



## STUDIES ON SPATIO-TEMPORAL CHANGES IN LANDUSE PATTERN IN LATUR CITY OF MAHARASHTRA STATE

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### ABSTRACT

*Present investigation was carried out to study the spatio-temporal changes in landuse pattern in Latur city of Maharashtra state. Land cover means different physical materials such as trees, grassland, water, crops, buildings etc at the surface of the earth. Urban Land use/Land cover changes are very dynamic in nature and have to be monitored at usual intervals for sustainable environment development. Land cover is changing mainly due to increase in urban population. Data used for the present research work is collected from both the sources i.e. primary and secondary. The data collected from different primary and secondary sources is analysed and tabulated. From the preset investigation it is concluded that in the year 1991, total built-up area of Latur city was 12.677 sq. km and it increased to 19.866 sq. km in the year 2011. Maximum built up area 3.801 sq. km was found in Sector No. X in the year 1991 which was increased to 5.72 sq. km in the year 2011. In twenty year period built-up area increased by 1.92 sq. km in Sector No. X. The change in built-up area is not uniform within study region.*

Keywords: Landuse, Built up, spatio temporal,

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### Introduction

The growth and morphology are the two aspects, which are related with the historical development of the city. The Latur city is an old city of Maharashtra and has a political significance since the beginning of the ancient period. Some urban geographers have studied the growth and morphology of various urban centres which will enable to apply the method

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used by earlier urban geographers. The modern city is a dynamic organism constantly in process of evolution. This evolution involves both a modification of long established functions and the addition of new functions (Kumbhar, 2006). The morphological set-up of the various functions differ from place to place and time to time. It varies within the limits of the time and space (Tanreja, 1971). Cities are expanding in size, number and relative importance in many developed and developing countries of the world. The development of technology, industrial growth and development of transport links have given rise to several new problems. The morphological study of towns essentially consists of the study of the pattern, internal functional arrangement and external form of the towns (Mulik, 1989). The functions of urban centres have been investigated within a number of conceptual frame-work including central place theory and the urban economic base (Sinha, 1976).

Functions are the driving force of the city life and influence to a very large extent, in growth and morphology (Mishra, 1988). The urban centres as central places exist mainly to fulfill the needs of local people and surrounding people by providing goods and services.

Latur is an ancient settlement. The history of Latur shows its ancient appearance. In ancient times it was known as Ratnapur. Now it is called as Latur. About 250 years back the town was confined to Kasba peth towards the north of Khadak Hanuman temple. After the construction of Barshi-Latur road in 1898, Miraj-Latur narrow gauge in 1911 the trend of urbanization of Latur town started. Due to this Latur town developed gradually and now it is one of the important district place in Maharashtra state.

### **Choice of the Region and Topic**

The choice of the study area and the topic has been influenced by several considerations. Latur city is one of the fast growing cities in Aurangabad division as well as in Maharashtra. As yet no systematic study has been done in geographical point of view of Latur. Latur is one of the important cities in the region which perform many functions. It performs different functions like educational, industrial, commercial, administrative etc. Food grain trading is main function of Latur city. All these considerations motivated the author to turn his attention to this topic.

### **Sources of the Data**

Present work is based on primary and secondary sources of data. Primary data is collected to analyze facilities. The secondary data for the present investigation has been collected from following sources.

1. The Reports of Municipality Office of Latur.

2. District Census Hand Book of Latur District 1991-2011.
3. Socio-Economic Review and District Statistical Abstracts of Latur city.
4. The Gazetteer of Latur District.
5. Reports of Town Planning.
6. Different department plans of Zilla Parishad, Latur

### **Methodology Adopted**

Data used for the present research work is collected from both the sources i.e. primary and secondary. The primary data regarding intra-urban markets, shopping centers, health care and educational facilities, industrial facilities have been collected at the time of field work.

Secondary data collected from different sources, basically from Gazetteers of Osmanabad and Latur district, District Census Handbooks of 1981, 1991 and 2001, Annual Reports published by Latur Municipal Council, Silver Jubilee Report of Latur district and Town Planning Office of Latur.

