Chapter III

GEOGRAPHICAL SETTING AND RESOURCE INVENTORY OF THE TRIBAL REGIONS
In the previous discussion (Chapter - II) Orissa has been divided into two major tribal regions mostly based on the geographical location and contiguity. These are:

I. The Northern Tribal region; and
II. The Southern Tribal region.

(I) The Northern Tribal Region:

The Northern tribal region lies in the northern or border of the state of Orissa between 21°16'N. and 22°34'N latitudes and 83°E and 87°11'E. longitudes. It includes the administrative units of Sundargarh district, Kendujhar district, Mayurbhanj district, the Kuchinda Tahsil of Sambalpur district and the Berhampur Police station of Baleswar district, bordered by the states of Madhya Pradesh in the west and northwest, Bihar in the north, and West Bengal in the north and northeast. In the east lies the district of Baleswar while the districts of Sambalpur and Dhenkanal lie to its south. The region has an area of 29562.4 sq.kms. with a population of 3924341 as per 1981 census and has greater east-west extension (about 350 kms) as against 160 kms. of north-south extension (1).
Physiography\(^{(2)}\):

The region from relief point of view is not a homogeneous area (Fig. 3.1) if we take into account its geographical personality and setting. The most conspicuous aspect is the presence of a number of hills and dales which provide an undulating landscape to the area as a whole. There are 5 major rivers about whose nature of flow discussions have been made later in this chapter.

Morphologically the region can be divided into four parts:

i. The mountainous country;

ii. The rolling uplands;

iii. The subdued plateau; and

iv. The river valley and plains.

(i) The mountainous country:— This sub-region is largely a mountainous tract with many lofty hills. It is a part of the Indian peninsula. Morphologically this mountainous region again may be sub-divided into different sub-units:

(a) The common Interfluves of the Subarnarekha, the Budhabalanga and the Baitarani:— The interfluves comprise the Similipal massif, a group of hills extending over an area of 1555 sq. kms. The Meghasan hill which rises to a height of 1166 metres is situated in the southern extremity of this
group. The other hills are the Dhudruchampa (1010m.), Gorumahisani (904m.), Badampahar (833m.), Chahala (777m.) and Balidiha (623 m.). They are almost circular in extent. The dome-like shapes have given rise to radial pattern of drainage which is unique in Orissa. The topography offers a serious obstacle for lines of communication between the east and the west.

(b) The Nilgiri hills :- This sub-unit is an isolated hilly section situated on the extreme east of the region. It is part of the Eastern Ghats surrounded by the plains of Baripada in the west, Anandapur in the south and Northern coastal plain in the east extending over an area of 681.2 kms., which rises to a height of 606 metres.

(c) The Baitarani - Brahmani Interfluve:- In this third sub-unit the trend of the mountainous interfluve of the area is from north to south. It has several peaks of which Badamgarh (1075 metres), Mankarnacha (1118 metres), Kunratir (1064 metres) in Bonei Tahsil of Sundargarh and Gandhramardan (1002 metres) of Kendujhar are important. It can be described as a polycyclic region. This part of the region is cutoff on all sides by densely forested hills which are crossed by narrow river valleys forming beautiful gorges. Both the rivers of Brahmani and Baitarani dissect...
the region into several parts but the rivers are neither navigable nor of any help to irrigation due to the rocky and rugged grade of river beds and irregular waterflow in the channels. The region is completely devoid of forest cover due to shifting cultivation practised by the Bhuyans and Juangs of the area. Agriculturally this is one of the most backward regions of the state. Economically, however, it is very valuable as it contains the important deposits of such minerals as iron, manganese and mica.

(d) The Brahmani-Mahanadi Interfluves: The mountains in this interfluve region run almost parallel to the watershed of the Brahmani and the Baitarani discussed above. Except in the north, this region is highly eroded by the tributaries of the Mahanadi and the Brahmani and is, therefore, low in elevation. It is not a continuous mountain chain. The mountains are covered by a thick growth of bamboo forests due to high rainfall and suitable soil conditions.

(ii) The Rolling uplands: These uplands are included in the sub-montaine zones and have mostly a rolling undulating topography with elevation varying from 152 to 305 metres. It can be further divided into the following sub-units:

(a) The Rairangpur Rolling Uplands: The chief peculiarity of the upland is that unlike other areas it drains to the north and morphologically, it is completely cut off from the other drainage systems of Orissa.
(b) The Baitarani Rolling Uplands: It is at the fringe of the Keonjhar plateau and is of little importance for its small size.

(c) The Rolling uplands of the Brahmani Basin (Rourkela uplands): These uplands are on the eastern slopes of the Mahanadi-Brahmani interfluves and in the confluence of the Sankh and the Koel rivers. They can also be called the Rourkela upland. This region has become economically important because of the Rourkela Steel Plant and it is one of the most advanced areas of the region in the field of industries.

The Rajgangpur undulating open upland tract of this sub-unit lies in the east intervening between the Ranchi plateau in the north and the Mahabir range in the south with a general elevation ranging from 210 metres to 305 metres within which there are a number of isolated hills and sharp ranges created by the river action of unimportant streams draining towards the Sepal river in west and the Mandira-Sankha drainage in the east.

(d) The Sundargarh upland: It is in the centre dissected by the Ib drainage system which has provided it with relatively wider valleys and dales separated by isolated hills and ranges besides, in the month, open and cultivated plain tract. The highest peak of the Sundargarh upland is
Didrapahar (765 metres) lying in the border of Sundargarh and Banei. The other smaller hills are Bhaisamunda (681 metres), Kichimiri (625 metres) and Mahabir (568 metres).

(iii) The Plateaus:
   (a) In the western part of the study region lies the Hemgiri Plateau area having centrifugal streams from an elevation of about 350 metres extending in a considerable hilly terrain in the north and in the south to a relatively plain landscape with about 215 metres of elevation above sea level drained by the Basundhara and Ichha rivers of the Jb system.

   (b) The Kendujhar Plateau is another part of the study region. It is drained by the Baitarani and presents unique features of a high plateau. It ranges in height from 300 to 600 metres. It is delineated by the Similipal mountains in the east, the Mankaranacha mountains in the west, and then it rapidly merges into the rolling uplands of the Baitarani in the south. In the north the Singhbhum and Ranchi highlands form the boundary of the region. Thus morphologically it is a well defined region. The region is very rich in mineral resources like iron ore, manganese and limestone. Besides, this extensive tableland is quite suitable for pasture and cultivation.
(iv) **The valleys and plains**: (a) Subarnarekha and Budhabalanga valleys and flood plains (Baripada plains): The area is supposed to have been built up in the first instance by marine deposits in the form of a broad continental shelf. In subsequent periods due to upliftment the river-borne deposits were spread on the horizontal strata. Thus it has taken the outward form of being entirely built up by the river action. With a comparatively low fertility and high elevation, as against the coastal plains, the carrying capacity per unit area of land here is limited. Red soil with low fertility is frequently met with towards the western plains. It is as a result of proximity to the Similpal Hills. The important urban centre, Baripada town, lies by the side of the Budhabalanga. Therefore, it may be named as the Baripada plains.

