

CHAPTER 1 : INTRODUCTION

1.1 Background of Arsenic problem

Surface water from ponds, lakes, rivers, and to a lesser degree, dug wells, was the traditional source of drinking water in Bangladesh. As a result, endemic water borne diseases extracted a heavy toll on human lives. With a view to save people from such diseases, the Department of Public Health Engineering (DPHE) embarked on a massive program in the early 70s to install tubewells with assistance from UNICEF (Mia, 1999). Basically a supply driven strategy and top-down planning were followed in the implementation of the program. A simultaneous communication campaign was mounted by government and non-government agencies to wean people from using surface water. The success of this program was remarkable. Millions of tubewells, majority of them privately installed, now dot the landscape. Very recently over 97% of the population was reported to have access to safe water from tubewells (BBS, 1997). This enviable success could be attributed to the government agencies, NGOs, international agencies such as UNICEF, and bilateral donor agencies. However, in the early 90s a new menace shattered the notion of tubewell water as safe. Arsenic was discovered in groundwater; first in West Bengal, India and then in Bangladesh. Initial investigations were of limited scope and area-specific. Follow-up national scale studies revealed the problem to be of an enormous magnitude engulfing almost the entire country. Over 7,000 cases of chronic arsenicosis have been identified in Bangladesh. It is estimated that as many as 109 million people (at 10 ppb) or 93 million people (at 50 ppb) are potentially at risk. It is clearly one of the worst cases of mass poisoning of drinking water in history.

1.2 History of investigation

The problem of high levels of arsenic in tubewell water was first detected in 1993 in Bangladesh, and was subsequently confirmed after 1996 (Kabir, Ahmed, and Zaman, 1999). The first discovery of arsenic contamination in Bangladesh was made in Barogharia union of Chapainawabganj district by DPHE following reports of extensive arsenic contamination in the adjacent districts of West Bengal, India (BCAS, 1997).

In West Bengal itself, first reports of arsenic contamination were published in 1983, and by 1988 massive contamination of groundwater in the province was confirmed (Shaha, 1995). In 1995, School of Environmental Studies (SOES) Jadavpur University, India organized an international conference on arsenic in Calcutta. This conference both brought the arsenic problem in West Bengal to a wider audience, and at the same time also highlighted the urgent need for serious studies across the border in Bangladesh (Shaha, 1995).