

Specialized Course On Arsenic Contamination in Bangladesh

Background

Arsenic contamination has been recognized as a major public health problem in Bangladesh. Groundwater extracted by shallow tube wells from arsenic contaminated aquifers in the affected areas of Bangladesh can no longer be considered safe for drinking and cooking. On an average 27% of shallow tube wells in Bangladesh is producing water with arsenic in excess of Bangladesh standard of 0.05 mg/l for drinking water. Arsenic problem has reduced the national population coverage by safe water supply from 97% to 74%. In acute arsenic problem areas more than 90% of shallow tube wells are contaminated. The high concentration of arsenic in groundwater in areas with higher percentage of tube well contaminated has magnified the risk of adverse health effects. An estimated 29 million people are drinking tube well water with arsenic content higher than the acceptable level in Bangladesh and 46 million people drinking water with arsenic in excess of provisional WHO Guideline value. The estimated total number of excess lifetime skin cancer risk at the present level of arsenic contamination of groundwater is around 400,000 in Bangladesh. More than 15,000 people have so far been identified to be affected by arsenic poisoning. Bangladesh has to mobilize massive effort to reduce high risk associated with ingestion of arsenic through contaminated water in which the need for qualified personnel cannot be over emphasized.

In this backdrop, International Training Network (ITN) centre had organized its first training on *Arsenic Problems and Dearsination of Water* for the professionals during 9-12 August, 1997. Since then, a lot of efforts have been put to understand and mitigate the problem, which resulted in the expansion of the sphere of knowledge in the field of arsenic contamination. In response to a high demand of the sector a number of specialized courses have already been undertaken. As a matter of continuation, ITN has been striving to impart quality training to update the knowledge and skills of the professionals working in the field of arsenic contamination.

Objectives of the Course

The main objectives of this training course are:

- To expand the knowledge base to understand the causes, magnitude, environmental consequences and health effects of arsenic contamination of groundwater;
- To update the technological development in arsenic mitigation;
- To provide practical training on arsenic detection and measurement in groundwater and analysis of test results; and thus
- To enhance the knowledge and skills of the professionals for better understanding and management of arsenic problems.

Participants

This is a specialized course to impart knowledge and skills to address arsenic problems in Bangladesh. The course is designed for professionals working in the field of arsenic mitigation. The participants are required to be graduates with some knowledge of chemistry. The professionals with practical work experience in arsenic problem areas can attend the course.

Course Outlines

Theoretical

- Arsenic Problem: World-wide Scenario
- Environmental Chemistry of Arsenic
- Fate of Arsenic in the Environment
- Hydrogeology and Arsenic Contamination
- Standards for Arsenic and Guideline Values
- Health Effects of Arsenic Contamination of Water
- Causes and Magnitude of the Problem in Bangladesh
- Arsenic in the Food Chain
- Social Aspects of Arsenic Contamination
- Arsenic Measurement by Laboratory and Field-test Kits Methods
- Treatment of arsenic contaminated water
- Arsenic Mitigation Programs in Bangladesh
- Quantitative Health Risk Assessment (QHRA)
- Policy dimensions of arsenic issues in Bangladesh

Practical

- Arsenic Mitigation: Practical Experience by Field Visit
- Arsenic Measurement by AAS-GF, SDDC and Fields Kits
- Group Work on Arsenic Mitigation Program

Resource Persons

ITN Center's Resource Pool comprising of academicians, researchers and professionals having long experience in the field of arsenic will provide expertise services during the course.

Course Coordinator

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