a Dhaka-bound passenger bus yesterday.

Two passengers were arrested for illegal possession of the phensidyl bottles. Two cases were filed with Savar thana in these connections.