

Implications of Decentralized Urbanization in the Sustainable Development of Kerala, India

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ABSTRACT

Urbanization is the process of demographic transformation of the population from dispersed or semi-clustered agrarian settlement to compact industrial or service settlements. It largely treated negatively because of its adverse impact on the physical environment of the cities and the social environment on the city dwellers due to the large agglomerations of the population and dwellings. Nowadays urban planners are largely concerned with the development of small towns with considerable space among them rather than large urban clusters. Kerala is one of the twenty-nine states of India with 47.71 percentages of population living in urban areas. The peculiarity of Kerala urbanization is the urban centres are scattered over the state. So the environmental pollution and social pathologies are less in comparison with the other urbanized areas of the country. The manifold influence of the dispersed type of urbanization in the sustainability of Kerala is examined with the help of geospatial technologies. It is noted that the meticulous physico-climatic condition in association with the scattered manner of urban settlement largely responsible for the attained sustainably and almost uniform development of the state.

Key Words : urbanization, Urban centres, Sustainable development, Geospatial technologies

INTRODUCTION

Kerala is a semi-urbanized Indian state with 47.71 percentage of the population living in urban centres and is the leading state in terms of Human Development Index, sex ratio, common facilities like transportation and communication networks. Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

It is very interesting to enquire the influence of urban centres in the sustainable development of Kerala. Among the 17 sustainable development goals of UNO, good health, education, reduced inequalities, sustainable cities and societies, and gender equality are more or less related with the accessibility to those facilities to all citizen of the cities and the positive interaction of communities. In most of the Indian villages, inaccessibility to the health, education, and energy facilities is the main hindrance

which pull them into low sustainable in that respects.

Several studies have been conducted in this respect especially in the European countries in the collaboration of European Union and they concluded that the dispersed and small urban settlements are responsible for more sustainability of any region than the large and concentrated urban settlements. Such studies are very less in developed countries like India. Moreover, the use of geospatial technologies for the quantification of the connectivity and service areas are limited. In this respect, this study has paramount importance in spatial science.

Objectives :

- The important objectives of the present study are
- To represent the spatial organization of the urban areas over Kerala state
 - To identify the relative significance of the scattered urban centres in the sustainable development

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of Kerala.

METHODOLOGY

The present study is based on the Arc GIS software in which the role of urban centres in the sustainable development of Kerala is identified through the buffer analysis of the statutory and Census Towns in Kerala. The locations of all census and statutory towns plotted in Google Earth software and then transformed to GIS platform. The forest area and the water bodies are exempted from the total area for the analysis as they are devoid of settlements. The buffer of influence is maintained at a different level for the census towns, Municipalities and Municipal Corporation as their size and sphere of influence differ one from other. All the buffering calculations are done around a point which is the approximate geometrical centre of the geographical cities.

Study region :

Kerala, commonly known as the “God’s own country” is one of the 29 states in India with unique geographical, cultural and ecological characteristics. It is an archetype of India, with geographical and cultural variations. Historically Kerala has been a land of racial and religious admixture and co-existence with several ancient Hindu, Buddhist, and Jain temples, along with the first Christian church, the first Muslim mosque and

the first Jewish synagogue in India. This greenish land stretches between the Western Ghats and the Arabian Sea, with the varying landscape from lagoons and coastal plains to high peaks.

As its uniqueness in the geographical conditions, the population of Kerala also maintains its unique place in Indian demography. It is a progressive civilization, which can compare with the developed countries in terms of Human Development Index, Population Growth Rate, Sex Ratio, and Literacy Rate. The total population of the state is almost equally divided between the rural and urban regions.

Kerala is one of the economically developed states of India. An outstanding feature of Kerala’s development experience is the growth of the service sector, which include the remittances sent home by overseas *Keralites*. ‘Kerala Model’ of development is a phrase widely used by economists, political scientists, and sociologists of India to denote the overall developments achieved by the state.

As a response to the topography of the land, the settlement and urbanization are mostly concentrated in the Lowland and Midlands. The Highland region experiences a less concentration of settlement and hence urban centres. All the major urban centres have a coastal location like Thiruvananthapuram, Ernakulum, and Kozhikode. The five out of six Municipal Corporations and about twenty per cent of the Municipalities have a coastal location. The highland holds no Municipal Corporation, only five Municipalities out of eighty-seven and very less proportion of census towns.

RESULTS AND DISCUSSION

The buffering of the Municipalities, Census Towns and Municipal Corporations yield a large proportion of the land area excluding forest region and water bodies covered by the different buffers of the towns and the non-served areas are very less in the state. Moreover, there are several regions in the state which are served by more than one urban area or even more than two or three centres. A comparison with other states of India is appropriate in this respect. So that it can identify the un-served areas, and it may a reason for the high and low sustainable development in the respective area.