(b) **Valley of Bramani**: It runs north-south to a few miles from Panposh area till it enters the wooded mountainous tract of the Banei subdivision. Geographically this section may be called the plains of Panposh. The relief is characterised by an elevation approximately 180 to 210 metres above the sea level while the peaks in the east do not exceed in height 600 metres.
Drainage system of the Northern Tribal Region:

The whole region is drained mainly by five major rivers i.e. Ib, Brahmani, Baitarani, Budhabalanga and Salandi (see Fig. 3.2). River Ib a tributary of Mahanadi, collects water from the western part of the region and the central hill ranges serve as the watershed of the river Brahmani on the south and Baitarani on the north. The river Budhabalanga and Salandi collect water from the central part of Similpal hills. Apart from these five rivers some other small rivers also contribute towards draining of water in the region. All these rivers flow as down-streams with steep gradient carrying large quantities of water during the monsoon season. The rivers, however, are not navigable in any season.

Climate:

The region experiences, on the whole, a hot dry summer followed by a rather well-distributed monsoonal rainy weather. The eastern part of the region is slightly humid in comparison to the western part. The maximum rain (about three-fourth of the year) falls in the two months of July and August. The hot weather season is from March to May. May is the hottest month with mean daily maximum
temperature recorded at 41°C. and the mean daily minimum standing at 27°C. The rainy season starts from early June. Rainfall helps in lowering the dry temperature and as rainfall is well-distributed during the monsoon season from June to September the weather is tolerably good. From October both day and night temperatures begin to decrease and by December the coldest weather is experienced when the mean daily minimum temperature is 13°C. Sometimes the minimum temperature drops to 7°C. Average annual rainfall varies from 140 cms. to 192 cms. During the pre- and post-monsoon season tropical storms and depressions originating in the Bay of Bengal pass through the eastern and central part of the region after crossing the coastal tracts of Orissa. The maximum and minimum relative humidity of the region is 85% and 32% respectively. The high percentage of humidity is observed in the north.

Soil type

The soil of the region is mostly reddish and lateritic derived from the underneath igneous and metamorphic rocks due to fluvial action under humid tropical conditions. The red soil is found practically all over the region. The hilly tracts are covered with laterite soil. There is a small patch of black cotton soil in the south. The eastern part of the region, particularly the eastern part of Mayurbhanj
is composed of alluvial soil. Also along the valley of the Ib and valley of Brahmani in the open plain country is characterised by rich and fertile soil formed out of the silts deposited through ages.

**Forests** (5):

About two-third of the area of the region i.e., about 13197 sq.kms. in area is covered by rich forest of tropical deciduous type. Following the terrain, rainfall pattern and soil type, the forests can be broadly classified into two major vegetation types:

(i) **Tropical semi-evergreen dry deciduous types**: About half of the area of the forest cover are characterised by a dense forest mixed with many climbers and trees of which *Sal* (*shorea robusta*) is the dominant species. Besides *Sal*, other important trees are *Asan* or *Sahaj* (*Terminalia Tomentose*), *Bija* or *Piasal* (*Pleroscarpus marsupium*) and *Kurum* (*Schleichare Trijuga*), *Mahula* (*Baisia latifolia*), *Kendu* (*Diospyros melanxylin*), *Sisoo* (*Dalbergia latifolia*), *Khair* (*Acacia catechu*), and *Bandhan* (*Ougeinia Dalbergioides*).

These are some of the common species found all over. The eastern half of Banei sub-division, Rajgangpur range of Sundargarh sub-division, Kanjipani and Bansapur of western Kendujhar contain better quality of forest vegetation. The principal grass vegetation in the forests is *Sabai* or *Panasi*.
(Enlaliopsis binate) which is used for paper pulp and rope making. It is also used as fodder in its young stage. Kendu leaf is an important forest resource and it contributes significantly to the revenue of the region and job to the tribal families of the region. The most striking feature of this region is the absence of bamboo groves. The semi-evergreen dry deciduous forests are confined to the region of high elevation and precipitation.

(ii) Tropical semi-evergreen moist deciduous types :-

The eastern half of the region itself covers about 80 percent of the total forest land of the area. The sal (Shorea robusta) forest is most common and is concentrated almost whole of Mayurbhanj district and in about half of Kendujhar district. The forests in general can be grouped under moist-deciduous semi-evergreen type with species like Sal, Piasal, Asan, Kurum, Sisoo, Gambhari etc. Sabai grass is grown in plenty in the interior plain tract. Forests are destroyed by fire due to shifting cultivation practices of the tribal people. Minor forest products of the region are cocoons, lac, myrobolan, Sonari bark, arrowroot, honey, Mahua flowers and seeds. The sal is famous for its valuable timber and many other uses, like the use of its leaves for making plates which are used to serve dishes. Use of Sal branches as fuel and for production of very high grade charcoal is noteworthy.
One also finds good growth of cane in this region. Indiscriminate felling of trees for different commercial uses, burning wood for charcoal as well as shrub cutting and leaf collection along with jhuming (Podu or shifting cultivation) and tassar cultivation have brought significant deteriorating change in the forest cover of the region.

Mineral:

The region is one of the richest in Orissa so far as economic minerals and rocks are concerned. The most important ones are iron-ore, manganese ore, dolomite, chromite, kaoline, lead ore (galena), China clay, and asbestos. Most of these are exploited now in large scale. Bauxite derived from laterization of shales with more than 45 percent of alumina is widely found in the Sundargarh and Kendujhar districts. There is a fair stretch of coal deposit in the Hemgir coal fields which forms the connecting link between the Ib river coal fields in the east and Raigarh coal fields of Madhya Pradesh in the west. The Singhbhum-Kendujhar-Banei Iron Ore belt which extends into the eastern part of the region upto Gorumanisani, Badampahar and Suleipat of Mayurbhanj, is regarded as the most important group of deposits of iron-ore in India. Large deposits of high grade iron ore are also reported at places in the Gandhamardan hills. The development of iron ore has been adversely affected by two major
constraints. The first one is the lack of a proper rail link with the important industrial centres and ports and the second one is the absence of mineral-based industries in the surrounding area. The iron ore reserves located at Gorumahisani, Badampahar and Suleipat have been exploited by the Tata Iron and Steel Company (TISCO). Extensive deposits of manganese ore are found both in Sundargarh and Kendujhar contributing 40 percent of the Indian manganese reserve for which Orissa is famous for exporting this ore to foreign countries. It is Kendujhar which has brought Orissa into international map for exporting of chromite to the U.S.A. and Japan. There has been indiscriminate exploitation of limestone and dolomite in the district of Sundargarh for cement industry. China-clay deposits are found around Karanjia and Joshipur in Mayurbhanj district. Besides these, there are a large variety of minerals and rocks of commercial significance in the region. The discovery of gold reserve at Telkoi in Kendujhar district would place the region as a leading mineral belt of India with infinite possibilities of multi-dimensional development in various sectors of the economy. With this huge possession, the region has achieved the unique distinction of being the most important mineral-bearing region in the state as well as in the country as a whole.
Water Resource:

On account of existence of a good number of large perennial rivers like the ID, the Brahmani, the Baitarani, the Budhabalanga and the Salandi and due to presence of a number of springs in the region as a whole it is advantageous to the inhabitants to enjoy adequate water resources. As the economy of the region is primarily inclined to agriculture, the presence of such big rivers with favourable relief for various irrigational projects provides adequate environment for gainful agricultural occupation if properly planned.

