

FOREWORD

Being a common pool and hidden resource, and because of a perpetual belief that groundwater is risk free from pollution and can easily be drawn on demand; exploitation of groundwater resources in many places in the Country has taken place indiscriminately without caring for hydrogeological features of aquifers and consequences that may emerge in the long run. One of the resulting effects has emerged in the form of deteriorated groundwater quality from the sources of hazardous contaminants of geogenic origin. Rise in deteriorated groundwater quality is emerging as the grave impinging issue to scarcity of fresh groundwater resources and thereby to demand management. Arsenic contamination in groundwater above the permissible limit of 50 g/L in scattered places reported from seven States particularly in the Holocene aquifers of Ganga-Brahmuptra alluvium plains is one of the major challenges of groundwater quality hazards before the Country that requires scientific solutions. The occurrence of arsenic in groundwater and its consequential health hazards to the people has been described as the biggest natural groundwater calamities in the World.

Since the arsenic contamination in groundwater was first reported from West Bengal in the late eighties and thereafter from six other States, a number of counteractive, preventive measures and R & D activities have been put in place, particularly in West Bengal. In other States, those remained scanty. Despite so many years passed over, however, the problem resolving issues have remained unresolved.

As a step towards that, the Follow up committee of the "Second Advisory Council for Artificial Recharge of Ground Water" has identified "Arsenic contamination in groundwater in India" as one of the focal areas to resolve by first bringing out a vision document emphasizing the present state-of-affairs of the problem, field actions and R & D works taken so far and their outcomes and shortfalls, the gaps, and areas in which further research and activities to be taken up, etc. To bring out a vision document, the Ministry of Water Resources, Govt. of India has entrusted the task to the National Institute of Hydrology (NIH), Roorkee and Central Ground Water Board (CGWB) with financial support. The Vision Document entitled "**Mitigation and Remedy of Groundwater Arsenic Menace in India**" is an outcome of the joint coordinated efforts of NIH and CGWB.

The Vision document contains a total of ten chapters: the chapters 1-5 explain knowledgebase, understanding and technological opportunities available, state-of-affairs of arsenic contamination in India and different corrective measures taken and shortcomings experienced; while the chapter-6 in fact, brings out a critical appraisal of chapters 1-5. The chapter-7 focuses the gaps and identifies areas requiring future initiatives. The Chapters 8-10 devise a "Comprehensive Plan of Actions" envisaging roadmap, financial requirement and the method as to how the mission can be coordinated and accomplished.

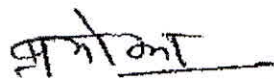
The texts presented in the document in the form of different chapters have been contributed by a number of resource persons conversant to the subject areas. The contributors were: Prof. K. J. Nath, Chairman-West Bengal Arsenic Task Force; Prof. Dipankar Chakraborty, School of Environmental Studies, Jadavpur University; Dr. S. P. Sinha Roy, Ex.-member, CGWB and Former Chairman, Arsenic Task Force, West Bengal; Mr. R. M. Mishra, Joint Secretary(Admn), MoWR; Dr. S. K. Sharma, Consultant (GW), MoWR; Dr. B. B. Basu, Director, School of Fundamental Research, Kolkata; Dr. N. C. Ghosh, Scientist-F, NIH-Roorkee; Dr. C. K. Jain, Scientist-F, NIH-Guwahati; Shri Abhijit Roy, Superintending Hydrogeologist, CGWB-ER, Kolkata; Dr. Dipankar Saha, CGWB-MER-Patna. Valuable contributions made by each of the experts are thankfully acknowledged. The services rendered by Dr. Nagendra Kumar, Associate Professor, Deptt. of Humanities and Social Sciences, IIT Roorkee in the form of professional editing of the document are also thankfully acknowledged.

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