Exploring the Dynamics and Spatial Variations of Rural Road Infrastructure in the Tribal Area Development of Tripura, India

Pradip Debnath¹, Jora Debbarma¹, Stabak Roy^{2&3} and Saptarshi Mitra^{1*}

Abstract : The area transformation of a region is closely related to the efficiency and effectiveness of its transportation network system. Most of the global population lives in rural areas, and most remote villages do not have adequate access to all-weather roads. Inadequate infrastructure is considered a significant barrier hindering the economic growth and prosperity of a particular region. This study comprehensively analysed the current status, spatial variations, and significance of rural road infrastructure in the Tribal Areas Autonomous District Council (TTAADC) of Tripura, India. Primary data was collected through a standard questionnaire following simple random sampling, and secondary data was obtained from the TTAADC headquarters. Road density indices revealed spatial disparities, with the highest density in the South and the lowest in the Dhalai divisions. The graph theory approach highlighted relatively efficient road network connectivity in the plain areas compared to hilly regions of TTAADC. A simple exponential smoothing forecasting method was applied from 2023-2035. Potential impacts on communities were assessed using a modified Kuppuswamy scale following the buffer modelling of 1-3 km along roads. The potentially affected dwellings and communities were identified within a 1-kilometre buffer zone along the roads. The result shows that due to land tenure technicalities, many affected families may not receive compensation for losing their lands. The study contributes insights into the intricate relationships between rural road transportation, connectivity, and broader area development, informing future research, policy formulation, and implementation in the region.

Key Words: Prediction modelling, Road density, Spatial connectivity, Trio-buffer modelling, TTAADC

- ² Institute of Socio-economic Geography and Spatial Management, University of Gdansk, Poland
- ³ KnB Think Tank Academy, India

Corresponding Author*: saptarshigeotu2000@gmail.com

¹ Department of Geography and Disaster Management, Tripura University, Suryamaninagar, Tripura, India

Status of Political Participation of Women Representatives in Urban Local Governance: A Study on Asansol Municipal Corporation, West Bengal

Asha Bauri^{1*} and Anindya Basu²

Abstract : Numerous initiatives have been taken globally to increase the women's share in the political arena especially in local-level politics. Following the 74th Constitutional Amendment Act (CAA), the women representation in each and every urban local body (ULB) of India has increased and Asansol Municipal Corporation (AMC) is no exception. Though among the other ULBs of West Bengal, the pace is quite slow but still the ULB has more than the one-third representation. The main aim of the study is to analyse women representation in the AMC, their level of political awareness and empowerment and their role in the local area development. The women representatives and the electorates from the respective wards have been surveyed and both the qualitative and quantitative methods are used. It is found that the women representatives have various responsibilities to develop the local area and few of them hold certain position in the municipal organization or civic administration which make them politically aware and empowerment Index of the Women Councillors (PAIW) and Political Empowerment Index of the Women Councillors (PEIW). It may be concluded that the gender is not the only determining factor for the local governance but active participation is of utmost importance.

Key Words: ULB, Women representation, Political participation of women, Political awareness of women, Political empowerment of women.

¹ Assistant Professor, Department of Geography, Kashipur M.M. Mahavidyalaya, Purulia: ashabauri92@gmail.com, *Corresponding Author

² Assistant Professor, Department of Geography, Diamond Harbour Women's University, email basu_anindya2004@yahoo.com

Emergence of Channapatna Urban Growth Node in the Fringe Areas of Bengaluru City, Karnataka, India

Priyadarshni Sen

"Well-planned and well-governed cities and their hinterlands are the future as they help addressing issues related to poverty, social exclusion and spatial inequality, shared prosperity, climate and the environment, and various forms of crisis". (Sharif M.M, 2016)

