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# Spatio-temporal changes in Land Values within Aurangabad City, Maharashtra

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***Abstract***

*Urban land values in developing countries have changed dramatically over the last few decades. Although the major factors affecting land values could be similar in different cities, the strength at which they influence and shape land value patterns is always different in each city. Generally, the land values are several times higher and rapidly increases in urban areas than that in rural areas. However, the value do not increases with the same rate in different sectors of urban area. The phenomenon of urban land values play an important role in the lives of all people those desire to stay in the city. The present paper attempts to study spatio-temporal changes in land values within Aurangabad city during the period from 1996 to 2015. For the present study, the data have been obtained from both the primary and secondary sources. Study reveals that in Aurangabad city, the government quoted average land values increased from Rs. 229 per sq. ft. in 1996 to Rs. 1,278 per sq. ft. in 2015. At the same time, the actual average land values increased rapidly from Rs. 312 per sq. ft. in 1996 to Rs. 9,448 per sq. ft. by the year 2015. Analysis of changes in land values with increasing distance from the city centre reveals that in all the years the land values were very high near city centre and generally declined with increasing distance. However, the values do not decreases with same rate in all directions due to variations in urban landuses and changes in functional patterns.*

***Keywords:*** *Spatio-Temporal, Land Values, City*

## Introduction:

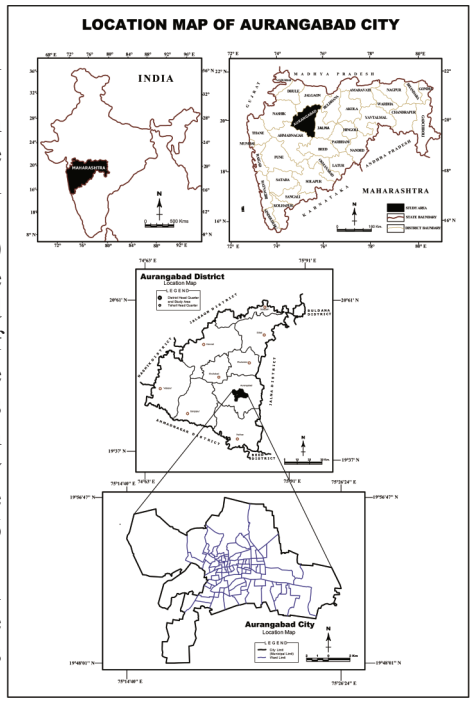
Land is the foundation of all forms of human activity; from which we obtain food we eat, the shelter we need, the space to work and the rooms to relax (Mbayaki, et. al 2016). In other words, land is utilized by man to build houses as well as for various economic activities. Therefore, land is recognized as the most valuable resource.

Land value means the value acquired by the piece of land. The land values are highly dynamic in nature, particularly in case of urban areas. They changes with the passage of time and space. "The concept of urban land value is as old as the cities themselves and the importance of this concept grew over time since the introduction of land as a commodity in the market. In practice, land value and especially urban land value patterns are more complex due to their intrinsic spatial patterns" (Ahmed, 1992).

Generally, the land values are several times higher and rapidly increases in urban areas than that in rural areas. However, the value do not increases with the same rate in different sectors of urban area. The phenomenon of urban land values play an important role in the lives of all people those desire to stay in the city.

Urban land values in developing countries have changed dramatically over the last few decades. Although the major factors affecting land values could be similar in different cities, the strength at which they influence and shape land value patterns is always different in each city. Many land value studies done in developing countries have concentrated on providing evidence of central business district (CBD) controlled land value gradients, and in doing so failed to consider other potential influencing factors such as urban sub-centres that could have influence on land values. (Nzau, 2003).

**Study Area:**




In this research paper Aurangabad Municipal Corporation limits have been selected as the study area. Aurangabad is an ancient and historical city situated in central part of Maharashtra state. Aurangabad city is the headquarters of Aurangabad district and also the divisional head quarter of the administrative region of Marathwada. Formerly, there was a small village named Kirki (Khadki) where the city stands today. It is situated at the bank of the river Kham, a tributary of Godavari. The city is located at the latitude of 19° 53' 50" north and longitude of 75° 22' 46" east. It sits in a strategic position on the Deccan Plateau. The population of the city as per census 2011 is 11,75,116 experiencing a phenomenal growth rate of above 70% in last four decades due to economy buildup caused by industrialization and tourism. The Aurangabad Municipal Council was formed in 1936 when the geographical area of the town was 63.41sq km. In 1982, the council was converted into a Municipal Corporation and 18 nearly villages were included in the city. The area of the Municipal Corporation at present is 138.5 sq km.

**Aims And Objectives:**

- To know the geographical setting of the study region.
- To assess the spatio-temporal variations in land values.
- To Assess the Distance and Direction-wise variations in land values.

**Database And Research Methodology:**

**A] Literature Survey:**

The available literature on the topic of research has been scanned from various libraries, research institutes, journals and internet.

**B] Data Collection:**

Both, primary and secondary data are used for the present research work. Base map of the city and other primary maps were obtained from the Survey of India, Municipal Corporation and Town Planning office. Geographical, historical and socio-economic information about the city have been collected from government and non-government published literature.