Demographic characteristics:

The region extends over an area of 29562.4 sq. kms. (18.98% of the state area) and has a population of 3924341 persons, sharing 14.93% of the state's population according to 1981 census (Fig. 3.3(a)). Out of the total population 2006958 are males and 1917383 are females, constituting 51.15% and 48.85% respectively. The number of females per 1000 males is 955. The backward class population (S.T. and S.C. taken together) comprises 62.19% of the total population out of which the scheduled tribe population alone shares 54.30% of the total population, the scheduled caste population accounting for only 7.89%. Fig. 3.3(a) gives a clear picture of the pattern of population distribution in general while Fig. 3.3(b) that of tribal population in particular.
Population density distribution pattern

The average density of population in the region is 132 persons per sq.km. (1981) as compared to 169 in the state as a whole. This region is one of the thinly populated regions of Orissa. Among the three major territorial units of the region, Mayurbhanj has the highest density i.e. 151 persons per sq.km. The densities of the other two districts, i.e. of Sundargarh and Kendujhar are 138 and 119 persons per sq.km. respectively. The other territorial units which are very small in comparison to the above said three districts, have densities of 79 and 212 persons per sq.km. for Kuchinda Tansil of Sambalpur district and Bernampur police station of Baleswar district respectively. The overall low density is not so low when we consider the spatial pattern and compare with the land productivity and its land availability for agriculture. The police stationwise distribution of population density has a wide range varying from 33 to 314 persons per sq.km. (1981) in the region. From the population density map (Fig. 3.4-a) depicting the general population density it is observed that in general the south-eastern part of the region is more populated than the other parts. Most of the northern portion of the region is moderately populated, while the south-central portion has very low population density in the region. Table vide Appendix-III gives a clear picture of population density distribution in general and also of the tribal density in particular.
NORTHERN TRIBAL REGION OF ORISSA
THANAWISE POPULATION DENSITY DISTRIBUTION, 1981

**GENERAL**

![Map of General Population Density](image)

- > 279.14 (VERY HIGH)
- 209.4 - 279.14 (HIGH)
- 139.84 - 209.4 (MODERATE)
- 70.19 - 139.84 (LOW)
- < 70.19 (VERY LOW)

Mean ($\bar{x}$) = 139.84, S.D. ($\sigma$) = 69.65

**TRIBAL**

![Map of Tribal Population Density](image)

- > 121.20 (HIGH)
- 82.81 - 121.20 (MODERATE)
- 44.42 - 82.81 (LOW)
- < 44.42 (VERY LOW)

Mean ($\bar{x}$) = 82.81, S.D. ($\sigma$) = 38.39
Since majority of the people in the region depend upon agriculture, the density is higher as usual in those portions where soil is fertile and facilities for agriculture are available. The density in the southeastern region is high because it has more advantageous factors for agriculture than other parts of the region. The sparsely populated condition in central and northwestern side is due to the unsuitability of land for agriculture on one hand and for forests and hills with steep slopes on the other. Hence, the density variation is a function of land characteristics and conditions for favourable agriculture.

Urban population:

The population distribution in urban and rural area (1981) shows that about one-sixth (i.e. 15.56%) of the total population of the region live in urban areas as compared to 11.82% for state as a whole. This regional level of urbanisation has largely been contributed by the industrial development of Rourkela and its surroundings. It is clear when we note that Sundargarh district to which Rourkela belongs has the highest percentage of urban population (30.59%) in the region as well as in the state. The urbanisation share in Kendujhar and Mayurbhanj districts and Kuchinda Tahsil of Sambalpur P.S. are 12.46%, 5.7%, 4.97% respectively, but the Berhampur Police station of Baleswar district is
completely rural in character. Spread of urbanisation mainly due to industrialisation has attracted quite a few tribal people under the natural law of exposure to new ways of earning livelihood to a section of the tribals in Sundargarh district.

Rural Population:

In this region near about 84.44 percentage of the population live in rural sectors (1981 census). The distribution pattern of rural population by size of settlements shows the following observations:-

i. 40.00 percent of rural population live in settlements having a population size of less than 500.

ii. 34.53 percent of rural population live in settlements having population 500 to 999.

iii. 25.47 percent of the population live in settlements having 1000 and above.

The above fact clearly indicates that majority of the rural population lives in small size villages. Such distribution pattern is due to topographical and tribal ethnic character of the region. That is why, the nature of population distribution is sparse and the settlements are scattered over space.
Scheduled Tribes:

According to 1981 census of India, the scheduled tribe population in the region was 2130958. This population constitutes 36.02 percent to the total tribal population on the state and 54.30% to the total population of the region. The general population density map (Fig.3.4-a) was superimposed on the scheduled tribe density distribution map (Fig. 3.4-b) and it was revealed that in most cases the low concentration of scheduled tribes is associated with the high population density of the area. In other words, all the good lands have been occupied by the non-tribals while the tribals are gradually being displaced from the plains only to take refuge in the hills and forests so as to avoid the cultural invasion and unscrupulous economic exploitation by the non-tribals.

As per 1981 census out of 21 police stations of Mayurbhanj 12 police stations have a density of more than 100 tribals per sq.km, and among the police stations Khunta P.S. has the highest tribal population density $(202/km^2)$ followed by Tiringi $(142/km^2)$ and Barsahi $(139/km^2)$. In Sundargarh district, the highest density is found in Biramitrapur $(130/km^2)$, followed by Raghunathpali $(120/km^2)$, Rajgangpur P.S. $(114/km^2)$, Bisra P.S. $(103/km^2)$ and the lowest density is observed within Guriudia P.S. of Sundargarh $(26/km^2)$, Jamankira $(28/km^2)$ and Kuchinda P.S. $(29/km^2)$ of Sambalpur.
district. The tribal population density of this region is clearly noted in Appendix - III for all the police stations.

**Population Growth (9):**

The nature of population growth was studied by taking the population figures from 1951 to 1981. It was observed that the growth of population was phenomenal during all the three decades i.e. 1951 to 1961 (24.79%), 1961-71 (26.38%) (Fig. 3.5-a) and 1971-81 (26.59%) (Fig. 3.5-c). From 1951 to 1981 in general the region is indicating a constant high growth rate of population. But it may be noted that during 1971-81 the growth (Fig. 3.5-c) is slightly slower. The constant growth of population may be due to the industrial development of the region after 1950's. Apart from this, all other factors of population growth remain same as the case for the state as a whole i.e. high birthrate and comparatively low death rate in respect of previous decades.

