

FOREWORD

Water is the most precious gift of nature and is essential for the very existence and sustenance of life on the planet earth. It is one of the most important components which influences the economic, agricultural and industrial growth of any region. However, increasing demand of water due to ever growing population and consequent decrease in per capita availability of water, unscientific and improper use and management of available water resources, degradation of water quality due to growing urbanization, industrialization and inadequate waste management, have led to a number of quantitative and qualitative problems in many areas. A further dimension to it has been added by the issue of increasing global temperatures, causing global warming. In view of this, proper assessment of available water resources and their scientific management for the benefit of the society has assumed a great significance.

Punjab is endowed with rich water resources, with perennial rivers like Ravi, Beas and Sutluj and seasonal river Ghaggar. Punjab derives its name from the availability of rivers in the ancient times itself. Besides these important rivers, there are a number of other small rivers, wetlands, canals, drains, ponds and reservoirs in the state. However, like many other states in India, Punjab is also facing number of problems in the water sector. Water scarcity in the arid regions, water logging in the highly irrigated regions, water quality degradation in many of the cities, depleting ground water levels due to excessive pumping in many parts of the state, ecological degradations of the wetlands and lakes, are only a few to name. As such, it is high time that planners, bureaucrats, policy makers, researchers, academicians, non governmental organizations, field engineers and stake holders should sit together and discuss various issues related to the assessment of availability of water and its management for the socio-economic benefit and development of the state, so as to plan proper strategies to address the various issues.

The National Institute of Hydrology has carried out some important studies on water resources of Punjab in the past. Even currently, a study on the ground water dynamics of the Bist-Doab region of the state is being carried out by the Institute under the Purpose Driven Studies (PDS) component of the Hydrology Project, Phase II. During the course of the investigations, the group of the scientist realized various issues related to the water availability and management of the water resources of Bist-Doab region in particular and the state of Punjab in general. Recognizing the importance of addressing these issues, the Institute decided to organize a Regional Workshop on "Water Availability and Management in Punjab" jointly with the Central Ground Water Board, North-West Region, Chandigarh and Panjab University, Chandigarh during 13-15 December, 2010 at Chandigarh. The proceedings of the Regional Workshop are being published in the form of the edited volume. The volume covers a wide range of technical papers on various themes including interesting case studies on various issues of water resources of Punjab. It is earnestly hoped that the compilation will go a long way for promoting integrated planning, development and management of the water resources of the state.

The editors of the proceedings Dr. M. S. Rao, Dr. S. D. Khobragade and Dr. Bhishm Kumar have worked with great enthusiasm, dedication and sincerity to make possible the publication of this volume in time. Their efforts are highly appreciated.

In the end, I would like to acknowledge the efforts of the Organizing Committee and the Local Organizing Committee of the Workshop for their hard work which reflected in the successful organization of the Regional Workshop. The excellent supports provided by CAS, Dept. of Geology, Panjab University, Chandigarh and the Central Ground Water Board North-West Region, Chandigarh are sincerely acknowledged.

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