

INTERNATIONAL WORKSHOP ON CONTROL OF ARSENIC CONTAMINATION
IN GROUND WATER
ADDRESS BY THE UNION MINISTER, RD

1. I am extremely happy to be present on the occasion of the “International Workshop on Control of Arsenic Contamination in Ground Water in West Bengal”. At the outset, let me wish you all a very Happy New Year and a New Millenium.
2. Our country, since independence, has achieved significant progress in providing safe drinking water supply to millions of rural population. The figures, in terms of coverage of rural population (98.05%) and rural habitation (97.59%) as on 1.9.99 are impressive. This could be possible due to concerted efforts jointly made by the Centre and the States. Our Government at the Centre has accorded a very high priority for provision of safe drinking water to all rural population within a stipulated time frame. The National Agenda of Governance and the President’s Address to Parliament on 25th October’99 lay emphasis on providing safe drinking water covering all the rural population in the country within the next five years. However, the present scenario of the Rural Water Supply Sector gives two contrasting pictures. On the one side, we have the substantial coverage. On the other side, we witness the emergence of two major inter-dependent problems of (a) sustainability (both of the system and the source); and (b) water quality. Lack of sustainability gives rise to re-emergence of problem habitations year after year. Some of the water quality parameters, notably excess fluoride and arsenic have in recent times become challenging problems and pose a major health hazard affecting a substantial chunk of rural population.
3. In this context, it is worth mentioning that demands for fresh water from different sectors like Rural Water Supply, Irrigation, Urban Water Supply and Industries are increasing day by day against a gradual decrease of availability of the resources. Apart from the mismatch in the supply- demand scenario due to population explosion and ever increasing desire for higher levels of supply, gross mismanagement of water resources and neglect of the environment have further aggravated the situation resulting in continuous fall in water level and deterioration of water quality. In the earlier days traditional sources including ponds, tanks and open dug wells used to be the main sources for Drinking Water in rural areas. Over the years, these sources were neglected. The seventies witnessed launching of a massive programme for ground water development through a number of deep and shallow tube wells in the irrigation sector to cope with the demand of the “Green Revolution”. Simultaneously, the introduction of fast drilling technology resulted in a mushroom growth of bore wells withdrawing ground water in an unplanned manner. This uncontrolled drawal of ground water, especially in the irrigation sector coupled with highly subsidised electricity tariff to free electricity in various states led to severe water scarcity situations. Similarly, with the indiscriminate use of ground water, a series of quality problems were also identified like excess fluoride, arsenic, brackishness and iron. Further, the increased use of agro-chemical, poor environmental surroundings and discharge of untreated sewage and industrial effluents have significantly increased

the risk of further deterioration in drinking water quality.

4. It may be mentioned that ground water provides the source for more than 85% of the rural drinking water supply. Ground water, is an underground system not exposed to direct contamination, like surface water. But it is still having some major quality problems related to local geology. I am given to understand that ground water quality problems in general are of two types. (i) it is inherent in the form of contamination, caused by the very nature of the geological formation. Excess fluoride, arsenic and iron fall under this category. (ii) Ground water pollution is also caused by human interference. Some of the examples are (a) excess application of chemical fertilizers having high amount of Nitrogen in the agricultural sector; (b) untreated domestic sewage and industrial effluents causing biological contamination. (c) excess pumping of ground water in coastal areas leading to brackishness.
5. Against this back drop, the Department of Drinking Water Supply under the Ministry of Rural Development has initiated a number of measures for providing safe drinking water and for delineating major quality problems. 1% random sample survey of the habitations carried out in 1991 and validated in 1994 revealed that about 1.3 lakh habitations were affected with various quality problems in the country. This estimation may not reflect the correct picture as the figures are based on a small sample size; but it indicated of a challenging task at hand. Efforts were made to tackle the quality problems in drinking water through submissions, but the problem still persists because of the sheer magnitude and plurality.
6. Arsenic problem in ground water affecting a substantial rural population in West Bengal (population at risk is 5.3 million) is of great concern to Government of India. Besides West Bengal, very recently arsenic problem is also reported from Rajnandgaon District of Madhya Pradesh. Under Sub Mission on arsenic, a number of initiatives were taken in consultation with the Government of West Bengal, aimed at providing

(a) short term quick relief measures in the form of replacement of contaminated tube wells by deep tube wells and construction of sanitary dug wells; and

(b) long term permanent solution through surface water based piped water supply schemes.