Regarding the tribes of the region, it was observed that the growth of tribal population during 1961 to 1971 was 20.08% (Fig. 3.5-b) and during 1971-81 it was likewise 21.36% (Fig. 3.5-d). These growth are less than the regional growth and the cause may be due to relatively more mortality rate among the scheduled tribes. The growth rate of the population in the region (both general and tribal) is recorded in Table vide Appendix - III.
NORTHERN TRIBAL REGION OF ORISSA
THANAWISE POPULATION GROWTH

GENERAL (1961-71)

TRIBAL (1961-71)

GENERAL (1971-81)

TRIBAL (1971-81)

Fig. 3.5(a)

Fig. 3.5(b)

Fig. 3.5(c)

Fig. 3.5(d)
Literacy:

The literacy rate of the region is 29.49% as compared to 34.12% of the state. The male literacy is 41.35% and female literacy 17.27% (State: male literacy 46.90%, female literacy 21.11%). The Tahsilwise literacy rate varies from 17.91 to as high as 44.76% which is more than the state average. The Tahsils such as Telkoi of Keonjhar district (17.91%), Rairangpur of Mayurbhanj (23.11%) and Banei of Sundargarh (25.33%) represent very poor literacy rate because of high concentration of tribal population in those Tahsils. Inspite of locations of district headquarters and concentration of all functions at that location, district headquarters like Mayurbhanj (27.88%), Kendujhar (27.69%), Sundargarh (31.65%), the literacy rate is below the state average. The literacy rate in the Tahsils such as Panposh of Sundargarh (44.76%), Champua of Kendujhar (31.54%), Rajgangpur of Sundargarh (31.42%) and Kuchinda of Sambalpur (30.48%) are comparatively better than some of the tahsils in districts headquarters due to the efforts made by the
Christian missionary and rapid industrialisation.

As far as the female literacy is concerned again Panposh Tahsil stands first with 32.92% of literacy rate which is much more than State's average, and the rest of the tahsils remain below the state average.

As about the tribal population the average literacy rate of the region is 17.62%. The male tribal literacy of 27.98% and female tribal literacy 7.35% are much below the state average.

Transport and communication:

The heart of the entire northern tribal region is characteristically of a hilly terrain and this has led to limited scope for establishment of better communication links. The peripheral plains and valleys of the five major rivers have been served by road and rail communication. This is due to the impact of the prospect of mineral wealth of the region through important centres on one hand and for the existing linking service centres of this region with the relatively prosperous centres in coastal region and industrial centres of Orissa.
The poverty as regards important road transport link is easily understandable from the fact that only 210 km. length of road under the National Highways occupies the entire region as against 1553 km. in the state as a whole. There has been some improvement in the higher class road link due to the State Highways and Express Highways constructed after independence of the country for mining activities and export purposes through Paradip port lying in the eastern coast of Orissa. NH-6 is the most important road for the northern tribal region running in an east-west direction (see Fig. 3.6). Only a small section of NH-23 in a north-south direction in the central part connects it with Bihar via Rourkela (Panposh plain) and a negligible strip of NH-5 is also a north-south stretch in the extreme eastern part connects the Mayurbhanj sector with West Bengal via Baripada (Baripada plain).

In comparison to other areas of the district, the Kendujhar district portion has better transport and communication facilities as evidenced by the fact that even by 1961 when the state of Orissa had only 22 km. of road per 100 sq. km. of area. But, since the Anandpur sub-division where there is better road connections does not belong to the tribal zone, the said statistics would
fall down to as low a figure as 15 km. specifically for the tribal region portion of the district. The tribal core area of Kendujhar portion of the northern tribal region is very much neglected and is served by narrow village roads (370 km.) mostly looked after by the Gram Panchayats. The R.E.O. and the P.W.D. of the district take care of village roads which are unmetalled and of few miles of major district roads and these too are limited to 455 km. in the tribal region of the district. Regarding waterways in the Kendujhar district section of the tribal region, there is hardly anything to note. Because, the Baitarani river, which is the only important river here, is not navigable in this section. In railway communication, this sector of the tribal region has nothing important to note except that only a few km. of railway lines are laid in the northwestern part for lifting iron ore and other minerals now under exploitation.

So far the eastern section of the northern tribal region is concerned, except for the Baripada Plain area there has been not much development in road transport. There are some major district roads (M.D.R) and in total the district of Mayurbhanj has 8186 kms. of roads out of which 906 kms. are surfaced and motorable while 7,278 kms. are unsurfaced.
and mostly unmotorable being in large part very narrow village roads. Still further east, the portion of tribal region under the Baleswar district is the tiny section of Berhampur police station which is quite inaccessible with only a negligible coverage of narrow unmotorable village roads. Inland water communication is not possible in the Mayurbhanj sector of the northern tribal region obviously due to physiographic constraints. There has been, however, a narrow gauge railway line in the eastern part connecting Rupsa with Talbandh through Baripada. The broad-gauge line along the western part connects the Tatanagar industrial town of Bihar with Gorumahisani and Badampahar iron ore areas of the region in the Bamanghati subdivision. This railway communication has induced a large influx of traders who are non-tribals to trade rice, fire-wood and wood slippers, etc. and this has rather caused more harm to the tribal way of life than improving their lot. For, they have been noticed to be exploited in the process of mining and industrial activities solely controlled by middle-men and upper class business communities.

Coming to the west, the Sundargarh district portion of the northern tribal region gives a mixed impression so far road development is concerned. In fact, till as late as
1961 the topography of the district, coupled with scattered settlements and mineral and industrial potential little noticed, had been solely responsible for the very poor transport links. The Banei area was the weakest in this aspect. In the early part of the present century except for the road from Baneigarn to Banki there were no regular roads and therefore the few cart-tracks served the area for communication. The then Gangpur state (under a feudal ruler) which now constitutes the Panposh and Sundargarh subdivisions of the district had then only one good road, linking Sundargarh with the Jharsuguda railway station of Sambalpur district. However, there were two fair surface tracks, one from Rajgangpur to Sundargarh and the other from Sundargarh to Laikera. There are both railways and inland waterways but serving the area rather partially without much significance to the tribal settlements and people. The railway link was due to south-eastern railway line (then known as the Bengal-Nagpur Railways) passing through Panposh and Sundargarh sub-divisions. But there is hardly any importance of this to the tribal settlements which are located somewhat at far off places and only a small section of the tribal communities is in knowledge of the plus-points of this communication facility. There is also a branch railway link from Panposh to Biramitrapur.
which is mostly for supply of ore to steel plant.
The inland transport is mostly to carry goods during the rainy season down the Ib river to Sambalpur district in the western part, somewhat serving a small part of the region in the plain area of western sector of the tribal region.

