

Water: Resource and Sustainability

Edited by
Sanchita Gupta



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Water: Resource and Sustainability is a comprehensive compilation of research articles highlighting the various issues related to water as a resource. The edited volume focuses on the economic, social and political aspects of the use and misuse of water in both rural and urban areas of India. The volume emphasizes on the sustainable practices at the micro level that can help in understanding the key ideas of water usage for the benefit of mankind as a whole, irrespective of temporal and spatial considerations. The book provides a useful insight for future research orientation associated with the dynamic resource called water.

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FOREWORD

Dr. Ajanta Paul
Principal

The edited volume entitled *Water : Resource And Sustainability* brought out by the Department of Geography, Women's Christian College, Kolkata, addresses a variety of issues related to water, its presence, proximity, distribution, quality and management in South Asia with a focus on India and West Bengal, in particular. It yields, in the process a wide spectrum of observations, analyses and insights on this crucial issue as the papers in the present volume will testify.

From depletion of surface water, pollution of groundwater, scarcity of fresh water, condition of rivers and different types of waterborne diseases to their proposed redress such as water purification practices, rainwater harvesting and land use changes which deal with specific problems in the ongoing discussion, contextual issues such as geopolitical dynamics in administering water resources, bio diversity and climate change, too, have served to lend a macro approach to the entire discourse.

This volume is being brought out, I believe, not in mechanical fulfilment of the directives of regulatory bodies but in the cause of a larger humanitarian concern to restore balances, and tilt scales (in howsoever small or limited manner) in the human-nature interaction which currently threatens to destroy nature and its elemental resources such as water in a relentless trajectory that surely and ironically spells doom for mankind.

If we are not careful, Lord Alfred Tennyson's famous lines : "I chatter, chatter, as I flow/To join the brimming river, / For men may come and men may go,/ But I go on for ever " may be proved false in the overwhelming wake of a desertified and barren world where we hear the echoing lament of Samuel Taylor Coleridge's dire regret : " Water, water everywhere/ And all the boards did shrink/ Water, water, everywhere, nor any drop to drink."

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PREFACE

Water is an essential requirement for the life and sustenance of all human beings. Life is possible on earth only due to availability of water. Water is indeed a valuable resource and it had been the focal point for the growth of human civilization. Although about three-fourths of the earth consists of water but only a limited amount of freshwater is of actual use for man. With the progressive growth of human population, this limited amount is proving to be inadequate. Herein lies a long history of use and misuse, sharing and politicizing of water as a resource. So now water is not just a resource but it has acquired a social identity. Water resource thus has a social dimension which is cherished and desired by all but unfortunately threatened and plagued by the problems of over extraction, wastage, pollution and contamination. Water Security is the effective response to changing water scenario in terms of availability, utility and qualitative aspects of water from various sources. Temporal and spatial variations in precipitation are resulting in erratic and unpredictable supply of water from rainfall and glaciers. This result in moisture stress related to either excess or deficit of it. Over exploitation of groundwater for irrigation and industrial purposes is resulting in depletion and deteriorating quality of groundwater. In spite of large river systems, strained bilateral relations act as catalysts for political conflicts with respect to sharing of river water. Affordable access to clean water is directly related to effective water management practices and thus water security is a crucial factor in government planning measures for any country. Sustainable and judicious use of water and effective strategy adoptions together with its fruitful implementation can only save mankind from the miseries of water famine and conflicts associated with it. The dynamic perspectives of water from geographical, social, economic and political points of view thus need to be addressed to save the world and ensure it to be a better place to live in.

The present volume is a collection of scholarly articles which have treated the various aspects of water- its uses, access and viability. The first part entitled "Water Resources-Dynamic Perspectives" is focussed upon the multidisciplinary approach of water. It has traced the course of occurrence of water historically and the myths associated with it. The philosophical viewpoint has drawn an analogy between the stages of a river and the life of man. The economic approach had analysed how water has evolved into a value added economic commodity. The politicization of water influencing the bilateral relationships has attached a political implication to the emerging aspect of water. The ecological perspective is reflected in the quality dimensions of water and how it has become a focus of media coverage and attention. This

in fact is a commentary on the evolution of water from just a physical entity towards gaining socio-economic, political and environmental dimensions affecting mankind at the global as well as the grass root level. It is an account of evolution of water into not just a resource but a social resource whose sustainability is of prime concern.

The second part entitled “Anthropogenic Impact and Emerging Challenges of Water as a Resource” is centred around the impact of man on water. The irony lies in the fact that human existence is at stake without water but it is man who is casting an evil spell on it. The availability and use of water has reached at a point of exploitation where greed and irresponsible approach had ruined the natural assurance of free and uninterrupted flow of water for all. Three case studies of unscientific mining practices, pollution of water and depleting supply of drinking water had touched upon the fact that the negative impact rings a warning bell for all. It is time to be aware and conscious together.

The third part entitled “Rural Aspects of water usage” includes specific case studies with a rural backdrop. The study area ranges from block to district level. The types of water include freshwater, sub-surface water, groundwater and even wetland areas. The consequent results of various rural activities like agriculture, irrigation, surface water extraction and groundwater mining have been discussed and existing scenario have been highlighted upon for the various districts of West Bengal.

The fourth part entitled “Urban Aspects of water usage” is focussed on selected case studies in areas under Kolkata Municipal Corporation, Haora and Barasat Municipality. The study areas range from ward level to added areas of a metropolitan city to district towns. The issues covered include the crisis of potable water, scarcity of municipal water, degeneration of city canals and resultant urban flooding and overall impact of rapid urbanisation on water in an urban scenario.

The fifth part entitled “Water Security and Sustainable Management Practices” is centred upon the issues of water conservation and viable management options. The techniques discussed include forestry intervention, rain water harvesting, watershed management, scientific aquaculture practices, water harnessing with a gender specific and participatory approach and conservation of water bodies inside forest areas.

Water is a precious resource which plays a key role for human existence on earth. Its utilization depends upon a delicate balance between the physical and human aspects. The impending doom of a water famine calls for immediate policy measures and a unified approach is essential for sustaining availability and usage of water.

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