

Preface

The natural resource management incorporates the understanding of the scientific and technical aspects of water, energy and bio-resources distribution and ecological systems which helps in supporting the healthy survival of life on the planet 'Earth'. These natural resources are the most fundamental resources for the sustenance of any civilization. Demand for these resources is ever increasing at an alarming rate post war and are moving towards unsustainable levels. Degradation and erosion of natural resources, namely, land, water, forest, biodiversity (plant, animal and microbial genetic resources), livestock and air—those parts of the natural world that are used to produce food and other valued goods and services that are essential for our survival and prosperity—are also the root causes of the agrarian crisis in the world. Diminishing water resources and their unequal distribution in the changing scenarios will increase competition for water which may turn potentially to violent events/wars in future. The majority of the populations are looking forward for energy efficient system to enhance the judicial conservation of water and bio-resources of our environment. The human pressure and their anthropogenic activities are slowly but steadily deteriorating these resource management capacities in the changing environment. This edited contribution contains papers of multidisciplinary views of authors for managing the natural resources which will be useful guideline for better management of such resources in changing climate scenarios in the world. It is aimed to hold interest for all those who are keen to know about the management of natural resources. The biggest contribution has been, of course, from all the renowned authors. The papers are contributed from distinguished scientists and academicians from reputed universities and institutions from all over the world including India who are contemporary workers in this field of natural resource management. We are very much appreciative of all the contributors who have responded to our call and submitted their papers timely to bring out this book.

The present edited book is the outcome of the International Humboldt Kolleg (IHK2013) held from 8 to 9 February, 2013, in Jawaharlal Nehru University (JNU), New Delhi, India, on the theme of Management of Water, Energy and Bio-resources in Changing Climate Regime: Emerging Issues and Environmental Challenges.

It contains 22 chapters which are grouped under three sections such as (i) Management of Water Resources: Challenges for Sustainability; (ii) Bio-remediation for Resource Enrichment; and (iii) Environmental Pollution: Issues and Strategies. This volume presents case studies and examples in the context of changing environment scenarios and their management. The case studies presented thus provide an insight into present day issues, challenges, opportunities and new approaches that need to be considered in future for efficient and effective natural resources management. These papers give an insight into the present and past issues and their interrelationships in judicial management of these natural resources. Each chapter demonstrates the need for managing each of the demanding resources due to change in climate, land use, industrialization and the need for each country's managers to take initiatives and commit themselves to manage these resources in a sustainable way.

We would like to thank all the contributors for expressing their individual views and also acknowledge our colleagues for their untiring efforts to timely review of manuscripts. The author's commitment and the reviewers' efforts with high quality review of the manuscripts contributed significantly to keep the high scientific contents of the book. One of the editors (N. Janardhana Raju) would particularly like to thank his collaborators and research scholars for supporting his research activities over two decades which helped him in the process of bringing out this contribution. The generous financial support extended by the Alexander von Humboldt Foundation, Germany, in organizing International Humboldt Kolleg at JNU is gratefully acknowledged. We hope this book will be very useful for managers, environmentalists, hydrologists, water resource and energy managers, and for governmental and other regulatory bodies dealing with water, energy and bio-resources issues by providing an opportunity to acquire pertinent scientific information. Finally, we thank the publishers for taking this effort to bring out this volume with due diligence and in a timely manner.

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