So far the Kuchinda portion of the northern tribal region (under Sambalpur district) is concerned, it is better-served by transport links joining it with the NH-6 at Deogarh, with the Calcutta-Bombay railway line at Jharsuguda Railway station, with NH-42 at Redhakhole and with NH-23 at Rourkela. This transport and communication factor is responsible to produce a repulsive impact on tribals in and around Kuchinda proper and therefore at present most of the tribal settlements of this zone lie closer to Sundargarh district in continuation with its southern tribal belt.
(II) The Southern Tribal Region

This tribal region as already noted comprises of the districts of Koraput, Phulbani and parts of Ganjam and Kalahandi, lying in the southern part of Orissa. The region extends from 17°50'N. to 20°39'N. latitudes and 81°53'E. to 84°25'E. longitudes over an area of 31303.21 sq.kms. (20.08% of the state area) and has a population of 3,206,201 persons, sharing 12.15% of the state's population according to 1981 census. Out of the total population the scheduled tribe population numbering 1,796,618 persons accounts for 56.03%. The region may be divided into three distinct physiographic divisions, namely (i) the rolling uplands of Vamsadhara, Nagavali and Indravati, (ii) the common interfluves of the Rushikulya and Vamsadhara, the interfluves of the Nagavali-Sabari and the Indravati catchment basin, and (iii) the subdued plateaus of Nawarangpur, the Jeypore plateau and the plateau of Khondmals.

Physiography:

The rolling uplands of the Vamsadhara and the Nagavali are carved due to the erosive action of the rivers Vamsadhara and Nagavali. Although they are
separated by high ridges (Fig. 3.7), they are included under a single unit because of their small size on one hand and homogeneous economic structure on the other. Agriculture here is subdued by forestry, as vast areas of this region are forest-clad.

In the common interfluves of the Rushikulya and the Vamsadhara, the elevation with about 600 metres above sea level is low in the north and is deeply eroded. The mountains that separate the Tel, a tributary of Mahanadi, from the Rushikulya basin vary from 600 metres to 1,220 metres in elevation. This interfluve stretches in a north-south direction with several peaks rising above 1,220 metres. Amongst them the Singarasu and Mahendragiri (about 1,525 metres above sea level) and Devagiri (1,383 metres) are important. All the peaks come under the Ganjam district. The area with a compromising ecology for tribal habitats is mainly dominated by organised tribal groups inhabiting typical tribal settlements.

In the extreme border lying in the Eastern Ghats, the Pottangi and Chandragiri mountain ranges have an average height which varies from 915 to 1,373 metres in elevation. The first five peaks of the Eastern Ghats are located in these areas and among them the Deomali is the highest mountain in Orissa with an elevation of 1,670 metres above sea level.
Other ones are Sinkaram (1,617 metres), Galikoda (1,616 metres), Yandrika (1,582 metres) and Nimagiri (1,516 metres). The direction of the mountain range is SW to NE. Along the sides of the Pottangi-Chandragiri mountain range, there is a vast tract of Malkangiri rolling upland which still lies underdeveloped literally, preserved in thick bamboo forests. Recently due to the availability of cheap hydel power from the Machhhkund project, the area is gradually flourishing with various industrial units, the most important one being the paper mill. During the last decades the region has experienced increase in population because of immigration from other areas of Orissa and from neighbouring states of Andhra Pradesh and Madhya Pradesh. The rehabilitation of the refugees from Bangladesh under the Dandakaranya project has added different dimension to the demographic situation. Further continuation in the north is the Nawarangpur plateau, which is comparatively of low elevation (600 to 900 metres) and separates it from the Bhawanipatna rolling uplands. The plateau is drained by the Sabari and its tributaries. Mountains, 600 to 900 metres in elevation, are met with in isolated patches. A rugged physiography has cut off this region from the rest of Orissa and a few roads (mostly village and forest roads of lower order) through difficult mountain ghat are the only means of communication.
The Plateau of Khondmals, which is about 600 metres high is surrounded almost continuously by high circular ranges of hills ultimately merging in the outlier of the Eastern Ghats. The whole area extending upto Baliguda is intersected by deep ravines and is interspersed with valleys with small hamleted tribal settlements here and there. The Kalinga Ghat, about 700 metres above the sea level is the main gateway from the southern district of Ganjam into these hilly tracts (Fig. 3.7). Geologically the plateaus of these regions are composed of rock groups called Khondalites and charnockites of Archaean age and contain deposits of manganese ores, graphite and bauxite.

Drainage of the Southern Tribal Region:

The region has many rivers and perennial streams. Seven of them are noteworthy (Fig. 3.8). Important of them are (a) the Raul and the Bagh, the two north-flowing tributaries joining the Tel-system and the Mahanadi system and (b) the Vamsadhara and the Nagavali, flowing in the eastern part which run southwards into Srikakulm district of Andhra Pradesh and fall ultimately into the Bay of Bengal. The other rivers are the Indravati, the Kolab and the Machhkund which drain westwards. The Duduma
waterfall of the Machhkund is specially important for its hydroelectric project. Almost the entire Koraput, Nawarangpur and Malkangiri subdivisions of the Koraput district are drained by these three rivers and their tributaries. The Tel is another important river. It rises in the north of Umarkote Tahsil of Koraput district and forms for some distance the north boundary of the Southern tribal study region. All the seven rivers are perennial while the other small streams are usually dry during summer. These small streams overflow during heavy rains but they hardly cause floods as they are guarded in by hills and slopes running down to their banks. None of these rivers are navigable.

**Natural Resource Base:**

Natural resource endowment of any region is the basic and key factor for the economic infrastructure and social development. Keeping this view in mind, the natural resource base of the tribal region was studied taking into consideration the basic ones, i.e. land, soil, forest, mineral and water resources.

**Land:** Land is the basic but most important resource as agriculture is the prime and dominant economic activity of this region even though this tribal region is covered by forests to the extent of more than one-third of the geographical
area. The importance of land in the context of economic development can well be judged from the region's land utilisation pattern where land under net area sown and under miscellaneous crops and groves etc. taken together comes to more than 28 percent of the total geographical area of this region.

The economic development of this region is solely dependent on the proper land management and distribution, as the region has very limited other meaningful resources to promote secondary and tertiary activities other than agriculture.

**Soil** :- Occurrence of different soils in the region is closely related to the broad physiographic division and their genesis is dependent on micro-topographical situation and geomorphology of the different land types. The broad category of soils are represented in the region are:

(i) Red soil, (ii) Laterite soil, (iii) Brown forest soil, and (iv) Black cotton soil. Generally speaking, the soils that we come across are red soils in some of the zones which have poor water-holding capacity. These are acidic in character within low level of productivity. Similar also is the case of laterite soil found mainly in the northeastern side of Koraput and in Rangiri area of Ganjam district. In the northwest part there is the presence of black cotton soil which is full of nitrogen, phosphorous and organic matter with sufficient lime content.
Forest: The region is well endowed with forest (Fig. 2.2) which provides the basic ecological set up to tribal habitat. With a total area of 21696.35 sq. kms, classified as forest it works out to be 69.34% of the total geographical area in the region.

Following the terrain and rainfall pattern the forests can be grouped under the following two vegetation types of which second one is very important both commercially and for tribal habitat.

(i) The tropical dry deciduous forest which occurs in the north-western part of the region is particularly found in Phiringia area of Phulbani district. The main tree species are Sal, Asan, Dhaura, Kendu, Kurum, Salia bamboo. Trees are generally of poor quality.