Abstract : It is always a city-planners' aim to seek a balanced growth in a city and its peripheral region with supportive territorial systems integrating the major rural and urban functions. Channapatna region, located near Bengaluru city is strongly under the influence of urban expansion of the city. However, it stands unique with its noteworthy hand-made wooden toy making industries and wood related hand-made industries. Given Channapatna as major area of study here, it has been analysed based on parameters of demography and land use through statistical methods and areal explanations via land use planning. The paper highlights the growing needs of conserving the traditional toy making industries while bringing the scantily populated villages under urban planning for modern housing and industrial activities. The paper provides the analysis of the region under study through statistical inferences leaving further scope of its evaluation in the course of time

Key Words: Urban Planning, Rural-urban fringe, Growth node, Land use

Assistant Professor, Department of Geography, Mrinalini Datta Mahavidyapith, Kolkata, email: priyadarshinigeo@gmail.com

Status of the Hooghly River Water Pollution at Dakshineswar Ghat before and during Covid 19 Pandemic

Rupam Kumar Dutta

Abstract : Water quality is significant for human health and environment. The present research work is concerned with status of the Hooghly river water pollution and impact of National lock down during Covid-19 pandemic (1st wave) on Hooghly river water quality, a case study of Dakshineswar ghat. The National lockdown has a significant role on the pollution status of the river Hooghly. In the work few important parameters of water quality have been selected to study like; BOD (Biochemical Oxygen Demand), DO (Dissolved Oxygen), TSS (Total Suspended Solids), TDS (Total Dissolved Solids), total coliform. For understanding about the variability of anthropogenic impacts on the Hooghly river water quality, the analysis has been divided into two phases; pre-pandemic and during pandemic .Depending on the availability of the data, pre-pandemic phase has been taken from January 2018 to December 2019 and during pandemic phase has been selected from January 2020 to March 2021 in the study. During these both phases, months and year wise data regarding above mentioned parameters of water quality have been collected from the West Bengal pollution Control Board (WBPCB), Kolkata. The trend analysis of the entire thirty-nine months (from January, 2018 to March, 2021) has been done in the present work to study the changing magnitude of water pollution in between pre-pandemic and during pandemic phases. From the quantitative analysis it is found that during the pandemic condition (January 2020 to March 2021), the quality of water in the Hooghly River at Dakshineswar improved due to reduced anthropogenic activities, in comparison to the pre-pandemic normal years (January 2018 to December 2019).

Key Words: Hooghly river pollution, Pandemic, Comparative study, Anthropogenic factor.

Assistant Professor in Geography, Kultali Dr. B.R. Ambedkar College, South 24Pgs, West Bengal email: drrupamkumardutta@gmail.com

Land Capability Evaluation Based on Fuzzy Logic: A Study of Uttar Dinajpur District, West Bengal

Goutam Sarkar

Abstract : Land capability is of utmost importance in any agricultural action as it is the cradle for all crops and plants. Land capability classification (LCC) is a field examination of soil properties, slope, degree of soil erosion, and changing land use patterns which form the basis for future planning for soil conservation. The land capability evaluation is useful and describes the capability of land for suitable crop production. The land capability maps have been prepared depending on the Fuzzy Logic (FL) process. Input layers in fuzzy generating land capability map assessments have been represented in the map using QGIS 3.1.11 'MADEIRA' 2018, and Arc GIS 10.5.1, 2017 platform. Altitudes (m), and slope (o) maps are prepared from the ASTER DEM, USGS, drainage, and water availability maps are prepared based on field observation records and CEC (%), clay (%), sand (%), silt (%), etc. maps are arranged from the soil grid. The whole work of the study has been completed based on two sets of data; primary and secondary. The required primary data and information were collected from the direct field survey. The present paper is an attempt to highlight the capability of land in Uttar Dinajpur District of West Bengal.

Key Words: Land potentiality, Land capability classification, Fuzzy Logic, Agricultural development

SACT-I in Geography, Dr. Meghnad Saha College, Itahar, Uttar Dinajpur, West Bengal, e-mail: goutamgeo82@gmail.com