Data regarding zone-wise land values and maps for the year 1996, 2001, 2011 and 2015 have been collected from office of the Assistant Director, Department of Registration and Valuation, Aurangabad.

The primary data regarding land values have been collected during the field work through personal interviews and questionnaires.

**C] Data Analysis:**

The data collected from primary and secondary sources are processed by adopting appropriate methods and statistical techniques to investigate various aspects. The details regarding the various scientific methods and techniques have been discussed in the text at appropriate place.

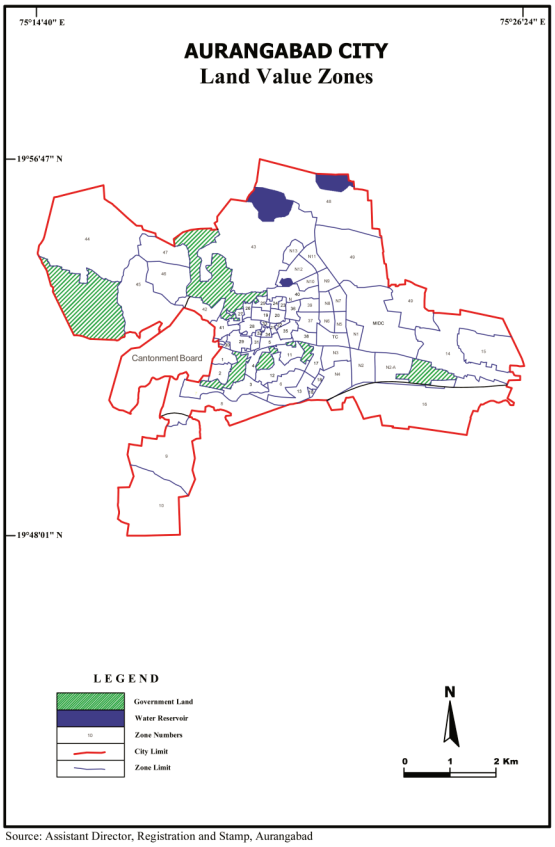
The obtained results are given in the form of tables and maps. Appropriate cartographic techniques are employed to support the analysis. The brief account of analysis of data regarding values is mentioned below.

The specific Land Values map of study region for the year 1996, 2001, 2011 and 2015 prepared with the help of AutoCAD Map software. Analysis of land values is carried out with the help of maps and graphs.

**Analysis Of Land Values In Aurangabad City:**

For the analysis of land values within Aurangabad city during the year 1996, 2001, 2011 and 2015 has been taken into consideration for analysis but the land values of 1996 and 2015 are discussed in detail. The data are collected from both, the primary and secondary sources. The values derived by government for transaction of land belonging to different zones are obtained from Town Planning and Valuation Department and CIDCO Office, Aurangabad. The actual land values are collected by field survey through questionnaire and personal interviews of hundreds of property owners, estate brokers and concerned agencies. For the purpose of land transaction it was divided into 64 zones (Figure 1). With the help of this data the spatio-temporal variations in land values have been studied by different ways.

- Spatial variations in land values within the Aurangabad city during the year 1996, 200 2011 and 2015.
- Temporal variations in land values.
- Distance and Direction-wise variations in land values.
- Trends in Land Values




Source: Assistant Director, Registration and Stamp, Aurangabad

For convenience and to make the comparison easy, more stress is given on average land values. The government quoted and actual land values in different zones during different years are grouped into different classes and comprising zones in them are given in the form of tables, while the spatial variations in land values are depicted with the help of isolines in figures. Distance-wise average land values are analyzed separately with the help of graphs. In addition, trend analysis is conducted.

Growth of Land Values in Aurangabad City (1996-2015):

For the analysis of growth of land values in Aurangabad city as a whole, the period from 1996 to 2015 have been taken into consideration. Both, the government quoted and actual land values at main roads and interior parts in different zones for the years 1996, 2001, 2011 and 2015 are given. With the help of this table the average land values at main roads and interior parts for the city as a whole are computed, from which the average land values in the city as whole during different years are calculated. Growth rates for different periods as well as for total period are also computed and reported in Table 1 and 2.

While analyzing the government land values it is observed that in Aurangabad city the average land value was Rs. 229 per sq. ft in 1996. It increased up to Rs. 1278 per sq. ft. by the year 2015 (Table No. 1).

In initial five years period (1996-2001) the land values increased by 59.83 percent. During this period the average annual growth rate of land values in Aurangabad was about 11.9 percent. In the next ten years that is from 2001 to 2011 the land values increased by 251.09 percent and the average growth rate was 25.11 percent. In the last four years (2011-2015) however, growth rate of land values decreased significantly. During the total period of 19 years (1996 - 2015) under investigation the average land values in Aurangabad city increased by 458.08 percent with the annual growth rate of 24.10 percent.