(ii) The moist tropical semi-evergreen forests occur more extensively in the region with a large variety of wood species of which commercially valuable wood species are Sal, Teak and Asan. In fact, Umarkot, Nawarangpur, Jeypore, Kotpad, part of Râmpiri of Ganjam district, and also part of Daringbadi of Phulbani district are all situated on plateau topography with an elevation of about 600 metres which is the store house of typical 'sal' tract of moist peninsular or subtropical wet hill type. The main tree species are
Sal, Teak, Asan, Bija, Kurum, Kangara, Makar Kendu and Champa. In moist location, dabe bamboo and green grass rising up to a height of 3 metres are commonly seen in the Malkangiri area. This type is economically the most valuable forest of the region.

As against the vast forest potential the state of development of forest-based industries is rather meagre. Fire and Podu or shifting cultivation have caused great damage to the valuable forest tracts of Koraput, Phulbani and Ramgiri of Ganjam district. The most important product of the forest are timber, fuel, firewood, charcoal, bamboo and Kendu leaf. Among the numerous minor forest products of economic value outstanding are Mahua flowers and Mahua seed, Sal seeds are also in demand for edible purposes. Kusum is common in open cultivated tracts mainly for vegetable oil. But the various valuable forest species are being indiscriminately destroyed due to shifting cultivation practised by the tribals who are ignorant of the effect in the long run of their action, far even the existence of the uniqueness of their habitat is concerned.

Mineral resources:

The region has a wide variety of mineral deposits. Iron ore, manganese ore, china clay, dolomite, limestone, bauxite, quartzite, and graphite are some of the important minerals. Tin has been recently discovered in this region and it is reported to have high
economic concentration. Explorative searches are being made to locate economic concentration of other valuable minerals. If gainfully exploited, a section of the tribals that has some positive response to the new development is likely to gain a lot economically with good occupational avenues which may ultimately do good to the community of tribals at large.

The region forms a part of the north-eastern plateau which also includes Chhotanagpur division and East-Madhya Pradesh division. Therefore, the geological formation of the greater part of this region comprises crystalline schists, gneisses and granite. This sub-region indicates also occurrence of minerals such as kyanite, chromite, asbestos, graphite and clays. Graphite is found in Tumudibandha in a belt of 28 km. long and 8 km. wide.

Water Resources (16):- This is the most vital resource in the context of the region's economy because of the region's agricultural character. Water resources are more important for tribal settlements as the tribal people lead a primitive life in the rugged mountainous tracts of the region where the rate of surface run-off is very high and percolation rate is substantively low although precipitation rate may be high compared to the plains. In this region the sub-soil water table is much lower than that of the plains. As a result, the
streams and tributaries are mostly non-perennial in character and the availability of water both for domestic and agricultural uses is too meagre. Even in rainy season the rivers with narrow water-channel are not able to provide required amount of water for irrigation due to high degree of slopy terrain causing quick runoff.

Most of the tribals are living on the slopes of the hills or on hill-tops of the Eastern Ghats in dense forests or near small rivulets or springs. For cultivation, they totally depend on rain water. Cultivation is practised in two ways. In shifting cultivation which is the first traditional way of the tribals, maize is grown in a limited quantity by clearing forests on shifting basis in low valleys. However, cultivation is mainly carried out in Kharif season and during the Rabi season (i.e. winter) land almost remains barren. Thus under such a set up the non-availability of perennial water resources has little impact on the distribution of tribal population. Of late, construction of some minor irrigation (M.I) projects has eased the problem of water supply to some extent and this has brought some impact on the distribution of tribal density.

Digging of dugwells to solve the drinking water needs of the tribals has yielded little result. This is
mainly because the dugwells are shallow and mostly dry up during the dry season as subsoil water table is much below the surface. The water resource both for drinking and agricultural purposes for tribal settlements is very limited and therefore this is one of the major problems to be solved.

Demographic base (17):

In the context of geographical background of the region, basic characteristic of population need to be analysed because in geographical study of population and settlements, the position of man is pivotal. When a settlement is established, whether it is tribal or non-tribal, it begins to attract population in sequence of time and subsequently thereafter a number of places, the nodal positions, grow as market or urban centres. It need not be emphasized that population and settlements are interrelated and complementary to each other. In regional geography, socio-economic conditions are very much influenced and governed by the different basic characteristics of population mass like growth, distribution and density pattern, sex composition, strength of female literacy, ratio of working and non-working labour force, occupational structure, etc. The characteristics of population are conditioned by both the attractive and restrictive physico-cultural environmental forces like relief, geological structure, climate, soil,
minerals and other infrastructures like economic input of resources, transportation, etc. It is very much necessary and desirable in the context of the present subject of study, to know about the spatial distribution of tribal population and settlements as this will provide ample scope for a proper understanding of the various problems associated with the tribal concentrations.

The southern tribal region which consists of 54 thanas under 20 Tahsils has an admixture of various tribes mostly of Proto-Australoid racial stock with Austro and Dravidian branches of language group (18). These tribes provide an interesting example in socio-geographical study in view of the socio-cultural transformation and process of integration of them with the main stream of the non-tribal population in this region. The Eastern Ghats run southwest to northeast, separating the region from the main plain coastal lands of the state as a whole and thus have great impact on the life of the people of the region in general and that of the tribals in particular. Earlier in Chapter -II it has already been mentioned that the tribes are concentrated in areas of relatively higher relief and slopes surrounding the mountainous region of the Eastern Ghats since such condition ecologically suits the tribal ways of living in seclusion. Out of the 54 police stations of the Southern region, only 8 police stations
have less than 50% tribal population. These are Jeypore (30.74%), Jnarigan (48.98%), Nawarangpur (42.27%), Koraput (36.17%), Similiguda (34.50%), Ambadola (29.32%), Tentulikhunti (47.25%), Phulbani P.S. (39.84%). It may be noted that these police stations cover urban areas with substantial administrative and secondary and tertiary sector population structure in which the tribal population is limited in number and hence the tribal percentage obviously for these police stations are below the general trend for the region as a whole. Fig. 3.9(a) gives a clear picture of the distribution pattern of population in general while Fig. 3.9(b) that of tribal population in particular. Besides these, Rayagada in Koraput district and G.Udayagiri of Phulbani district though have also been declared as towns, their tribal population exceeds 50% of the total population mainly due to the developed section of local tribal population in these two places taking to secondary and tertiary activities thereby reducing outside infiltrations. Moreover, these two areas have high tribal concentration from earlier time, i.e., before these are declared as towns. Moreover, various business activities, industrialisation, transport facilities and missionary activities upgraded all these areas into urban status. If we analyse the population pattern we can easily
observe that in 1961 the percentage of tribal population was 69.70% which decreased to 61.99 by 1971. Again the tribal population further dropped to 56.62 in 1981. Similar is the case of G.Jdayagiri. This, therefore, implied that the tribal population shows a declining trend every decade, as a result of an increasing trend(*) in urbanisation.

