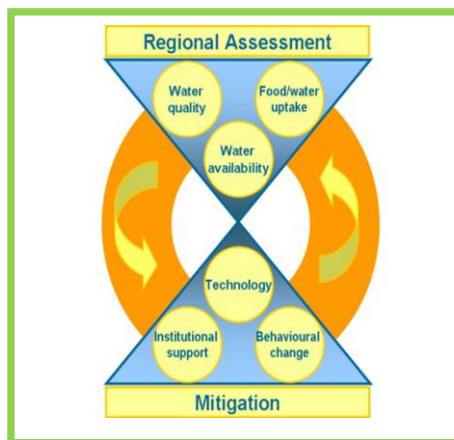


# International Workshop On Mitigating Effects of Geogenic Contaminants

February 22-23, 2012  
NEERI, Nagpur, INDIA



Organized by



CSIR-National Environmental  
Engineering Research Institute  
(NEERI), Nagpur – 440020,  
Maharashtra, INDIA

ISO 9001:2008



WHO Collaborating Centre  
for Water and Sanitation

With Support of



IWA International  
Water Association



## Background

Geogenic contamination refers to naturally occurring elevated concentrations of certain elements in groundwater (such as arsenic, fluoride, iron, uranium and selenium) which have a negative health effect on humans consuming this water. Geogenic contamination of groundwater might be a result of geochemical characteristics of the aquifer material – e.g. high concentrations of the contaminant in the rock matrix, dissolving during water-rock interaction, or occur due to environmental conditions such as an arid climate or reducing conditions in the aquifer which facilitate the contaminant to occur in a more mobile state. The most wide-spread geogenic contaminants are arsenic, fluoride and selenium, affecting the health of hundreds of millions of people worldwide.

Fluoride is the 13<sup>th</sup> most abundant element in the earth's crust (625 mg/kg) and exists in trace amounts in almost all ground waters across the world. According to estimations from UNESCO, more than 200 million people worldwide rely on drinking water with fluoride concentrations exceeding the present WHO guideline of 1.5 mg/L. Fluorosis, associated with elevated fluoride concentrations in drinking water has been reported in a range of countries. Fluorosis poses a grave public health problem in many countries over the globe and excess intake causes different types of fluorosis; primarily dental and skeletal fluorosis.

There are growing concerns of health significance due to exposure to emerging geogenic contaminants such as selenium in India and other countries. In this context, a 2-day workshop during February 22-23, 2012 is being organized at CSIR-NEERI, Nagpur, India with support from Ministry of Drinking Water and Sanitation, (MDWS), Government of India, UNICEF, WHO and International Water Association (IWA) to deliberate on issues related to geogenic contaminants with particular reference to fluoride, iron, selenium etc. for the participants from countries affected with geogenic contaminants to discuss and share experience particularly on preventive/mitigation measures undertaken to minimise health effects. Site visit of interested participants to fluoride and iron intervention areas are planned on February 24, 2012.

This workshop is planned as a sequel to the workshop being organised in Kolkata, India during February 18-20, 2012 to discuss arsenic contamination.

## Objectives

- ▶ Deliberate on recent findings indicating an increased geographical extent of geogenic contaminants particularly fluoride, iron, selenium etc.
- ▶ Discuss possible health impacts of geogenic contaminants and identify stress parameters
- ▶ Devise strategy for implementing approaches such as Quantitative Chemical Risk Assessment (QCRA) and health based targets
- ▶ Identify technological interventions to minimise geogenic contaminants
- ▶ Study feasibility of implementing interventions and possible bottlenecks in various socio-political settings
- ▶ Evaluate approaches such as nutrient supplementation for integrated mitigation
- ▶ Share experience for integrated mitigation

## Content of the Workshop

- ▶ Speciation and controls on the mobility in groundwater and soils
- ▶ Case studies on QCRA and health based targets
- ▶ Monitoring tools for geogenic contaminants and mapping by using GIS-based tools to estimate extent of contamination on a regional and national scale.
- ▶ Technological interventions to minimise geogenic contaminants
- ▶ Creation of technology bank and success stories for common use and implementation
- ▶ Developing business models for technological interventions
- ▶ Review importance of community participation in planning and implementing interventions
- ▶ Operation and maintenance of technological interventions.

## Expected Participation

The invitees for the workshop will be from geogenic contaminated region particularly from developing countries. This workshop will assist in cross-learning on mitigation measures to minimise health impacts of geogenic contamination. In addition, experiences on hydrogeological processes responsible of contamination will also be discussed. An abstract (250 words) highlighting type of geogenic contaminants, geographical extent and mapping and mitigation measures etc. should be submitted to the Organising Secretary before February 10, 2012. Presentation of 10 minutes duration will be made by the selected participants. In addition, there will be invited presentations by the experts in the workshop which will help participants to design and implement mitigation measures in the respective region/countries. A poster session is also planned during the Workshop and interested participants should submit abstract (250 words).

