

Tempo-spatial patterns of land use changes and urban development: A case study of Coimbatore city.

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Abstract:

Urban Centre is always being an attraction of surrounding people. Industrialization and urbanization have resulted in a large number of migrations from rural areas towards the city for large employment opportunities to improve the living standard. Coimbatore city is one of the second biggest urban centre after Chennai city in Tamilnadu, The city were which has more agriculture land open land, wasteland, and dry land categories changing into urban aspect like residential and industrial and Educational categories. The selected study area is Coimbatore Corporation. In this paper analyzed the land use changes for the two period of 1981 and 2011. Data collected from LPA (Local Planning Authority) and simple statistical calculation were made to find out the changes in land use pattern, The Arc Gis 10.3 Software were used for preparing the maps and representing different categories of land utilization of urban centre. The major findings of the study are more agricultural land is converted in to residential, educational and industrial uses so on.

Keywords - Urban land use, Agriculture change detection.

I. INTRODUCTION

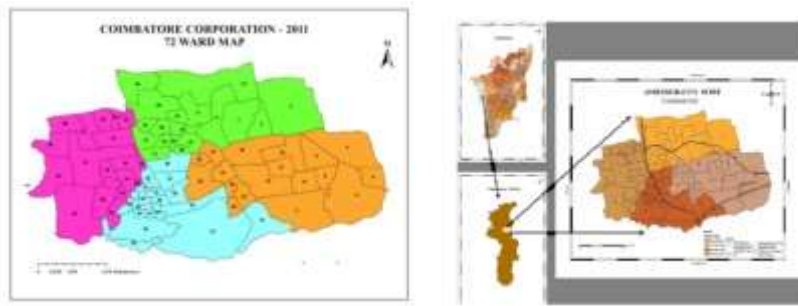
Urban Landscape change and the role of man in changing the face of the earth have been a constant theme in geographic writings across the centuries. Attention of man's continuous indulgence with the urban environment in modifying them to suit his convenience. This modification has been facilitated by modern techniques of measurement and monitoring. Urban Centre is an integrated system of man and urban environment and urbanization is the process of city establishment and growth. Spatial expansion of the city urbanization has become an important generator of economic growth and social change. Growth of the city is always depends upon industries, medical, educational and road connectivity. Urban Centre is always being an attraction of surrounding people. Industrialization and urbanization have resulted in a large number migrated from rural areas towards the city for large number of employment opportunities, improved living standards.

Urban and rural settlements are main concern of economists, historians and sociologists but their line of approach differs. Geographers mainly treat the problem as manmade habitat on the earth's surface in relation with environment and examine the settlement features such as buildings and their architectural style (Singh, 1961). The architectural styles throw light on historical sequence and on functional relationship. Characteristic of urban settlements, their size, function, spatial distribution, layout and internal structure vary regionally with the variation of physical conditions, with the density of population and with the character of human cultures which they serve and represent (Dickinson, 1963), Thus, these three important aspects size, form and functions of settlement as built by man through time and space are the essentials of the study.

Urban geography deals with very complex areas possessing sharp internal differentiation (Kohn, 1954). It is concerned with the problems of guiding urban growth for better living. As the urban settlement is closely related to its umland its growth is also dependent upon the proper development of rural areas. The spatial distribution and functional character of urban settlements are generally oriented by the need of the rural settlements.

II. LOCATION

Coimbatore is administered by the Coimbatore Municipal Corporation which comprises 72 wards grouped into four zones. It is situated on the banks of the Noyyal River in western Tamil Nadu and is surrounded by the Western Ghats on all sides. The metropolitan city of Coimbatore is one of the important industrial towns of South India. The metropolitan city is situated between 10°54'36" North latitude to 11°06'17" North and 76°52'13" East to 76°97'25" East longitudes with an area of about 257 sq.km. Population wise it is 18th largest town in India and the 2nd largest town in Tamil Nadu after Chennai and is also called as 'Textile City' and 'Manchester of South India'. The population pressure on the city is ever growing. As per the 2011 census, the population of the metropolitan city of Coimbatore is 14, 46,034.



