

NATIONAL POLICY FOR ARSENIC MITIGATION 2004**1. Preamble**

- 1.1 In Bangladesh surface water is abundantly available during monsoon but it is scarce during the dry season. Ninety seven percent of the population relies on ground water for drinking purpose. Ground water used for drinking in many areas of Bangladesh has been reported to have contamination by arsenic above the Bangladesh National Standard of 50 parts per billion (ppb). The percentage of contaminated tubewells in villages varies from more than ninety percent to less than five percent. Geographically, the tube wells in the delta and the flood plains regions, which comprise 72% of the land area, are more or less affected by arsenic contamination.
- 1.2 Arsenic contaminated aquifers have no regular pattern, varies both horizontally and vertically within short distances
- 1.3 Population exposed to arsenic in Bangladesh runs into millions, thousands of people are suffering from arsenicosis and many among them have developed cancer and other complications.
- 1.4 Arsenic contamination is geological and there is no known control at source and also there is no proven treatment for arsenicosis. Hence the primary option is alternate supply of arsenic safe drinking water. Therefore, it is simultaneously a water supply and a health issue.
- 1.5 Water supply brings with it the issue of appropriate and affordable technology options to the community. The shallow tube wells, cornerstone of the water supply miracle in Bangladesh, can no longer provide safe water for drinking and cooking in arsenic affected areas.
- 1.6 Symptoms of arsenic poisoning bring in the social dimensions. People with arsenic induced symptoms face social sanctions with apparent but no real justification.
- 1.7 Arsenic in ground water used for irrigation may also have affect on agriculture and food chain.

- 1.8 The variety of ways arsenic affects life and people have attracted the attention of a diverse group of stakeholders. Different ministries and government agencies, academics, NGOs and bilateral/multi-national development partner agencies are pursuing separate programmes without any co-ordination. This is resulting in duplication of activities and conflicting strategies that inhibit synergy and optimal use of scarce resources.
- 1.9 A policy guideline for arsenic mitigation programmes for arsenic affected areas to guide and co-ordinate all activities has therefore, become imperative.

2.0 Objectives

- 2.1 The policy provides a guideline for mitigating the effect of arsenic on people and environment in a realistic and sustainable way.
- 2.2 This will also supplement the National Water Policy 1998, National Policy for Safe Water Supply and Sanitation 1998 in fulfilling the national goals of poverty alleviation, public health and food security.

3.0 Policy Statements

Access to safe water for drinking and cooking shall be ensured through implementation of alternative water supply options in all arsenic affected areas. All arsenicosis cases shall be diagnosed and brought under an effective management system. Impact of arsenic on agricultural environment shall be assessed and addressed.

4.0 Identification of the nature and extent of the problem

Considering the pattern of distribution of arsenic contaminated tube wells and prevalence of patients, the national programme shall include the following:

- 4.1 Screening and regular monitoring of all tube wells including irrigation wells to identify the wells that have arsenic above the levels permissible in Bangladesh. The purpose of monitoring will be twofold, first to identify priority areas and groups for assistance and second to assess the effectiveness of the Policy and the Implementation Plan in reducing the arsenic risk and the number of patients.
- 4.2 Identification of all arsenic affected patients and population at risk;

4.3 The water quality of all new water supply sources is tested prior to commissioning; and

4.4 Assessment of the level of arsenic in soil and agriculture products including livestock.

5.0 Arsenic Mitigation

The arsenic mitigation activities under the Policy will focus on the following:

5.1 Public Awareness

5.1.1 Raising awareness regarding the impact of ingestion of arsenic contaminated water;

5.1.2 Raising awareness about alternative arsenic free safe water sources and mitigation options;

5.1.3 Raising awareness regarding remedial measures against arsenic poisoning; and

5.1.4 Raising awareness that arsenicosis is not contagious and that social exclusion is not justified.

5.2 Alternative Arsenic Safe Water Supply

Technology options for water supply are area dependent and no single option can serve the purpose of the people having diverse socio-economic background. Arsenic mitigation programme for water supply must promote a range of technology options approved for arsenic affected areas. All mitigation programmes shall adhere to the following:

5.2.1 Follow the Bangladesh Standards for drinking water as defined in 'Environmental Conservation Act 1995 and Rules 1997, Schedule - 3';

5.2.2 Give preference to surface water over groundwater as source for water supply;

5.2.3 Follow approved guidelines/protocols for installation of water supply technology options;

5.2.4 Ensure, on an emergency basis, safe source of drinking water at a reasonable distance;

5.2.5 Assess the needs for water supply intervention based on the status of contamination at village level; and

5.2.6 Endeavor to promote piped water systems wherever feasible and such schemes must ensure that the poorest members of the community have access to safe water that meets

the minimum service levels established by the Government. In the case of piped water supply in the rural areas where the supply will be mainly for drinking and cooking, 8 litres of water per capita per day will be ensured and the service level in municipal areas will be determined by the respective municipal council/city corporations.

