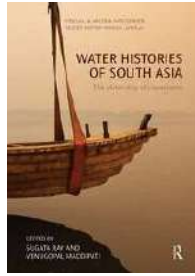


Chapter




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The case of Chandernagore

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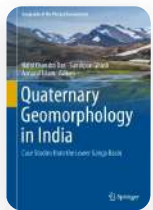


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Imprints of Neo-tectonism in the Evolutionary Record Along the Course of Khari River in Damodar Fan Delta of Lower Ganga Basin

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Neo-tectonism affected the evolution of landscape across the earth since post-Miocene. The Khari river in Lower Damodar fan delta in West Bengal similarly portrayed the imprints of

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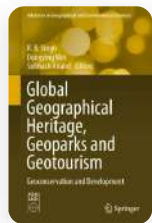
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Ecological and Socio-Economic Vulnerability to Climate Change in Some Selected *Mouzas* of Gosaba Block, the Sundarbans

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Abstract

This paper is an attempt to recognize ecological and socio-economic vulnerability to climate change in some selected *mouzas* of Gosaba Block, Indian Sundarbans. Ecological vulnerability has been identified by intensive studies on plant morphology (plant height,

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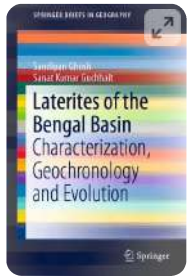
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Sandipan Ghosh is an Applied Geographer with post-graduate, M.Phil. and Ph. D. degrees in Geography from The University of Burdwan. He has published more than 40 international and national research papers in various renowned geography and geoscience journals.

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In addition he has reviewed articles of many international geoscience journals published by Springer, Taylor & Francis, and the International Water Association (IWM). Mr. Ghosh is a lifetime member of The International Association of Hydrological Sciences (IAHS), Eastern Geographical Society (EGS), and Indian Geographical Foundation (IGF).

His principal research fields are various dimensions of fluvial geomorphology, flood geomorphology, Quaternary geology, and laterite study. Most recent he has worked on the gully geomorphology and soil erosion on the lateritic terrain of West Bengal and the Quaternary geology and active tectonics of the western Bengal Basin. At present he is working an Assistant Professor at the Department of Geography, Chandrapur College, Purba Bardhaman.

Sanat Kumar Guchhait is an Applied Geographer with post-graduate and Ph.D. degrees from The University of Burdwan, West Bengal, India. He has published three books and more than 30 research articles in various international and national journals of geography. His principal research field includes social

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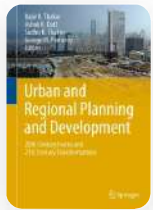
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Decentralized Governance Versus State Dependence: Financial Challenges and Participatory Development in Small Cities of West Bengal

| Chapter | First Online: 11 February 2020

| pp 321–336 | [Cite this chapter](#)



Urban and Regional Planning and Development

[Gopa Samanta](#) 

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Abstract

The urban planning regime in Independent India started with the Master plan and the Town and Country Planning Act (1947), and continued for decades with an overwhelming importance on large and metropolitan cities. In the 1980s, the emphasis on urban planning and development experienced a shift from large cities to small and medium cities following the Integrated Development of Small and Medium Towns (IDSMT) Program launched in

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Sridhar KS (2007) Reforming delivery of urban services in developing countries. *Economic and Political Weekly* 42(33):3404–3413

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Freedom, Functioning and Barriers of Women Councillors in India

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Explores the complexity around women's position in politics and governance

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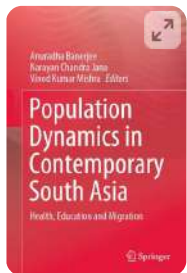
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Population Dynamics in Contemporary South Asia

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- Promotes a fresh understanding of contemporary population issues
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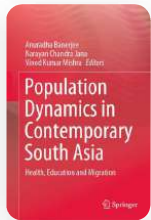
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Trend and Pattern of Infant Mortality in West Bengal, India: A Critical Appraisal

| Chapter | First Online: 17 March 2020

| pp 111–131 | [Cite this chapter](#)



Population Dynamics in Contemporary South Asia

[Narayan Chandra Jana](#) & [Syfujjaman Tarafder](#)

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Abstract

Infant mortality is defined as the number of infant deaths (one year of age or younger) per 1000 live births. It is a widely used indicator of the total health condition of a community and its general living standard because the causes for infant mortality lie in the stage of social and cultural development of the community.