## Registration and Accommodation

### Registration Fee

Foreign Participants : Waived Off  
Indian Participants : Rs. 2,000/-

Registration fee includes admission to the workshop, workshop kit, lunches, tea/coffee, banquet and proceedings

### Travel and Accommodation

The accommodation for International and national delegates will be arranged in hotels and NEERI guesthouse on first cum first basis. Tariffs for the accommodation can be obtained from the Organizing Secretary.

## Dates and Venue

The International Workshop on Mitigating Effects of Geogenic Contaminants will be held at National Environmental Engineering Research Institute (CSIR-NEERI), Nehru Marg, Nagpur – 440 020, INDIA during February 22-23, 2012. The campus is situated on NH-7. Nagpur is well connected by road, rail and air to most of the important cities.

## About Organisers

### Partners

**CSIR-NEERI:** The National Environmental Engineering Research Institute is a premier R & D organization in the domain of Environmental Science and Technology in India with its Headquarters at Nagpur. It is one of the National Laboratories within the Council of Scientific and Industrial Research (CSIR), Government of India. NEERI is served by competent and experienced teams in various core disciplines of relevance to environmental science and engineering. Keeping in view the R&D accomplishments of CSIR-NEERI in water and sanitation sectors, World Health Organization in consultation with Government of India has designated Water Technology and Management (WT&M) Division of CSIR-NEERI, Nagpur as WHO Collaborating Centre for Water and Sanitation (WHOCC No. IND-104). This Collaborating Centre assumes great significance as it is one of 13 collaborating centres on water and sanitation in the world.

**MDWS:** The Ministry of Drinking Water and Sanitation (MDWS), Government of India, formerly under the Ministry of Rural Development as Department of Drinking Water and Sanitation, is presently headed by the Minister for Rural Development. In 2011, it was conferred the Ministry status, keeping in view the extreme importance given to the sector by the ruling government. The MDWS is the nodal department for the overall policy, planning, funding and coordination of programmes of drinking water and sanitation in the country. The MDWS Vision is to ensure safe drinking water and improved sanitation for all, at all times, in rural India; and the mission is to ensure all rural households have access to and use safe and sustainable drinking water and improved sanitation facilities by providing support to States in their endeavor to provide these basic facilities and services.

**IWA:** The International Water Association is a global network of 10,000 water professionals, spanning the continuum between research and practice and covering all facets of the water cycle. Through IWA members collaborate to promote the development and implementation of innovative and effective approaches

to water management. The strength of IWA lies in the professional and geographic diversity of its membership - a global mosaic of member communities - including academic researchers and research centres, utilities, consultants, regulators, industrial water users and water equipment manufacturers.

**WHO:** WHO is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends. WHO works on aspects of water, sanitation and hygiene where the health burden is high, where interventions could make a major difference and where the present state of knowledge is poor.

**UNICEF:** UNICEF is fully committed to working with the Government of India to ensure that each child born in this vast and complex country gets the best start in life, thrives and develops to his or her full potential. The organisation uses quality research and data to understand issues, implements new and innovative interventions that address the situation of children. UNICEF uses its community-level knowledge to develop innovative interventions to ensure that women and children are able to access basic services such as clean water, health visitors and educational facilities, and that these services are of high quality.

**IWWA:** The Indian Water Works Association is a voluntary body of professionals concerned and connected with water supply for municipal, industrial, agricultural uses and treatment and disposal of wastewater. IWWA focuses basically on the entire "Water Cycle" encompassing the environmental, social, institutional and financing issues. IWWA was founded in 1968 with headquarters at Mumbai. IWWA has 27 Centres spread across the country and is very active in conducting different activities in the areas of Water Supply and Wastewater Treatment and Disposal. IWWA has a membership of more than 6500 plus professionals spread all over the country and abroad.

## Patron

Dr. S R. Wate, Director, CSIR-NEERI, Nagpur

## Organizing Committee

Mr. D. Rajasekhar, MDWS, New Delhi  
Mr. N.K. Sehra, PHED, Bhopal  
Mr. T.G. Koshriya, PHED, Raipur  
Mr. Shardendu Narayan, JSWSM, Ranchi  
Dr. Peter Harvey, UNICEF  
Dr. Aidan Cronin, UNICEF, New Delhi  
Mrs. Payden, WHO, New Delhi  
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## Registration Form

### International Workshop On Mitigating Effects of Geogenic Contaminants

February 22-23, 2012  
NEERI, Nagpur, INDIA

Full Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Institution/Organization: \_\_\_\_\_

Address for correspondence: \_\_\_\_\_

Telephone No. (O)  
(R) \_\_\_\_\_

Mobile : \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Date: \_\_\_\_\_

Place: \_\_\_\_\_

(Signature of the Delegate)

