

AN ASSESSMENT OF THE LITERATURE SURVEY ON SPATIAL PLANNING AND REGIONAL DEVELOPMENT

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ABSTRACT

Planning is necessary for the implementation of different activities of a State and society. It is considered as a scientific tool for decision making (Easwaran A, 1998). A proper planning is necessary for the sustainable development of a region to grow in all sectors without affecting any areas. Remotely sensed satellite imageries are an important source of data for the development of a Geographic Information System (GIS) for applications in regional development planning. The main aim of this article is to make a literature survey on different aspects such as Spatial Planning in Global Level, Indian Scenario and Application of GIS and Remote Sensing (RS) for Spatial Planning through the various studies that have been conducted in the various studies. All the socio-economic, environmental and demographic problems are caused because of rapid growth of population hence; this article would give a holistic picture of important role of Spatial Planning and regional Development.

Key words: Spatial Planning, Regional Development, GIS, RS.

INTRODUCTION

Spatial planning is a key instrument for establishing long-term, sustainable frameworks for social, territorial and economic development both within and between countries. Spatial planning is concerned with “the problem of coordination or integration of the spatial dimension of sectoral policies through a territorially-based strategy” (Cullingworth and Nadin, 2006). The concept of regional development is based on the development of specific regions. The planning for regional development involves identifying the regionalism present, demarcating the region, determining the need of the region, formulating the plan, implementing the plan within the framework of government set up and reviewing the implementation of the plan (Misra, R.P.,1992).

Remote sensing and GIS are tools or aids, which help the planners to accurately create and manage data. GIS is used as analysis tool as a means of specifying logical and mathematical relationships among map layers to get new derivative map layers. Any new data can be added to existing GIS database easily. Thus remote sensing data provides reliable, timely, accurate and periodic spatial data. In this paper the review of literature gives an account of various studies conducted in the research topic selected that is Spatial Planning and Regional Development.

REVIEW OF LITERATURE

The review of literature is broadly divided on three categories.

A. SPATIAL PLANNING AND REGIONAL DEVELOPMENT- GLOBAL LEVEL

Recently, the world has welcomed its 7 billionth inhabitant. It is expected that we will grow to 9 billion persons by 2050. At present, more than half the world lives in urban areas and urbanization will continue in the future also. Harvard economics professor Glaeser argues, population can have magical consequences for business and innovation. At the same time we are aware of the environmental consequences of sprawling suburbs. Thus, sustainability is a core issue for today's spatial planner. And the spatial planning practice greatly influences our environment.

Ashok K Dutt (1970) has article entitled- "A Comparative study of Regional Planning in Britain and Netherland". In this article author was compare the Britain and Netherland regional planning experiences and explained that in Britain and Netherland the Coordinated and comprehensive regional planning approach has been adopted and both countries have been greatly influenced by the Garden City concept of Howard. The themes of establishment of new towns, development of less-advanced areas, and location of industrial nuclei have been implemented in both countries as aspects of regional planning. Netherlands has achieved more success, as it has molded the above ideas to suit the requirements of the country, but Britain is implementing the themes more conservatively.

Hansen C.J (2009): "Regional Development Planning the creation of Ownership? The case of North Jutland" In this paper author discussed the background as well as the specific challenges and opportunities relating to regional development planning, he opined that the regional development planning is an entirely new strategic tool and in the structural reform it has been identified as a key instrument to the new role of the regions as regional development.

Lu Chen et al., (2013) in their paper on “Driving force of urban growth and regional planning: A case study of China’s Guangdong Province”. In this study they found that, as the rural-urban migration and urban growth rapidly increasing there is a need of appropriate regional planning in order to make effective strategic decisions on regional planning, which is essential to identify the determinants that promote or restrain urban growth.

Okpala D (2010) made a study on “Regional Overview of the Status of Urban Planning and Planning Practice in Anglophone (Sub-Saharan) African Countries”. He attempts to explain the trends in the evolution of urban planning over the period, the varying rationale and institutional frameworks adopted in the various countries, the evolving challenges, role of urban planning in promoting sustainable urban development in the countries of the region and increasingly uncontrollable urban sprawl. And assesses the effectiveness of the various planning approaches adopted and implemented by various countries, impact and efficacy of urban planning education in the region in the context of the overall sustainable urban development management in Africa.

Schmidt S and Buehler R, (2007) have conducted a comparative study of planning process in the US and Germany. They have compared the planning process in Germany and United States and examined recent trends and patterns in the planning processes of both countries, with a particular focus on whether or not planning is converging. Authors suggest that the US and Germany can still learn from where the other has been and is going in terms of the scope, goals, and direction of planning.

