CUTTACK STANDARD URBAN AREA
PHYSICAL AND CULTURAL SETTING

Chapter III

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CHAPTER - III

PHYSICAL AND CULTURAL SETTING

Introduction:

The physical and cultural positions with which an area is privileged with, are of immense importance for the geographic study of that area, as the components of both these factors play influential role in determining the various aspects of the life and living of the people inhabiting the particular area. The suitability of both these factors favours and encourages the population growth and concentration, but where these factors prove themselves unsuitable, the area is likely to be sparsely populated. This is because man always wants to live in suitable environmental conditions and as it is observed that human activities are mostly directed and determined by both physical and cultural environment of the concerned area.

The Cuttack Standard Urban Area enjoys suitability of all the components of both physical and cultural factors. Culturally this area occupies the apex of Orissan culture, tradition, urbanization, industrialization and all other forms of socio-economic development. The region has been the socio-economic-political and cultural nerve centre influencing
and determining the destiny of the whole state. The locational factors of the Standard Urban Area actually play predominant roles for the overall development of the region in all the spheres.

**Locational Analysis**

**Location, Site and Situation:**

The location of the Cuttack Standard Urban Area is between $20^\circ 23'15"$ to $20^\circ 35'5"$ North latitude and $85^\circ 43'30"$ to $85^\circ 59'45"$ East longitude. It lies on the western flanks of the Orissa coastal plain at the apex of the Mahanadi delta and stretches over an area of 230.50 Sq. km. The area is almost plain and is crossed by Mahanadi and its distributaries flowing to north-east, east and south-east directions (Fig.3.1).

The core region, the Cuttack city is situated at the centro of the Standard Urban Area being bounded by river Mahanadi and Kathjuri on the west, north and south. On the north side of the Mahanadi River, Choudwar and Jagatpur Industrial Estate are situated. In the north-west, north, and north-east, at the periphery the urbanizable rural components of Choudwar, Tangi and Salipur Police Station are located. To the east of Cuttack city is situated the Cuttack Industrial Estate and the outgrowths of Central Rice Research Institute and other Government colonies. South of the Kathjuri river, the urbanizable rural components of Cuttack Sador Police Station are located.

The Cuttack Standard Urban Area is linked with other important towns of the State by rail, road and canals. Its location over the delta of river Mahanadi helps it to enjoy the advantages of the over-stored water resource which is used by the inhabitants in the productive as well as domestic purposes. National Highway No.5 connects Calcutta with Madras running through this region, and National Highway No.42 connects Cuttack with
Sambalpur also running through this region. The S.E. Railway line runs through this region joins Calcutta with Madras. The Cuttack-Talcher Railway line and the Cuttack-Purip line also run through this region. River Khanadi acts as a waterway between Cuttack and the places of its middle course. It is also connected with a number of places in the lower deltoid region by Taladanda, Pattamundai and Kendrapara canals. This region is also connected with important towns and market centres by the help of state Highways and major District Roads.

It is located at a distance of 1936 kms. from Bombay in the west, 1851 kms. from Delhi, in the north-west, 410 kms. from Calcutta in the north, 1185 kms. from Hyderabad in the south-west, 1360 kms. from Madras in the south at National level. So also at regional level, it is located at a distance of 300 kms. from Sambalpur in the west, 500 kms. from Rourkela in the north-west, 101 kms. from Bhubaneswar, the state capital and 211 kms. from Berhampur in the south.

With all these favourable factors such as centrality of its location, supply of abundant water resources, developed transportation links with all other important urban centres of the state as well as of the country, the Cuttack Standard Urban Area exhibits the most advanced trends of urbanization and population concentration in the state.

Shape:

With a view to the "eccentricities" in spatial forms that exist on the surface of the earth, studies pertaining to the shapes of areas are given considerable significance in the study of urban geography. Numerous observations have been made on the spatial shapes of cities in relation to urban growth,
and urban planning. Many developments have been made in recent years to study the spatial shape of urban units as it is a subject of interest for urban geography, ecology and regional planning.

A circular city includes the maximum amount of area within the city limits and hence the maximum amount of population can be accommodated within the minimum spatial spread. Thus it lowers down the expenditure on providing services and public utilities like city transportation, electricity, sewerage, water supply, telephone links etc. from the city-centre to its periphery.1 Within the overall circular shape, the street pattern may be radial or grid-iron pattern. A circular city can accommodate the maximum number of population with the minimum overhead expenditure in providing city services and amenities and hence less per capita taxation for the same population than in any other form of a city. Therefore, the circular shape of the city appears to be ideal. Hence an attempt is made to give the region a circular shape as and when required befitting the local geographical and other environmental conditions.