According to 1981 census, the population of this region is 3,206,201 of whom 1,796,618 (i.e.; 56.03%) are tribals. The rural and urban break up for all the inhabitants as well as for the scheduled tribes of the region gives an interesting picture as may be judged from Table - 3.1 given below:

<table>
<thead>
<tr>
<th>Population break-up of the Southern Tribal Region of Orissa(1981)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong> (All inhabitants)</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Rural</td>
</tr>
<tr>
<td>Urban</td>
</tr>
</tbody>
</table>

(*) It is to be noted that the declining trend in percentage growth of tribal population does not mean a decrease in their absolute number. In fact, tribal population has increased from 1961 to 1971 and then to 1981 but only the rate of increase has slightly declined.
It may well be noted that though the region has a share of 56.03% of tribal population, only 20.36% of the region's urban population belongs to urban category while in rural areas the tribals account for 60.25%. This indicates that by and large the tribals have a repulsive tendency towards urban living thereby implying that the percentage of the tribal population is fewer nearer the urban centres, while their number increases with the increase of distance of urban influence.

Out of the total population, 1.642 million people are males and the rest 1.560 million people are females, constituting 51.3% and 48.7% respectively. The number of females for 1000 of males is 949.

**Density distribution pattern of the tribal population**:

As per 1981 census in 4 out of 54 police stations of the region, density of tribal population is more than 90 heads of tribals per sq.km. and another 3 police stations have tribal density of more than 80 persons per sq.km. Among the police stations Nawarangpur has the highest tribal population density of 107/km² followed by Raighar (99/km²), Kodinga (97/km²), Kotpad (90/km²), Malkangiri (88/sq.km), Jeypore (86/sq.km), Boriguma (85/km²). The lowest density is observed in Kotagarh (11/km²) in Phulbani district,
followed by Chitrakonda (12/km$^2$) and Mudulipada (13/km$^2$) of Koraput district (19). It is seen in this region that wide variation of tribal population density is mainly due to dense forests and rugged hilly terrain. Thus it can be concluded that hilly terrain and extensive dense forests control the density of tribal population. Plains of river valleys and accessible areas are, in general, inversely related to high density of tribal population in the region. A visual impression of the general as well as tribal pattern of density distribution of population in 1981 can be well observed from the population density maps vide Fig. 3.10(a) and 3.10(b). Table vide Appendix - IV gives police station-wise density figures for this region.

Tribal population growth :-

The nature of population growth has been studied taking into consideration the population figures from 1961 to 1981. As in case of state so also for this tribal region the tribal population in the region shows an increase in their absolute number but it is at a slower rate than that of the total population of the region. The tribal population which was of 1.4 million in 1961 increased to 1.541 million in 1971 and 1.796 million by 1981 as against the growth of total population from 2.124 million to 2.688 million and then to 3.206 million during the same period. A visual impression of the growth pattern in general and of tribal population in particular can be very well obtained from Fig.3.11(a) and (b) for 1961-71 and Fig.3.11(c) and (d) for 1971-81. It has been interesting to note that the largest of the police stations
SOUTHERN TRIBAL REGION OF ORISSA
THANAWISE POPULATION DENSITY DISTRIBUTION, 1981

Fig 3.10(a)

Fig 3.10(b)
in this region, Ramgiri, which has the largest tribal percentage of population has also experienced the maximum growth in tribal population (1286.72%) during the decade 1971-81.

The considerable growth may be attributed to the following facts:

(i) The area bears a high tribal character for which the government amalgamated some areal units to this particular police station in order to make it a larger homogeneous areal unit with tribal character.

(ii) Increase in the size obviously might have caused increase of tribal population because the area is having a series of lofty but considerably flat hills, ranging from 600 metres to above 1000 metres in elevation with soothing tribal environment of a fairly good forest cover which is ecologically suitable for tribal people to practise shifting cultivation on the hill slopes.

(iii) Due to construction of various development projects and acquisition of land by the government agencies in the nearby tracts around the Ramgiri area, tribal people from these surrounding areas have migrated to Ramgiri region for their safety and security as land was
available here providing compatible ecological set up for tribal settlements.

During the same period of 1971-81 the police stations of Dasmantapur (-0.91 growth) and Chitrokonda (-3.08 growth) experienced the negative growth rate which was mostly due to the completion of the Upper Indravati Reservoir and Balimela Reservoir. The tribal people concentrated there as labourers prior to 1971 but after completion of the project work when vast land area belonging to tribal habitats was submerged under water, they might have migrated to some other nearby region for their shelter and livelihood. The other causes behind the negative growth rate may be attributed to serve drought and repeated calamity from epidemic diseases, predominant among which was Malaria. Recurrent periods of agricultural distress as well as lack of medical facilities in the area during epidemic because of the remoteness explain the vital issue for loss of tribal population during the decade 1971-81.

Besides the above mentioned police stations, some have also higher growth rate than the state's average during the period 1971-81. These are: Jharigaon (45.51%), Raighar (33.48%), Umarkot (38.22%), Dabugaon (33.87%), Padwa (35.97%), Orkel (36%), Malkangiri (34.24%), Similiguda (34.12%), all belonging to Koraput district,
Daringibadi (25.67%) of Phulbani district and R. Udayagiri (36.66%) of Ganjam district. Such a high growth rate is due to coverage of various government programmes for the welfare and development of the tribal communities with the aims of improving the quality of life of them where they are less disturbed by non-tribal community.

**Urbanisation and urban population:**

The process of urbanisation in the region is very negligible and whatever exists today, it is somewhat of a statistical definition rather than of urban quality of life. The region has now 15 urban centres, namely Phulbani and G. Udayagiri in Phulbani district, and Chitrakonda, Balimelanagar, Malkangiri, Jeypore, Sunabeda, Koraput, Kotpad, Paparahandi, Nawarangpur, Rayagada, Chandili, Gunupur, Gudari in Koraput district. These 15 urban centres have a total population of 339401, contributing only 9.55% of population as compared to 11.82% of the state's urban population in the year 1981. During 1971 with ten urban centres the share of urban population was 6.83% as compared to 8.41% of the state's urban population. In the year 1981 five new urban centres were added which are: G. Udayagiri, Chitrakonda, Balimelanagar, Paparahandi and Chandili. Amongst the towns Sunabeda and Rayagada are
industrial towns. All the towns are famous for either a single or a limited group of industries. During the five year plans, the condition has increased for installation of Machhakund and Balimela hydroelectric projects due to which the power situation in the region is satisfactory. The important nodal centres are Rayagada, Boriguma, Padwa, Pottangi, Jeypore, Kotpad, Sunabeda and Nawarangpur.

A low level of urbanisation is observed due to the fact that there is very limited scope for development of secondary and tertiary sector activities till recently.

Literacy

The literacy rate of the region is 16.74% as compared to 34.12% of the state. The male literacy is 23.43% as against female literacy of only 8.54% (state male literacy 46.90%, female literacy 21.11%). The Tahsil level literacy rate varies from a low value of 7.44% to as high as 29.72% which is still less than the state average. The Tahsils of Kodinga (7.44%), Kashipur (9.12%), Umarkot (11.47%) and Kotpad (13.69%) represent very poor literacy because of high concentration of tribal population in those Tahsils. It is important to note that irrespective of high tribal population concentration, the literacy rate shows better figure in G.Udayagiri (29.72%), Baliguda (18.49%), Khondmal (28.59%), Jeypore (21.96%), Nandapur (17.51%), Gunpur (19.99%), Rayagada (19.5%) and
G. Udayagiri (29.72%) giving a higher value than the region's average which is due to the efforts made by Christian Missionary to educate the tribals in this area.

