



Riverine environment and its dynamics:

Challenges, issues and sustainable managements

'Riverine environment and its dynamics: Challenges, issues and sustainable managements' is the title of the book and is depicting the challenges of contemporary riverine environment. River is a natural resource that is inevitable to prosper all the civilizations. Such studies are nothing but the engine for analysing economic development including the sustainable environment. Degradation of river-floodplain systems is of serious concern. River and riverine landscape degradation is rapidly exaggerating over time and is becoming a political issue associated with socio-economic implications. This book offers an insight into the basin management i.e., basin morphometric characteristics, water resource, species diversity, land use and land cover changes, and also landscape evolution. Many of the scholars are especially recognized and specialized in the studies of riverine environments and the book is not an exception. As riverine landscapes are depending largely on hydrological conditions and hydraulics of the channel, the studies on morphometry, surface and subsurface ground water storage with seasonal hydrological dynamics are of prime focus to maintain the ecological integrity. The book will be helpful for the researchers, planners and different stakeholders.



Riverine environment and its dynamics: Challenges, issues and sustainable managements



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The Study of Groundwater Level Fluctuations of Damodar River Basin, West Bengal, India

**Debapriya Poddar¹, Sarbari Mukhopadhyay², Tapash
Mandal³, Jayanta Das⁴ & Dr. Snehasish Saha⁵**

Abstract

Groundwater acts as a significant provider of required water in different sectors of India, like household, agriculture, and industry. A copious amount of water and food resources are needed in Damodar River Basin for the fast expansion of the population, leading to severe strain over the water resources. The analysis of the temporal trends of groundwater level is essential for preserving groundwater for further use. Hence, the principal objective of this work is to examine the temporal trends in the Damodar River Basin in the annual, seasonal time scale from 1996 through 2017, applying the Mann-Kendall (MK) and Sen's slope estimator tests. The outcome of these analyses represents the positive trends and also the negative trends that have occurred in the case of groundwater depth of the study area. However, decreasing trends are much weaker than increasing trends. Compared with the monsoon season, strong increasing trends have been identified in pre-monsoon, post-monsoon Kharif, and post-monsoon Rabi seasons. The southern region of the Damodar River Basin, where paddy farming requires vast amounts of water, is where the significant positive developments were concentrated. The results of this research will assist policy makers and planners in maintaining a sufficient and consistent

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