

Drinking Water Quality In India

Background

There is no doubt that water and sustainable development are inextricably linked. Once viewed as an infinite and bountiful resource, water today defines human, social, and economic development. Without adequate supplies and management of fresh and salt-water resources, socio-economic development simply cannot take place.

If we look at the present scenario, we are leading towards crisis. About 85 % of rural population in India is solely depended on ground water, which is depleting at a fast rate. In the urban areas though about 60% of the population is depended on surface water sources, the availability and quality are questionable.

Population growth is expected to result in a decline in the per capita availability of fresh water: In 1947, this was measured at 5,150m³. By the year 2000, it was around 2,200m³. It has been recently estimated that by 2017 India will be 'water stressed' - per capita availability will decline to 1600 cu m. Studies put the amount of available aggregate annual utilizable water in India, surface and ground together, at about 1,100 BCM.

Such aggregate figures, however, are quite misleading, since there is considerable spatial and temporal variation in rainfall. Some areas receive slight rainfall, whereas others experience monsoon conditions, which often result in flooding, loss of life and increased poverty.

Another problem areas are the fast-growing urban centres, where water requirements are expected to double by 2025. The situation concerning industrial supplies is even more difficult to analyze. Agriculture, the largest consumer of water resources in India, will probably require 770 BCM by the year 2025 to support food demand (Chitale 1992). The total estimated demand of 1013 BCM by the year 2025 would be close to the current available annual utilizable water resource of India. With predicted demands such as these, the supply of rural drinking water and requirements for ecosystems conservation are sure to face an uncertain future unless anticipatory policy measures are taken.

Water Quality Problems

The shortage of water in the country is slowly affecting the lives of people as well as the environment around them. Some of the major issues that need urgent attention are:

- As a result of excessive extraction of ground water to meet agriculture, industrial and domestic demands, drinking water is not available during the critical summer months in many parts of the country.
- About 10 per cent of the rural and urban population does not have access to regular safe drinking water and many more are threatened. Most of them depend on unsafe water sources to meet their daily needs. Moreover, water shortages in cities and villages have led to large volumes of water being collected and transported over great distances by tankers and pipelines
- Chemical contaminants namely fluoride, arsenic and selenium pose a very serious health hazard in the country. It is estimated that about 70 million people in 20 states are at risk due to excess fluoride and around 10 million people are at risk

due to excess arsenic in ground water. Apart from this, increase in the concentration of chloride, TDS, nitrate, iron in ground water is of great concern for a sustainable drinking water programme. All these need to be tackled holistically. With over extraction of groundwater the concentration of chemicals is increasing regularly.

- Ingress of seawater into coastal aquifers as a result of over-extraction of ground water has made water supplies more saline, unsuitable for drinking and irrigation.
- Pollution of ground and surface waters from agrochemicals (fertilizers and pesticides) and from industry poses a major environmental health hazard, with potentially significant costs to the country. The World Bank has estimated that the total cost of environmental, damage in India amounts to US\$9.7 billion annually, or 4.5 per cent of the gross domestic product. Of this, 59 per cent results from the health impacts of water pollution (World Bank 1995).

Role of different Agencies and the need

Ministry of Water Resources, Ministry of Urban Development and Poverty Alleviation, Ministry of Rural Development, Ministry of Environment and Forest and Ministry of Health and Family Welfare all have got a different roles to play to provide drinking water of adequate quantity and potable quality to meet the health needs of the community. All of them are involved and play their respective roles to provide quality water and its management. Roles of different agencies are listed below:

- Ministry of Water Resources: The Central Ground Water Board is monitoring both quantitative and qualitative data with regard to ground water. Apart from this CGWB has developed ground water maps concerning various qualitative issues.
- Ministry of Urban Development and Poverty Alleviation: Working through various Urban Bodies, the Ministry is involved in monitoring drinking water quality in the urban agglomerations. There are quite a few Water Boards especially in Metro Cities who are equipped to take up the job, but not all urban bodies keep watch of the quality of water being provided on regular basis.
- Ministry of Rural Development: Department of Drinking Water in the Ministry is working through State public Health Engineering Departments or Water boards are monitoring the drinking water quality in the rural areas of the country. Almost all the districts do have WQ laboratory. Though WQ is generally tested during installation, follow up testing is not done on regular basis. The department in certain places is initiating community involvement for WQ testing including "Catchments Approach".
- Ministry of Environment and Forests: Working through Central Pollution Control Board, the Ministry is involved in monitoring water quality of main rivers and big water bodies. Most of these water sources are being used for drinking water

purposes. So CPCB itself or through State Pollution Control Boards is having a watch on raw water quality.

- Ministry of Health: So far the Ministry had been playing a limited role with regard to drinking water surveillance in some selected areas. But with the inclusion of drinking water under food category, MoH will be playing a significant role.

But as things stand now not all the water being consumed by the community are of drinkable standards. Apart from coordination amongst various agencies on day-to-day basis at the local level, not all WQ laboratories are properly equipped to tackle the issue. There is also a gap with regard to trained manpower. Not all the results are properly recorded and follow up corrective measures are properly monitored. To strengthen the WQ surveillance programme it is necessary to have a common agenda for the concerned Ministries. The meeting is needed to initiate a dialogue to reach the common goal.

It is proposed to hold a 2day workshop to discuss the water quality issues in New Delhi. The dates are 23-24 September 2004. The representatives of various Ministries listed above are expected to participate and share their views with special reference towards strengthening WQ laboratory practices. Apart from them some CSIR laboratories like NEERI, ITRC etc. are also expected to participate. Apart from WHO, USEPA/USAID, DFID, the World Bank, UNICEF and a few more bilateral agencies are to participate.