On the assumption that boundaries of a region may resemble a circle and with the knowledge that such a figure has some relatively simple geometrical properties, a method has been devised to measure the degree to which the shape of

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### Table 3.1: Cuttack Standard Urban Area

**Degree of Circularity**

<table>
<thead>
<tr>
<th>Standard Urban Area/Components</th>
<th>Area (in Sq. Km)</th>
<th>Distance in kms. between the two most distant points on the region's periphery</th>
<th>Measurement of circularity (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cuttack Standard Urban Area</td>
<td>225.89</td>
<td>21.19</td>
<td>64.05</td>
</tr>
<tr>
<td>1. Cuttack Municipality</td>
<td>59.67</td>
<td>9.63</td>
<td>31.79</td>
</tr>
<tr>
<td>2. Cuttack Industrial Estate</td>
<td>6.94</td>
<td>3.5</td>
<td>72.13</td>
</tr>
<tr>
<td>3. Central Rice Research Institute and Other Government Colonies (outgrowth)</td>
<td>6.81</td>
<td>3.13</td>
<td>88.78</td>
</tr>
<tr>
<td>4. Jogatpur Industrial Estate</td>
<td>5.55</td>
<td>3.0</td>
<td>73.52</td>
</tr>
<tr>
<td>5. Chowdwar Municipality</td>
<td>31.08</td>
<td>6.75</td>
<td>86.05</td>
</tr>
<tr>
<td>6. Tangi Police Station</td>
<td>13.09</td>
<td>8.75</td>
<td>39.1</td>
</tr>
<tr>
<td>7. Chowdwar Police Station</td>
<td>45.33</td>
<td>14.69</td>
<td>26.75</td>
</tr>
<tr>
<td>8. Cuttack Sadar Police Station</td>
<td>39.45</td>
<td>8.13</td>
<td>53.1</td>
</tr>
<tr>
<td>9. Salipur Police Station</td>
<td>13.07</td>
<td>4.57</td>
<td>79.68</td>
</tr>
</tbody>
</table>

Source - Computation by the Author.
a region has a circular form. Gibbs tries to qualify the aspect of shape by comparing it with certain basic types of shape like circular, rectangular, star-shaped and elongated.

The area contained in a circle can be determined by the formula: \( A = \pi r^2 \). Accordingly the two most distant points on the periphery of a region establish the absolute maximum area that could be contained within its boundary.

Hence, Gibbs feels that a circular shape is highly efficient in terms of "internal linkage" with the centre of the area, and he prefers to measure the degree of circularity with the following formula:

\[
Me = \frac{100 \times Aa}{(3.1416)(D_p/2)^2}
\]

Where \( Me \) = Measure of circularity in shape.

\( Aa \) = The actual area of the region.

and \( D_p \) = The distance between the two most distant points on the boundary of the region.

The measure has an absolute maximum value of 100 and a fixed minimum of 0.0, and the \( Me \) value is mathematically independent of the size of the entities.

The above measure has been applied to quantify the shape aspect of the Cuttack Standard Urban Area and its components. (Table - 3.1) A comparison of the \( Me \) value reveals that they bear a close relationship to the differences which

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2Ibid., p. 101.
CUTTACK STANDARD URBAN AREA

DEGREE OF CIRCULARITY

INDEX

--- CUTTACK SUA
--- CUTTACK MUNICIPALITY
--- CUTTACK INDUSTRIAL ESTATE
--- C R R I AND OTHER GOVT - COLONY (O G)
JAGATPUP INDUSTRIAL ESTATE
--- CHOWDWAR MUNICIPALITY,
--- TANOI P.S.
--- CHOWDWAR P.S
--- CUTTACK SÄDAR P.S
--- SALIPUR P.S

SCALE

Fig-3.3
appear in a visual inspection of the shape of the Standard Urban Area and its component units. (Fig. 3.2).

The computed Mc value indicates that presently Cuttack Standard Urban Area contains 64.05 per cent area of its optimum size. The Mc value for Central Rice Research Institute and other Government colonies (Outgrowth) shows that the area is nearly circular as it contains 88.73 per cent of the optimum size of the component. The high Mc value for all the urban components shows that their shapes are nearly circular whereas in the case of rural components the shapes are not circular except the Salipur Police Station (Fig. 3.3).

