

## An interview with Mahmuder Rahman

### Bangladesh's arsenic agony



Courtesy of Mahmuder Rahman

Prof. Mahmuder Rahman

Professor Mahmuder Rahman obtained his medical degree from Dhaka University in Bangladesh and is a member of the Royal College of Physicians (United Kingdom). He was a full professor and consultant physician at Dhaka National Medical College and Hospital until 2003. Apart from his clinical and academic work, he has contributed extensively to formulating policy for affordable health services, and is actively involved in developing integrated health delivery services such as Dhaka Community Hospital, which is a self-financing hospital dedicated to providing health care for people on low incomes. Rahman was actively involved in developing the "Arsenicosis" National Case Detection and Case Management Protocols. He has published more than 15 papers on Bangladesh's arsenic problem. As a member of Bangladesh's National Expert Committee on Arsenic, he took a leading role in formulating the National Arsenic Mitigation Policy and Action Plan.

The need for safe and clean water is the topic of this month's commemorative issue of the *Bulletin*, to mark 60 years of the World Health Organization (WHO). In this interview, Professor Mahmuder Rahman says that 12 years after the scale of the arsenic poisoning disaster in Bangladesh was first revealed, millions of people are still drinking contaminated water. He expresses his frustration at the lack of progress on a long-term solution and his fears for the future.

*Q: How many people are still drinking arsenic-contaminated water in Bangladesh?*

A: The Government of Bangladesh estimates that 30 million people are drinking water that contains more than 50 micrograms per litre of arsenic. However, up to 70 million people are drinking water that contains more than 10 micrograms per litre of arsenic, which is the provisional WHO guideline value. After a quick field survey in 2001, the government estimated that 40–50% of the estimated 10 million tube wells were contaminated with arsenic. In some villages that figure was as high as 80–100%. Now there is the problem that some tube wells that were not originally poisoned are becoming so.

*Q: Why did it take so long for the full extent of this disaster to be revealed?*

A: International and national agencies were very shy about addressing the issue when it was reported to them in 1993. They did not respond until the Dhaka Community Hospital called a confer-

ence in 1997. Then the media came and they started waking up.

*Q: If it is widely known in Bangladesh that many of the tube wells are contaminated, why are people still drinking the water?*

A: When it was established that a well was contaminated, it was painted red and people were asked not to drink from it, but it was not sealed. After time, and because there were no alternative sources of water, people started to drink the water again. Arsenic is colourless and odourless and gives no acute symptoms such as fever or pain, so people, especially children, continue drinking it.

*Q: Why has no alternative clean, safe water supply been found so many years after the scale of the disaster was discovered?*

A: After seven years of lobbying, followed by national and international conferences, hundreds of publications in the print media plus extensive coverage on television and radio, government and international agencies

started to respond to this massive human health problem. The Government of Bangladesh responded with the Arsenic Mitigation Action Policy Plan prepared by a committee composed of Bangladeshi experts in 2003. Yet no real effort has been made to find alternative safe water sources to address this major problem on a mid- and long-term basis. We have seen hundreds of learned consultants from various international agencies visiting Bangladesh but with very little understanding of the geography, culture and patterns of water use. They even fail to consider the total water resources of the country. Instead, everyone debates what the answer is, whether it is surface water, dug wells, tube wells or rain water. But then there is opposition to all these proposals and the argument goes on. Most of these experts come with the preconceived idea that dug wells and surface water are totally polluted with bacteria, but they forget that with simple and affordable technology these water supplies can be made safe and can play a major part in mitigation of this major problem.

*Q: What needs to be done?*

A: Rivers and canals are in abundance in Bangladesh, which receives 2000 millimetres of rain a year. There are regions of this world with a fourth of this rain. There are a lot of options, but some agencies have their own agenda and they do not want to follow our government-approved water policy, which is the use of a combination of treated surface water, rainwater and dug wells that reach water that is generally eight to 12 metres deep. Conventional dug wells are small in diameter, about one metre, but we have designed wells of around four metres called *idera* that are capable of supplying up to 80 families. They are safe and quite popular. However, we must not be dependent on groundwater. We do not want to risk bringing up other toxic material of which we have very little knowledge, such as boron. It's only arsenic today, but we do not know what will come next.

*Q: What about technological solutions such as filters?*

A: There are some water filters available but they are short-term solutions; they cannot be permanent solutions.

No one in their right mind would suggest taking poisoned water and purifying it for drinking when there are other more important sources of water available. We need a long-term solution. Bangladesh is a developing country. We do not have the luxury of piecemeal solutions because if we only solve a piece of the problem, it will rebound on us on a much bigger scale.

*Q: What is your main concern in the future?*

A: Recent studies show that a large amount of groundwater is going to the fields for irrigation. It has been found that rice stalks that are used for cook-

ing can have a higher concentration of arsenic than contaminated drinking-water. People then breathe the fumes while they are cooking. Agencies are only monitoring arsenic in drinking-water but we need a proper evaluation of the risk from topsoil contamination. No international and national agencies are very serious about this, but arsenic in the food-chain has the potential to cause more serious problems in the future than arsenic in drinking-water.

*Q: Do you have a clear picture of how many people are suffering from arsenic-related disease?*

A: There are a lot of cases, but no

proper prevalence study has been done. There is an urgent need for research. We still don't know exactly how many people are suffering from cancer, skin lesions or gangrene. Arsenic can cause low birth weight, and many physical and neurological deficiencies. The Bangladeshi who is drinking water with 50 micrograms per litre of arsenic and has poor nutrition may have worse health than a well-nourished person drinking the same water. This is a point that bothers us very much. Moreover, agencies or donors are not taking responsibility for patient management or arranging for research on the long-term ill effects of arsenic. ■

### Recent news from WHO

- On 6 December, WHO launched a major initiative called "make medicines child size" to increase children's access to safe and effective medicines. HIV/AIDS, malaria, tuberculosis, pneumonia and diarrhoeal diseases account for over 50% of under-five mortality.
- In her message for World Aids Day on 1 December, WHO Director-General Dr Margaret Chan called on the world not to forget Africa or women. In all regions, the proportion of women living with HIV is growing. In sub-Saharan Africa, the most afflicted area, it approaches 61%, the highest in the world.
- Measles deaths in Africa fell by 91% between 2000 and 2006, from an estimated 396 000 to 36 000, reaching the United Nations 2010 goal to cut measles deaths by 90% four years early. The announcement on 29 November was made by the founding partners of the Measles Initiative: the American Red Cross, The United Nations Children's Fund (UNICEF), the United Nations Foundation, the United States Centers for Disease Control and Prevention (CDC) and WHO.
- The Ministry of Health in Uganda confirmed an outbreak of Ebola haemorrhagic fever in Bundibugyo district. On 7 December, 93 suspected cases, including 22 deaths, were reported.
- The United Kingdom contributed £2 million (US\$ 4 061 878) on 22 November to support the US\$ 10 billion WHO global pandemic influenza action plan to increase vaccine supply.
- WHO's Director-General announced a second round of changes in 2007 to the structure of the Organization, on 21 November. The Health Technology and Pharmaceuticals cluster of departments will be merged into the Health Systems and Services cluster in recognition of the fact that "access to safe, effective, affordable medicines and other technologies is a fundamental component of an effective health system". The Health Technology and Pharmaceuticals cluster includes the departments of Essential Health Technologies, Medicines Policy and Standards and the department of Technical Cooperation for Essential Drugs and Traditional Medicine.

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