**Table 1: Growth of Government Land Values in Aurangabad City (1996-2015)**

| Sr. No. | Years | Average Land Value (Rs./Sq. ft.) | | | Growth Rate (%) | | |
|---|---|---|---|---|---|---|---|
| | | Main Road (M) | Interior Parts (I) | Average (M+I) | Main Road (M) | Interior Parts (I) | Average (M+I) |
| 1 | 1996 | 353 | 105 | 229 | ** | ** | ** |
| 2 | 2001 | 461 | 181 | 321 | 30.59 | 72.38 | 59.83 |
| 3 | 2011 | 1254 | 555 | 904 | 222.02 | 206.63 | 251.09 |
| 4 | 2015 | 1768 | 789 | 1278 | 90.99 | 42.16 | 11.06 |
| Percentage Change 1996-2015= | | | | | 400.85 | 651.43 | 458.08 |

Source: Town Planning &Valuation Department and CIDCO Office, Aurangabad

The analysis of the actual land values in the city revels that on main road the average land value was Rs. 373 per sq. ft. in the year 1996. It increased up to Rs. 10,409 per sq. ft. by the year 2015 (Table No. 2) whereas in interior parts it increased from Rs. 252 per sq. ft. in 1996 to Rs.8,488 in the year 2015. The average land value for city as a whole increased from Rs. 312 per sq. ft. in 1996 to Rs. 9,448 per sq. ft. in 2015. In the total 19 years period (1996 - 2015) the actual average land values in Aurangabad city increased by 2928.21 percent with the annual growth rate of 154.11 percent. These values are significantly high than the growth in government decided land values. It is observed that the growth rate of actual land values was more than twelve times as compared to the growth rate of government decided land values.

**Table 2: Growth of Actual Land Values in Aurangabad City (1996 -2015).**

| Sr. No. | Years | Average Land Value (Rs./Sq. ft.) | | | Growth Rate (%) | | |
|---|---|---|---|---|---|---|---|
| | | Main Road (M) | Interior Parts (I) | Average (M+I) | Main Road (M) | Interior Parts (I) | Average (M+I) |
| 1 | 1996 | 373 | 252 | 312 | ** | ** | ** |
| 2 | 2001 | 1042 | 945 | 993 | 179.36 | 275.00 | 218.27 |
| 3 | 2011 | 4374 | 3552 | 3963 | 319.77 | 275.87 | 299.09 |
| 4 | 2015 | 10409 | 8488 | 9448 | 137.97 | 138.96 | 137.72 |
| Percentage Change 1996-2015= | | | | | 2690.62 | 3268.25 | 2928.21 |

Source: Field Survey, 2011 and 2015.

**Spatial Variations in Land Values, 1996:**

In 1996, total geographical area of Aurangabad city was 138.50 sq. km. For the purpose of land transaction it was divided into 64 zones (Figure 1). The government quoted as well as actual land values at main roads and interior parts in different zones for the years 1996, 2001, 2011 and 2015 are given. It indicates that in 1996, the government derived land values ranged in the city from Rs. 5 per sq ft. for interior parts of zone No. 44 to Rs. 717 per sq. ft. for main roads of total 10 zones (zone No. 4,5,17,19,20,21,28,29,31 and 33). Within the city area average land values ranged from Rs. 15 per sq.ft. in zone No. 16 and 48 to Rs. 615 per sq. ft. It is observed that in most of the zones actual land values were more than government decided land values. In certain zones actual land values were too much high e.g. zone No. 19, 20. In some zones (zone No. 8, 10, 15, etc.) however, actual land values were less than government decided values.

For detail analysis the zones under different classes of average land values (Govt. quoted) and actual average land values (collected through field survey) are given in table 3 and 4 respectively. The

spatial variations in government decided average land values and actual average land values are depicted with the help of isolines in figure No. 2 and 3 respectively. From the analysis of land values in Aurangabad city during the year 1996, following points can be highlighted.

**Table 3: Distribution of Zones According to Land Values (Government Decided) 1996.**

| Average Land Values Rs./ Sq. ft. | Total Number of Zones | Zone Number |
|---|---|---|
| < 20 | 2 | 16,48 |
| 20 – 40 | 3 | 44,45,47 |
| 40 – 80 | 16 | N2A,N2,N3,N4,N5,N6,N8,N9,N10,N11,N12,N13,9,10,15,46 |
| 80 – 160 | 8 | 6,8,14,37,39,42,49,N1 |
| 160 - 320 | 12 | N7,3,7,12,13,18,27,32,34,35,36,40 |
| 320 – 640 | 22 | TC,1,2,4,11,17,19,20,21,22,23,24,25,26,28,29,30,31,33,38,41,43 |
| > 640 | 1 | 5 |
| Total | 64 | |

Source: Town Planning and Valuation Department and CIDCO Office, Aurangabad.

1) The highest actual land values were noticed in zone No. 19 which can be recognized as the heart of the city. The Gulmandi can be identified as the city centre from which the land values decreases in all directions, but another pocket of high land values point is Town Centre (TC) in CIDCO. In this area Connaught place is highly commercialized in systematic manner. Zone No. 19 is spread over the left bank of River Kham. The main social and commercial areas included in this zone are Budhilane, Diwandewadi Gomshet Market, Kumbharwadi to Supari Hanumaan Road, Old Shahaganj, City Bus Stand area, Juna Bazar, Regal Cinema, Lota Karanja Road, etc. Most parts of zone No.19 are mainly under commercial and retail use and interior parts from road having old and newly constructed buildings are used for residential purpose. All the amenities present in this zone and hence, highest land values are recorded here in all the years.