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Appendix

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Table 1 IMR by states including India, 2009

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Table 3 Demographic and health indicators by districts, West Bengal, 2002–2004

Table 4 Infant mortality by background characteristics, West Bengal 2005–06

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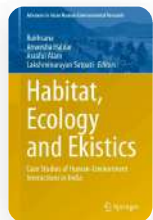
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Management of Wastelands in Chotanagpur Plateau Fringe: Lessons from Village-Level Experience in Birbhum District of West Bengal, India

| Chapter | First Online: 22 October 2020

| pp 293–307 | [Cite this chapter](#)



Habitat, Ecology and Ekistics

N. C. Jana & Manas Pal

📖 Part of the book series: [Advances in Asian Human–Environmental Research \(\(AAHER\)\)](#)

📖 236 Accesses

Abstract

The ever-increasing population pressure on land is raising the issue of management and development of degraded wastelands and the optimal utilization of land potentiality. The

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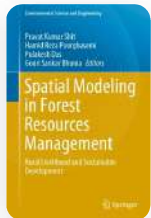
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| pp 553–566 | [Cite this chapter](#)



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[Koyel Sam](#)  & [Namita Chakma](#)

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 695 Accesses  1 [Citations](#)

Abstract

The Bengal Duars, a landscape of foothill ecology in Eastern Himalaya asherb of rich biodiversity with unique physiography and climate. This landscape is now tremendously under threat disrupting by natural as well as anthropogenic activities. The recent phase of transformation of forest cover caused by illegal felling, encroachment, mining, quarrying

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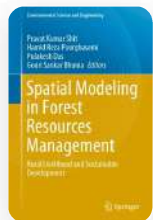
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[Debmita Nandi](#) ✉ & [Sumana Sarkar](#)

📖 Part of the book series: [Environmental Science and Engineering](#) ((ESE))

📖 685 Accesses 📄 2 [Citations](#)

Abstract

Among the 22 blocks of the Bankura district, the Jaypur block occupies first position (5.81%, 2011) in the household industry sector which is also higher than district average (4.18%,

Tewari DD, Campbell JY (1995) Developing and sustaining non-timber forest products: some policy issues and concerns, India. *J Sustain Forest* 3(1):53–79

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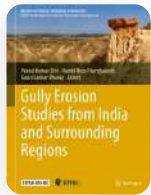
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 639 Accesses  20 [Citations](#)

Abstract

The lateritic region of the Birbhum District of West Bengal is part of the low-level unconsolidated erosional deposits from the eastern Chotanagpur plateau. Topographically, the region is the part of the ‘Rarh Plain’ of western West Bengal. A localized badland, namely

Serial No. 319

Walling DE (1983) The sediment delivery problem. J Hydrol 65:209–237

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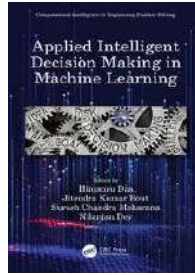
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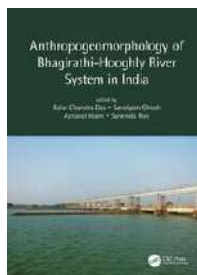


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Anthropogenic Impact on Channel and Extra-Channel Geomorphology of the Dwarkeswar River Basin

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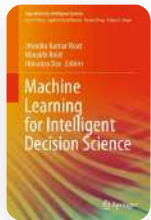
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Abstract

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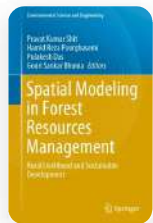
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Assessment of Forest Cover Dynamics using Forest Canopy Density Model in Sali River Basin: A Spill Channel of Damodar River

| Chapter | First Online: 09 October 2020

| pp 365–384 | [Cite this chapter](#)



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 Part of the book series: [Environmental Science and Engineering](#) ((ESE))

 712 Accesses  3 [Citations](#)

Abstract

In a spatio-temporal scale, changing conditions of forest land cover and its detection study is an important concern for sustainable forest management. Nowadays, the forest canopy

Zhang X, Friedl MA, Schaaf CB, Strahler AH, Hodges JCF, Gao F, Huete A (2003) Monitoring vegetation phenology using MODIS. *Remote Sens Environ* 84:471–475

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Mathematical modelling of long profiles in a tectonically active area: Observations from the DEM-based geomorphometry of the Rangit River, India

Sayantana Das^{§1}, Lopamudra Roy¹, Arindam Sarkar², Somasis Sengupta³

¹ Department of Geography, Dum Dum Motijheel College, Kolkata

² Department of Geography, P.K.H.N. Mahavidyalaya, Howrah

³ Department of Geography, The University of Burdwan

§ sayantdas@gmail.com

Abstract—The longitudinal profile of a river is one of the most popular indicators for assessing the degree of tectonic and structural control in a fluvial system. Sensitive to long-term tectonic, structural and climatic regimes, long profiles have been employed all over the globe and the anomalies in the long profiles are often been interpreted as evidence of active tectonic deformation. With the advent of high-resolution DEM datasets such as, SRTM, ASTER, etc. many large rivers of the world have been studied and analysed with respect to structure and tectonics. The present study is one such attempt for the Himalayan Rangit River in Eastern India. Physiographically located in the Eastern Himalayan Division of the Himalayas, this river is a small, steep-gradient tributary of the Tista River, debouching its waters into the Tista River near Melli (27°04'47"N, 88°25'56"E). SRTM DEM (30 m) was procured for the study area and the drainage network and the watersheds of the major tributaries as well as the trunk stream were extracted using the D8 routine in ArcGIS environment. The long profiles were smoothed by the 11-point Moving Average method so as to remove all the major artefacts and spikes that may have arisen due to the inherent limitations in the SRTM dataset. This was followed by mathematical modelling of long profiles and estimation of the SL Index. Steep segments in the rivers were identified by normalizing the SL Indices and comparing with the average SL index. Finally, the shape of the long profiles was quantified from the power law regression equation between basin area and channel slope.

