CHAPTER - IV
INFRASTRUCTURE OF ECONOMY
4.1 INTRODUCTION:

The infrastructure of an economy is conceived as to consist of those materials, provisions, built ups and features, which are basic and skeletal to the entire economic edifices that a community develops. They underlie, run across and link up all economic activities, practices, functions and organisations. Infrastructures are cultural or man-made features. They are the products of the processes of economic and political developments. They are the accumulated efforts of the past and investment for future.

The infrastructure of economy is both material and non-material. The material aspects of infrastructure are represented by such features as line of communication, system of transportation, installations for power generation and transmission, irrigation, buildings, market etc. The non-material aspects of infrastructure refers to social, economic and political organisations, institutions, skill, technology, and education of the people.

The infrastructures are pre-conditions and products of the processes of economic development. They on the one hand, guide and determine the scope of economic development and on the other, they get enlarged, improved and bettered in course of development. These elements of infrastructures have profound effects upon the economic activities of the region.
In the present chapter efforts have been made to assess the infrastructure facilities of Western Orissa. Because the assessment of these elements are important for the better understanding of the economy of the region. Here some important elements of infrastructures like irrigation facilities, power transmission, transport and communication, medical and educational facilities are discussed due to their importance in agricultural and industrial sectors of economy.

4.2 IRRIGATION:

In the economy of the three districts of Orissa under study, agriculture is the most predominant sector. But it is completely dependent on rainfall which is concentrated during the four months from June to September. As such agriculture is more or less confined to the Kharif season. There is very little rainfall during the rabi season and this fact greatly limits the possibilities of agriculture during that season. Even in kharif, the paddy crop needs irrigation if there is a long break in monsoon and during the period between and of the time of monsoon and the harvesting of crop. Except for the Hirakud Canal, the irrigation facilities available are utilised mostly in the kharif season. This, irrigation in these districts acts more or less as a supplement to rainfall. During the rabi season little irrigation is available. According to the figures supplied by the Government, net irrigated area in these three districts has fluctuated from 113,000 hectares to 173,000 hectares in recent years. Of this, the canals are the only dependable source of irrigation and the cultivators can plan the cropping pattern on this basis. Irrigation by tanks, wells and other works is uncertain, available for a few
waterings only, and is fully dependent on the rainfall. Consequently the advantage from such irrigation is of limited use in the planning of crops and the application of inputs. It is, therefore, very essential to make an accurate appraisal of the available irrigation by various sources and to evaluate the further potential which could be developed in near future. In following paragraphs an attempt is made in this direction. (Table Nos. 4.2.7, 4.2.2, 4.2.3 & 4.2.4).

GOVERNMENT CANALS:

In Bolangir district Government canals comprise the Hirakud system. According to the Irrigation Department the actual area irrigated on this project in 1989-90 was about 63,000 hectares, out of a total potential of 69,000 hectares. According to Revenue authorities the actual irrigation is only about 57,000 hectares. As the assessment of canal water charges is made on the basis of the irrigated area as recorded by the revenue authorities, the area irrigated in 1989-90 might be taken to be about 57,000 hectares. It is suggested that a joint survey of the irrigated area from this project may be made by the Irrigation and Revenue Departments and agreed figures of the actual irrigated area recorded jointly for each phase every year so that there may remain no discrepancy in these figures. The irrigated area from this canal system in 1991-92 could be put at 65,000 hectares.

The other two major projects that could be considered in this district are Ong and Sundar Project (Indra Stage I). Ong project is a diversion scheme across the river. Ong by constructing a barrage at Guchhapali. It is estimated to cost Rs.14 crores and would irrigate 26,000 hectares. Sundar project is also a diversion scheme on the
Sundar river, a tributary of the river Indra in Kalahandi district. This scheme (forming Stage I of Indra Project) is estimated to cost about Rs.60 lakhs and would irrigate, 3,600 hectares in Kalahandi district, and 400 hectares in Bolangir district. As these projects are based on the run-of-the-river supplies these would provide irrigation primarily during the kharif season. Both these schemes need detailed investigations and the figures of costs and benefits mentioned above are only after project reports have been prepared on the basis of detailed investigations. Hence priority should be given to detailed investigations of these projects. However, no benefit of irrigation is expected to flow in from these schemes during the Eighth plan period.

In Kalahandi district there is no major or medium irrigation project at present. Irrigation from minor works of large size (classified under canals) is shown as 2,500 hectares at present. However, from the long-term point of view the following schemes could be tapped in this district.

<table>
<thead>
<tr>
<th>Table - 4.2.5 Proposed Irrigation Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of the Project</strong></td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td>Uttei</td>
</tr>
<tr>
<td>Indravati (Total)</td>
</tr>
<tr>
<td>Stage I</td>
</tr>
<tr>
<td>Indra Stage I (Sundar Weir)</td>
</tr>
<tr>
<td>Stage II</td>
</tr>
<tr>
<td>Sandul</td>
</tr>
<tr>
<td>Udanti</td>
</tr>
<tr>
<td>Ret</td>
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<tr>
<td>Jonk</td>
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</table>
The work on Uttei project is to start shortly and if the project is executed expeditiously during the Eighth Plan, 2,500 hectares can be expected to be irrigated by the end of Fourth Plan. Another project that could be undertaken in the near future is the Indravati Project. This is a multi-purpose project estimated to cost Rs.61 crores. The area proposed to be irrigated is 1,48,500 hectares and the installed capacity for power generation is kept at 600 MW. The Project contemplates construction of four dams over the river Indravati and three of its tributaries. The dams and the reservoir are to be located in the adjoining district of Koraput but the diversion were below the reservoir would be in the Hatti Valley in the Kalahandi district. Stage I of the project, comprising construction of works for irrigation benefit only is estimated to cost Rs.29 crores. Detailed investigations for the project are in progress. No benefits can be expected to accrue from this project during the Eighth Plan period.

However, it may be observed that since this project involves a large outlay of Rs.61 crores, its selection could not be finalised merely on the requirements of this district alone. The State Government will have to consider other aspects such as availability of cheaper projects elsewhere and the need of power development in this region as a whole.

The other possible projects are Indra (Stages I and II), Sandul, Udanti, Ret and Jonk. Indra Stage I is to benefit both Bolangir and Kalahandi district as discussed above. All these projects have been under consideration of the State Government for a long time but detailed
investigations have not been completed on these projects so far. The cost as well as the benefits in terms of irrigated area given above area very rough approximations and the feasibility of these projects as well as interse priority could be judged only when complete information is available. Such information is expected to be available in the Eighth Plan period. Prima facie, on the basis of incidence of cost per hectare of area proposed to be irrigated, this cost is lowest in case of Sandul project. Final decision about their inclusion could be taken up only after estimates have been prepared.