As far as the female literacy is concerned, the Tahsils of G. Udayagiri (13.76%), Khondmal (11.50%), Koraput (9.50%), Nandapur (9.94%), Jeypore (14.59%), Gunupur (11.52%) and Rayagada (12.08%) are in better position with more than the region's average of female literacy while the rest of the Tahsils have remained below the region's average position.

If we take only the tribal population, the average rate of literacy is 8.17% out of which male literacy is 14.30% as against a meagre 2.17% of female literacy.

**Working force:**

The working force of the region constitutes 38.24% of the total population in 1981 as against 31.82% of the state. The break-up for male working force is 59.77% whereas only 18.74% of the female population comes under working force (state's male working force 54.38% and female 11.88%). The percentage share of workers in 1961 (46.29%) was very high with respect to 1971 (35.37%) and 1981 (38.24%), but this was mostly because of definitional change of workers in 1971 and subsequently in 1981.
Transport and communication:

Settlements in the southern tribal region of Orissa are far more inaccessible than those in the northern tribal region. Besides the usual factor of hilly terrain, the wide dispersed location of most of the tribal areas from the main transport and communication links and nodes is responsible to make them isolated. The basic infrastructure to connect the markets which are the main focal points of economic and cultural life of tribals with manageable road connections will be the very first step for development of the tribal areas of Orissa in general and of the southern region in particular.

It has been observed that the eastern part of the southern tribal region which falls under the Ganjam district comprising the Ramgiri-Udayagiri area is served by a good motorable major district road (MDR) running north-south and providing a link to this area with the NH-5 via Paralakhemundi towards south and with Phulbani district in the north. This area has a number of minor road connections which are mostly narrow village roads. But if we consider the links between the remote tribal settlement concentrations and the main central places of the area, the transport and communication situation is one of the poorest mainly due to very difficult and rugged mountainous terrain. The Lanjiya Saura tribe which dominates this area therefore lives with extreme isolation.
To the immediate north of the R.Udayagiri tribal area lies the Kandh tribal belt of Phulbani comprising the administrative sub-divisions of Baliguda and Khondmal. Routrey (23) in his work on Phulbani district prepared an accessibility map taking 5 kms. of distance on either side from main roads (i.e. S.H., M.D.R.). It is observed in that map that the Baliguda and Khondmal tribal belt is highly inaccessible as most of the settlements (except a few important service and administrative centres) are lying outside the accessibility limit. However, the village roads linking these settlements with the major district roads (MDR) or State Highways (SH) have provided some amount of accessibility to the area as a whole. This poor state of affair is attributed to its hilly terrain with vast stretch of forest lands on one hand and restricted transport link on the other, towards Sambalpur district in the northwest and Dhenkanal district in the northeast due to lack of bridge over the Mahanadi running in the north from west to east in Central Orissa. The region is linked by bus services with state capital Bhubaneswar and some of the states urban centres in south and east, but that too only with connections to such important centres of the region as Phulbani, Baliguda, Kotagarh, Nuagan,
Raikia and Daringibadi. There is no NH (National Highway) connection in this part. The SH (State Highway) connection is of 150 km. while MDR (Major District Road) runs for another 150 km. There are a few forest roads maintained by the forest department. There is no railway link and the nature of the streams do not allow the area to have any water transport.

The major portion of the southern tribal region of Orissa lies within Koraput district. It is a well known fact that the terrain of Koraput is such that it does not permit easy modes of transport and communication. Road and railway transport, however limited, are the only available means of transport since inland water transport is not possible in this district. In this vast tribal area most of the settlements are far away from the most important road link, the NH-43 which has a length of 157 km. in this region. There are three State Highways (SH) but joining only the important service and administrative centres of the area. These three are the Borigumma-Papadahandi-Malalpur SH (110 km.) and Muniguda-Baliguda SH (20 km within Koraput zone). Besides, the Koraput district has 3,326 km. of roads out of which 657 km. are surfaced and motorable. Rest 2,669 km. of roads are unsurfaced. These are maintained by the Public Works Dept., Local Bodies and R.E.C. and in most
cases they are of poor quality. It is important to mention that V.L. Singh in her Ph.D. work on transport geography of Orissa has rightly recorded the Koraput rural areas as the most inaccessible areas in Orissa except for the areas which are linked for commercial exploitation of mineral and forest resources.

So far railway links are concerned, there are three lines serving the Koraput district. The Parlakhemundi narrow gauge from Ganjam has its terminus at Gunupur with only 6 km. in length in the southeast of this district. The most important railway link to carry mostly iron-ore is joining Visakhapatnam with Kirandul via Koraput and Jagadalpur traversing about 160 km. The third link passing through Koraput is the Raipur-Vijaynagar Branch of S.E. Railway (Broad gauge) which traverses the Rayagada sub-division covering 94 km. The new introduction of the Sambalpur-Bhubaneswar Express serves from this year but only the southern section of Koraput district linking it with eastern and western Orissa. The major portion of the district, however, is unserved by railways and even today a large section of the tribal communities have not got an idea as to how a train looks like.
Reference

(1) Based on Survey of India's map of Orissa and National Atlas of India Million Sheets (Nagpur and Calcutta sheets).


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(4) Ibid.


(7) Based on Adibasi Atlas of Orissa (sheet on Water Resources), prepared under the direction of B.N. Sinha, Dept. of Geography, Utkal Univ., Bhubaneswar, sponsored by the Dept. of Tribal and Rural Welfare, Govt. of Orissa.

(8) Based on data collected from Census of India Publications for Orissa, 1981 with cooperation of the staff of the Directorate of Census Operations, Orissa, Bhubaneswar.

(b) Census of India (1961): Orissa, General Population Tables, Vol. XII, Part II-A.

(c) Census of India (1971): General Population Tables, Series 16 - Orissa, Part II A.


(12) Based on Survey of India map of Orissa and physical maps of National Atlas of India, Million sheets (Hyderabad, Nagpur and Calcutta sheets).

(13) Source : Records of the Agriculture Directorate of the Govt. of Orissa, Bhubaneswar.

(14) D.K. Singh and B.M. Das (1978): 'General Background', Ch. I of District Educational Profile, Koraput, Directorate of Public Instruction, Orissa, Bhubaneswar.


(b) District Gazetteers of Koraput, Phulbani and Kalahandi, Govt. of Orissa.


(17) Based on data collected from Census of India publications for Orissa, 1981 with cooperation of the staff of the Orissa Unit of Census of India, Bhubaneswar.


(19) Based on Census of India, 1981. Series -16-Orissa, General Population Table.


(21) Based on data collected from Census of India office in Orissa, Bhubaneswar.