**Size:**

The Cuttack Standard Urban Area occupies an area of 225.89 sq.kms. and it accounts for 2.01 per cent of the total area of the district (11,211 sq.km). Out of the total area of the region the urban components account for 109.95 sq.km. or 45.67 per cent, while the rural components as a whole with the area of 115.94 sq.km. account for 51.33 per cent of the total area. Among all the components Cuttack city is the largest in size as it occupies 59.57 sq.km. or 26.37 per cent of the total area. Among the urban components Chowdwar ranks second in size occupying an area of 31.08 sq.km. (13.76 per cent of the total area). Among the rural components the Cuttack Sadar Police Station occupying 20.07 per cent of the total area ranks first followed by Chowdwar Police Station (Appendix-2).

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Since inception, the topography of Cuttack Standard Urban Area has been changed to a considerable extent, even beyond recognition at certain places by the superimposition of the cultural landscape, created and developed by the inhabitants, on the physical landscape. Significant cultural changes on the physical landscape can be percepted in Cuttack city and some other parts of Cuttack Standard Urban Area. With the progress of urbanization, the immediate environs of the city are undergoing rapid changes in the physical landscape and with the present rate of cultural development, it is expected that most parts of the Cuttack Standard Urban Area will lose their natural identity with the progress of time.

The Cuttack Standard Urban Area with its urban and rural components possesses uneven topography which is not uniform and broken at several places by the existence of small hillocks, and a number of drainage channels.

In the course of rapid urbanization, the Cuttack city has lost its natural landscape totally. The minor topographical features like domes have been levelled down; depressions and tanks have been filled in and human habitation and other urban structures have been built over. But despite the transformation in the natural landscape, the city possesses almost a levelled topography being bounded by the river Mahanadi and
Kathjuri in its northern, western and southern sides. The land being close to the river embankments in Cuttack city is higher than that in the centre, making as a whole, a saucer type of topography. Because of the embankments, the riverbeds are higher than the city centre due to the continued sand deposits. In general the altitude of Cuttack city is about 24 metres above the sea level. But within the city at some places the altitude varies from 20 metres to 23 metres.

To the north in the Coudwar Municipality area, the elevation of the land is about 40 metres above the sea level with local variations. The land here slopes from north to south and south-east. Jagatpur is situated on the flood plain of river Mahanadi to its left bank whose average altitude is of 21 metres above the sea level.

Farther north, in the surrounding rural agricultural regions, the land is levelled with a higher altitude than the former. In places the 40 metre contour line intervenes and encircles small hillocks in the extreme northern part of Cuttack Standard Urban Area (Fig. 3.4).

The southern part of the Standard Urban Area represents the topography where the drainage system greatly predominates. Here in this part, the land can be said to be levelled in a general sense, still there is considerable slope of the land from west to south-east and south. The area is well-drained by all the major rightbank distributaries of river Mahanadi and the topography is greatly a product of fluvial erosion.
The topography of Cuttack Standard Urban Area is predominantly by river islands which are continually growing in number. At present, there are more than 60 islands on the bed of river Mahanadi and its distributaries. The anicuts of Narej and Jobra have tremendous effects on the formation of these islands. The flow of water is checked by these anicuts and the debris are deposited in a great amount and numerous river islands are formed. Their sizes vary from 0.5 acre to 10 acres. Because of this sand and silt deposition, the river bed has been continuously rising. As a result, the stream flows above the Central city level. This causes a great fear in the minds of the inhabitants of Cuttack city during the time of floods.

Geology:

The geological structure of the Cuttack Standard Urban Area resembles that of the Mahanadi Delta, which has been developed in eight successive stages to reach the present conditions. Prior to the development of delta the original shoreline was concave towards the sea owing to the hard bedrocks of the Eastern Hills. The present condition is due to the huge quantity of alluvium deposits by the river Mahanadi and its distributaries. The central and southern part of the Cuttack Standard Urban Area is composed of alluvial soils lying regions to a depth of about 30 metres. Below this depth

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gneisses, charnockites and khondalites are found which are the parts of the buried Eastern Hills. In the northern part of the Standard Urban Area, there are small hillocks made up of gneisses, charnockites and khondalites which are exposed above the surrounding regions.

The rocks of the Cuttack Standard Urban Area falls in the older delta which belongs to the Tertiary period, and the underlying rocks are composed of grits, sandstones and conglomerates with white and red clays. 1

Drainage

The Standard Urban Area is situated on the head of the delta of the river Mahanadi. Cuttack city is bounded up in its three sides by the river Mahanadi and its distributary, the Kathjuri river.