There is no major irrigation scheme in the district, and Salki project is the only medium scheme at present. This project is nearing completion and an expenditure of Rs.130 lakhs has been incurred to the end of March 1987 out of a total estimated cost of Rs.166 lakhs. The irrigation potential of this scheme is 22,000 hectares. The irrigation utilisation has already reached a level of 16,200 hectares in 1986-87 according to the Irrigation Department figures. It is suggested that the project should be completed expeditiously so that the full potential may be utilised during the Eighth Plan period.

The other projects that could be taken up in the district are the Bagh (Cost Rs.210 lakhs with irrigation potential of 19,000 hectares) and Raul (cost Rs.304 lakhs with irrigation potential of 15,000 hectares). The Upper Salki Project is a multi-purpose project for 18 MW hydro-power generation, 2,000 hectares irrigation and water supply to Phulbani town. But the full irrigation benefits of this
project have yet to be worked out and are to form part of another project. The Bagh Project is a diversion scheme while the Raul Project would entail the construction of a reservoir. The figures of costs and benefits of these three projects are rough estimates. The position regarding the exact cost and benefits from these projects and their feasibility can be determined only after detailed investigations are completed. The work should be carried out expeditiously.

**TANKS:**

There have been a large number of tanks of varying sizes in these districts for a long time. However, many of these tanks are not in satisfactory working condition and very little reliance could be placed on these tanks for purposes of irrigation. Some of these tanks were maintained by the former princes in the Princely States. But soon after the take-over of the States it was not clear as to who was responsible for their maintenance and repair. Consequently, many of these fell in disuse. In order to improve the condition of these tanks the Government of Orissa established the Rural Engineering Organisation (REO) in the State in 1989. This Organisation looks after such minor irrigation works which have an ayacut of above 24 hectares. Minor irrigation works of 24 hectares and below are under the charge of the Gram Panchayats. The REO has made an inventory of the projects under its charge and started repairing them. This Organisation has completed verification of 55 projects whose ayacuts have been certified. In addition, 21 projects have been repaired but require verification and classification of ayacut. There are 45 projects which are in partly derelict condition and
68 projects in complete derelict condition (Table 4.2.6). The last two categories of projects need repairs and renovation. It is estimated that about 10,900 hectares are irrigated from the completed projects under the charge of REO (Table 4.2.7). It is further estimated that the derelict projects could irrigate another 6,700 hectares after the necessary repairs are undertaken. It is suggested that priority should be given to the proper maintenance and repair of the projects under operation and the derelict works should be fully repaired during the Eighth Plan period. This will stabilise the existing irrigation from these works.

As regards the tanks under the charge of Gram Panchayats these are neither properly maintained nor repairs carried out when required. The responsibility of repairing these works is with Panchayats but these are hardly discharging their responsibility properly. In a few cases due to proper leadership, good work has been done but such cases are rare. The Government, therefore, should stress on the importance of organising voluntary work for the repairs of these tanks. Wherever necessary the advice of technical officers of the REO could be made available to the Gram Panchayats. If these suggested steps are carried out, it is estimated that irrigated area by these tanks could be increased from 10,000 to 12,500 hectares by the end of the Eighth Plan.

WELLS:

There are a large number of open wells in these districts and water from them is lifted through indigenous appliances like
Tendas. These wells are by and large left unlined, except in river valley areas, where the sub-soil is alluvial. Irrigation from them is mostly for kitchen gardens and very small plots of cultivated lands are irrigated on a regular basis. The water level in these wells goes down during the rabi season and in summer. Except in river valleys, the wells are very expensive because there is weathered rock even at 3 to 6 metres below the ground level and hard rock at 9 to 12 metres below. Water is generally found in the weathered rock stratum and any aquifers above it.

It is estimated that the existing (1989-90) irrigation by wells in the three districts is about 9,000 hectares, almost all of which is in the kharif season. For a proper plan for expanding irrigation by wells, it is necessary to have a systematic survey of underground water resources of these districts. The State Government has recently initiated a survey in Bolangir district for finding out suitable areas for locating clusters of tube-wells and open wells for irrigation in close proximity of each other so that it may not be uneconomical to bring an electric line for installation of electric pumping sets on these wells. Dynamiting of open unlined wells for opening out the fissures in the water bearing rock formations and increasing the water storage space in the wells by deepening them would help to increase the discharge and irrigation capacity of these wells. In places where such wells are power operated at present with a diesel pumping set, they have a discharge of about 1/4th of a cusec each. The area irrigated is two to three hectares confined mostly to kharif.
Similarly, in areas where a suitable water bearing formation exists at a small depth below the bottom of open wells, the supply in a well can be increased by making a boring in the bottom of the well to connect it to the aquifer below. For successful implementation of this programme concerted efforts from the concerned departments and willing co-operation of cultivators would be required. The progress of this programme would depend on its successful implementation from the start so that cultivators get enthused about it. The programme should, therefore, be started after proper investigations in promising areas and survey should be extended to the other two districts as well. There is very little activity at present by individual cultivators or their co-operatives in respect of constructing tube-wells or digging wells. Land Mortgage Bank and Agriculture Refinance Corporation have not paid any attention to this problem in these districts. It is important that these agencies should be encouraged to take up suitable irrigation programmes to boost up private activity in this sphere through institutional investment.

Because of the presence of rocks at shallow depths, deeping of wells in these districts will be expensive. It is estimated that such an open well with diesel pump would cost about two hectares in kharif, i.e. Rs.2,500 per hectare cost of irrigation. This is high in comparison to Rs.1,000 per hectare in coastal districts of Orissa.

**TUBE WELLS**

At present, there is no tube-well for irrigation in these three districts. As hard rock is found at about 9 to 12 metres below the
ground surface in most parts of the region, this source of irrigation was hitherto considered neither feasible nor economical. However, in districts Bolangir, the Government has now undertaken a geological survey to explore the potential of ground water resources along the valleys of the Ong and th Tel Rivers and similar surveys are proposed to be undertaken shortly along river valleys in Kalahandi and Phulbani districts.

Prima facie, there is not much likelihood of finding suitable ground water resources for embarking on a large scale programme of tube-well construction for irrigation purposes in these districts, except in river valley areas. Even then the scope is limited by the extent of the valleys, which are not very wide. The survey teams need to concentrate on locating suitable areas, and finding out the actual discharge and drawdown of such wells. The suitability of water for irrigation purposes would also need to be tested by chemical examination. It is estimated that an irrigation potential of 3,000 hectares could be added through such tube-wells in suitable areas in these districts during the Eighth Plan period.

LIFT IRRIGATION WORKS:

The lift irrigation schemes include works where water is lifted from rivers, springs and natural ponds. At present small quantities of water are usually lifted through tends, and diesel engines and electrical pumping sets are rarely used. The construction and maintenance of State tube-wells and of lift irrigation schemes is under the charge of the Directorate of Lift Irrigation. Towards the end
Fig. 4.2.1

Western Orissa

Area Irrigated by Various Sources

Sources of Irrigation

Percentage of Net Area Irrigated

- 10-15
- 16-20
- 21-25

Others

Canals

Wells

 Tanks
of 1989, this Organisation started a work in Bolangir district with the installation of four pumping sets on the rivers Mahanadi near Sonepur and in Kalahandi, with three lift irrigation schemes on the rivers Uttei and Indra. In Phulbani two schemes were started on the Mahanadi and four are to be taken up on the Salki near Paljhar village. About one dozen more pumping sets on the river Mahanadi and three on the Salki are proposed to be installed in near future.