Census towns serving area :

In India, Census Towns are those areas which fulfil all criterion for being an urban area by the census of India, but they are yet not been given any statutory urban

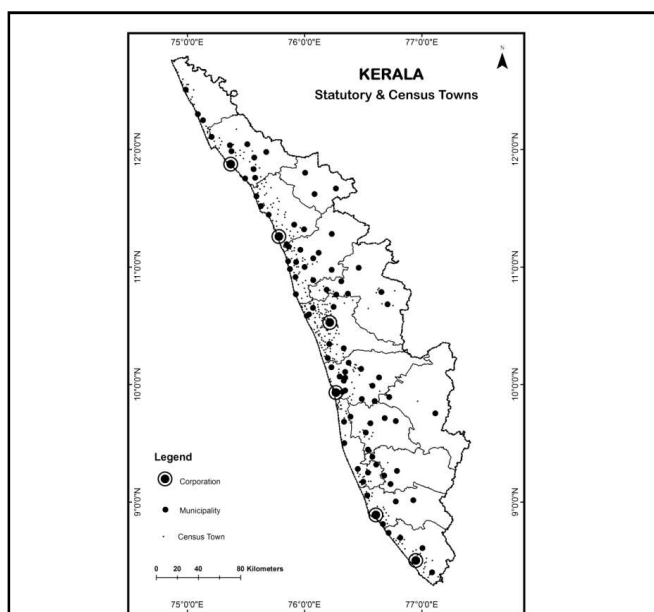


Fig. 1 : Distribution of urban centres in Kerala

status. According to the town classification, most of the Census Towns in Kerala are third or fourth class towns. As per the census report 2011, there are 461 Census Towns in Kerala, but later in 2015, twenty-nine were upgraded to Municipalities and hence 432 Census Towns were considered for this study. For census towns, a ten kilometres buffer is taken from the geographical centre of the towns.

statutory urban areas in India. According to the 2011 census report, there are fifty-nine Municipalities in the state, but later in 2015 twenty-nine Census Towns were upgraded to Municipalities and one Municipality is upgraded to the Municipal Corporation. At present, there are eighty-seven Municipalities in Kerala. Municipalities are much greater in the sense of size, population and the influence to surrounding areas than census towns, so the buffer is taken as twenty-five kilometres from the geometrical centre of the towns and cities.