To the north of Cuttack city river Mahanadi flows in a west-east direction and from this, its left bank distributary, the Birupa branches off near Choudwar. After flowing northward for a short distance the Birupa flows parallel to the Mahanadi within the boundary of Cuttack Standard Urban Area.

To the south of the Cuttack city the area is drained by river Kathjuri and its distributaries. River Kuakhai first branches off from Kathjuri and flows in a north-south direction. Then the Sarus Sea branches off from the Kathjuri which flows

Fig-3
in a general north-south direction. After the bifurcation of Serun Nai, Kathjuri flows first in a north-east direction and then in a south-east direction within the boundary of the Cuttack Standard Urban Area.

Some tributaries here flow into the Mahanadi and its distributary the Birupa. The Singli Jhor flows through the Chowdwar Municipality in a north-south direction and it meets river Mahanadi near Chasapara. The Mendakhal Nai flows through the eastern margin of the Chowdwar Police Station in a north-south direction upto Nuntikri after which it flows parallel to river Birupa and meets it outside the boundary of the region.

A main drainage line (at present serves as the main sewage line) flows through the central part of Cuttack city in west-east direction and it meets river Kathjuri at Mayabazar.

There are a number of canals which are constructed to get water from the main river and its distributaries. The Taladanda canal takes its origin from river Mahanadi near Jobra and after travelling through Cuttack city it moves eastwards upto Paradeep about 98 kms. away from Cuttack city. Three other important canals take their origin from the river Birupa. The high level canal is constructed in the left bank of Birupa and it flows in a north-east direction parallel to the National Highway No. 5. On the right bank of Birupa two canals such as Pattamundai canal and Kendrapara canal flow in between river Mahanadi and Birupa (Fig. 3,5).
The riverbeds remain dry during the summer except the main channel of the Mahanadi upstream the anicut. During rainy season the overbank flow of water in the entire river system brings severe flood havoc to the regions under the Standard Urban Area. Centuries of sand accumulation in the river beds has resulted in its upliftment above the general level of the city. Mostly from the superimposition of the cross-section, it has been seen that the average rise of the bed of river Mahanadi is 4.54 feet within 62 years (1900-1962), and the average increase of the width of its banks is 600 feet within 62 years i.e. from 1900 to 1962. Within the same period, the average rise of the bed of river Kathjuri is 4.34 feet and the average increase of the bank width is 600 feet.¹

The average periodicity of floods in the Mahanadi and its distributaries has been steadily shrinking all over the last 180 years in Orissa. 1334 saw worst ever recorded floods of the 13th century. Between 1334 and 1926 there were six major floods with an average interval of 18.40 years, between 1926 to 1955 there were four major floods with an average interval of 7.25 years, and between 1955 and 1982 there were seven major floods with an average interval of 5.86 years.¹ (Appendix-III).

The floods in river Mahanadi and its distributaries are causing a perpetual fear in the minds of the people of the region, particularly to the inhabitants of Cuttack city.

TABLE 3.2
CUTTACK STANDARD URBAN AREA

Climatic Phenomena

<table>
<thead>
<tr>
<th>Months</th>
<th>Temperature (°C)</th>
<th>Relative Humidity (%)</th>
<th>Rainfall (in mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>20.7 (69.3°F)</td>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>February</td>
<td>23.1 (73.6°F)</td>
<td>61</td>
<td>0</td>
</tr>
<tr>
<td>March</td>
<td>23.3 (32.9°F)</td>
<td>66</td>
<td>0</td>
</tr>
<tr>
<td>April</td>
<td>29.1 (84.3°F)</td>
<td>68.5</td>
<td>26.4</td>
</tr>
<tr>
<td>May</td>
<td>30.2 (86.3°F)</td>
<td>65</td>
<td>109.5</td>
</tr>
<tr>
<td>June</td>
<td>30.8 (87.0°F)</td>
<td>76</td>
<td>203.1</td>
</tr>
<tr>
<td>July</td>
<td>27.2 (80.9°F)</td>
<td>81.5</td>
<td>369.7</td>
</tr>
<tr>
<td>August</td>
<td>26.9 (80.4°F)</td>
<td>83</td>
<td>416.7</td>
</tr>
<tr>
<td>September</td>
<td>26.8 (80.2°F)</td>
<td>80.5</td>
<td>305.1</td>
</tr>
<tr>
<td>October</td>
<td>25.2 (79.1°F)</td>
<td>77</td>
<td>70.3</td>
</tr>
<tr>
<td>November</td>
<td>25.8 (78.4°F)</td>
<td>73.5</td>
<td>72.4</td>
</tr>
<tr>
<td>December</td>
<td>22.8 (73.0°F)</td>
<td>63</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: District Statistical Handbooks, Cuttack - 1976-77.
As substantial portion of the city remains below the normal flood levels of the Kathjuri and the Mahanadi rivers and as the underlying sandy strata connects these rivers with the low lying areas of the city, breaching of the embankments cannot be completely ruled out.