These schemes are small ones, lifting about one cusec water at each site. The area proposed to be irrigated by each scheme is about 15 to 20 hectares. And because these schemes are scattered over a large area, it is not economical to bring a power line to them. In this situation it would be advisable to select such areas where clusters of lift irrigation schemes, tube-well and open well are possible so that power lines could be brought to serve them. For schemes where power line could not be brought diesel sets may be provided as at present. It is estimated that an irrigation potential of 3,000 hectares would be added by lift irrigation in these districts during the Eighth Plan periods (Fig.4.2.1. & Fig.4.2.2.).

4.2.1 Water Economy :

Economy in use of water for irrigation purposes is an important consideration. The cropping pattern to be adopted and the water requirement of the crops for various areas need to be supplied by the Agriculture Department. Distribution of water from canals, with water rates charged on area basis, is not conducive to economy in the use of water. But distribution on volumetric basis has not been
found practicable, except on tube-well. Substantial economy in water use is, however, possible if it is applied in furrows after properly levelling the land or by subdividing a large field into small compartments (kiaris), instead of allowing it to flow over the whole field and flooding it. There is great need for demonstrating scientific agronomic practices and economical use of irrigation water directly in the fields of cultivators so that they do not regard these as merely a laboratory or research concept. This is all the more necessary in the case of life irrigation from rivers and canals, as a considerable recurring expenditure has to be incurred in lifting water and making it available for irrigation to cultivators.

4.2.2 Investments:

The proposals for expansion of irrigation in the three districts as discussed earlier would require an overall investment of Rs.800 lakhs till the end of 1991-92. Of this, investment in the public sector would be in the neighbourhood of Rs.700 lakhs and the rest in the private sector. Out of the investment of Rs.700 lakhs in the public sector, Rs.30 lakhs suggested for ground water surveys and investigations, 50 per cent of which would be under the Central sector and 50 per cent in the State Plan. The bulk of investment will have to be made in the construction of canals and tanks, lift irrigation schemes, surveys and investigations (Table.4.2.8). As regards wells and tube-wells, a sum of about Rs.115 lakhs has been suggested, a large part of which would be provided by cultivators. However, loans up to 50 per cent of the estimated cost may be granted by the Government or through institutional investment to stimulate private
activity as there is hardly any enthusiasm among cultivators for the construction of wells and tube-wells at present.

4.3 POWER :

4.3.1 Installed Capacity :

At present, Balangir and Kalahandi districts are connected to the State electricity grid in Orissa. However, Khariar Road, Nawapara and Nawapara Road in the extreme north of Kalahandi are served by a 1000 KW diesel generation station. Phulbani is served by four diesel generation stations with a total installed capacity of 900 KW as under:

**TABLE 4.3.1**


<table>
<thead>
<tr>
<th>Name of the Station</th>
<th>Installed Capacity (in KW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phulbani</td>
<td>450</td>
</tr>
<tr>
<td>G. Udayagari</td>
<td>250</td>
</tr>
<tr>
<td>Baliguda</td>
<td>150</td>
</tr>
<tr>
<td>Band</td>
<td>100</td>
</tr>
</tbody>
</table>

These stations serve the respective centres where they are located. In addition, the facility at G. Udayagiri supplies electricity to Tikabali also, 21 kilometres away.

Since the supply of electricity in the Khariar Road-Nawapara area in Kalahandi and the whole of Phulbani is from local diesel generation sets, the distribution systems are also only local. In Balangir and the parts of Kalahandi, which are connected to the state grid, transmission and distribution lines have been laid for a total length of 506 and 237 circuit kilometres, respectively.
TABLE 4.3.2

Transmission and Distribution Lines (in circuit kms.)

<table>
<thead>
<tr>
<th></th>
<th>Balangir</th>
<th>Kalahandi</th>
<th>Orissa</th>
</tr>
</thead>
<tbody>
<tr>
<td>66 KV</td>
<td>40</td>
<td>Nil</td>
<td>--</td>
</tr>
<tr>
<td>33 KV</td>
<td>235</td>
<td>113</td>
<td>--</td>
</tr>
<tr>
<td>11 KV</td>
<td>130</td>
<td>71</td>
<td>--</td>
</tr>
<tr>
<td>Up to 500V</td>
<td>101</td>
<td>53</td>
<td>--</td>
</tr>
<tr>
<td>TOTAL</td>
<td>506</td>
<td>237</td>
<td>9,195.6</td>
</tr>
</tbody>
</table>

Area (in sq.kms.) 8,836 13,097.6 155,825

Extent of transmission and distribution line per sq. km.

0.06 0.02 0.06

Source: Oriss State Electricity Board, Bhubaneswar.

It is seen that, per unit area, the lengths of transmission and distribution lines in Balangir are comparable to that for the State as a whole; in Kalahandi it is only a third.

TABLE 4.3.3

Number of Towns and Villages Electrified, 1989

<table>
<thead>
<tr>
<th></th>
<th>Towns</th>
<th>Villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balangir</td>
<td>5</td>
<td>948</td>
</tr>
<tr>
<td>Kalahandi</td>
<td>2</td>
<td>326</td>
</tr>
<tr>
<td>Phulbani</td>
<td>2</td>
<td>124</td>
</tr>
<tr>
<td>TOTAL</td>
<td>9</td>
<td>1398</td>
</tr>
</tbody>
</table>

Altogether nine towns and 1398 villages have been electrified so far (Fig.4.3.1 & Fig.4.3.2).
4.3.2 Consumption:

The per capita consumptions of electricity in the districts of Balangir, Kalahandi and Phulbani are low; in 1989-90, the levels of the annual per capita consumptions were only 2.150, 1.534 and 0.399 KWH respectively, in the above three districts. The major part of the electricity now consumed in houses and commercial establishments and for street lighting.11

The major contrast in the structure of this consumption between these districts and Orissa and all-India averages is in the share of the industrial sector. This sector accounted for 36.4 and 79.6 per cent of the per capita consumptions in Orissa and India, respectively, whereas in these three districts, domestic, commercial and public lighting constitute the mainstay of the demand for electricity-67 per cent in Balangir, 59 per cent in Kalahandi and 92 per cent in Phulbani.

Another significant difference is in the consumption for irrigation which was 3.80 KWH per capita for all-India. In this connection it may be worth mentioning that as a proportion, the share of irrigation is only 6.2 per cent of the all-India per capita consumption which is itself very low compared to the 22.24 KWH consumed per capita on this account in Madras, equal to 25 per cent of the total.