**Table 4: Distribution of Zones According to Land Values (Actual) 1996.**

| Average Land Values Rs./ Sq. ft. | Total Number of Zones | Zone Number |
|---|---|---|
| < 40 | 7 | 10,15,16,45,47,48,49 |
| 40 - 80 | 5 | N2,N2A,9,14,44 |
| 80 - 160 | 22 | N1,N3,N4,N5,N6,N7,N8,N9,N10,N11, N12,N13,6,7,8,11,13,35,41, 42,43,46 |
| 160 - 320 | 7 | 3,12,33,36,37,39,40 |
| 320 - 640 | 19 | 1,2,5,17,18,21,22,23,24,25,26,27,28,29,30,21,32,34,38 |
| 640 - 1280 | 2 | TC,4 |
| 1280 - 2560 | 1 | 20 |
| > 2560 | 1 | 19 |
| Total | 64 | |

Source: Field Survey 2011 and 2015.

2) Zone No. 20, which lies to the east of zone No. 19 ranked second in both government and actual land values during the year 1996. It covered area from Shahaganj Bus Stand to Maharashtra Hindi Vidyalaya. This zone also under commercial use enjoys many facilities. As per valuation department records, the land values ranged in this zone from Rs. 207 per sq. ft. for main roads to Rs. 717 per sq. ft. for interior parts.

3) Zone No. 4 which lies behind the government engineering college and civil lines is one of the high class residential areas. It is spread along the Jalna road. The northern side of this zone is captured by commercial areas. This zone also enjoys many facilities. Due to presence of hospital, college and schools, nearness of market and bus stand there was more demand of land in this zone, particularly for residential purpose and hence land values were comparatively high.

4) Zone No. 1 and 2 are located near cantonment board and western boundary of Aurangabad

city. They comprise the high class residential areas like Konkanwadi, Panchavati, Bansilal Nagar and Station Road areas. These zones were already developed and hence, the land values were comparatively high. Here, the actual land values ranged from Rs 500 to 600 per sq. ft. during the year 1996.

5) Zone No. 16 and 48 showing lowest range of land values. Zone No. 16 which lies close to the railway line mostly occupied by undulating surface. Sukhana River and it's streams passing through this zone. It is covered by heavy transportation network. It lies close to the airport and railway track. Due to heavy noise and air pollution by railway and airlines, people are not interested to reside here. This zone is mainly occupied by lower class people. The Government decided land values in this zone ranged from Rs. 19 per sq. ft. on main road to Rs. 15 per sq. ft. for interior parts.

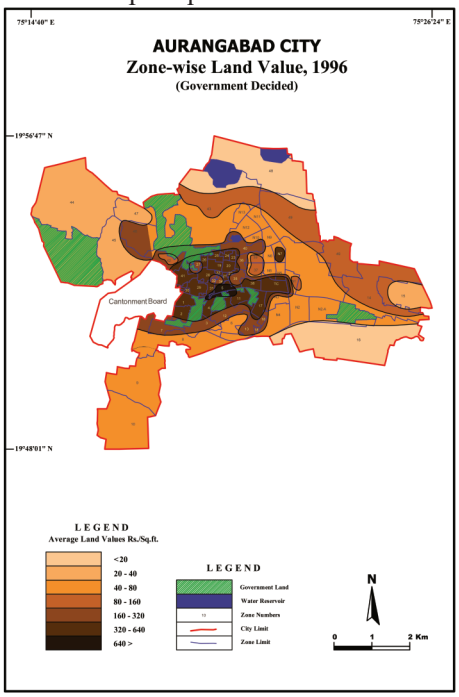



FIG. 7.2

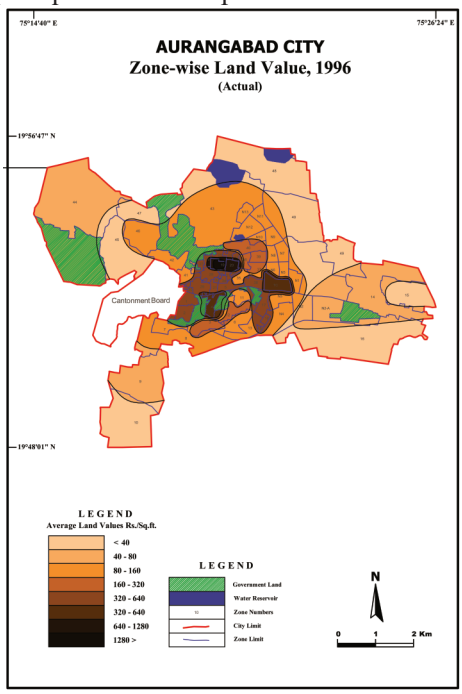



FIG. 7.3

6) In Zone No. 17, 18 and 21 to 30 actual average land values ranged from Rs. 320 to 640 per Sq. ft. Zone No. 17 and 18 are occupied by high and middle class residents and commercial complexes. They comprises of Seven Hill, Javahar Colony, Gajanan Mandir to Pundaliknagar, Nyayamurti Nagar Vikrant Nagar, Garkheda Parisar, Co-oprative Cotton Mill area and Shivaji Nagar.