**Climate:**

Cuttack Standard Urban Area is situated immediately to the south of the Tropic of Cancer and is in near proximity to the Bay of Bengal. The distance between the region and the Bay of Bengal is only 85 kilometres for which the sea exerts maximum influence on the climate of the region. It also lies in the monsoon belt and the climate of the region is generally hot with high humidity. The topography of the region is levelled and the elevation is not considerable (24 metres above sea level) to bring any change in the climatic pattern of the region.

The climate of the region is characterized by hot summers with high humidity near all the year round, low diurnal and annual range of temperature and a good seasonal rainfall (Table -3.2). Three main seasons are experienced in this region. The winter season is experienced from November to the end of March and the temperature ranges from 22.8°C to 23.3°C (73.0°F to 84.9°F) during this period. From March end to May hot summer season continues. The rainy season is experienced during July to October when the region gets rainfall from the monsoon winds and from the cyclonic depressions taking origin over the Bay of Bengal. June is usually the
hottest month with a daily minimum temperature of \(30^\circ C\) (86.4\(^\circ F\)). But at times the maximum day temperature crosses \(42^\circ C\) (107.6\(^\circ F\)). With the onset of monsoon in early June, day temperature drops appreciably but night temperature remains comparatively higher. January is the coldest month of the year with the mean daily maximum temperature of \(29.2^\circ C\) (84.6\(^\circ F\)) and the mean daily minimum temperature of \(12.2^\circ C\) (53.9\(^\circ F\)). It is obvious, therefore, that there is little variation in the normal temperature because of low relief and moderating influence of the sea. The diurnal range of temperature is \(8^\circ C\) (14\(^\circ F\)) during June to December and \(10^\circ C\) (50\(^\circ F\)) from January to May.

The monsoon is the rain bearing wind and it provides the region more than 80\% of its rainfall. The average annual rainfall of the Cuttack Standard Urban Area is about 144.2 Cms. The records show a great variation in the amount of rainfall from year to year, and it is because of the irregularities of monsoon. The easterly depressions which are originated over the Bay of Bengal penetrate into the state in a north-west direction and they give considerable amount of rainfall to this region during the winter season. The maximum rainfall occurs in the month of August accounting more than 415.7 mm (Fig. 3.6). High humidity prevails throughout the year which varies from 60 to 82 per cent. Lowest percentage of humidity is recorded in the month of January while highest humidity of 81.5 per cent occurs in the month of July. The climograph of Cuttack city (Fig. 3.7) shows that high humidity and comparatively high temperature causes the climograph of Cuttack to be confined in the muggy corner. The
hythergraph (Fig. 3.8) shows that variation in annual temperature occurs a little while the rainfall varies widely throughout the year.

The winds blow over the region with moderate speed throughout the year and they become stronger in the period of monsoon. In the rainy season the average speed of the wind is about 25 kms/hour. In the period of cyclonic storms the wind speed often exceeds 150 kms/hour, causing great mishaps to the life and property of the inhabitants. From October to January the wind blows in a north-east - south-west direction and it is reversed in the period of summer monsoon. During the post-monsoon and the pre-monsoon period these cyclonic storms originate over the Bay of Bengal, and move in north and north-west direction over the coastal Orissa, Bangladesh and West Bengal. Sometimes these depressions are intensified into severe storms with winds of high velocity causing the weather of this region greatly unstable.

As a whole the climatic condition is suitable to the growth and concentration of population in this region.

Soils:

The location of this region at the apex of the Mahanadi delta greatly determines the type of soil that the region possesses. Its soil is purely alluvial, especially riverine alluvium in nature. In the Northern Part alluvium is found along the course of river valleys, but away from the river course there occur changes in soil type.
Red soil is found in patches in the region particularly in the northern part. This type of soil surrounds the laterite soil which is found in the portions of Chowdwar Municipality and Chowdwar Police Station. A small patch of red soil is also observed between River Mahanadi and Birupa (Fig. 3.9).