In view of the above low level of electricity consumption, it is necessary to examine whether lack of availability of electricity was a casual factor. In 1987-88, the total installed capacity in Orissa
was 443 MW, while the estimated load demand in the State was only around 227 MW. Therefore, Balangir and the parts of Kalahandi, connected to the State grid, could not have suffered from an inadequate supply of electricity.

In the Khariar Road-Nawapara area of Kalahandi and, in Phulbani district, served by diesel generators, the cost of electricity is no doubt high as compared to the areas connected to the State grid. Also in these two areas there may have been, in a few specific cases, difficulties in getting the required additional block of power for new industrial units. But viewed in the context of the total power availability in the State, both these disabilities may be ascribed to the fact that these areas have not been connected to the State grid. At the same time the electricity generated in these diesel stations per KW of installed capacity was low-only of the order or 350-690 KWH/KW. This low level of output can only be a reflection of the low level of demand for electricity.

Moreover, the electricity industry is one where unit costs decrease with increasing production. Once a system is built, the annual fixed costs are determined at a given level. The larger the quantum of electricity generated, the less would be the incidence of the fixed charges in the unit cost of generation. Thus with a higher level of generation and sales, the plant economies ca only improve.

Therefore, it would appear that the low level of electricity availability has not been the casual factor standing in the way of
economic development. In fact, in most less developed areas, there are other factors like resource endowment, other infrastructure like transport service facilities, etc. often acting along with economic, social and political factors, which tend to retard progress.12

4.3.3 Consumption Pattern :

The less developed areas are generally largely rural; urban centres are few and far in between. In such areas, significant increases in the use of electricity cannot be expected merely by increasing the availability of electricity. Special programmes, to educate these communities in the use of electricity and the benefits accruing from its use, have been suggested by some who have been engaged in such developmental programmes in the less developed by the Rural Electrification Administration (REA) of the Tennessee Valley Authority can be cited in illustration of this.

The REA started with a programme to determine what are the jobs in a farm that can be more profitably done through the use of electricity. Then cheaper distribution and household wiring systems had to be designed. A number of electric appliances were designed to suit the needs in these outback communities. Thereafter, the REA set out to demonstrate the benefits arising out of the use of electricity to these communities and backed it with loans. With this coordinated programme, the REA sold electricity to these farming communities, so much so that against an initial outside expectation of 40 KWh per households, consumption levels averaging 375 KWh per month were obtained in ab out 30 years. Also, a local electric
appliances industry grew up to manufacture the new appliances designed under the auspices of the programme.

However, it must be noted that the conditions obtaining even 30 years back in the Tennessee Valley are not to be compared with what is obtained in the less developed tracts of today's India. To mention one, average farm sizes in the Tennessee valley even those days were around 300 acres. Labour has always been at a premium in the U.S.A., so that there has been, and there is, a continuous and conscious effort in every sphere to substitute manual power with mechanical power. Therefore, it appears doubtful if such a programme could help in a context, where manpower is cheap and surplus and farm sizes too small.

The rural electrification programme in India has so far been meaningful only in irrigating farms as can be seen by the experience in States like Madras, Punjab, Haryana and more recently in Uttar Pradesh and Bihar. Here again the scope for irrigation in these three districts appear to be limited. The scope for lift irrigation and industries in these districts has been discussed in respective chapters and may together require an additional 12 to 14 MW or so. Thus the total additional load inclusive of the other sectors may be about 30 MW.

This is only a small load compared to the total installed capacity of 443 MW in the State. Moreover, planning for electricity is best done on a regional basis, for all the States in the region.
No doubt proposals for further capacities are under consideration which would increase the availability of power. Therefore, the additional electric power requirement of these three districts can be easily met. What is more relevant to the power needs of the area under discussion would be the extension of the transmission and distribution system. It is understood that proposals are underway to extend the existing grid in both Bolangir and Kalahandi districts and, to link Phulbani to the state grid. Further extensions may be considered from Baudh via Kantamal to Gandapara and to link Balliguda also to the grid. These may require about Rs.2.3 crores.

4.4 TRANSPORT :

The transport facilities available in the Phulbani, Bolangir and Kalahandi districts comprise of 228 kilometres of railways, and a road network of 4,300 kilometres. A detailed description of these facilities is given below (Fig.4.4.1 & Fig.4.4.2).

4.4.1 Railways :

Until recently the Kalahandi district alone had a railway line but with the extension of Jharsuguda-Sambalpur line to Titlagarh in 1963, the Bolangir district has now got railway facilities. In fact the railways in Kalahandi pass through corners of the district and its length is also small. The total route-length of railways in these
two districts is 228 kilometres; Kalahandi 64 kilometres; 164 kilometres in Bolangir and nil in Phulbani. Phulbani district has a railway out agency located at the district headquarters opened in September 1960. This out agency is served by Berhampur railway station, situated at a distance of 164 kilometres from the out agency office at Phulbani. The traffic booked from this out agency in the past years, though shows an increase, but in absolute terms it is still not very significant. The two railway lines passing through Bolangir and Kalahandi districts are: (i) Raipur-Raya-Gada-Vizianagaram, and (ii) Jharsuguda-Sambalpur-Titlagarh. Both these sections are broad gauge with single track and facilities for steam and diesel traction.

The railway sections under discussion serve mainly the long distance needs of the areas lying outside these districts and provide connection with Vizianagaram and ultimately to Visakhapatnam Port. The goods traffic density in terms of net tonne-kilometres per route kilometre in 1989-90 in Raipur-Vizianagaram section was 4,951 between Kantabanji and Titlagarh and 13,385 between Titlagarh and Rayagada section. On Jharasuguda-Sambalpur-Titlagarh section, the traffic density was 9,330 net tonne-kilometres per route kilometre between Bolangir and Titlagarh in the above period. The heavier directional flow on both the sections was towards Vizianagaram. The traffic density on Titlagarh-Rayagada section was very high as it carried the joint load of both the above mentioned sections.

A break-up of the goods traffic by commodity for the latest available year 1983-84, shows that most of the commodities transported
on the two railway sections were not of local origin. On Raipur-
Vizianagaram section, the heavier movements were those of iron ore
and iron and steel, coal and ores of different types, manganese ore,
etc. On Jharsuguda-Sambalpur-Titlagarh section, iron and steel and
railway materials accounted for more than 50 per cent of the
traffic.13

The existing line capacity on the Jharsuguda-Sambalpur-
Titlagarh section is 11 trains each way per day. The number of trains
utilising this in 1985-86 was 11 trains each way per day. The number
of trains utilising this in 1985-86 was 11 trains each way per day,
indicating saturation. The other railway section i.e. Raipur-
Rayagada-Vizianagaram, carried 10 trains each way per day in 1985-86
against its capacity of 11 trains each way per day. The spare capacity
available on this section is only marginal.

4.4.2 Roads:

The length of different categories of roads in each district
as on 31st March, 1989 are given in Table 4.4.1.