5.3 Diagnoses and Management of Patients

In proper diagnosis and management of patients the arsenic mitigation programme shall include the followings:

- 5.3.1 Provisions for protocols for diagnosis and management of arsenicosis patients;
- 5.3.2 Provision of training to health service providers at different levels;
- 5.3.3 Formulation and maintenance of an effective referral chain for complicated case management of arsenicosis patients;
- 5.3.4 An appropriate mix of preventive and social medicine;
- 5.3.5 Provision of medical and healthcare in health centers and hospitals for seriously affected patients; and
- 5.3.6 Provision for rehabilitation of arsenicosis patients;

5.1 Capacity Building

Programme to address the problem of arsenic in ground water in the country shall include building appropriate capacity at all levels. Capacity building shall include the following:

- 5.4.1 Providing government support for test kit manufacturing within the country, through both public and private initiatives;
- 5.4.2 Capacity at local and community levels for installation, operation and maintenance of mitigation options including monitoring, information management and reporting;
- 5.4.3 Capacity of the relevant government departments will be increased for hydrogeological investigation and analysis;
- 5.4.4 Capacity for water quality monitoring and surveillance of existing safe tube wells and the proposed interventions;
- 5.4.5 Establishment of a network of well-equipped laboratories with arsenic measurement capacity at appropriate levels;
- 5.4.6 Capacity of relevant government agencies to provide technical guidance and monitoring for supply of safe water should be strengthened;

- 5.4.7 Capacity of relevant government agencies for assessment of arsenic in soil and agricultural products.
- 5.4.8 Provision shall be made to tap international expertise in areas where necessary local expertise is yet to be developed. The government shall identify, with assistance from the national level expert committee, the specific areas where inputs from international experts will be beneficial.
- 5.4.9 Capacity building of local level doctors and health workers to diagnose and management of cases of arsenicosis patients and diagnosis and management of arsenicosis patients will be included in the curricula of all medical colleges as well as of all training institutes for health workers of all levels;
- 5.4.10 Capacity building of health workers as well as social service workers in rehabilitation of arsenicosis patients; and
- 5.4.11 All government hospitals in arsenic affected areas shall have trained medical personal for identification and management of arsenicosis patients and district and the national level hospitals shall have different types of specialist medical professionals for treatment and management of different varieties of arsenicosis patients.

6.0 Institutional Arrangement

The policy emphasizes effective coordination of the activities of government ministries and agencies, greater role of local government institutions, the involvement of the user communities in planning and delivery of services. NGOs and the private sector may also be involved in service deliveries. The institutional arrangement for implementation of the policy shall include the following:

- 6.1 The Government shall form a high level committee or designate any such existing committee to oversee all activities, implementation programmes in accordance with this policy;
- 6.2 The Government shall form a national level expert committee or designate any such existing committee to provide technical advice and support in the field of arsenic mitigation;
- 6.3 National level government agencies shall focus and co-ordinate their activities in their mandated field in a more effective way;

- 6.4 Move towards decentralised planning and delivery of safe water options and health services through the grass root level local government institutions (LGIs) with technical support from relevant government agencies;
- 6.5 Greater involvement of LGIs in mobilizing resources, monitoring and information management; more specifically registration and monitoring of tube wells and patients;
- 6.6 Groundwater being a natural resource, a suitable regulatory mechanism shall be in place to regulate all activities in relation to groundwater such as exploration, exploitation and management.

7.0 Research and Development

The national programme shall encourage and promote research and development to seek a clear understanding of the impact of arsenic on water supply, health, food and agriculture. To promote co-ordinated research and development the government shall:

- 7.1 Prepare with the help of the National Committee of Experts, among others, a prioritised list of study and research activities needed in different fields of arsenic mitigation; and
- 7.2 Shall formulate appropriate regulatory measures to ensure that all research on arsenic in the country whether by local or expatriate organisations or individual researchers are undertaken in a co-ordinated way and the results are shared with the Government of Bangladesh or its designated agency

8.0 Information, Applied Research and Reference Laboratory

- 8.1 Knowledge and information shall be managed centrally to ensure transparency of the implementation process. Ready accessibility of information to all stakeholders is essential. A government institution shall undertake this sustained role of functioning as an information warehouse at the national level;
- 8.2 Centres of excellence on relevant research shall be developed. These centres shall focus on existing information and knowledge leading to identifying and conducting research on key areas; and
- 8.3 A reference laboratory shall be designated for analytical validation of arsenic related laboratory activities.

9.0 Collaboration and Co-operation

To ensure effective collaboration and cooperation among various stakeholders the Government shall emphasize on the following:

- 9.1 Co-operation and co-ordination among the Government organisations and ministries involved in arsenic mitigation;
- 9.2 Identification by the Government, with the assistance of the national level expert committee, the areas where international collaboration is required for program implementation, arsenic mitigation and research and specifying the nature of required support.
- 9.3 Collaboration and co-operation among professional groups involved in various activities related to arsenic contamination; and
- 9.4 Close co-operation among Government, Non-Government Organisations, Civil societies, Development partners and Research & Training Institutions within and outside Bangladesh.

10.0 Policy Implementation

- 10.1 All stakeholders shall work within the framework of this policy. The Government shall administer this policy through relevant ministries and government agencies.
- 10.2 An implementation plan shall be prepared which will provide the operational framework for arsenic mitigation activities in the country.
- 10.3 The policy shall be reviewed and updated depending on the implementation feed back, if and when such need arises.