The data collected from different primary and secondary sources is analysed and tabulated. Information collected in the research work is presented through graphs, diagrams and maps.

### **Spatio-Temporal Changes in Landuse/Land Cover**

Land cover means different physical materials such as trees, grassland, water, crops, buildings etc at the surface of the earth. Urban Landuse/Land cover changes are very dynamic in nature and have to be monitored at usual intervals for sustainable environment development (Kadam and Nagarale, 2012). Land cover is changing mainly due to increase in urban population. The population of Latur city was 1,97,408 in the year 1991 which increased to 3,82,754 in the year 2011. In last twenty years the population of Latur city has increased by 93.88%. This increase in population has affected on landuse/land cover of the city.

**Table No. 1****Change in Urban or Built-up Area During 1991 and 2011.**

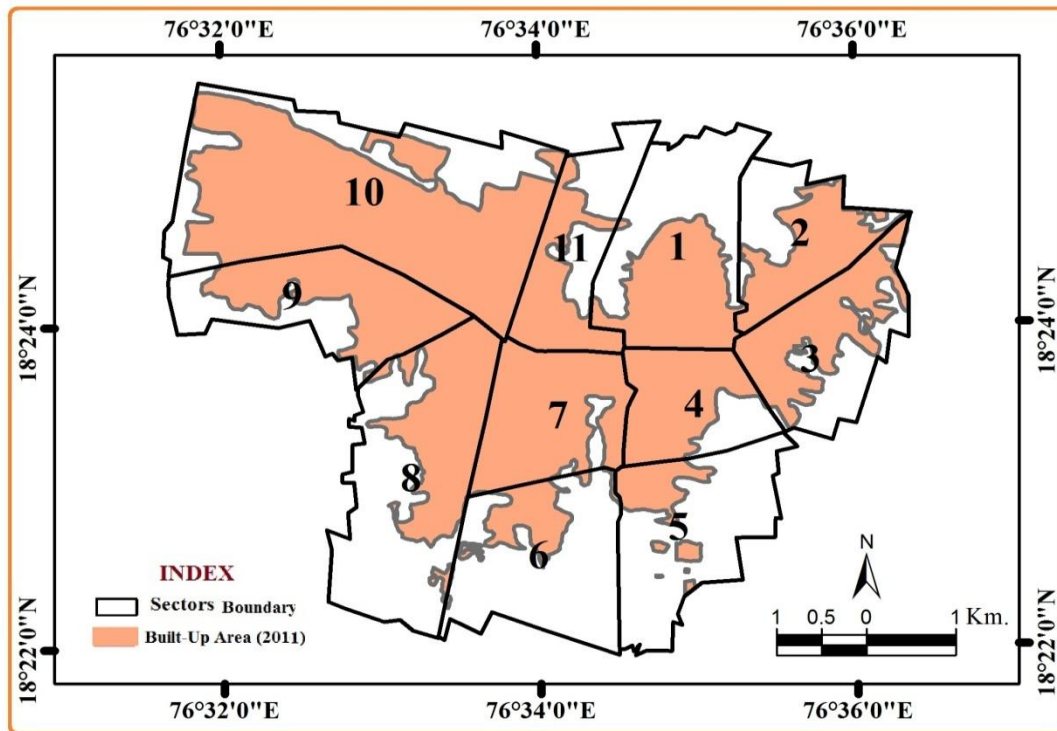
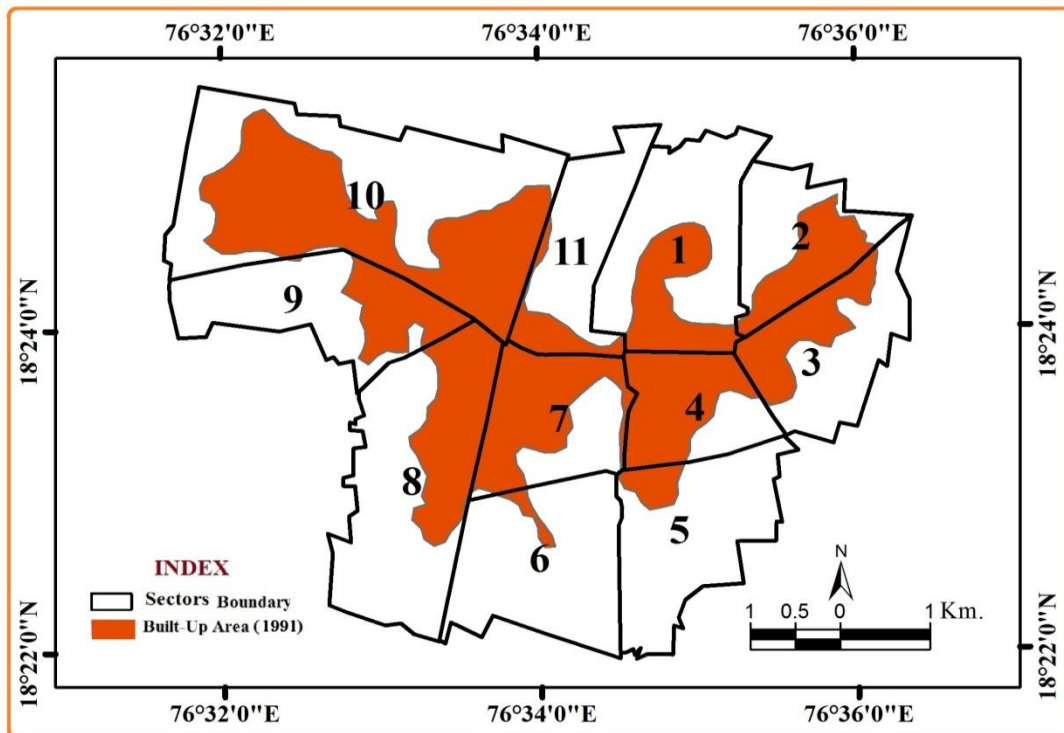
<b>Sector No.</b>	<b>Census Map Built-up Area (Sq. Km)</b>	<b>Census Map Built-up Area (%) 1991</b>	<b>Image Built- up Area (Sq. Km) 2011</b>	<b>Image Built- up Area (%) 2011</b>	<b>Difference (Sq. Km)</b>
<b>I</b>	1.027062	8.10	1.641089	8.25	0.61
<b>II</b>	0.912708	7.20	1.264746	6.36	0.35
<b>III</b>	0.955267	7.53	1.621886	8.16	0.67
<b>IV</b>	1.302716	10.28	1.3814	6.95	0.08
<b>V</b>	0.256305	2.02	0.532121	2.68	0.28
<b>VI</b>	0.097243	0.77	0.608246	3.06	0.51
<b>VII</b>	1.515297	11.95	2.167409	10.90	0.65
<b>VIII</b>	1.520256	11.99	1.939701	9.75	0.42
<b>IX</b>	0.850803	6.71	1.854623	9.33	1.00
<b>X</b>	3.801464	29.99	5.725503	28.79	1.92
<b>XI</b>	0.438718	3.46	1.149534	7.78	0.71
<b>Total</b>	12.677839	100.00	19.886258	100.00	7.21