Wapwera, S. D., (et.al) (2015) in their paper on “Institutional framework and constraints in the urban and regional planning system in Jos Metropolis, Nigeria”. In this paper authors critically analyze the current institutional framework of urban and regional planning in Jos Metropolis, Nigeria by identifying the constraints and how it has affected the control of development and its management. The research approach adopted is qualitative-quantitative with deductive-inductive reasoning. The results reveals that, the identified institutional framework is weak because which has been constrained by different constraints which leads to a non-functional institutional framework.

B. INDIAN SCENARIO

Day by day India faces rapid process of urbanization and the growth of the cities. It is the second-most-populous country in the world, with a population of 1.028 billion and, of this, 285 million (27.8 percent) live in its 5,161 cities and towns. Pressures of rapid growth and years of its negligence have severely stressed the condition of India’s cities and towns. This is evident in the innumerable challenges facing them—large areas not serviced by roads, water supply, sewerage and storm water networks, inadequate health and education amenities, traffic

congestion, ineffective and inadequate public transportation systems, unregulated and chaotic growth, slums, poor building stock, destruction of heritage resources, etc. All of these make India's cities and towns polluted, unlivable, inefficient, and vulnerable to disasters (Shirley Ballaney 2008). Hence to come over these problems a proper planning is essential.

Isha Kaushik (2013) was discussed about challenges and issues of planning in India, he has indicated some of the drawbacks that exists in India, such as, physical and environmental, land uses proposals and land classification, socio-economic problems, demographic. He also stated that, all the mentioned problems are caused because of rapid growth of population which migrated from surrounding areas and creates problems in the city region and such problems; hence to come over these problems a proper planning is essential.

Mukharji G (1967): has studies "Metropolitan Planning in India". In this study author explained that the population growth, traffic condition, plan less urban growth, residual problem and growth of slums in the city region are the main problems in Calcutta, Bombay, Delhi and Madras metropolitan cities. Hence author suggested that, the regional planning is essential which creates more logical arrangements of work and residents and creates more balanced relationship. **Pathak C R (1967)** was studies Damodar Valley region which is rich in mineral. He has identified various problems of the region such as high rate of population, rapidly growing urban- industrial complexes and over mining and mainly coal mining, hence, the author suggested that regional development plan for the Damodar Valley Region must include the mining industry for healthy regional growth.

Subash. S. Sannashiddannavar (2015) was carried out Micro-Level Spatial Planning for Haveri District, Karnataka, Using Geo-Spatial Technology. In this, author studied the distributional patterns of facilities and regional imbalances, the result of the study indicated that, the Hangal Taluk in Haveri district is the least developed area, such as under developed in educational facilities, health facilities and market centers, that showed intimation about where development is need and to solve these regional imbalances author suggested that the micro-level Spatial planning is essential.

Thakkar Y and Chauhan K A (2014) proposed "Overview of Area Planning Proposal for Medium Town: A Case Study of Kamrej Town, Surat District". In this study authors explained that, the present problems and issues arising in existing kamrej town are infrastructure facilities, road connectivity and overall land use planning. The study is carried out on infrastructure development such as water supply, drainage network, and solid waste management, on the basis of Indian norms and standard respect to some case studies for urban areas. Finally,

authors attempted to highlight the present scenario of kamrej town, and made the area planning proposal for the future growth of Kamrej town in Surat District.

Wood J (1958) on his paper “Development of Urban and Regional Planning in India”. In this paper he explained that, the urban problems are not all of recent making. In India the urban situation had become serious because of the large increase in population since 1921. The magnitude of urban problem is enormous. The problem if not unmanageable now which results rapid increase of population and continuing, uncontrolled growth of urban area.

C. APPLICATION OF GIS AND REMOTE SENSING FOR SPATIAL PLANNING

Remotely sensed satellite imageries are an important source of data for the development of a Geographic Information System (GIS) for applications in regional development planning. Integrating remote sensing and GIS systems helps in making better decision making by planners by realization of improved understanding, analysis and results presentation (Sundaram R V, 1994). The development of Geographical Information Systems and Remote Sensing has triggered the spatial studies, especially in regional, urban and rural planning. In present scenario the important of GIS and Remote Sensing has been understood by planners and almost all the studies carried out through incorporating GIS and Remote Sensing. In developed and developing countries the use of GIS and Remote Sensing plays a very important role, which can provide us with robust results by extracting urban land cover information (Mr. SujitPavaskar, Mr. Deepak Rajaram 2015).