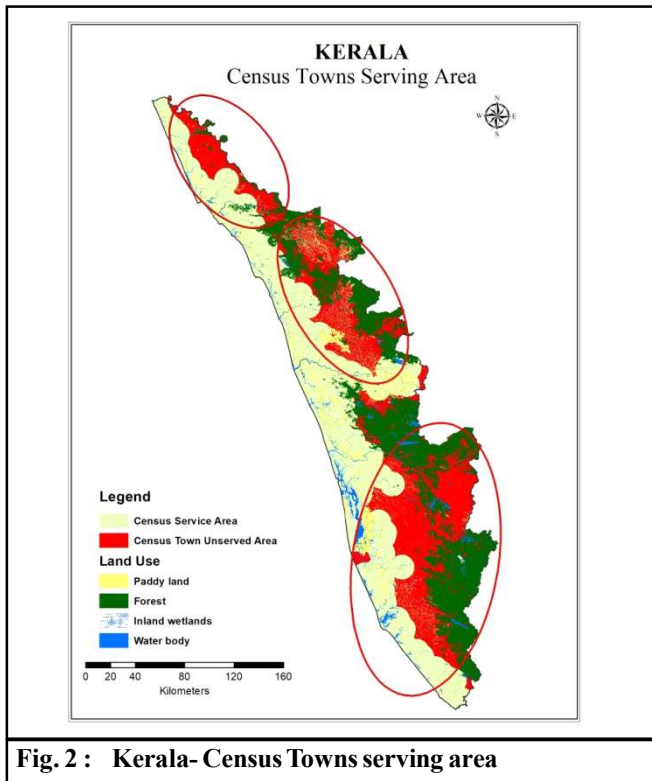


Fig. 2 : Kerala- Census Towns serving area

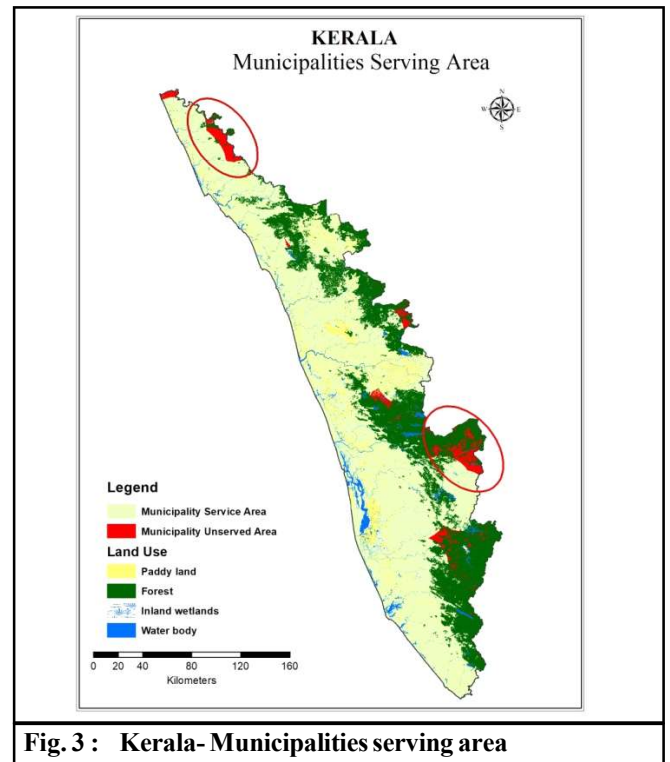


Fig. 3 : Kerala- Municipalities serving area

The buffer analysis shows that 72.57 per cent of the total inhabitable area of the state is served by the Census Towns and only 27.43 per cent of the inhabitable area is not served by any census towns. It denotes that nearly three-fourths of the inhabitable areas of Kerala is served by at least one Census Towns and the only one-fourth area is not served by any towns in this category. It clearly indicates the widespread spatial distribution of the Census Towns over the land of Kerala. It also implies that the facilities like the higher secondary schools, colleges, community health centres, and nationalized banks can be accessible to the majority of the population by travelling less than ten kilometres from their residences.

The buffering of Municipalities show that 96.91 per cent of the total inhabitable area of the state is covered by at least one of the Municipalities and only 3.09 percentage of total inhabitable area is not served by any Municipalities in Kerala. It also clearly indicates the extensive distribution of the Municipalities over the inhabitable land of the state. Consequently, for the 99 per cent of the population of the state, the facilities like multispecialty hospitals, higher education institutions, and service centres of different brands of the vehicle can be accessible within twenty-five kilometres of their residential areas.

Municipalities serving area :

Municipalities are one of the three major types of

Corporation serving areas :

Municipal Corporations are the topmost statutory

urban areas in India. In Kerala, there were only five Municipal Corporations at the time of 2011 census. Later in 2015 Kannur municipality is upgraded as the sixth Municipal Corporation in the state. Municipal Corporations are very large in terms of areal extension as well as the number of population in comparison with Census Towns and Municipalities. As the hinterland is very vast, the buffer for Municipal Corporations is taken as fifty kilometres for this study.

The buffering of Municipal Corporation recorded 78.26 per cent of the inhabitable land is covered by the fifty-kilometre buffer of the six Municipal Corporations of the state. Only 21.74 per cent of the total inhabitable area is not served by any of the corporations. As a result, for the lion share of the population of the state, major facilities like medical colleges and universities can be accessed by travelling less than fifty kilometres from their localities.

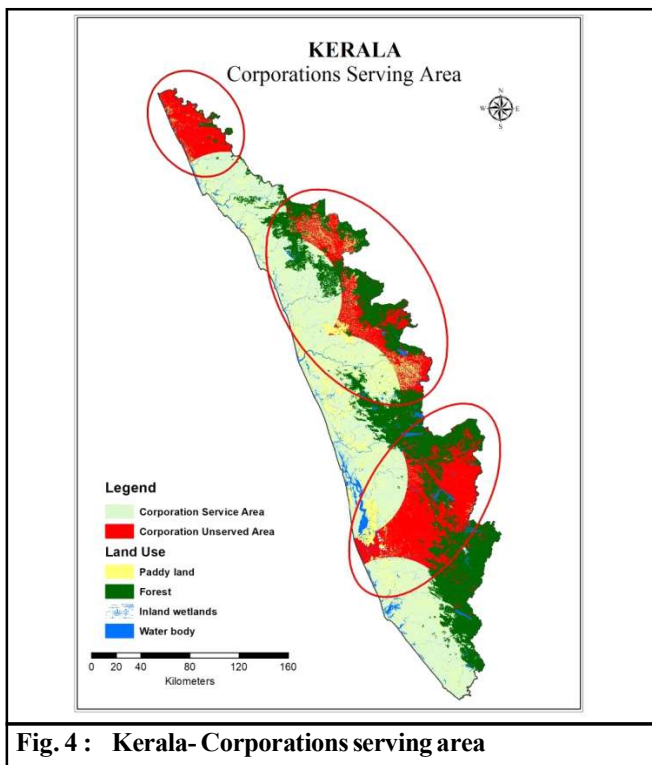


Fig. 4 : Kerala- Corporations serving area

Total urban serving area :