Source: Landsat Image 23-March-1991 TM and Google Earth Image 3-May-2011

## Built-Up Area of Latur City

(1991)

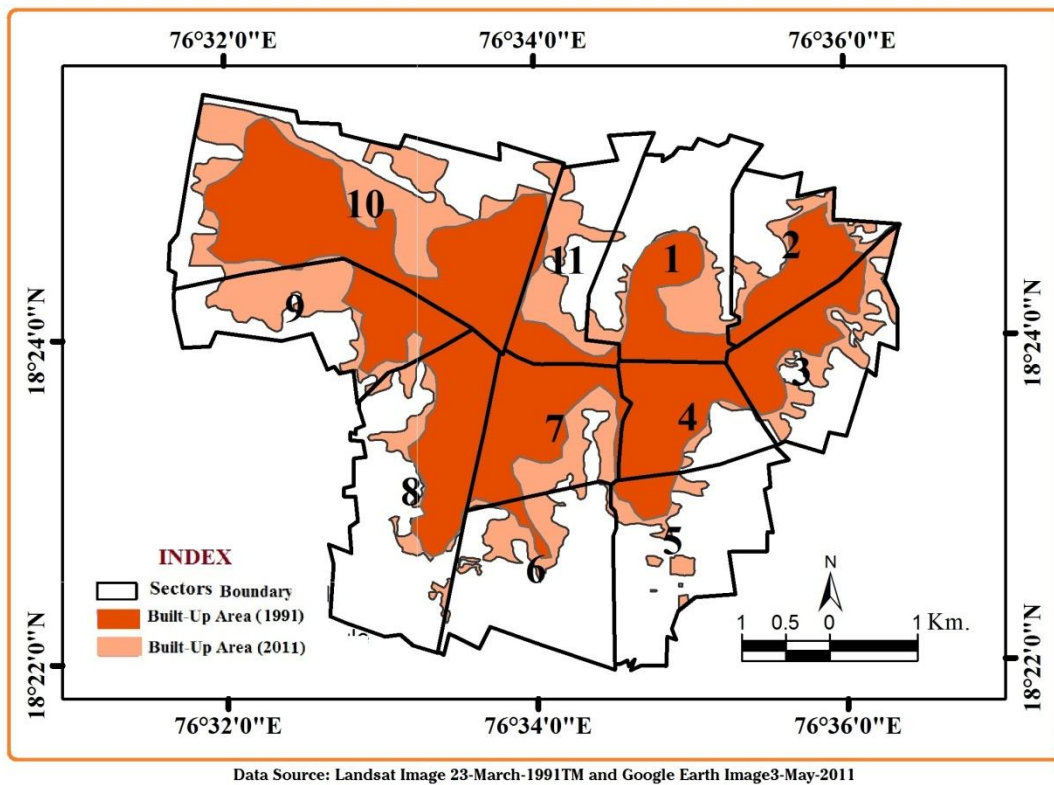
Fig. No. 1



## Built-Up Area of Latur City (2011)

Fig. No. 2

**Built-Up Area of Latur City  
(1991 And 2011)**



**Fig. No. 3**

A detail analysis of sectorwise landuse pattern of Latur City is presented in earlier part of this chapter. Here an efforts have been made to show the changes in land cover particularly in built up area of the study region from 1991 to 2011 in twenty years period.

Landsat image of 1991 and google earth image of 2011 have been used to show the changes of the built-up area of the city. Sectorwise built-up area, built-up area in percentage and difference in area for Latur City have given in Table No. 1.

In the year 1991, total built-up area of Latur City was 12.677 sq. km. It increased to 19.866 sq. km in the year 2011. Due to increase in urbanization in twenty years period the built area of Latur city increased by 7.21 sq. km.

In the year 1991, maximum built-up area 3.801 sq. km or 29.99% of the study region was found in sector No. X, followed by Sector No. VIII and VII with 1.520 sq. km or 11.99% of the total built-up area of the city and 1.515 sq.km or 11.95% respectively. On the other hand, minimum built-up area 0.097 sq. km or 0.77% was found in Sector No. VI, followed by Sector No. V with 0.256 sq. km area or 2.02% of the total area of the city (Fig. No. 1, 2 and 3).

In the year 2011, maximum built-up area 5.72 sq. km. or 28.79% of the total area of the city is found in Sector No. X, followed by Sector No. VII. In Sector No. X, built-up area increased by 1.92 sq. km in last twenty years. In the year, 2011 minimum built-up area is found in Sector No. V. It is observed that the built-up area is increased in all sectors.

### **Conclusion**

From the preset investigation it is concluded that in the year 1991, total built-up area of Latur city was 12.677 sq. km and it increased to 19.866 sq. km in the year 2011. Maximum built up area 3.801 sq. km was found in Sector No. X in the year 1991 which was increased to 5.72 sq. km in the year 2011. In twenty year period built-up area increased by 1.92 sq. km in Sector No. X. The change in built-up area is not uniform within study region.

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