The thickness of alluvium also varies within the Standard Urban Area. South of Cuttack city the thickness of alluvium exceeds 40 metres in depth whereas in the northern part of the region the thickness of the alluvial soil varies between 10 to 35 metres.

**Vegetation:**

The fast-growing population in urban areas with associated industrialization is the cause of the removal of the natural vegetation. In the northern and southern part of the region the vegetation is represented by broad leaved deciduous trees such as mango, jamu, deodar, etc. coconut trees and palm trees are found in some places. In the northern part wide grasslands with deciduous and with thorny trees are observed. In the northern part, particularly in Chowdwar Municipality grassy meadows are widely prevalent. Some patches of grasslands are also found in the southern part of the region. Bamboo trees and rosewood trees are also found abundantly in the northern and southern parts of the Standard Urban Area.

In the central part of the region the natural vegetation is greatly removed for the purpose of human habitation, urbanization and industrialization. Still some deciduous trees, palm trees, coconut trees, deodar etc. are observed inside the Cuttack
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NATURAL VEGETATION
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- PALMS
- BAMBOO
- GRASS
- OTHER TREES

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city (Fig. 3.10). The river islands of Mahanadi upstream Jobra are dominated by tall grasses and these are primarily used as pasture lands.

CULTURAL SETTING:

Agriculture:

Though the soils are fertile and the climate is favourable for the purpose of agriculture still it is not the primary occupation of the inhabitants of the region. In aggregate, only 2.85 per cent of the total population of the region are engaged in agricultural activity with local variations. In the urban components of the region only 0.94 per cent of the total population are engaged in agricultural activity whereas in the rural components the corresponding figure exceeds 12 per cent. Out of the total workers of the urban components, agricultural labourer and cultivators combinedly account for only 3.04 per cent whereas for the rural components the same figure is 42.67 per cent (Appendix - IV).

Out of the total area of the Standard Urban Area (225.39 sq. km.) the area devoted to the purpose of agriculture is about 78.5 sq. kms. which is 35.91 per cent of the total land and this area is well irrigated. Main crops cultivated in this region are rice, maize, jowar, bajra, mung, biri, kulthi, groundnut, sesamum, castor and vegetables. In the recent years the tendency to cultivate the high yielding variety of wheat has increased.

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Pulses are also grown in the region as an important crop. Among the cash crops the cultivation of Jute predominates. Tobacco, another cash crop, is also cultivated in the region though it occupies less area than that of any other cash crops cultivated here. Vegetables are also grown widely in the locality both in winter and summer seasons.

Rice is the most important cereal of the region. It is cultivated in three different periods of the year. The Kharif rice is cultivated over a greater area followed by winter and autumn rice. The production of rice suffices the need of the population of the area and the region is self-sufficient in the production of food crops. In the recent years the production of rice has increased rapidly because of the introduction of high yielding variety of seeds, increasing use of fertilizers and increasing facilities of lift irrigation. But flood and drought associated with the vagaries of monsoon are the main factors to decrease the production at times.

Among all the components of the Cutteck Standar Urban Area, the area and population devoted to the purpose of agriculture are least in Cutteck city. In the components about 0.37 per cent of the total population are engaged in agricultural activity. No piece of land is left for the purpose of agriculture inside the city and the over-growing population occupy almost every metre of land for the purpose of habitation and other urban uses.
Industrialisation and urbanisation are closely interlinked processes and it has been clearly manifested in the case of Cuttack Standard Urban Area. The region has experienced considerable industrial progress after Independence. About 23.19 per cent and 62.40 per cent of the total population of the region are engaged in secondary and tertiary activities which indicates the importance of industrial activity in the region. In the urban components the proportion is higher and particularly in Cuttack city more than 70 per cent of the population are engaged in tertiary activities, and about 25 per cent of the population are engaged in secondary activities.

The region is particularly developed in the sphere of small scale industries. Among the small scale industries ceramics, chemicals, drugs and pharmaceuticals, electricals and electronics, ferrous and non-ferrous castings, food and beverages, general engineering, leather and rubber products, plastic and polythene, printing and textiles are important.