Akanbi A K et al., (2013) used GIS and remote sensing for the planning of Hyderabad city in India, in which they have illustrate that, the advancement of GIS, which considerably influenced the dynamic nature of urban and regional planning, incorporation of GIS becomes imperative for better and improved decision-making in regional planning and management. It offers a solution to the problems and decision-making, which is more reliant to the real-time spatial modelling. The integration of Geographical Information System (GIS) and Remote Sensing has provided a tool, which can contribute to much clearer understanding of real planning problems as well as prescriptive planning scenarios to enhance the quality of urban planning and management.

Bibby B R and Shepherd J W, (1999) used GIS for the planning purpose of land use and land cover in urban areas, they have stated that, the use of GIS in strategic planning raises issues which go to the core of the concept of land use itself, including the definition of a land use, the definition of the ‘parcels’ into which land is divided, and the acquisition of data on what occupies the Earth’s surface. A key concept underlying all these issues is that the term ‘land use’ (as opposed to much of what is called ‘land cover’) defines a social purpose and not a set of physical qualities. Regarding land use in this way means, among other things, that many more datasets can be

used to investigate land use matters than is customarily assumed and that GIS has the key role to play in the processing and integration of such data.

Bunch M J et al., (2012) have used Geographic Information Systems for Spatial planning and environmental management of Coolum River and Chennai slums. They stated that, GIS was more prominent in the Coolum research, and was kept in the background in work with slum dwellers. However, the efficacy of the process was important, more so than the scientific rigour of the application of GIS to the problem. They argued that this is an appropriate and useful role for GIS that avoids spatial and social marginalization in spatial planning and environmental management.

Fuling B et al., (2015) in their study on “A study on the application to Regional Planning in Remote Sensing and GIS Technology”. In this paper authors described that the procedure of the regional planning of Wuchang County, China using aerial photographs and GIS technique by interpreting and analyzing the aerial photographs, the land resources of Wuhan County, such as arable land, water, forest, traffic and waste land, are investigated. Authors suggested that, remote sensing and GIS technologies are very useful for the regional planning, management and decision making.

Harris T M and Elmes G A (1993) attempted to identify trends in the integration of GIS in urban and regional planning and impacts of GIS technology on the planning system in North America. As North America is currently experiencing a revolution in the linking of computer-based Geographical Information Systems (GIS) to planning issues, the authors concluded that growth rate of GIS in planning in North America; the field is now sufficiently well established to allow meaningful trends, evaluations and directions.

Jhavar M et al., (2012) have used remote sensing data in Geographical Information System for the assessment of urban planning. Through discussing the important and effectiveness of GIS and remote sensing data for the planning purpose at macro and micro level, they have suggested that, urban planning authorities and agencies in every parts of India should adopt new technologies like remote sensing and GIS.

Pavaskar S and Rajaram D (2015) were implemented GIS and Remote Sensing for City planning and Management. They have illustrated that, India’s urban and town planner’s major problem is development of appropriate plan for the efficient urban development because of continuous growth of population and unplanned spatial growth. Hence, they have appraised the GIS implementation in city planning; which identifies the reasons

for its present failure and suggests ways for a successful implementation that could be more generally applicable, especially in developing and developed countries.

Rai P K and Kumra V K (2011) were discussed about the role of geo-informatics in urban planning, in which they have stated that, high rate of urban population growth is a cause of concern among India's urban and town planners for efficient urban planning. Therefore, there is an urgent need to adopt modern technology of remote sensing which includes both aerial as well as satellite based systems, allowing us to collect lot of physical data rather easily, with speed and on repetitive basis, and together with GIS helps us to analyze the data spatially, offering possibilities of generating various options (modeling), thereby optimizing the whole planning process.

Xiao Y and Zhan Q (2009) have done a research on A Review of Remote Sensing Applications in Urban Planning and Management in China, in which they have indicated that, remote sensing as an important data source provides enriched and up to date information for planning at the different planning levels and also remote sensing plays important role in monographic study in urban areas such as dynamic monitoring of urban sprawl, land use change analysis, infrastructure network (roads, railways and settlements) study, hydrological features (river/stream, lakes).

CONCLUSION

There are several studies have been conducted all over the world, which showed that importance of planning for the development of a region. The review of literature has been arranged in a systematic order which has helped to understand the definition of spatial planning and regional development, Application of GIS and Remote Sensing for spatial planning in India and abroad. From the reviews, it is clearly indicate that majority of scholars opined that, there is a need of appropriate spatial planning in order to make effective strategic decisions for regional development. GIS and Remote Sensing is very essential tools, by the use of these tools makes the most appropriate decisions in the planning process.

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