

ECOHYDROLOGY

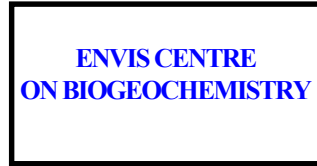
Editors

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Jawaharlal Nehru University



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V. Subramanian
AL. Ramanathan
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Preface

The international workshop on ECOHYDROLOGY that is being held in Jawaharlal Nehru University has attracted the attention of a wide range of specialists dealing with diverse aspects of either ecology or hydrology. Accordingly, this volume of invited papers represent scientific contribution from several laboratories in South and Southeast Asia, Africa and Europe. Various papers have been grouped thematically into four sections: the first section deals with the mountain ecohydrology with several case studies from the Himalayas. The second section deals with ecological aspects of sub-surface hydrology based on case studies in many parts of the world. The third section focuses on the ecohydrology of the Western Ghats region in Kerala and other coastal areas such as Goa. The fourth section deals with general aspects of eco-hydrology applicable to diverse environment and hydrological domain.

Contributors represent varied specialisations as well as regions: for example, scientists from many parts of India have contributed case studies in diverse regions such as the Dal Lake in Kashmir, the Brahmaputra valley in Assam, the glacier region in the Ganges catchment areas, Coastal regions in Kerala, estuarine regions and mining areas in Tamil Nadu, many lakes and other water bodies in the Garwal and Kumaon Himalayas, wetlands in Andhra Pradesh as well as some kind of modelling studies that has wider applications. In addition, there are contributions representing water bodies in Malaysia, Sri Lanka, Nepal, Kenya, Japan and Sweden besides a generalised document on key water related issues from Switzerland.

Thus, this volume, courtesy funding from the regional office of UNESCO in Delhi as well as the Ministry of Environment and Forests, Government of India, is expected to be useful to all researchers working either on ecology or hydrology or ecohydrology. The publication represent a joint contribution to the International Hydrological Programme of the UNESCO as well as the ENVIS Centre in Biogeochemistry in Jawaharlal Nehru University.

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November, 2001.*

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Section 1

Ecohydrology of the Himalayan Water Sheds

Section 2

Sub-surface Hydrology

Section 3

Ecohydrology of the Western Ghats in Kerala

Section 4

Basic Concepts in Ecohydrology

Ecohydrology connects the two key elements that are the focus of all environmental problems, namely ecosystems and water. The hydrological problems in diverse ecosystems are being focussed in many countries due to enhanced stress on water both with respect to quantity and quality. Hence, there is an urgent need to integrate ecological approaches for better understanding of surface and subsurface hydrological processes. With this view in mind, several experts were invited to contribute to this book to reflect the inherent diversity in the subject matter. Ecosystems from temperate regions in Sweden, Japan as well as the Himalayas, river and ground water domains in the south Asian region, lakes and coastal environment and pollution of water bodies in diverse regions have all been covered in this book. Contributors represent eight countries namely India, Nepal, Bangladesh, Sri Lanka, Kenya, Japan, Sweden and England.

All invited articles have been suitably edited for easy reading. It is intended as a standard reference for ecologists, hydrologists, geochemists and those interested in current issues in environmental sciences particularly problems related to water or the aquatic environment.

About the Editors

Prof. V. Subramanian: A gold medalist in M.Sc. from Jadavpur University(Calcutta), V. Subramanian obtained his Ph.D. from U.S.A. with a Fulbright Fellowship and taught at McGill University, Canada for two years before joining Jawaharlal Nehru University (JNU), New Delhi in 1975. He was formerly Dean of the School of Environmental Sciences, JNU and at present co-ordinator for Environmental Information System (ENVIS) Centre on Biogeochemistry, School of Environmental Sciences, JNU. He oversees a large number of research projects including special assistance programme in Biogeochemistry. He has extensively travelled to all parts of the world and has been a Visiting Faculty for variable duration at different places such as University of Delaware- USA, University of Antwerpen(UIA)- Belgium, University of Toulouse, University of Paris- France, University of Hamburg- Germany and Oxford Brookes University- U.K. with the help of twenty Ph.D. graduates, he has worked on practically all rivers in the Indian sub-continent and has active collaboration with a large number of scientists in many parts of the world. He has published over 150 technical papers in International Journals and his former students are either teaching or researching in many institutions in various countries.

Dr. AL. Ramanathan: He has been engaged in teaching and research for 10yrs for the PG Geology department in Tamilnadu before joining as Associate Professor in SES, JNU, NewDelhi from 2000. He has completed three research projects sponsored by DST (young scientist scheme), Ministry of Environment and Forest and Rajiv Gandhi National Drinking Water Mission, Government of India. He was a visiting Scientist/Associate in various reputed national and international laboratories in India and abroad (Japan and Russia). He has travelled extensively all over Asia, Asia-Pacific and Europe for various scientific assignments. He has worked in the major rivers of India including the estuaries and mangroves and ground waters of Tamilnadu. He has published around 30 papers in referred international and national journals. He has also guided various research students in the above fields during this period.