

Arsenic contamination in groundwater and its proposed remedial Measures

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ABSTRACT: Arsenic contamination occurs in groundwater of Bangladesh mainly from the alluvial and deltaic sediments. Arsenic contamination of groundwater in Bangladesh was first detected more than a decade ago and the ‘shallow tubewells’ were reported as the main source of arsenic contaminated water. From the nutritional and metabolic points of view, arsenic is likely to adversely affect human health and nutrition. Up to now, several studies have been carried out on this context; however, inadequate knowledge on arsenic sources, mobilization and transport still remains as a constraint due to lack of data, information and technological advances. Thus, a review study has been undertaken on the sources of arsenic, its causes, mobilization, transport, effects on human health, arsenic test procedures and removal methods, in the context of groundwater contamination in Bangladesh, and finally sustainable remedial measures of arsenic have been proposed. This study suggests that laboratory facilities for testing of arsenic and effects of enhanced groundwater pumping, phosphate fertilizer etc., need to be updated, expanded and studied. This review work is significant to further knowledge improvement, as the topic is general and worldwide. It can be concluded that the integration of the proposed remedial measures with the national geographic information system interface database relating to arsenic for analysis, production

of hazard maps, and dissemination on television show for the planners, engineers, managers, field supervisors and affected people, can reach at the sustainable solution for mitigating arsenic and associated problems successfully in Bangladesh.

Keywords: *Arsenic removal methods; Mobilization; Source; Transport*