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## INTEGRATED PLANNING AND RATIONALIZATION OF RURAL SETTLEMENTS – AN ECOLOGICAL APPROACH

A CASE STUDY OF SANGANER TEHSIL, JAIPUR (Rajasthan)

### Doctoral Dissertation Abstract (2010)

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The process of urbanization feeds on land transformation from rural to urban which leads to socio-economic transformation in the rural areas. The rural areas where there has been a penetration of million cities face a typical situation of imbalanced development and ecological problems. The process of development brings about a change in the rural ecology and is responsible for various environmental and socio-economic problems. No doubt, the government has initiated many programmes for rural development, but the expected results have not been attained mostly due to lack of micro-level analysis and planning.

Integrated planning is required for the sustainable development and healthy environment of Sanganer tehsil. The study encompasses the analysis of the existing land use and settlement patterns and the changes undergone in the past decades. It also analyzes the dynamics of change and the functioning of the developmental interventions together with their environmental impact. A proposal for new centres of development, in tune with the future needs of the area, has also been elaborated in the study.

Sanganer lies south of Jaipur city. It is a Tehsil and Panchayat Samiti headquarter. It is

situated between 26°40' to 26°55' north latitude and 75°30' to 76°00' east longitude at the height of 390 metre above mean sea level. It is an upland area having semi-arid type of climate, covered by a thick mantle of soil-blown sand and alluvium. Dhund and Bandi both tributaries to the Banas river are the major streams. The area also presents socio-cultural and economic diversity. The study region sprawls over an area of 4,51,83 hectares with a total population of 1,32,801 persons.

The main objectives of the study were – to analyze the changing land use pattern; to study the growth of settlements over a period of decade; to analyze and study the functioning of the developmental projects and their impact in the study area; and to suggest new centres of development for a balanced growth.

To meet the objectives of the study, appropriate statistical methods have been employed for the analysis and interpretation of data. The study has a secondary data base (Census 2001) supplemented with primary data which helped in the formation of the clusters, proposing a hierarchy for the settlements and comparative and analytical study of the socio-economic change in the study area. For this, the functions performed by a particular settlement such as primary, middle, secondary and senior

secondary schools; medical services; drinking water, telegraph, telephone, post-office, transportation (bus, railway) and banking facilities; credit societies, power supply, newspaper circulation, police stations and concentration of small scale and cottage industries were taken into consideration. All the functions and amenities were assessed in terms of their individual weightage that gave centrality score. From which hierarchical orders of settlements were derived. The land use data and projects currently undergoing in the area have been evaluated in the light of ecology.

The study has been divided into four parts consisting eight chapters. The first part has two chapters. The first chapter deals with the introduction, meaning, aims and objectives, methodology and review of literature. Chapter second describes the historical and geographical background, administrative evolution, the physical set-up, climate and socio-cultural and economic set-up of the study area.

The second part of the study also consists of two chapters which describes about the theme of the topic. Chapter third is devoted to integrated planning and rationalization of rural settlements and describes the concept and theory in detail. In chapter four the theoretical description of the rural settlements is presented. It describes the genesis, ecological aspects and the structure of the settlement which is compared to the anatomy of the human body. Comparative analysis of the variations in relation to family, caste and religion in the past and present times and the functions of the settlements are also discussed.

The third part of the study is also divided into two chapters which deal with the statistical analysis of the settlements of the study area. Chapter five is devoted to the study of functional hierarchy of rural settlements.

Centrality score method is adopted to determine hierarchy of settlements. The centrality of a place or settlement is judged from the quantum and quality of existing central functions. On the basis of centrality scores the rural settlements have been classified into five orders of hierarchy. This brings to the conclusion that the distribution of services and the resultant hierarchy represents the imbalances in the development.

Chapter sixth deals with the spatial analysis of the rural settlements so as to calculate and propose a more equity and balanced development. Nearest Neighbourhood Analysis method has been adopted to classify the settlements on the basis of hierarchical order calculated with centrality score ranking method. The  $R_n$  values for the study area vary from 2.32 to 6.00, which exhibit highly dispersed pattern. It is exceptionally higher in the first two orders owing to the fact of being served by the urban centre of Jaipur, Sanganer and Bagru. It suggests that the attributes of location of a particular settlement should be considered before suggesting any planning strategy for development.

Fourth part of the study consisting two chapters is the analytical evaluation of the study area in terms of ecology and proposing a plan of action for a balanced development. Chapter seventh carries the proposal of integrated planning and ecological balance with special reference to Sanganer tehsil. After the statistical analysis planning strategy for the study area is proposed based upon the hierarchical arrangement of the service centres. The focus is on agriculture and agricultural based development owing to the fact that the area has a history of practicing agricultural and other associated functions which go in perfect harmony with the environmental and ecological conditions. The entire study area is grouped into nine clusters based upon the

attributes of homogeneity, population size, compactness, location and connectivity. Each cluster varies in terms of population size, area, density, and facilities these avail. This brings to the conclusion that size of population attracts the process of developmental activities in terms of income and revenue generation. The developed areas having all the facilities are lucrative to the population and are densely populated. Therefore, taking into account future prospects a new hierarchy of settlements has been proposed in terms of location, population size, availability of resources and accessibility.

Chapter eighth is an analytical and critical appraisal with special reference to the transformations and ecology over a decade. The population distribution and density of population reflect the relationship between

population and land, population and accessibility and population and process of development and transformation in the study area. Similarly, land use pattern also reflects the transformation of area under forest, unirrigated area, culturable waste and area not available for cultivation. This chapter highlights the change of area in terms of occupancy and occupation since 1981, land acquisition for the ambitious and developmental projects, decrease in area under agriculture, increase in the level of environmental pollution, unequal distribution of the benefits of development to the people, inaccessibility and shortage of water.

With this the study concludes that development and transformations are indispensable but what is the need of the hour is to plan it in such a way that the benefits should be distributed in every corner of the area.