There is no National Highway passing through any of these
districts. The low category of roads dominate the area. Out of the
total length of roads, 59 per cent are of village type roads. Though
the State Highways, Major District Roads and some of the other
district roads elsewhere in the country are generally of higher
standard, most of these roads in the districts under study are
unsurfaced and fall to provide the level of service expected of them
(Table 4.4.2).
The length under gravel and earthen types constitutes 65 per cent of the entire road network. Due to the limited length of fair weather roads, the hinterland in these districts becomes unapproachable during rains, disrupting the routine administrative work or these districts.

A comparison of surfaced roads per 100 square kilometres of area in different districts of the State shows that these three districts trail much behind the others: 3.3 kilometres in Bolangir, 3.6 kilometres in Kalahandi and 4.9 kilometres in Phulbani, as against the best served districts of Ganjam (9.4 kms) Balasore (7.9 kms) and Cuttack (7.7 kms). The state as a whole possessed 5.3 kilometres of surfaced roads per 100 square kilometres of area on 31st March 1989.

The width of roads in the districts under study is single-lane. This is, however, not a draw-back as most of the roads have sparse traffic. The latest PWD Traffic Census conducted in February 1988 covered 88 points in these districts. The traffic volume per day on a few sections was found higher than their capacity. The increase in traffic beyond the capacity norm affects normally the speed of movement. But as the vehicles involved mainly consisted of bullock carts and cycles, no widening of the sections concerned is called for.

(a) Adequacy of Roads:

An analysis of roads in the districts on area and population basis shows that Phulbani districts possessed about 13 kilometres
of roads per 100 square kilometres of area, as against 14 kilometres both in Bolangir and Kalahandi (Table 4.4.3). The comparative figures of road length on area basis in Orissa State and for all India on 31st March, 1989 were 27 kilometres and 26 kilometres respectively. On population basis these districts are well served by roads compared to the State or the country as a whole. Phulbani with much less population density possessed about 2,880 kilometres of roads per million of population, as against 1,700 kilometres in Kalahandi and 1,180 kilometres in Bolangir. The State and the country had 2,220 kilometres and 1,730 kilometres per million of population respectively in March 1989.

The objectives of the First Road Development Plan (Nagpur Plan) were that in a highly developed agricultural area no village should be more than three kilometres from a road, nor more than eight kilometres from a main road, the average distance from a main road being generally less than three kilometres in most cases. Similarly in a non-agricultural area no village should be more than eight kilometres from a road, not more than 32 kilometres from a main road, the average distance from a main road being 10 or 11 kms. in most cases. The Plan report provides a set of formulae which help to calculate road length targets for any region. Accordingly, the road length required under the Nagpur Plan for the three districts under study was about 2,500 kilometres, against the existing length of 4,303 kilometres. Thus these districts have achieved the Nagpur Plan targets so far as accessibility is concerned, but the quality of most of the roads is poor. The Orissa State as a whole has also
achieved the Nagpur Plan targets.\footnote{14}

The Road Development Plan popularly known as Bombay Plan envisaged road targets for different land uses. They are as may be seen from the table below:

<table>
<thead>
<tr>
<th>Description of area</th>
<th>Maximum distance of any place (in kms)</th>
<th>From a metalled Road</th>
<th>From any Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed and agricultural area</td>
<td>6.4</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Semi-developed area</td>
<td>12.8</td>
<td>4.8</td>
<td></td>
</tr>
<tr>
<td>Under-developed and uncultivable area</td>
<td>19.2</td>
<td>8.0</td>
<td></td>
</tr>
</tbody>
</table>

The planners have provided a set of formulae to calculate road length needed by 1991 for any area under study. Though the application of the formulae to a small area of the size of a district may not be very correct, yet some broad idea of deficiency to be made up in road length can be obtained. Against the Bombay Plan standards, these three districts should have a total road length of about 9,400 kms. by 1991, about 75 per cent of the additional road length should be of superior categories.

(b) Road Development in Blocks:

The information relating to roads under each developmental block in these districts is not available. Knowing that blockwise
examination of roads will be useful to find out area-service deficiencies, an attempt has been made to estimate the length of roads in each block from district road maps. The length of roads thus obtained is only approximate as differences arising from curves, etc. cannot be accounted for in measurements from maps. The discussion presented there is based on such estimates.

In Phulbani district, Boudh, Kothagarh, Phiringa, Kantamal, Palkia and Tumuribundh blocks are poorly served on area basis than the other blocks. In Bolangir district, the poorly served blocks are Tarna, Bangamunda, Binka, Birmaharajpur and Turekila blocks. In Kalahandi district, the blocks with poor road length are Thamal Rampur, Sinapali, Golamunda, Komaria and Jaiptra.

(c) Past Development:

Actual statistics regarding the road development over the Plan periods in these districts is not available but it appears that only marginal efforts have so far been made to improve roads. Out of the meagre sum of Rs.65 lakhs spent in the Third Plan, a major portion of Rs.37 lakhs went to road improvement and Rs.16 lakhs to bridges and culverts. Only Rs.12 lakhs was spent on new road construction. In physical terms, this amount could not have added more than 40 kms. of metalled roads in a period of five years. As between districts, Rs.8.5 lakhs was spent in Bolangir, Rs.21 lakhs in Kalahandi and Rs.35.5 lakhs in Phulbani towards improvement of roads and bridges. New roads were, however, provided Phulbani and Kalahandi districts only in the Third Plan.15
(d) Bridges and Culverts:

The area under study is criss-crossed by several rivers, streams etc., necessitating heavy bridge work along most of the roads. As stated earlier, the State Government has made only marginal efforts to provide bridges and culverts in these districts. The amount spent on bridges and culverts in the Plan periods was Rs. 80.5 lakhs in Kalahandi and the remaining Rs. 10 lakhs in Phulbani district. Yet there are a number of unbridged crossings and weak bridges in these districts. There are 43 weak bridges, 17 on the State Highways and the remaining 26 on the District Roads. Out of 125 unbridged crossings, 51 are in Bolangir district, 20 in Kalahandi district and the remaining 54 in Phulbani district. Again, 16 of these bridges are on the State Highways, 60 on the major and other district roads, and the remaining on the classified village roads.

The existence of the above-mentioned deficiencies interrupt the free movement of vehicles. There are load restrictions imposed on different routes due to weak bridges. The maximum safe laden weight is 12.5 tonnes on most of the routes and on a few it is 7.5 tonnes. These load restrictions contribute to the higher operational cost of trucks in the districts. Efforts are needed to strengthen the weak bridges so that all roads can carry 12.5 tonnes load uniformly.

(e) Market Towns:

At present there are six regulated markets in these districts two in Bolangir, three in Kalahandi and one in Phulbani, apart from several unregulated markets. These are Junagarh, Kesinga and Khariar Road in Kalahandi district; Bolangiri and Kantabanji in
Bolangir district; and Tikabali in Phulbani district. Besides these, there are a few sub-markets from centres of production range from eight kilometres to 53 kms. The average distance covered to bring commodities from villages to the nearest market is 25.5 kms. in Bolangir district; 32.5 kms. in Kalahandi district and 13.5 kms. in Phulbani.