**Table 5: Distribution of Zones According to Land Values (Govt. Decided) 2001.**

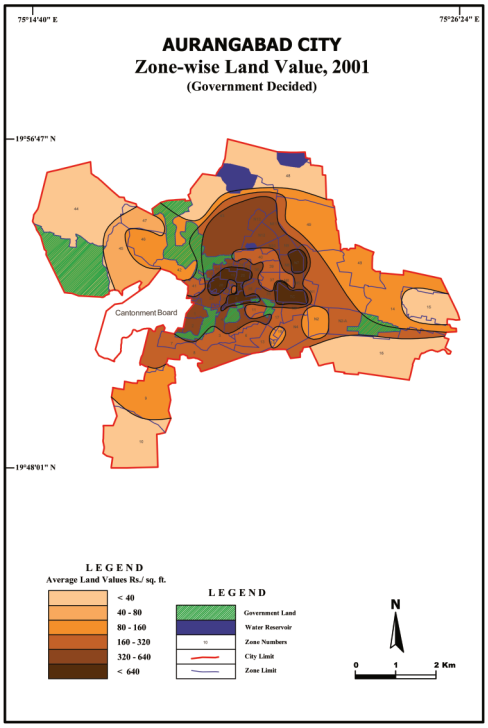
| Average Land Values (Rs./Sq.ft.) | Total Number of Zones | Zone No. |
|---|---|---|
| < 40 | 4 | 10,15,16,48 |
| 40 – 80 | 2 | 45,47 |
| 80 – 160 | 7 | 9,14,18,42,46,49,N2 |
| 160 - 320 | 17 | 3,6,7,8,11,13,17,34,37,39,40,41,N1,N2-A,N3,N4,N6 |
| 320 – 640 | 27 | 1,2,4,12,22,23,24,25,26,27,29,30,31,32,33,35,36,38,43,44,N5, N8,N9,N10,N11,N12,N13 |
| > 640 | 7 | TC,N7,5,19,20,21,28, |
| Total | 64 | |

Source: Town Planning and Valuation Department and CIDCO Office, Aurangabad.

**Table 6: Distribution of Zones According to Land Values (Actual) 2001.**

| Average Land Values (Rs./Sq.ft.) | Total Number of Zones | Zone No. |
|---|---|---|
| < 80 | 2 | 9,10 |
| 80 - 160 | 5 | 15,44,45,49,48 |
| 160 - 320 | 5 | 14,16,42,43,47 |
| 320 - 640 | 18 | 3,11,12,13,35,36,37,39,40,41,46,N1,N2,N3,N4,N5,N6,N2 -A |
| 640 - 1280 | 21 | 1,2,6,7,8,17,22,23,24,25,26,27,28,33,38,N8,N9,N10, N11,N12,N13 |
| 1280 - 2560 | 9 | N7,4,5,18,29,30,31,32,34 |
| 2560 - 5120 | 3 | 20,21,TC |
| > 5120 | 1 | 19 |
| Total | 64 | |

Source: Field Survey 2011 and 2015.



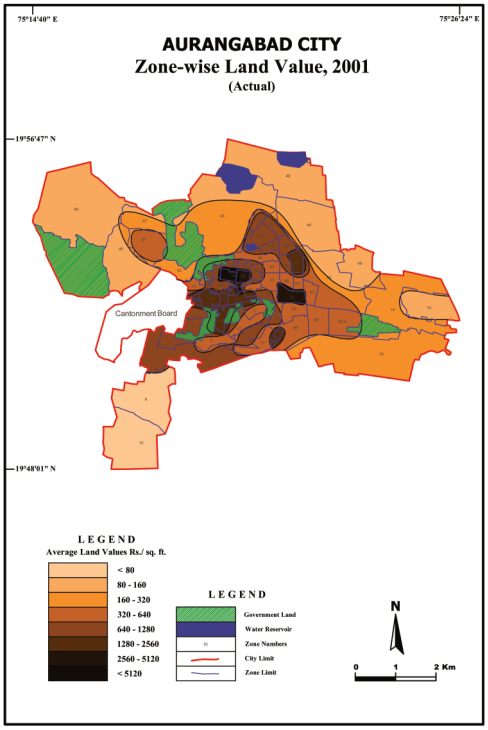




**Table 7: Distribution of Zones According to Land Values (Govt. Decided) 2011.**

| Average Land Values (Rs./Sq.ft.) | Total Number of Zones | Zone Number |
|---|---|---|
| < 80 | 2 | 16,48 |
| 80 – 160 | 4 | 10,44,45,47 |
| 160 - 320 | 4 | 9,14,15,46, |
| 320 – 640 | 7 | 3,6,8,37,39,42,49 |
| 640 - 1280 | 36 | 1,2,4,7,11,12,13,17,18,22,23,24,25,26,27,29,30,31,32,34,35,36,38, 40,41,43,N2,N4,N6,N8,N9,N10,N11,N12,N13,N2A |
| > 1280 | 11 | 5,19,20,21,28,33,TC,N1N3,N5,N7 |
| Total | 64 | |

Source: Town Planning and Valuation Department and CIDCO Office, Aurangabad.