Four schemes have been sanctioned under the Sub-Mission on Arsenic problem out of which one has been completed. The remaining three, with a total outlay of Rs. 339 Crore are under various stages of implementation. The share of Govt. of India is more than Rs.250 crores. Till date, more than Rs.93 crores has been released. Further releases will depend on the progress of the sanctioned schemes. All the schemes, on completion would provide safe drinking water to an estimated population of 27.61 lakh in 1840 habitations and 16 Non municipal areas in the districts of Murshidabad, Nadia, Malda and South 24 Parganas.

7. I understand that in order to have a correct picture on the actual extent and magnitude of the problem, a large scale testing of water samples contaminated with arsenic in the 8 affected districts is necessary. Keeping in view, the limited testing facilities and the need and urgency for large scale testing, the Government

of India sanctioned a sophisticated Central Chemical Laboratory at Calcutta at a total cost of Rs.63 Lakh and also 5 District Level Laboratories exclusively for testing of arsenic. Apart from testing of the samples in the laboratory, it may also be necessary to undertake testing at field level, involving trained community, using standardised field test kits, to get 'Yes' or 'No' qualitative results, so that the public at large may be in a position to delineate the contaminated sources and stop using them for drinking and cooking. With this end in view, a "National Workshop" was also organised recently at Lucknow with the sole objective for identifying the most appropriate field test kit for arsenic for possible manufacture and supply on commercial basis.

8. Apart from the treatment technology for removal of arsenic, other options explored are (a) preventive measures by undertaking large scale awareness generation amongst the community, about the adverse health effects due to continuous use of contaminated water; (b) Advocacy of nutritional intervention for offsetting the adverse impact of arsenic; and (c) large scale extensive capacity building through suitably designed training modules for effectively preparing the community to tackle the problem. In the context of the arsenic contamination posing a serious health hazard, the Ministry of Health, both at Centre and State, may also play a more active role for continuous water quality surveillance and other related options like improved dietary inputs for effective control of the arsenic problem.
9. You will be happy to know that there is a move by Government of India to set up an "Arsenic Mitigation Centre (AMC)" in Calcutta by upgrading the Central Chemical Laboratory for this purpose. This idea has been welcomed by Government of West Bengal and Donor agencies. I take this opportunity to acknowledge the good gesture of Government of West Bengal for providing the required land for establishing the centre. The proposed centre would not only be a referral resource centre for all problems related to arsenic, but would also be involved in evolving and designing suitable mitigation strategy through community participation.
10. The competing demands of ground water especially from the irrigation sector, which consumes more than 85% of the total available ground water, severely affect the drinking water sources in many parts of the country. The situation gets further aggravated, in the case of over exploited dark and grey blocks, resulting in recurrence of water scarcity situations and re-emergence of "Not Covered" (NC) habitations in the country. Further, absence of an effective mechanism for controlled drawal of ground water adds another dimension to the whole problem. To overcome the situation, a few options are available to us. One is to undertake recharging of ground water, through suitable techniques, relevant to local conditions, which may result in not only augmenting the ground water recharge but also in diluting the arsenic concentration. It is informed that recent studies carried out by the Central Ground Water Board, Ministry of Water Resources in this direction, have given encouraging results. The second option is practicing self regulation by community, on the use of water by adopting suitable cropping pattern, commensurate with the availability of water, which would go a long way in conservation of this precious resource. The third available option is to resort to dual rural water supply because the total fresh water requirement for purposes of

drinking and cooking is in the order of 8 LPCD. Since arsenic contaminated water is not harmful by physical contact, the same can be used for other purposes like washing of clothes and other domestic purposes. This strategy may have to be adopted in the long run in order to ensure equity in providing arsenic free safe drinking water to the affected rural population and to ensure thereby safe health.

11. Keeping in view the magnitude of the arsenic problem in West Bengal, I express my sincere thanks to the organisers for organising this workshop. I am sure that a set of practical, cost effective, and user friendly solutions to this vexing problem would come out from the galaxy of eminent experts in this field attending this workshop. I wish the workshop all success.