The arrivals at different market towns have been low: 5,729 tonnes at Kantabanji, 2,817 tonnes at Junagarh, 2,785 tonnes at Khariar Road, 591 tonnes only at Tikabali in the agricultural year November 1989 to October 1990.

The position of roads forming a link between the centres of production and the different market towns has been examined. The hinterland of these markets is deficient in all-weather roads. During rains, the fair weather approaches to the market towns become unfit for mechanical traffic and the farmers have either to dispose of the produce at the village level or move to market towns by animals/head load at a higher cost.

The absence of metalled roads between the market towns and their hinterland has its impact on prices even during fair weather. For example, the price of jagery at Kusand village (connected by an unmetalled road to Bolangir market located at 25 kms.) was Rs.162 per quintal as against Rs.170 per quintal at the market town. Whereas, the price of jaggery at Chudapali village (located again at a distance of 25 kms. from Bolangir market town but connected by metalled road) was Rs.165 per quintal.
The conversion of unsurfaced routes to all-weather in the hinterland of these market towns, as recommended later on, is necessary if the marketing facilities are to be developed to provide incentive to agriculturists.

4.4.3 Assessment of Existing Transport Facilities:

The existing rail and road facilities as outlined earlier show that they are deficient in many ways. No doubt, the terrain conditions with numerous rivers, streams, etc. on the one hand and the limited potential for development on the other is responsible to a great extent for the meagre transport facilities at present. The cross-drainage work is considerably heavy adding to the cost of transport development.

The railway in the district serves the long distance needs of the region and has hardly any effect on the local economy. The rail sections in these districts are saturated and may call for additional track capacity works but perhaps more depending on the needs of the areas outside these districts than those inside the districts. Further, the railway out-agency in Phulbani adds considerably to the cost of movement on account of (i) its location at a distance of 164 kms. away from Berhampur railway station; and (ii) handling charges.

As an alternative, the economy of these districts depends on roads. But there are a few serious drawbacks in the existing road system as well. Firstly, the inadequate length of metalled roads has failed to open up many pockets in the area which have continued to remain land-locked. Secondly, a large number of unbridged
crossings and weak bridges on different important roads, make continuous movement difficult in fair weather and impossible during rains.

4.4.4 ADDITIONAL FACILITIES NEEDED:

Railways:

Based on the existing traffic flow the railway sections in these districts is saturated and call for additional capacity works. Since these railway sections have predominantly cross-traffic, no estimate of future traffic based on local potential will be worthwhile. Under the circumstances, no definite suggestions relating to the extent of additional capacity that should be created on these railway sections in these districts is given. It is recommended that the railway authorities may take an overall view of the entire region and create the necessary facilities.

Another railway out-agency in Phulbani district may be opened in the Fourth Plan as the existing out-agency at Phulbani is inadequate to attract traffic from the entire district. The new out-agency may be located in the southern part of the district preferably in or around Belliguda.

Road:

No doubt, the road development has been deficient in these districts. Yet it is a fact that road development in this region is very expensive on account of the mountainous terrain and innumerable rivers, streams, etc. Hence, the development has to be selective so that the minimum needs of the area are met and particular attention
may be paid to those areas where potential exists. Hence, the strategy for road development recommended here is to strengthen some of the existing roads in the selected areas to a standard of all-weather roads so that (i) unrestricted free movement is possible on important inter-district roads; and (ii) land-locked areas in the hinterland get access to the main roads. Accordingly, the future programme for road development in these districts is as follows.

In Phulbani district, most of the inter-district roads have fair weather sections and weak and unbridged crossings. As a result of these deficiencies, road communications during rains get discontinued. Amongst the important inter-district roads with such weaknesses are (i) Phulbani to Bolangir via Boudh; (ii) Phulbani to Bhawanipatna via Belliguda; and (iii) Phulbani to Berhampur in Ganjam district. The completion of Salki Irrigation Project in the northern part of Phulbani district in the Fourth Plan will help to extend agricultural development in the area. This will call for improvement to Phulbani-Boudh-Sonepur road, the only road connection feeding this area. Further, when Raul Project comes up, improvement to SH 5 from Raul Bridge to the district boundary will become necessary.

There are a number of pockets in Phulbani district which are unapproachable. Though in fair weather, the existing forest and other tracks are serviceable for light animal drawn traffic only, in rains these areas become land-locked. Amongst the worst affected areas is the one lying west of Phulbani town and contained in by MDR 43 in the north and SH 1 in the south, followed by an area
encircled by SH 1, SH 7 and SH 7-A. Another similar pocket in the souther part of the district is that surrounded by SH 1 and MDR 60. There are some possibilities of agricultural extension along river Tel in this district. An all-weather road running parallel to river Tel will be called for in order to exploit this potential.

The road development is Bolangir is by and large much better than in the other two districts. However, there are deficiencies here also. The areas of poor accessibility are Sonepur and Birmaharajpur Development Blocks, both having surplus production and require special attention.

There is a proposal to construct a National Highway connecting Berhampur with Raipur via Rayagada, Kasinga, Titlagarh and Kantabanji. This will take off from NH 5 near Berhampur and join NH 6 in Sambalpur district. It will run for most of its length parallel to the existing railway line between Rayagada and Raipur. If it comes up, it will be the first National Highway passing through these districts.

In Kalahandi district, the two roads namely (i) Sambalpur-Bhawanipatna and further to Papadhandi, and (ii) Raipur to Bhawanipatna are its lifelines. But these roads are having numerous fair weather road sections, unbridged and weak crossings. The second road, mentioned above, is inter-state and is at present the only route linking Nawapara sub-division with the rest of the district.

The area underlying Raipur-Bhawanipatna road in Nawapara sub-division has no all-weather road although its agricultural potential
is significant. The Indra Irrigation Project which may materialise in the Fourth Plan is in this area. Metalling of road from Bhela to Khariar via Boden and Gindabahali is thus necessary. A fair weather link from Sinapalli on the above road to Dharamgarh will make communications in the southern part easier.

Another pocket of poor accessibility in the district is that of Karlamunda block. With the coming up of the Uettei Irrigation Project committed in the Fourth Plan near Rampur in the inter-district road between Bhawanipatna and Phulbani (SH 1), this area is bound to witness further agricultural development. Metalling of road from Ramput to Karlamunda in the west and up to Mohangiri in the east will be necessary.

Further, when the Indravati Project comes up in the southern most part of the district, the existing road between Motor and Jayapatna will need to be black topped and extended further up to the district boundary.

A list of roads recommended for improvement/construction in these districts is given in Table 4.4.4. The weak bridges and missing links/bridges in these districts are given in Tables 4.4.5 and 4.4.6 respectively but those recommended during the Eighth Plan are asterisk marked. The recommendations are also shown on the accompanying road maps of Phulbani, Bolangir and Kalahandi districts. The estimated cost of roads and bridges recommended for the Eighth Plan will be about Rs.14.94 crores.
The State PWD has tentatively provided Rs.25 crores in their draft plan for road development for the State as whole. The share earmarked for Phulbani, Bolangir and Kalahandi districts is Rs.3.37 crores besides approximately Rs.63 lakhs under the Rural Engineering Organisation's programmes. Thus the total amount proposed for these districts in the Eighth Plan is about Rs.4 crores on road development.

