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6th Professor S. R. Basu Memorial Lecture delivered on 14.03.2017

Bay Reclamation by Natural Process in Central Konkan : A Case Study of Shrivardhan Bay

Subhamita Chaudhuri*

Abstract : *Siltation process in Shrivardhan bay exhibits a complex interplay of the morphological features and the material, which is being transported and reworked by the coastal hydrodynamic processes. The position of the high tide line from 1925 to 2015 in the beach-spit zone shows a cyclic pattern. Recent observation shows that, the southern end of the spit is gaining elevation with accelerated sand accumulation. In response to the increased sediment input into the bay, the central island has also shown definite signs of extension. The flood and ebb tidal patterns are extremely complex inside the bay. The hydraulic gradients from the main inlet towards the northern and southern arms are such, that there is dominance of flood tide in the northern arm but ebb conditions dominate in the southern arm of the bay, resulting in probable siltation of the northern arm. The main inlet shows deteriorating stability condition as far as its throat cross sectional area is concerned. Suspended sediment concentration shows wide differences in high tide and low tide conditions, indicating probable settling of material within the bay. Analysis of heavy minerals in the sediments collected from different morphological units indicates that apart from basaltic minerals, almost all the samples have significant contribution from high rank metamorphic rocks. This implies a dominance of offshore source. The analysis also shows that sedimentation started earlier in the bay interior than in the spit.*

Key Words: *siltation, sediment budget, stability, provenance, suspended sediment concentration*

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Precipitation Trends in the City of Kolkata and its Implication on Urban Flooding

Pradip Patra¹, Anwasha Haldar² and Lakshminarayan Satpati³

Abstract : *Urban flooding may be caused due to various physical, social or infrastructural factors, of which intensive precipitation is the most dominant. Kolkata's drainage system is very old and regular siltation has reduced its carrying capacity; hence, heavy precipitation often leads to urban flooding. This paper attempts to critically assess urban flooding. Downscaling of Global Climate Model (GCM) is computed for prediction of the future precipitation scenario. Although, different models generate different results, finding the best model for future prediction of urban flooding is one of the focal issues of this paper. The result shows that the number of daily high intensive precipitation in Kolkata has risen in recent times and it is expected to increase further in future, which may lead to more water logging conditions in the city.*

Key Words: *extreme precipitation, water-logging, multi-decadal oscillations, Global Climate Model (GCM)*

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New Census Towns in Odisha : An Inquiry into their Characteristics Based on 2011 Census Data

Mohammad Izhar Hassan¹ and Priti Priyadarsini²

Abstract : *With reference to urban population, the results of 2011 census have brought many surprises. For the first time in the history of census operation in the country, net gain in the size of urban population during 2001-11 is larger than that in its rural counterpart. The rate of growth in urban population that was on a decline since 1981 recorded an increase during the decade. Nearly one-third of the net gain in urban population during 2001-11 was due to the addition of new towns at the time of 2011 census. This created an intense debate and apprehension among the researchers. Odisha, too, has witnessed a drastic increase in the number of census towns, although rate of urban growth has continued to decline. The present study looks into the nature and characteristics of these new towns with the help of data drawn from various secondary sources.*

Key Words: *new towns, sectoral diversification, census activism, statutory towns, census towns*

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**Female Work Participation and Occupational Structure:
Case Studies of Habra Block–I and Ausgram
Block-I of West Bengal**

Kana Biswas*

Abstract : *In the hierarchical social structure of the rural areas proportion of female workers continuously increases from the upper social segments to the lower social segments. Due to better economic background and very high traditional social status women of the upper social segments do not take part in economic activities, except in very few cases. The women of these segments are mainly engaged in high salaried permanent non-primary 'prestigious' occupations. Only in abnormal situation women of these segments are forced to take part in very rudimentary low paid occupations, violating socio-cultural restrictions and norms. Women of the lower segments are compelled to take part in economic activities due to their extremely poor economic condition and their earnings are necessary to meet the basic requirements of the family. Lack of socio-cultural restrictions do not prevent them in taking part in economic activities. These poor illiterate women of the lower social segments are engaged in very low paid, seasonal / temporary mainly primary occupations. Unfortunately none of them get opportunity to get high salaried permanent 'prestigious' occupations. Their participation in economic activities only raise their number; but not their economic standard nor their social status. So female work participation rate and nature of occupation still follow the age old working and occupational structure of Indian society.*

Key Words: *social hierarchy, social structure, social segments, rudimentary occupations, 'prestigious' occupation.*

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Education, Marriage and Age of First Conception of Muslim Females of Kolkata

Ruksanara Begum¹

Abstract : *Education is a reliable index to study socio-cultural aspect of a society. It controls various socio cultural parameters. Marriage and fertility on the other hand are two important demographic determinants. Education strongly influences these two demographic determinants. Muslims are the largest minority community in Kolkata. In the traditional Muslim society in many families female's role in public is passive. It adversely affect female status. In this context this paper intends to highlight the overview of Muslim females' education, marriage and their first age of conception precisely. The paper is based on mainly primary data and the data have been collected based on stratified sample survey on scheduled questionnaire. The objectives of the study are to explore spatial differences of educational condition of Muslim females, to study the age of marriage and choice of marriage of Muslim women, to state the spatial variation of first parity. The relation between education with marriage and between literacy and first parity has been examined. Relative positions of areas have been studied in terms of the above mentioned factors.*

Key Words: *Education, Marriage, Conception, Choice, Variation*

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Analysis of Crop Diversification and Irrigation Intensity: A Study of Birbhum District

Prasenjit Saha¹ and Somnath Rudra²

Abstract : *Irrigation is a vital input of agriculture and has a strong impact on crop diversification. So, in this paper an attempt has been made to analyse the crop diversification and irrigation intensity and its relation with irrigation facilities in the district of Birbhum. For measuring the diversification, Gibbs-Martin method has been applied. To show its relationship with irrigation facilities, correlation and multivariate linear regression analysis have been used. This paper shows that the northern and eastern region of the study area is agriculturally diversified than the western region. Irrigation intensity and ground water irrigation are positively related to the diversification. On the other hand, surface irrigation is negatively related with the diversification due to poor management of canal, and lack of perennial river. So crop diversification largely depends on ground water irrigation than the surface water irrigation which may create pressure on ground water table. Hence proper management of surface water irrigation is necessary to reduce pressure on ground water table.*

Key Words: *crop diversification, irrigation intensity, surface water irrigation, ground water irrigation.*

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