If the buffer areas of the Municipal Corporations, Municipalities and Census Towns are taken together, almost all inhabitable areas are come under at least one buffer area of any of the urban area. The analysis table reveals that 97.91 per cent of the total inhabitable area has come under the influencing area of at least one of

any urban areas and only 2.09 per cent area is not served by any city or town.

Most of the un-served areas located very near to the protected areas like National Parks, Wild Life Sanctuaries and Reserved Forest. The only highland physical division has no served areas, and the lowlands and midlands have zero per cent of the non-served area. This denotes the tangentially dispersed distribution of the urban centres in Kerala.

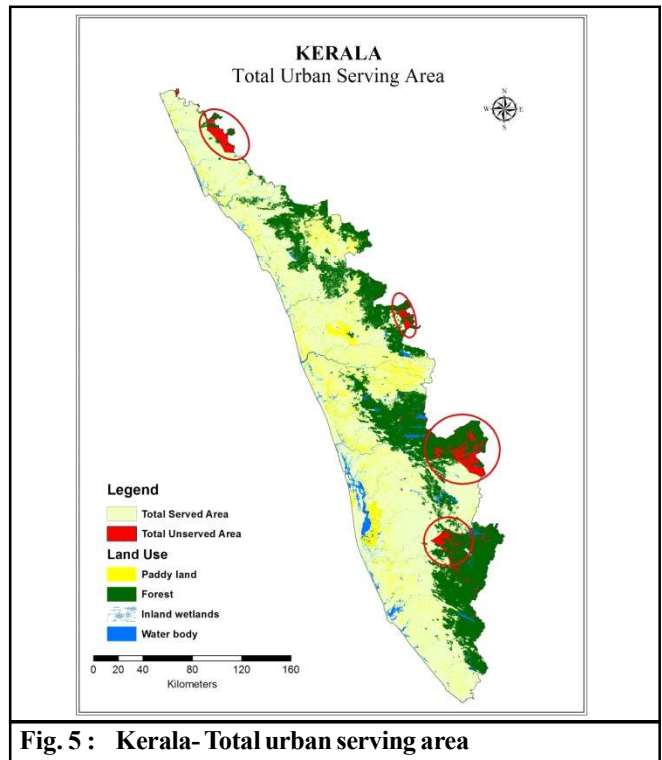


Fig. 5 : Kerala- Total urban serving area

Urban serving area and sustainability :

Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. One of the important dimensions of sustainable development is the development without disparities among areas. United Nations seventeen sustainable development goal clearly mention that it doesn't want anyone to leave behind. In this sense, the distribution of urban centres in Kerala is very favourable that all areas have almost equal development.

Some of the important titles in the seventeen sustainable goals of the United Nation are no poverty, good health, quality education, clean water affordable energy, and sustainable cities. These all goals are almost satisfactory in the state. Several areas of the world have

all these facilities, but the accessibility is very less due to the distance to be travelled and the availability of transportation facilities, especially for those who live in the villages. Only urban people have accessibility to these facilities.

In Kerala accessibility to these facilities especially to the good health facilities, education facilities, energy sources like electricity and gas connection are attained by all its population because of the dispersed distribution of the urban centres throughout the land. The balanced urban development over the land is also facilitating the good accessibility to its population. Most of the cities and towns are medium sized in Kerala, and there are not agglomerations of congested urban areas. This situation reduces the environmental and social pollution caused by the urbanization. These all are some of the major reason for the attained social and economic development of Kerala. Hence the sustainability of state is higher than its counterparts in the country.

Conclusion :

The distribution of urban centres in Kerala is in a dispersed manner. Almost all regions in the state have urban centres of different dimension. From the analysis, it is clear that the attained sustainable development of Kerala is an outcome of the interconnectivity with rural and urban areas, and this interconnectivity is facilitated by the scattered urban centres. Almost all geographical area of the state has more or less accessibility to essential facilities like education, health, and energy sources. So for any land area the dispersed type of urban centres

with small or medium sized towns or cities are better for the environmental sustainability of the terrain and social development of the inhabitants.

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