A study of the State programmes shows that the emphasis is on the improvement/extension of the inter-district roads only. Of course, this is desirable from several considerations including the needs of the administration, but opening up of the inaccessible pockets in the hinterland of these districts will help carrying development into the interior. For instance, in Kalahandi district apart from the improvement to the inter-State route between Bhawanipatna and Raipur via Khariar Road, the extension of all weather road communications to the Nawapara block in the west and Karlamunda block in the eastern part of the district will encourage agriculture development. On similar grounds, a road connecting Borda with Birmaharajpur in Bolangir district and improvements to MDR 24 between Sonepur and Gantapara in Phulbani district are recommended (Fig.4.4.3, 4.4.4 & 4.4.5).

**Road Transport**

The conditions under which the road transport had to operate in these districts of Orissa re far from satisfactory. The existence of various types of deficiencies mentioned earlier in this chapter, such as unsurfaced roads, weak bridges, unbridged crossings, etc.
ROAD MAP OF PHULBANI DISTRICT

Fig 4.4.5
on most of the important roads act as a severe hazard. These unsatisfactory conditions are impending the growth of road transport in these districts.

Table 4.4.7 gives the number of different types of motor vehicles registered in these districts from April 1988 to April 1990. Taking all vehicles together, an increase of 39.4 percent over the above period is observed; the increase in cars, jeeps and motor cycles being more rapid, viz. 98.5 per cent.

On area and population basis, Bolangir district possessed comparatively more number of vehicles than Kalahandi and Phulbani (Table 4.4.8). Bolangir had about 11 vehicles per 100 sq.km. of area and about 920 per million of population on April 1, 1990. As against this, Kalahandi and Phulbani districts had about six and two vehicles per 100 sq.kms. of area, and about 730 and 470 vehicles per million of population. However, in comparison with Orissa State and all-India, a wide difference is found. Orissa had 13 vehicles per 100 square kilometres of area, and 1,070 per million of population as on March 31 1988. The all-India figures for motor vehicles on area and population were 320 and 2,070 respectively on March 31, 1988.

If vehicles per 100 kms. of roads are considered it is found that all the three districts are far below the State and all-India level. Bolangir, Kalahandi and Phulbani districts had about 78, 43 and 17 vehicles per 100 kms. of roads, respectively as on April 1, 1990. The State as a whole possessed 31 vehicles per 100 kms
of road as against 490 on all-India basis on March 31, 1989.

Road Transport Services:

Passenger road transport facilities in the districts under study are provided by the (i) State Transport, and (ii) Orissa Road Transport Company Limited. The goods transport is in the hands of private operators. Whereas the State Transport is under the Government and is run on departmental basis, the ORTC is organised as a public undertaking with Government having 98 per cent of the shares.

The passenger transport services are distinctly divided between the two major operators in these districts. Bolangir and Kalahandi are having the State Transport Bus Services while Phulbani is under the jurisdiction of the Orissa Road Transport Company Limited.

In Bolangir, the State Transport Services operated 23 routes with a route length of 2,382 kms. in 1989-90 as against 21 routes of 2,267 kms. in 1985-86. The number of passengers travelled annually showed an increase of 31.1 per cent from 1985-86 to 1989-90 or 7.8 per cent per annum.

In Kalahandi district, the State Transport Services operated 16 routes with a route length of 1,842 kms. in 1989-90 as against 11 routes with 976 kms. length in 1985-86. The passengers carried showed an increase of 37 per cent over the same period of 7.4 per cent per annum.

In Phulbani district, the Orissa Road Transport Company Ltd., operated nine routes in 1989-90 with a route length of 1,289 kms. The total number of passengers travelled on these nine routes in
1989-90 were 993,093. In addition, the following routes operated by
the ORTC touched Phulbani district:

1. Bhubaneswar-Bolangir via Boudh.
2. Jatri-Boudh;
3. Odagam-G. Udayagiri;
4. Berhampur-Belliguda;
5. Berhampur-Bhawanipatna; and
6. Bhanjanagar-Rayagada

The average life of a bus if taken as six to eight years,
it is evident that 15 per cent of the fleet will need to be replaced
every year. The total number of buses on roads in these three
districts in 1989-90 were 132, anticipated to be 146 in 1991-92. Thus
100 buses will be needed during the 8th Plan (1989-94), to serve
the replacement needs. The past growth in passenger traffic has been
about 7 per cent per annum. Keeping in view the suggested
improvements to roads in this Report, it is assumed that the future
growth in passenger traffic will be 10 per cent per annum. This
will necessitate an addition of 65 buses in these districts during
the Fourth plan. The total number of buses to be added with thus
be 165. The investment called for will be about Rs.82 lakhs.

The registered number of trucks in these districts has shown
an increase of 44 vehicles in two years from 340 in April 1988 to
384 in April 1990. The permit policy of Orissa Government allows
that a permit may cover the entire district or more than one district
or even the entire State.
There are operation hazards in the way of trucks. Due to the existence of weak bridges, there are severe load restrictions on roads. The generally permissible load is 12.5 tonnes. But there are road sections with restrictions of 7.5 tonnes. The sections with low permissible loads are:

1. Bhawanipatna-Rayagada, 0/0 to 15/0;
2. Jonk-SAniapalli, 0/0 to 22/0;
3. Sonepur-Binke-Rampur-Gungripalli, 0/0 to 40/0;
4. Khariar-Bhawanipatna, 124/0 to 134/0, and
5. Titlagarh-Sindhkela, 0/0 to 18/0.

Efforts are needed to strengthen/reconstruct these weak links, so that uniform loads are permitted. Motor of these loads have been recommended for strengthening in this dissertation.

The prevailing freight rates in the districts are not high as compared to other areas, these being 30 paise per tonne per kilometre.

The replacement at the rate of 15 per cent will require 320 trucks in the 8th Plan period and another 170 trucks to take care of the future demand, based on past trend in vehicular increase and economic growth anticipated in this dissertation elsewhere. Thus 490 trucks will be needed in the 8th Plan period, 1989-94. The investment called for will be Rs.2.45 crores.