**Table 8: Distribution of Zones According to Land Values (Actual) 2011.**

| Average Land Values (Rs./Sq.ft.) | Total Number of Zones | Zone Number. |
|---|---|---|
| < 640 | 1 | 15 |
| 640 - 1280 | 8 | 9,10,14,16,44,45,48,49 |
| 1280 - 2560 | 6 | 3,6,7,8,36,47 |
| 2560 - 5120 | 36 | N2,N4,N6,N7,N8,N9,N10,N11,N12,N13,N2A,1,2,11,12,13,17, 21,22,23,24,25,26,27,28,33,34,35,37,38,39,40,41,42,43,46, |
| 5120 - 10240 | 12 | TC,N1,N3,N5,4,5,18,20,29,30,31,32 |
| > 10240 | 1 | 19 |
| Total | 64 | |

Source: Field Survey 2011 and 2015.

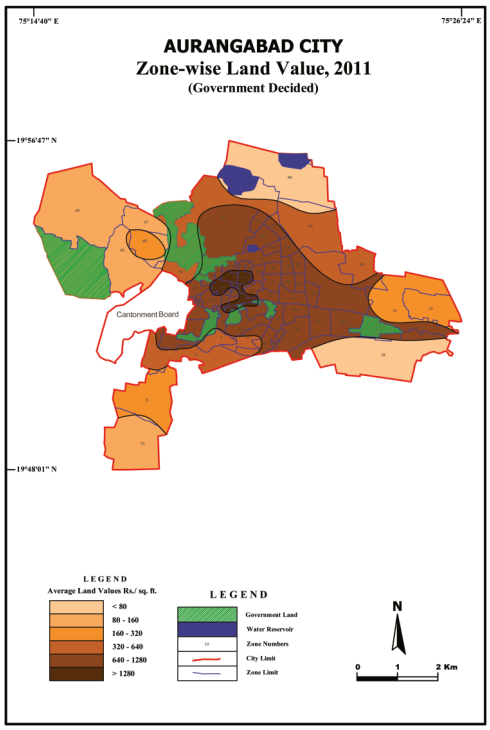



FIG. 7.6

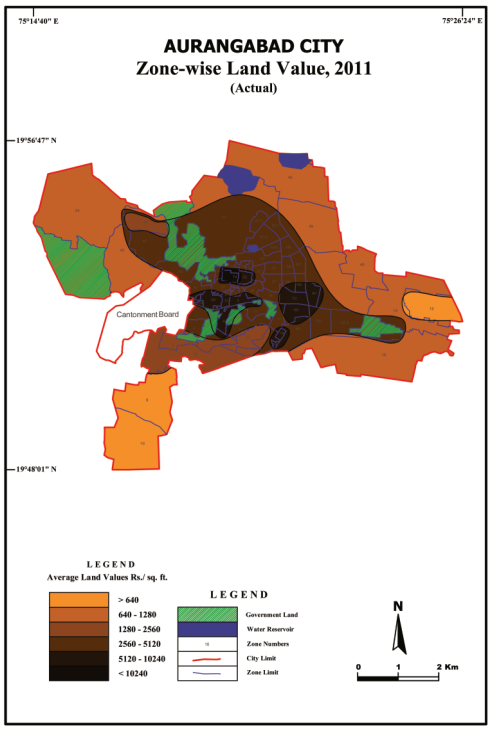



FIG. 7.7

**Spatio-Temporal Changes in Land Values during the Period 1996 To 2015:**

Salient features of distribution of land values in 2015 and changes in land values during the period 1996 to 2015 are mentioned below:

1) In Aurangabad city during the year 2015, the government decided land values ranged from Rs. 4,260 per sq. ft. for main roads of zone Town Centre (TC) to Rs 8 per sq. ft. for interior parts of zone No. 44 with average land values of Rs. 2,840 per sq. ft. to Rs. 74 per sq. ft.

**Table 9: Distribution of Zones According to Land Values (Govt. Decided) 2015.**

| Average Land Values (Rs./Sq.ft.) | Total Number of Zones | Zone No. |
|---|---|---|
| < 80 | 1 | 16 |
| 80 – 160 | 3 | 44,47,48 |
| 160 - 320 | 4 | 10,15,45,46 |
| 320 – 640 | 5 | 3,9,14,42,49 |
| 640 - 1280 | 16 | 6,7,8,12,13,18,27,32,34,35,36,37,39,40,41,N2A |
| 1280 - 2560 | 34 | 1,2,4,5,11,17,19,20,21,22,23,24,25,26,28,29,30,31,33,38,43,,N1,N 2,N3,N4,N5,N6,N7,N8,N9,N10,N11,N12,N13 |
| > 2560 | 1 | TC |
| Total | 64 | |

Source: Town Planning and Valuation Department and CIDCO Office, Aurangabad.

2) From the analysis of land values data for the years 1996, 2001, 2011 and 2015 it is clear that in general the trend of increase in values is continually going on. But, certain significant changes in the pattern of land values are noticed. During four years period the government quoted land values are not increased with same rate in the city. In recent years the growth rate of land value is low particularly in old parts of the city. On the other hand, in zones surrounding to the old city area the growth rate of land value is high.