Analysis of the long profiles of the Rangit River and its major tributaries reveals elevated magnitudes of most of the long profile parameters suggesting intense erosional regimes in the rivers. It is a well-known fact that the Himalayas are under active tectonic movement due to continuous collision of the Indian plate with the Eurasian landmass. Therefore, it may be concluded that the anomalous characteristics of the long profiles in the Rangit River and its tributaries may be ascribed to active tectonic deformation.

I. INTRODUCTION

Fluvial systems are characterized by extreme sensitivity of landscape. Any change in the prevailing climatic and tectonic conditions is invariably reflected by the changes in the river morphology and form. These changes are often difficult to comprehend at shorter spatial and temporal scales. Therefore, longitudinal profiles which take into consideration a river from its source to the mouth, is often used as proxies for ascertaining the degree of lithological, structural and tectonic control on the rivers [1,3,7,8,11,13,19]. The shape and form of the longitudinal profile of a river is result of the complex interplay between lithology, structure, tectonics, climate and catchment hydrology [11,14].

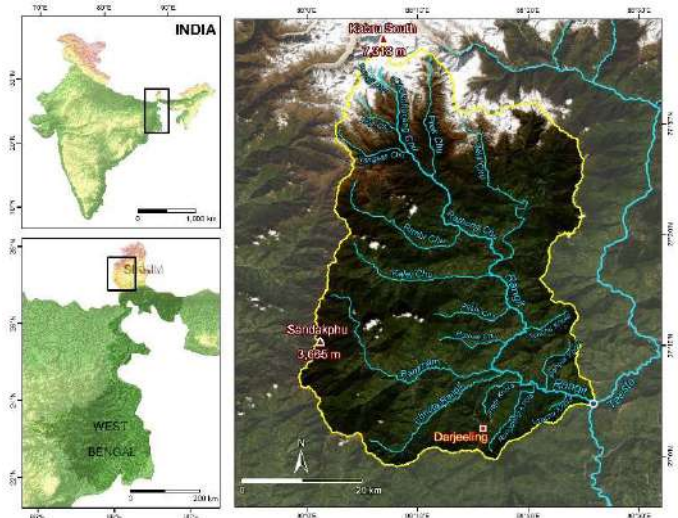


Figure 1. The Rangit Basin (delineated by yellow) along with its principal stream and tributary. The asymmetric basin is characterized by greater number of tributaries on the western side (right bank of the main channel).

Sayantana Das, Lopamudra Roy, Arindam Sarkar and Somasis Sengupta (2020)

Mathematical modelling of long profiles in a tectonically active area: Observations from the DEM-based geomorphometry of the Rangit River, India:

in Massimiliano Abioli, Ivan Marchesini, Laura Melelli & Peter Guth, eds., Proceedings of the Geomorphometry 2020 Conference, doi:10.30437/GEO MORPHOMETRY2020_35.

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with the launch of imaging satellites in the 1970s. However, few studies have been reported to understand the core science and research basics, as there are larger issues of capacity building to use geo-information technology in sustainable development and management of earth resources. There is also a fundamental gap between the theoretical concepts and the operational use of these advanced tools. This could be resolved by providing a broad range of applications of this technology to the scientific and research community in the field of geospatial technologies and allied subjects.

This book, entitled “Geo-Information Technology in Earth Resources Monitoring and Management,” deals with the challenges for sustainable management and development of earth resources with a focus on India and other countries around the world. The chapters are written by prominent academicians, researchers, and experts in the field of geo-information technology and related subjects. This book is a collection of chapters providing a multi-disciplinary overview for academicians, researchers, scientists, administrators, policymakers, social scientists, and professionals involved in the various aspects of earth resources development, planning, and management. The aim of this book is to replenish the gap in the available literature on the subject by bringing together the concepts, theories, and experiences of specialists and professionals in this field.

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Abstract

Flood is one of the most dreadful natural disasters in the humid tropics especially in India. It appears from the research studies and government reports that the Mundeswari (the main distributary of River Damodar) and Lower Darakeswar are the endemic flood-prone tropical

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Abstract

The present study provides a synoptic view of recent changes in the patterns of rainfall and their linkages to extreme floods in Bhagirathi-Hooghly Basin (BHB). The objectives are: (a) to obtain a better understanding of long-term and short-term trends and variations in

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