Cuttack city is renowned for its small scale industries. Its improved filigree works are famous all over the country. The city is progressed particularly in the sphere of small scale industries such as food processing industries, rice and flour mills, drugs and pharmaceutical industries, plastic and polythene industries, printing industries, electrical industries, furniture making and jewellery making etc. The food processing industries of the city get raw material
supply from the surrounding agricultural lands and after processing, the finished products are despatched to the market.

The two important suburbs of Cuttack such as Choudwar and Jagatpur Industrial Estate are fast developing in the sphere of industrialization since Independence. Choudwar is the single industrial unit of the region. It is credited with some large scale industries such as Orissa Textile Mills, Kalinga Tubes, Tile Factory, Titargur Paper Mills, Kalinga Industries Ltd., etc., and it gives employment to more than 7,900 people of the region which is more than 22 per cent of its total population. The Orissa Textile Mills alone employs a population of about 5,000 followed by the paper mill where the number of working force exceeds 1,500. The Kalinga Tubes gives employment to more than 737 people. The total capital invested in the productive sector of the locality exceeds 390 lakh rupees.¹

Jagatpur is another fast growing industrial component of the region and it is developed in the sphere of food processing industries, production of cold drinks, building and construction industries and in some other agro-based industries. Some new factories such as paper mills, etc. are planned to be constructed in this locality.

In Cuttack Industrial Estate, the industrial activity is growing rapidly after 1951. Mainly electrical, electronics, ....

¹District Statistical Hand Book, Cuttack, Government of Orissa, District Statistical Office, Cuttack, 1976-77, pp. 139-140.
manufacturing and processing industries are concentrated here. Some industrial and technical institutions such as Industrial Training Institute are located in this area.

The area devoted for the purpose of industrial activity constitutes 10.32 per cent of the total. In the rural components as a whole only 0.049 per cent area is devoted for the purpose of industrial activity whereas in case of urban components the corresponding figure exceeds 21 per cent. In Jagatpur Industrial Estate highest percentage of area is devoted for industrialization process (59.02%) followed by Choudwar (52.91%) and Cuttack Industrial Estate (42.18%). The process of industrialization in the region also causes expansion of urban population and area by drawing huge number of immigrants for the purpose of employment.

Transportation and Communication:

Transportation and communication system of a region is a vital aspect for its development. Transportation is quite simply the movement of goods and people from place to place \(^1\) and communication denotes the movement of ideas from one place to another. A well developed net-work of transportation and communication in a region helps in industrialization, urbanization, population concentration and causes the turnover of capital and products.

\(^1\) Alexander, John W., & Gibson, Lay James, Economic Geography, Prentice Hall of India Private Limited, New Delhi, 1979, p.321.
The Cuttack Standard Urban Area is the most developed in the sphere of transportation and communication in the whole state. Cuttack city, at its centre is connected with all important places of the state as well as of the country by both road and railway network. This connection of all the politically important and economically strategic places of the state with Cuttack city has made it the real nerve centre of the state.

Till 1866 the transportation and communication system of the region was in an underdeveloped condition. Two most important roads linked Cuttack with Sambalpur following the Mahanadi valley on either side. Another important road during that period called Jagannath Road was a link between Cuttack and Puri. Since then the transportation system has developed a lot in the region. The National Highway No.5 joining Madras with Calcutta passes through this region. The National Highway No.42 connects Cuttack with Sambalpur via Chowdwar which joins the N.H.5 near Neergundi. Besides the National Highways, the State Highways serve the transportation needs of the people of the region to a great extent. The Kendrapara Road (Major District Road No.15) is bifurcated from the N.H.5 near Jagatpur and it serves as a link between Cuttack city and most of the rural components of the Standard Urban Area coming on its way. The Cuttack city is also connected with Paradeep Port by another Major District Road, No.85. The region also possesses district roads, panchayat roads, village roads, etc. which primarily serve in the rural components of the region. They are mostly linked up with the higher order roadways.
CUTTACK STANDARD URBAN AREA
TRANSPORT
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Fig 3 II
This region is also served with broad-gauge railway lines of the South-Eastern Railways. The Talcher Railway line after running through Choudwar joins the main railway line (Howrah - Madras line) near Neergudi Station. Within the whole of the region the Howrah-Madras railway line runs generally parallel to the National Highway No.5, and they close up near Balikuda Station. There is also a newly constructed broad-gauge railway line from Cuttack to Paradeep. Besides helping in the movement of people, the railways accelerate the trade and commerce of the region to a considerable extent.