III. AIM AND OBJECTIVES:

- ✚ To analyse the urban land use of the study area for the two periods.
- ✚ To evaluate the urban agriculture land use change of the study area.

IV. DATA SOURCES AND METHODOLOGY:

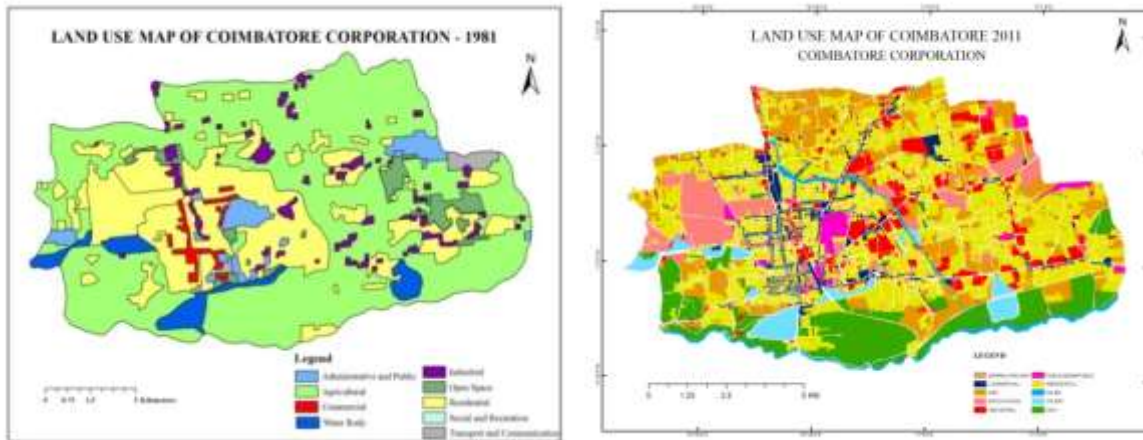
The urban land use data were collected from Local planning Area LPA for two periods for preparing 1981 and 2011 Land use maps, simple statistical calculation were use to analyse the urban land use with the help of ArcGis 10.3 software, system was employed to evaluate the changes in urban agricultural land use for the study period.

V. RESULT AND DISCUSSION:

Land use of Coimbatore Corporation 1981and 2011

| S. No. | Land Use | % to total developed area 1981 | % to total developed area 2011 | Changes in % |
|--------|----------------------------------|--------------------------------|--------------------------------|--------------|
| 1. | Residential area | 42.76 | 68.96 | 26.20 |
| 2 | Commercial | 1.85 | 4.84 | 2.99 |
| 3 | Industrial | 3.16 | 6.35 | 3.19 |
| 4 | Public and semi-public buildings | 2.56 | 3.95 | 1.39 |
| 5 | Education | 3.25 | 4.56 | 1.31 |
| 6 | Agriculture | 46.40 | 11.30 | -35.10 |
| | TOTAL | 100.00 | 100.00 | |