**Table 10: Distribution of Zones According to Land Values (Actual) 2015.**

| Average Land Values (Rs./Sq.ft.) | Total Number of Zones | Zone Number |
|---|---|---|
| < 1280 | 1 | 15 |
| 1280 - 2560 | 7 | 9,14,16,44,45,48,49 |
| 2560 - 5120 | 3 | 8,10,47 |
| 5120 - 10320 | 27 | 1,2,3,6,7,11,12,13,21,22,23,24,25,26,27,33,35,36,37,39,40,41,42, 43,46,N2A,N4 |
| 10320-20640 | 24 | 4,5,17,18,20,28,29,30,31,32,34,38,N1,N2,N3,N5,N6,N7,N8,N9, N10,N11,N12,N13 |
| > 20640 | 2 | 19,TC |
| Total | 64 | |

Source: Field Survey 2011 and 2015.

3) Analysis of changes in actual land values also reveals more or less similar pattern. From the Table No. 9 it is clear that in recent years also the zone No. 19, and Town Centre (TC) can be recognized as very high land value Zones. On the other hand, zone No. 15, 16, 44, 47, 48 are continued to be low land value Zones.

4) From the study of maps showing spatial variations in government decided average land values 2011 (Figure 6) and 2015 (Figure 8) it is clear that in 2011 there were two pockets of very high land values that is zone No. 19 and TC (Town Centre). But, during the year 2015 there was only one pocket of very high land value that covered the area of TC Zone.

5) The map depicting spatial variations in actual land values in 2015 revels that along with city area (Zone No. 19) in Town Centre parts also the land values were very high. Because, many commercial activities started to concentrated in Town Centre Zone.

6) It is noteworthy to mention that in extensive areas surrounding to old city and Town Centre the land values increased considerably and they came under the category of very high land value area. They comprises the areas along Jalna Road towards the east and southeast direction, Padegaon and Mitmita area towards west, the area in the vicinity Salim Ali Lake towards north and area along the Beed Bypass road towards south and Nakshatrawadi, Paithan Road towards southwest direction. The main causes of increasing land values in these areas are: i) with improvement in economic status people moves from low to middle class residential areas and middle to high class residential areas, ii) now days people prefer to stay in calm and less crowded areas.

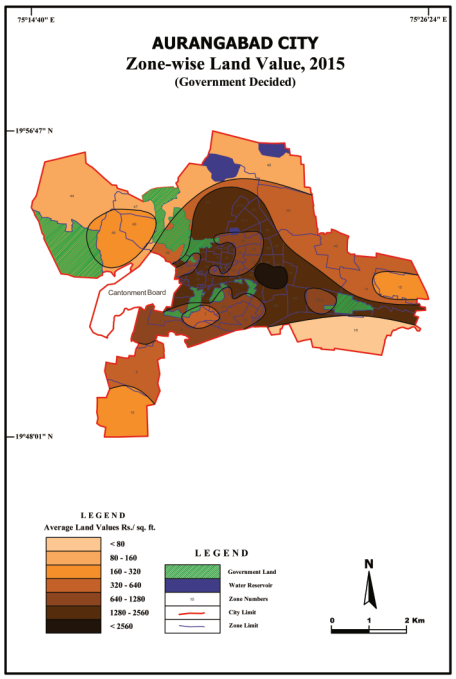



FIG. 7.8

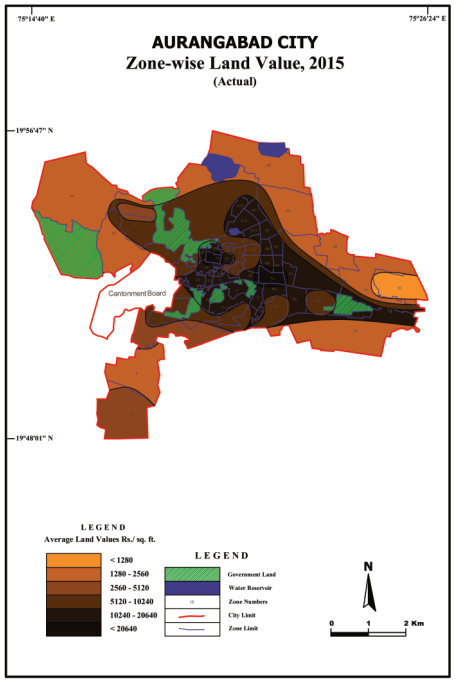



FIG. 7.9

**Changes In Land Values With Increasing Distance From Centre Towards Periphery:**

Distance is one of the important factor influencing land values. To know how distance plays an important role in influencing land values, the graphs were prepared showing land values against distance from the city centre for the years 1996, 2001, 2011 and 2015. Moreover, trend analysis is also conducted and graphs showing trends in land values with respect to distance from the city centre are prepared for all the years.

The graphs representing variations in average land values decided by government and actual average land values with increasing distance are depicted in Figure 10 and 12 respectively and trend analysis for government and actual land values depicted in Figure 11 and 13. The important features pointed out from the graphs and trend analyses are mentioned below.

