

Preface

While working on rivers I have realized that all researchers, teachers, students and planners are providing different basic information about the rivers. There is not a single book which provides information at a single place about all the rivers. This compelled me to think about editing a book on rivers where one could get basic, accurate and precise information from a single source. And the effort is before you in the form of a book entitled “The Indian Rivers: Scientific and Socio-Economic Aspects”, which would be the first book in the world to provide information about all major rivers of a country at a single source.

Water is the basic need of our survival, thus rivers are believed to be our lifeline. In India, different types of rivers with unique characteristics are present. India is a land of rivers, where rivers are worshipped like a mother. Rivers are a renewable natural resource. In view of this unique feature of the rivers, all ancient civilizations and cities of the world evolved and flourished near the banks of the rivers. For humans, rivers have become a way of life as they affect and control our culture, development and civilization. I have been privileged to see three rivers since my childhood (Chhoti Gandak, Rapti and Ghaghara) as they are situated within a periphery of about 10 km from my native place, Ropan Chhapra in Deoria district of Uttar Pradesh. Later, I got an opportunity to see and walk along all the major rivers of the Ganga Plain from their source to sink. Starting from the Gangotri Glacier where the Bhagirathi originates and the Satopanth Glacier, where the Alaknanda originates, up to the Kosi confluence with the Ganga in Bihar, I have seen all the confluences of the Ganga with its tributaries such as the Ramganga, Yamuna, Gomati, Ghaghara, Son, Great Gandak, Burhi Gandak and Kosi.

We are trying to understand the behaviour of the rivers, their dynamics, their science, their socio-economic aspects and also about what they expect from us. I have seen rural folk fully devoted to rivers from morning till evening throughout their lives because of their respect and love for nature. They understand the behaviour of a river in totality and in a better way than urban and educated people.

Natural factors everywhere have controlled and guided man, but this is for the first time in the 4.6 billion year history of earth that man is also affecting the natural factors up to some extent since the last century, and this a matter of great concern to

all of us. These days rivers are causing loss of life and property due to the interference of man in its natural cycle. The encroachment of man has polluted the water, disturbed the ecosystem, changed the transporting capacity, and increased the sediment load of the river, which in turn has changed the river dynamics, ultimately leading to increasing number of disasters. India has 2.45% of the world's land area, 16% of the world's population and 4% of the world's water resources. The continuously increasing population and rapid urbanization, together with the climate change are resulting in water scarcity in many parts of the country. Therefore, there is an urgent need to ensure sustainable development of the rivers with proper management. We need to take necessary measures for optimal utilization of the rivers, making them free from all kinds of pollution and degradation. All sections of the society have to work together to address the environmental issues and the challenges facing the river sector.

Professors and Scientists from different universities, IITs and National Research Institutions with considerable experience have authored 37 chapters on various rivers. The book contains chapters on all types of rivers and their basin such as Ganga basin, Indus basin, Brahmaputra basin and their tributaries, and Himalayan rivers, Ganga Plain rivers, Peninsular rivers, and also the rivers of ancient India, Hindi literature, and the Saraswati River. I hope this book will serve its main purpose of providing basic scientific and social information about all major Indian rivers to teachers, students and the common public. I am thankful to all the authors for their valued contributions.

During my journey from student stage to this stage as a teacher, I have learnt a lot from my mentors, students and society. The first chapter 'Concepts of River' is the manifestation of the same journey. I hope that this book will be accepted by all in its present form. I am looking forward to hearing from you and receiving your suggestions for improvement.

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