

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.

Editors



Dr. Snehasish Saha (M.A., Ph.D.)

Assistant Professor
Dept. of Geography & Applied Geography
University of North Bengal, India
Email: snehasishsahanbu1979@gmail.com



Kunal Chakraborty

Research Scholar
Dept. of Geography & Applied Geography
University of North Bengal, India
Email: kunu8293@gmail.com



Mantu Das

Research Scholar
Dept. of Geography & Applied Geography
University of North Bengal, India
Email: rs_mantudas@nbu.ac.in



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*Edited by
Dr. Snehasish Saha
Kunal Chakraborty
Mantu Das*



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Analysis of geomorphic indices of longitudinal river profile of Sanka River and its tributaries of Chhota Nagpur Plateau, India

Dr. Baidurya Biswas¹ & Dr. Snehasish Saha²

Abstract:

Longitudinal profile of a river provides the idea about tectonic activity and local terrain condition through which the river is flowing. It provides the information about the change in slope, natural breaks, and knick points in river course and also provides vivid idea about the cycle of development of the river. To understand minutely the local geomorphic condition, the longitudinal profiles of other major tributaries of Sanka River has been considered. By comparing the linear, logarithmic, exponential, and power regression models with distance against elevation data and geologic structure, it has been possible to understand the shape of lengthy profiles. The best fit model has been decided on the basis of derived R^2 or Coefficient of Determination and the model which provides minimum sum of square of residuals and standard deviation have been considered as best fit model. It has observed that longitudinal profile majority of the streams fits with exponential model except Sanka River and Srige Nala fits with power regression model and Dhudi Jhor fits with linear regression.

Key Words: Longitudinal Profile, tectonic activity, Coefficient of determination

1. Introduction

A river's longitudinal profile is a crucial geomorphic feature for understanding regional and tectonic activity (**Hack 1957, 1973; Lee and Tsai 2010**). Longitudinal profile of a river provides the information about the change in slope, natural breaks, and knick points in river course and also

¹Assistant Professor, Department of Geography, North Bengal St. Xavier's College, Email: baiduryabiswas@gmail.com

²Assistant Professor, Department of Geography & Applied Geography, University of North Bengal, India