ARTIFICIAL RECHARGE TO GROUNDWATER AND RAIN WATER HARVESTING: ISSUES AND LEARNING FROM THE DEVELOPING COUNTRIES

Call for Contributions

ABOUT THE MONOGRAPH

Globally, groundwater is one of the most critical natural resources. With its contributions to agriculture, potable water supply, industries and its immense economic and ecological importance, this resource plays a great role in meeting the Sustainable Development Goals (SDGs). Supporting billions of small and marginal farmers around the world, it acts as a hedge against water insecurity, drought, food vagaries, and water borne diseases. The relatively higher resilience of groundwater against the onslaught of climate change is widely accepted. Rainwater Harvesting and Artificial Recharge is considered as the key supply-side intervention to sustain the resilience of water and food security of communities around the world. The rationale is to recharge and store more water underground for enhanced and sustained water access by plants, ecosystems, and people. Storing water in soil and aquifer protects the resource from accelerated evaporation due to temperature rise under climate change. It is relatively cheap to implement, and obviates relocation of people from the flooding areas in case of major dams.

Many practices linked to these two technique (artificial groundwater recharge and rain water harvesting) are on trial around the world. The knowledge accumulated and the innovations adopted are reported to produce better outcomes. The impact of these interventions on sustaining, and in many cases, rejuvenating the groundwater resource are encouraging. However, success depends on wide ranging factors like biophysical, technical, agricultural, ecological, socio-economic, institutional and legal issues. Having strong ownership and engagement with local communities and stakeholders is the key issue. The interventions need to be integrated into broader water, land and ecosystem management policies and practices.

The Proposed monograph presents success stories and challenges encountered, science and technology being adopted, and the socio-economic impact created by rainwater harvesting and artificial recharge in developing countries of the world. Government-supported initiatives through policymaking, regulation and ongoing large projects from different countries are showcased in this monograph along with community-driven approaches.

The roadmap for enhancing benefits from such interventions, particularly in water-stressed regions of emerging economies, located in different climatic, geographical and geologic regions, will also be discussed.

ABOUT THE NAM S&T CENTRE

The Centre for Science and Technology of the Non- Aligned and Other Developing Countries (NAM S&T Centre), New Delhi is an Inter- governmental Organization with a Membership of 47 countries spread over Asia, Africa, Middle East and Latin America. The Centre was set-up in 1989 in New Delhi, India in pursuance of the decisions of various NAM Summits with the objective of promoting mutually beneficial cooperation among the NAM and other developing countries for collective self-reliance.

The Centre undertakes a variety of programmes, including organization of International Workshops, Conferences and Training Courses, and implementation of Collaborative S&T Projects. It also offers short-term Research Fellowships to Scientists and Technologists from developing countries in association with the Centres of Excellence in various countries. The Centre also brings out books, monographs and other scientific publications in different subjects that are of interest to developing countries. The Centre's activities provide opportunity for scientist–to–scientist contact and interactions, familiarizing participants on the latest developments and techniques in the subject areas, identification of the requirements of training and expert assistance, locating technologies for transfer between the Members and other developing countries, and dissemination of STI information etc.

In addition, the Centre encourages Academic- R&D-Industry Interactions in the developing countries through its NAM S&TIndustry Network.

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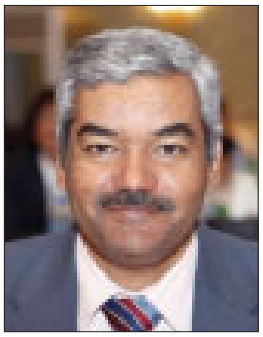
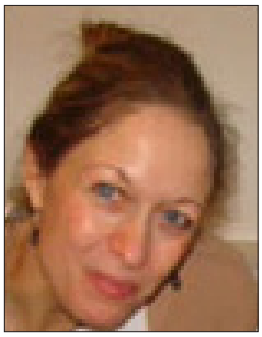
ABOUT THE EDITORS

Dr. Dipankar Saha is a Former Member, Central Ground Water Board (CGWB) and Former Member Secretary, Central Ground Water Authority, Govt of India. He spearheaded the National Aquifer Mapping and Management Programme in India. His area of specialization is groundwater exploration and management; contaminant behavior in aquifer environment; issues, policies and practices in the domain of sustainable groundwater management. He received Ph.D. from one of the prestigious Indian Institute of Technology and authored more than 55 publications in international journals. He is recipient of the prestigious National Geoscienece Award in India and has edited two books published by Springer; a. Water Governance- challenges and prospects and b. Clean and sustainable groundwater, and also coedited a special volume of the Journal of Hydrology: Regional. Dr. Saha is widely travelled, led the Govt of India Delegation and delivered many invited talks in India and abroad. He remained consultant to International Agencies and now is in the Board of Water for People India Trust. Presently he is the Chair Prof of Centre for Advance Water Technology and Management, a Centre of Excellence devoted to water and environment issues, at Manab Rachna International Institute of Research and Studies located at National Capital Region, Delhi.



Dr. Mohamed Shamrukh is a Professor of Environmental and Water Resources Engineering (early retired, Minia University).He recently worked as an expert on "Water Resources & Environment" at the Ministry of Municipality and Environment, Doha. Dr. Shamrukh was also a postdoc research associate in Texas A&M University at Qatar and visiting Research Scholar in main campus in Texas. He received Ph.D. from Minia University (Egypt) under joint system with Texas A&M University (USA) in 1999 and both Masters (1995) and Bachelors (1989) from Minia University. He published more than 43 papers in international journals and conferences besides two books and two chapters. His NATO book by Springer Publisher "Riverbank Filtration for Water Security in Desert Countries" is well known. He is a reviewer for scientific journals, conferences and research funding agencies. He was a member of mid-term review for 1st National Development Strategy in Qatar. He was honored with the Junior Scientist Visit Development Grant to USA from Egypt (2006). He participated in Saudi Arabia Cloud Seeding Project in 2007/2008 and Florida Weather Modification Project in 2019.



Dr. Karen G. Villholth, Principal Researcher, leads the Groundwater Portfolio at IWMI (International Water Management Institute). She is Coordinator of the Groundwater Solutions Initiative for Policy and Practice (GRIPP), a global partnership of 30 international organizations supporting sustainable development, use and management of groundwater. Her areas of work include research, policy advice, and capacity development on inter alia: trans-boundary aquifers, irrigation and food security, groundwater resources assessment/modelling, climate change and adaptation, natural/green infrastructure, and groundwater management and governance.
Karen holds a Ph.D. in Hydrogeology and a M.Sc. in Chemical Engineering from Technical University of Denmark and a M.Sc. in Civil Engineering from University of Washington, USA. She worked for DHI-Water and Environment and Geological Survey of Denmark and Greenland. She is Editor of eight books and special issues and author of more than 80 peer-reviewed international journal articles.

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TIMELINE	TENTATIVE ACTIVITY
August - November 2021	***Preparatory Work and Editorial Consultations***
December 2021 - January 2022	***Formal Invitations to Authors for Submission of Papers/Chapters***
January - February 2022	***Receipt of Tentative title, Scope of paper along with a few keywords***
May 2022	***Receipt of Full Papers/Chapters***
March 2022	**** Submission of Book Proposal to a Reputed Publisher***
May - June 2022	***Editing and Revision of Papers***
June 2022	***Submission of Full Manuscript to the Publisher***
July – September 2022	***Publication Process***
October 2022	***Publication of Monograph***

(*) Efforts would be made to publish the Monograph through Springer Nature, Singapore.