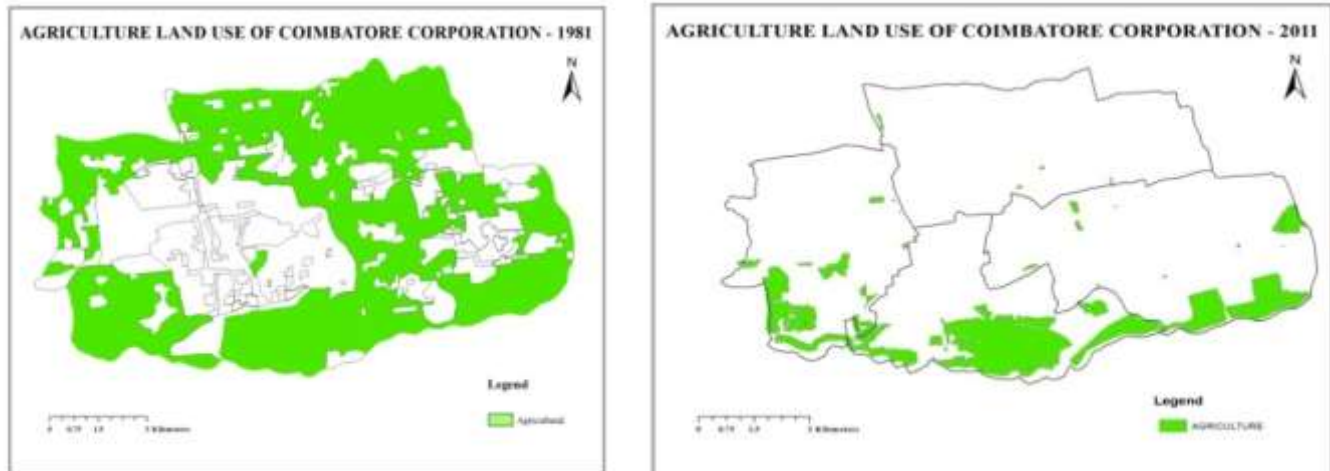
Source-Local Planning Department Coimbatore (LPA-2014)



After preparation of two decade land use cover map of Coimbatore city the maps shows clear idea about 1981 and data more residential area concentrated only in the middle part with 26.5% land use next to that most dominant was agricultural land use because before 1981 the area of the city was only limited sq km after added more area with Coimbatore town in the year 1981, the Coimbatore corporation become with 72 ward boundary most of the area covered with 61% of agricultural land use followed by industrial area was 3.50 % shows in the prepared table of 1981 land use categories other

land use categories is public and semi public land use and categories 2.50 % of land use and commercial land use 1.24% occupying in 1981 land use the table shows of 2011 land use was most dominant land cover class was residential with 59.84 countries decrease of agricultural land use was education land use with 6.26% followed by 5.65 industrial land use categories occupying in 2011 land use in the table other two land use categories commercial land use 4.25 and public and semi public was 4.37 occupying in the 2011 land use categories.

LAND USE / LAND COVER CHANGE DETECTION:



The increment in infrastructure development of Coimbatore city from time to time has played a major influence for the expansion of built up areas. The main focus of this study was assessing and examining the spatial extents of built up areas within the two study periods to achieve this, a tabulation prepared for two decade major land use classification of Coimbatore for that prepared maps and tabulation has made it. As clearly seen in the table of two different period land use data shows the proportion of built up areas in 1981 was 26.5 of the entire study area in 2011 the percentage of built up areas showed more than double increase and it was 57.84%. The study area has experienced spatial increase of different land use and land cover classes such as built up areas, due to corresponding horizontal expansion as well as conversion of land cover classes during the distinct study periods. According to the prepared maps and table shows that there had been a rapid land cover change from non built up areas to built up areas. In both study periods, agriculture areas were the most dynamic classes which contributed to the increase to the increase of built up areas. There was a huge increase of built up areas from 1981 to 2011.

REFERENCES:

1. People, space & economy of An Indian City. An Urban morphologic of Mysore City 1975).P.D. Mahadev (University of Mysore, retired prof.) Institute of Development Studies, India, Mysore.Dr. P.D. Mahadev Conducted the study about Mysore.
2. Coimbatore local planning authority.Directorate of Town and Country planning Government of Tamil Nadu. G.O. M.S. No. 22 Dated 27.01.2011 1993
3. Remote sensing GIS tool for urban Studies – Amenity patterns in Hyderabad (A.P. India), PhD Scholar, Dept of Geography, Osmania University, Hyderabad, India, and TS – PS: WG VII/4.
4. Change Detection in Land use And Land cover using Remote sensing Data and GIS.
5. ZUBAI, AYODEJI OPEYEMI (A case study of Ilorin and its environs in Kwara State). By October – 2006, MPhil Thesis.

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