About the Book

The hydrogeological aspect of groundwater science is universal and applied in nature to have a sustainable water resource development with social, economic, ecological, cultural and aesthetic background. Since 99% of the world’s fresh available water is groundwater; yet, the majority of financial resources are directed to surface water found in rivers and lakes. This serious imbalance requires urgent redress. This volume is addresses the issue to facilitate the joint analysis of groundwater management studies and problems faced by scientist, engineers, managers and other scholars from natural and applied sciences. Significant financial support is required for basic groundwater research if sustainable development is to be a realistic goal. As a fresh water resource, groundwater has major advantages over surface water. This is the basic idea that explicitly appears in almost all paper of this book. The authors have tried to focus their task on those topics that seemed to us more urgent and relevant and have paid much attention to questions related to management of aquifers, groundwater pollution, the long-term problems and the key issues in developing countries, where majority of world population live and where at present enormous groundwater abstraction occurs. We (editors) have dissipated proper information in a systematic scientific manner to make the concept of groundwater management and sustainability understand able to everyone, through this book.

The book provides a platform to bring together earth scientists, professionals from chemical and engineering science disciplines, public health professionals and social scientists involved with the management and development of groundwater resources. The book is expected to reflect the current understanding of all the issues related to management of groundwater resources and their sustainable use.

Salient Features

Salient Features:

- A compilation of 49 chapters, the book deals with all the issues related to the management of groundwater resources and its sustainable use.
- Topics covered include reuse, drainage, toxicity/poisoning and remediation, nutrient chemistry, recharge, reserve, aquifer remediation, modeling, legislation, quality monitoring, hydrogeochemistry, and many more.
- The text is well supported with line diagrams, pictures, and data tables.

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About the Author

AL. Ramanathan: is a Professor in the School of Environmental Sciences, Jawaharlal Nehru University, and New Delhi, India. His research area is in the field of Hydro geochemistry from inland and coastal surface and ground water and their resource management. He has got 18 yrs of teaching experience (PG) and research experience in this subject. He has taught in numerous universities in India and abroad. He has guided quite a number of PhD research students on ground water quality and modeling aspects. He has widely travelled all over the world for the advanced research work in ground water. He is also a recipient of various international and national scholarship and had collaborations with institutes and universities reputed in ground water research in India and abroad. He has published two dozen articles in reputed refereed journals and authored five books in these aspects. He has completed and continuing his research work on ground water got from Indian and international agencies.

A.K. Keshari: is an Associate Professor of Water Resources engineering and Geoinformatics at Department of Civil Engineering, Indian Institute of Technology Delhi. He has earlier worked as Scientist at National Institute of Hydrology, Roorkee and in North Eastern Electric Power Cooperation, Shillong and at IIT Kanpur for short periods. He has been Postdoctoral Fellow and Visiting Researcher at Kongju National University, Korea in Years 2001-2002, and has also visited Japan, USA and Denmark. He specializes in hydrogeology, groundwater flow and pollution modelling, remote sensing & GIS, hydrologic simulation & design, FEM & optimization, environmental & river hydraulics, hazard & risk assessment and project economics. Dr. Keshari has published more than 120 papers and has carried out many real life projects for UP Bhumi Sudhar Nigam, Tata Infotech Limited, CGWB, WAPCOS, SASE, DRDO, ISRO, DST, CES, MCD, Pondicherry PWD, ORG Informatics, Haryana Distillery, etc., some of them are World Bank funded Projects. He is the member of Indian Association of Hydrogeological Sciences (IAHS), Indian Association of Hydrologists (IAH) and is also member of Bureau of Indian Standards (BIS), Indo French Unit for Water and Waste Technologies (IFUWWT), etc. He has been the reviewer of many international and national journals.

D. Chandrasekharan: is a Professor of Geology in the Department of Earth Sciences, and Head, Centre of Studies in Resources Engineering, Indian Institute of Technology Bombay. He is an active researcher involved in research related to arsenic and fluoride pollution in groundwater in India. His research interests includes geochemistry of natural and thermal waters and gases. He has been nominated as a “Senior Associate” to The Abdus Salam International Centre for Theoretical physics, Trieste, Italy for a period of five from January 2002.

Jochen Bundschuh: completed his PhD on numerical modelling of heat transport in aquifers in Tubingen in 1990. For over 14 years he is working in international academic and technical co-operation in different fields of sustainable use of groundwater systems and connected disciplines, including the water-related economic, social, health, and political aspects. The last 12 years he spent in different Latin-American countries, where his main tasks comprised capacity building for institutional strengthening and human resources development applied research, and project management. The countries comprise: Paraguay, Argentina, Brazil, Uruguay, Brazil, Mexico, Bolivia, Costa Rica.
Honduras, Guatemala, Panama, Pakistan, India, Bangladesh, middle East, Tunisia and South Africa. From 1993 to 99 he served as expert of the German Agency of Technical Cooperation (GTZ) and as long-term professor for the DAAD (German Academic Exchange Service) in Argentine to install a centre for water and environment offering training, consulting and research. Currently (since 2001) he is integrated expert of the GTZ/CIM programme for technical cooperation between Germany and costa Rica and deals with the sustainable use of surface and groundwater resources for power generation. This mission comprises to develop and apply capacity building programmes, research, and to identify and formulate project proposals. Additionally to these principal activities, he is involved in many consultancies, capacity building programmes and projects in Latin- America, but also in Africa and Asia, which are comprising-in between others- research of groundwater contamination by arsenic originating from gelogenic resources.

**Prosun Bhattacharya :** PROSUN BHATTACHARYA received his Ph.D. degree in Petrology and Sedimentary Geochemistry from the University of Delhi, India in 1990. He joined Kungliga Tekniska Hogskolan in 1993 and started his carrier as a Research Scientist and worked on the genesis of high fluoride groundwater in Western India. He developed expertise on solid phase characterization through detailed soil chemical studies and their bearing on the high fluoride groundwater in the region. Since 1995, he has been working on heavy metal contaminated soils which have resulted from different industrial activities, particularly the wood preservations sites contaminated by CCA, ammunition industries, and shooting in Sweden along with the studies on chemical remediation. Since 1995, he is actively engaged with the studies on the genesis of high arsenic in groundwater of the sedimentary aquifers in the Bengal Delta Plain, West Bengal and Bangladesh and devising sustainable techniques for safeguarding ground water resources. At present his primary research interest is directed towards the understanding the mechanisms of arsenic mobilization in groundwater of the sedimentary aquifers based on hydrogeochemical, sediment geochemical and stable isotopic characteristics in Bengal Delta Plain (BDP), Huhhot Alluvial Basin (HAB), Mekong Delta (MD) and the chaco-Pampean Plain of Argentina. He established the Groundwater Arsenic Research Group (GARG) at the Department of Land and Water Resources Engineering, KTH in 1999, a group which is dedicated on research on the groundwater arsenic occurrences in different parts of the world. At present GARG is collaborating with a number of universities and research organizations in India, Bangladesh, China, Australia, Argentina, Costa Rica, Bolivia, Pakistan and Ghana. He has received the title as a Docent (Associate Professor) in Groundwater Chemistry at the KTH in April 2002. Prosun has authored nearly 170 international publications in peer reviewed journals, books and conference proceedings and has organized a number of international workshops on Arsenic in Groundwater of Sedimentary Aquifers.