1) It is observed from the Figure 10 and 12 that in all the years the land values were high at a distance of 0-1 km and they decreased with increasing distance from the city centre.
2) In the year 1996, the government decided land values decreased up to a distance of 6 km and then they remained almost constant. At that time most of the commercial activities were concentrated in old core city area.
3) Land values further grown in 2011 and 2015. Both, the values decided by the government and actual were considerably increased up to a distance of 6 km. Of course, the values continued to be decreased with increasing distance from the city center. The values either remain constant or decreased slightly beyond the limit of 7 km.
4) It is observed that in the year 2015 the actual land values decreased sharply up to 2 km d istance, and then they increased gradually between the belt of 2 to 4 km. Thereafter, the land values again decreased considerably up to the distance 7 km and then remained almost constant.
5) Trend analysis of both governments decided (Figure No. 11) and actual average land values (Figure 13) also indicate that generally the land values decreases with increasing distance from the city centre.

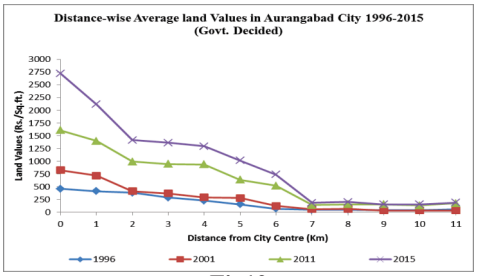



Fig10

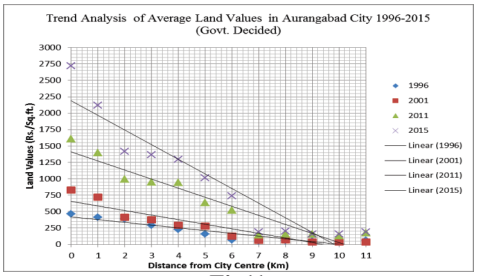



Fig11

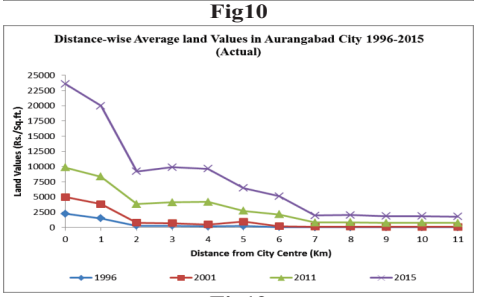



Fig12

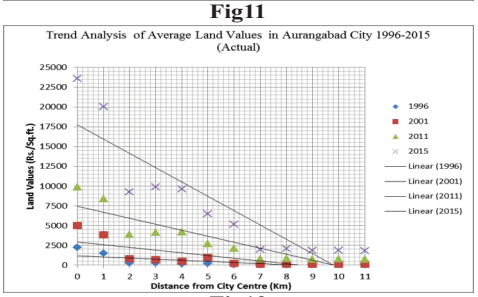



Fig13

In the year 2015, almost similar pattern of changes in land values as like in 2011 is observed. In 2015 also government decided as well as actual land values decreased sharply almost in all directions 2 km distance. Another peak of high values are noticed towards east and southeast direction between the belt extending from 4 to 6 km distance.

Trend analysis of government decided and actual land values indicates that during this year also the land values decreased with increasing distance in all directions.

From the analysis of variations in land values towards different directions it is observed that in certain directions particularly in east and southeast direction the another peaks of high land values are noticed between the belt extending from 4 to 6 km distance in recent years. It proves the hypotheses that the accessibility and availability of amenities and facilities influences land values.

**Conclusion:**

- For the assessment of spatio-temporal changes in land values, the period from 1996 to 2015 has been taken into consideration. For the purpose of land transactions the city is divided into 64 zones. The data are obtained from Town Planning and Valuation Department and CIDCO office, Aurangabad and also through field survey.
- Study reveals that in Aurangabad city, the government quoted average land values increased from Rs. 229 per sq. ft. in 1996 to Rs. 1,278 per sq. ft. in 2015. At the same time, the actual average land values increased rapidly from Rs. 312 per sq. ft. in 1996 to Rs. 9,448 per sq. ft. by the year 2015.
- In 1996, the government derived land values ranged in the city from Rs. 5 per sq ft. for interior parts of zone No. 44 to Rs. 717 per sq. ft. for main roads of total 10 zones (zone No. 4,5,17,19,20,21,28,29,31 and 33).
- The Gulmandi, located in zone No.19 can be identified as the city centre, from which the land values decreases in all directions.
- Zone TC (Town Centre) also recorded high values in all the years.
- During the year 1996, the land values were very low in two zones viz., zone No. 16 to 48.
- Analysis of changes in land values with increasing distance from the city centre reveals that in all the years the land values were very high near city centre and generally declined with increasing distance.
- In 2001, 2011 and 2015, both the government decided and actual values steeply decreased up to a distance of two km and then increasing trend observed between 4 and 6 km in certain

direction, then they declined gradually or remain constant.

- While studying variations in values from centre towards different directions, it is noticed that the values do not decreases with same rate in all directions due to variations in urban landuses and changes in functional patterns.
- Trend analysis for all the years also indicates that the government decided and actual land values declined with increasing distance in all the directions.

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