

## **Pioneer Learned Geographical Societies in India: Foundation and Contributions**

**Ravi S. Singh\***

**Abstract :** *The role of learned societies in promotion and development of knowledge have been significant. Such bodies also contributed immensely in shaping modern disciplines and their 'professionalization'. The available accounts provide sufficient evidences to the fact that this process though started in Europe in the modern period; such bodies are almost universal today. India experienced this change during the colonial period starting in the 19<sup>th</sup> century and accelerating especially in the first half of the 20<sup>th</sup> century. The present paper is an attempt to briefly sketch the journey of professional academic bodies in India with special reference to geography which were established in pre-Independence period. The analysis reveals that there is sufficient spatio-temporal and disciplinary disparity and gap in this regard. The initiatives made by the advocates and promoters of geography education were remarkable in initiating changes in the form of introducing geography education and later getting it compulsory in schools and institutionalising the discipline in the universities.*

**Key Words:** *Geography education, institutionalisation of knowledge, learned societies, new geography*

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## **Application of Frequency Ratio Model for Landslide Hazard Zonation of North Sikkim District, Sikkim, India**

**Kapil Ghosh\***, **Goutam Kumar Ghosh\*\*** and **Sunil Kumar De\*\*\***

**Abstract :** *Landslide is a common geo-hazard, which undermines the overall socio-economic set-up in the North District of Sikkim in the Eastern Himalaya. Altogether 231 landslides have been marked in the study area to prepare a landslide inventory map of the North District, Sikkim. For the present study nine geo environmental parameters have been considered. These spatial layers have been integrated in the GIS platform using overly techniques. The value of area-normalized incidence is summed up for the layers and kept as a separate attribute. Simple statistics of this additive normalized-incidence is computed and used to classify the entire study area into five meaningful landslide hazard zones namely, very high, high, moderate, low, very low. It has been observed that out of all the independent variables geomorphology, lithology, slope and thrust/ fault have more significant contribution to slope failure. The highest incidence of landslide per km<sup>2</sup> is recorded for very high hazard zone (73.67per cent). The second highest frequency (8.43per cent) of landslide is found in the high hazard zone. Lowest frequency (2.37per cent) found in the very low hazard zone.*

**Key Words:** *geo-hazard, landslide, lithology, slope failure, hazard zone mapping*

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## **Morphometric Analysis of Ajay River Basin Using Geospatial Techniques**

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**Abstract :** *River basin is a unique identity of nature where hydro-geomorphologic features are best allied with present geology, atmosphere and landscape. Quantitative study of a river basin depicts the forms and processes operating on ground level and gives the satisfactory result to analyze the geo-environment of the region. Morphometric analysis means the quantitative measurement of a spatial unit on the basis of selected parameters. Therefore, morphometric analysis of a basin gives a primary idea about drainage character and litho-geological integration of the basin which helps in sustainable management of the spatial unit. At present Remote Sensing and GIS are very useful tools for the riverine planning. Morphometric analysis is done by using the SRTM DEM data which is reliable and significant for the riverine planning. By acquiring the basin layout and channel from DEM data morphometric parameters can be easily extracted. The present study worked on the morphometric characteristics of the Ajay river basin in the Remote Sensing and GIS (RS & GIS) platform. Ajay is a significant basin in aspect of litho-geological conditions and the occurrences of hydro morphological hazards which affect the surroundings environment and rural livelihoods. In order to understand the hydro geological regime of this basin, the study of morphometric characteristics is of paramount importance. It helps in the formulation of specific hazards management strategy and its necessary implementation. The result is depicting that the drainage pattern is dendretic in nature and highly elongated in shape and topographically stands on the old stage of erosional cycle but erosional residual is present in the upper part of the basin as imprint of fluvial cycle.*

**Key Words:** *river basin, morphometry, remote sensing & GIS (RS-GIS), SRTM DEM, sustainable management, hydro-geology*

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## **Delineation of Flood Hazard Zones of Purbasthali I and II Blocks in the Western part of Bhagirathi-Hooghly river of Purba Barddhaman District, West Bengal, India**

**Payel Das\* and Sutapa Mukhopadhyay\*\***

**Abstract :** *River flooding, a common and catastrophic quasi-natural hazard, results in serious loss of life and economy. Purbasthali I and II Blocks of Purba Barddhaman District, West Bengal, have a long history of river flooding. For the development of any kind of flood management strategy, initially flood risk assessment is essential and identification of flood hazard zone is the prime necessity for flood risk assessment. In the present study, a GIS based multi criteria approach has been developed to delineate the flood hazard zone of the study area. Five flood hazard zones have been delineated considering seven influencing factors viz. elevation, slope, rainfall, soil drainage, flood frequency, flood height and flood stagnation. It is observed that out of total area of the blocks, 45.77 per cent (158.25 Km<sup>2</sup>) area falls under very high to high flood hazard and only 8.43 per cent (29.13 Km<sup>2</sup>) area under very low flood hazard.*

**Key Words:** *flood, flood hazard zone, Multi-influencing factor (MIF), flood management tool*

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## **Fertility Levels and Differentials in Saharsa District (Bihar): A Geographical Study**

**Nitin Kumar Mishra\***

**Abstract :** *India's high fertility has been a subject of concern among scholars and policy makers since the early days of demography. The fertility component is the most important demographic variable affecting the trends in population growth at the national and global levels. The rapid rate of population growth in India is adversely affecting every sector of economic and social development and country seems to be in the grip of the vicious circle of economic backwardness-high rate of population growth and more economic backwardness. People of the Saharsa district have very high fertility (2.72 children per women) which varies across the blocks. The multiple linear regression results indicate that spatial, demographic, social and economic backgrounds of couples affect fertility patterns significantly.*

**Key Words:** *fertility levels, fertility differentials, demographic variables, multiple linear regression*

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