The region is also privileged with good waterways due to the presence of river Mahanadi and its distributaries. The canals such as Taldanda Canal, High Level Canal, Kendrapara Canal and Pattamundai Canal which take their origin from Mahanadi and Dirupa are the most important waterways of the region. Before the construction of State Highway, the Taldanda Canal was the main link between Cuttack and Paradeep and it was helping tremendously in the transport of cargo during that time (Fig. 3.11).

Within the boundary of the region is located the Charbatia Air Port, which is of national importance.

The region is also well developed in the sphere of communication system. The Head Office of Post & Telegraph Department is located in Cuttack city. The city also acts as the centre of telephone service in the region as well as in the state. The communication system is evenly distributed
over the region and presently steps are being taken to improve it further.

Though the position of transportation and communication system in the region is commendable, still there are certain pitfalls in the system. The transport routes are not well developed and their narrowness causes traffic congestion and accidents frequently. Inside Cuttack city the intra-city transportation is very poor and inadequate and traffic congestion and accidents are not uncommon here. The transportation facilities in the rural components are still inadequate and in rainy season they cause various difficulties. The communication facilities in these parts are also poor and inadequate, some components even lacking postal services. But presently steps are being taken to do away with all these insufficiencies.

As a whole, the transportation and communication facilities in the region is more developed in comparison to those in other regions of the state. This developed transportation and communication system is making the whole region rich and advanced in the sphere of industrialization, trade and commerce, marketing facilities and a series of other ones which are the pre-requisite factors of urbanization.

Community Services and Public Utilities:

The people of the Cuttack Standard Urban Area enjoys wide range of community and public utility services. The Cuttack Standard Urban Area in general and Cuttack city in particular is regarded as the largest educational centre of the State. There are as many as 17 colleges, technical insti-
tutions in the region, to serve the needs of the inhabitants of the region as well as outside it. Cuttack city is credited with the most important and well-progressed educational institutions of the State. In the city itself there are seven famous colleges including Ravenshaw College at the top. The city also possesses more than 25 secondary schools absorbing thousands of pupils. So the wide educational facility in the city attracts vast number of students from different parts of the State as well as country which make the city an overcrowded one. In Jagatpur and Choudwar there are facilities for college level education. In the rural components of the Standard Urban Area schools are inadequate in number to meet the needs, but for higher level education the students rely on Cuttack city.

The largest medical institution of the State - Srim Chandra Bhunj Medical College and Hospital is located in Cuttack city which provides medical services to thousands of people. There are also health centres, dispensaries, medical aid centres scattered all over the region to provide medical facilities to the people of the respective localities.

There are 12 cinema halls in Cuttack city which serve the entertainment purpose of the people. Besides, there is one cinema hall in Choudwar. There are also theatres, clubs, libraries and stadium to add to the cultural progress of the region.

The sanitation facility in the region is developing rapidly with the construction of public latrines, bathrooms and effective sewage disposal system. People of the urban
components of the Standard Urban Area are provided with fresh water supply by the municipality. In the rural components drinking water is provided to people by digging tube-wells, public open wells etc. With the rural electrification programme almost all the rural components of the Standard Urban Area have been electrified. For the maintenance of law and order there are more than 10 Police Sub-stations established in every important places within the region. The State High Court is also located in Cuttack city to provide law and justice to the people.

The region is not important in the religious sphere and there is no important religious institution in the region besides Cuttack Chandi Mandir in Cuttack city. The Head Office of Post and Telegraph Department is located in the city and the postal system is efficient all over the region. The radio station of All India Radio is also located in the city. In Cuttack city there are three important graveyards such as Kaliabode, Sati Chaura and Khannagar. Other components have their respective areas for the purpose of cremation. Road transport system is effective in the region and there are bus stands at important places with Badambari in Cuttack city as the traffic originating spot.

Conclusions:

The physical and cultural setting of the Cuttack Standard Urban Area is the most suitable to promote greatly the socio-economic prosperity of the people inhabiting the region. With all these favourable factors such as centrality
of its location, supply of abundant water resources, developed transportation links with all other important urban centres of the state as well as of the country, the region exhibits the most advanced trends of urbanization and population concentration. All these factors are changing their influence in a positive manner from time to time and the population of the Standard Urban Area is also undergoing a temporal expansion which result in the spatial growth of the urban centres. And, with the present trend of urbanization, it is expected that in the near future, the total land under the Cuttack Standard Urban Area will be converted to a continuous urban area to reach the goal lying behind the formation of the Standard Urban Area.