The financial implications of the programme for development in transport discussed earlier amount to about Rs.8.2 crores including a sum of Rs.2.45 crores in the private sector (Table 4.4.9).
4.5 FINANCIAL INSTITUTIONS:

The economy of Western Orissa though basically agricultural has some traditional market and credit system. Among the traditional institutions, village money lenders, suppliers of food grains and seeds to cultivators and agricultural laborers on tenure credit basis and fixed stipulation. Hats are the most organised and well distributed marketing institutions. Some of them are provided with credit and storage facilities. Among the new institutions are co-operative banks, Agricultural Marketing Co-operative Societies and Commercial Banks. All these constitute important infrastructures that facilitate circulation, mobility and regeneration of economy. In this region the economy is purely based on agriculture and remained traditional in operation. Only in recent years as a result of various governmental efforts and private individual institutions certain section of farmers felt the need of large-scale institutional credits. Normally the farmers requirement of credits in terms of repayment timing are of three types, such as, short term, medium term and long term credits. Short-term credits are generally required by marginal farmers for the purchase of seeds, fertilisers and other inputs for agriculture. Besides they also utilise short-term loans to meet their domestic requirements including food in the idle months of the year. Medium term loans are required for the purchase of bullocks, improvement of irrigation facilities, reconstruction of fields etc. Long term loans are mostly required for such work which require heavy investments like purchase of tractors, digging deep tube-wells or for industrial purposes.

Credit needs of rural and urban areas in the region are being met by Cooperative Banks and Commercial Banks. The unorganised
agencies mainly consist of private money-lenders and creditors. Among the cooperative institutions, District Central Cooperative Banks, Land Development Banks, State Cooperative Bank, Non-agricultural Credit Societies are important. These institutions are established at almost all Community Development Block headquarters of the region to extend credit to rural folks, particularly farmers and semi-skilled artisans for development of agriculture and industry while non-agricultural credit societies comprising of Urban Cooperative Banks and Employees Credit Societies, generally meet the credit needs of the urban people such as small traders and employees of various government, non-government and industrial organisations.

Prior to nationalisation of Banks, Commercial bank had limited role in the economy of the region. Now nationalised banks and Rural Banks have opened a number of branches at the Block and Grampanchayat level to extend liberal credit to farmers and other skilled and semi-skilled artisans. Number of branches of commercial banks have increased about four times during the period from June 1969 to March 1989 (Fig. 4.5.1). At present there is one commercial bank for every 61,000 people in the region. In 1969 there were banks for every 1,21,000 people. Even then the availability of banking facilities are less as compared to the state average (Table 4.5.1).
TABLE 4.5.1
Average Population per Bank in Western Orissa

<table>
<thead>
<tr>
<th>Districts</th>
<th>No. of financial Institutions</th>
<th>Percentage of Increase</th>
<th>Average population per Commercial Bank Branch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balangir</td>
<td>7</td>
<td>4</td>
<td>29</td>
</tr>
<tr>
<td>Kalahandi</td>
<td>5</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Phulbani</td>
<td>4</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Western Orissa</td>
<td>16</td>
<td>8</td>
<td>69</td>
</tr>
<tr>
<td>Orissa</td>
<td>148</td>
<td>102</td>
<td>714</td>
</tr>
</tbody>
</table>


In spite of substantial increase in the number of various financial institutions, the amount of advances given in rural areas remain small in comparison to urban areas. Consequently, the traditional money lenders continue to exploit the rural people. Most of the cooperative societies and governmental agencies particularly in tribal rural areas are in operative and defunct. The commercial banks at the Block or Tahasil headquarters discourage the rural people to finance for the need. Their functions and services are scanty and poor. Hence, these institutions have largely fail to make any significant impact on the rural financing and credit facilities. But the urban areas have gained much from them.
4.6 EDUCATIONAL FACILITIES:

A glance at the history of economic development would reveal that countries which have advanced in their educational level have also advanced economically. Western Orissa is economically as well as educationally backward. The spatial distribution of educational facilities are very uneven. In the present analysis three districts, Balangir, Kalahandi and Phulbani, of the region have been taken into consideration. In these districts there are altogether 14290 habitable villages are there, out of which 11,348 villages are served by primary schools. From the analysis it appears that in these districts 78.3% of the villages have primary schools with in a distance of one kms. For the remaining villages the primary schools are located at a distance. In the Education Commission Report it is stated that the facility for primary school must be made available to all the inhabitants with in a distance of one kms. This is, however, ideal which is yet to be achieved for the region under study. The enrolment at primary level in the region is below average for the state and the country.

| TABLE 4.6.1 |
| Percentage of children in the age group of 6-11 in Primary schools in Western Orissa, 1989. |

<table>
<thead>
<tr>
<th>Districts</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balangir</td>
<td>66.9</td>
</tr>
<tr>
<td>Kalahandi</td>
<td>59.8</td>
</tr>
<tr>
<td>Phulbani</td>
<td>52.5</td>
</tr>
<tr>
<td>Westen Orissa</td>
<td>59.8</td>
</tr>
<tr>
<td>ORISSA</td>
<td>74.6</td>
</tr>
</tbody>
</table>

The ratio between population and various educational institutions are given in the following table. From the comparison of ratio it appears that in education two districts of Western Orissa (Kalahandi and Phulbani) are lagging far behind the other parts of the state (Fig.4.6.1)

**TABLE 4.6.2**

Man-Institution Ratio in Western Orissa, 1989

<table>
<thead>
<tr>
<th>District</th>
<th>No. of Primary schools per 10,000 population</th>
<th>No. of Middle schools per 10,000 population</th>
<th>No. of High Schools per 10,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balangir</td>
<td>18</td>
<td>4.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Kalahandi</td>
<td>14</td>
<td>3.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Phulbani</td>
<td>13</td>
<td>2.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Western Orissa</td>
<td>15</td>
<td>3.2</td>
<td>0.66</td>
</tr>
<tr>
<td>Orissa</td>
<td>19</td>
<td>3.6</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Source: Bureau of Statistics & Economics, Govt. of Orissa, BBSR.

Besides, these general education facilities, the region also have some institutions providing technical and higher education. The colleges having higher education facilities are seven in Balangir district and four each in Kalahandi and Phulbani districts. The technical institutions are limited to Industrial Training Institute of Industry department of the Government of Orissa and a few private substandard technical training institutes. (Fig.No.4.6.2). The facilities for higher technical education (Engineering or medical colleges) are not available in the region. From the study it is revealed that the
facilities for education in this region is insufficient and inadequate and needs special attention of the Government.

4.7 MEDICAL FACILITIES:

Medical facilities and health services are not only essential for a good healthy life but also they are vital for the maintenance of efficiency and economic productivity of a community. In Western Orissa health services and medical facilities are not adequately developed. General health conditions in this region are still depressed in comparison to the state, with high incidence of diseases and mortality. This is indicated by vital statistics reported in various Government publications. Birth, death and infant mortality rates are generally taken as indicators of effectiveness of medical and health services. This region is showing a negative picture in terms of health services (Table 4.7.1)

<table>
<thead>
<tr>
<th>TABLE 4.7.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth, Death and Infant Mortality rates per 1,000 population in Western Orissa, 1989.</td>
</tr>
<tr>
<td>Districts</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>Balangir</td>
</tr>
<tr>
<td>Kalahandi</td>
</tr>
<tr>
<td>Phulbani</td>
</tr>
<tr>
<td>Western Orissa</td>
</tr>
<tr>
<td>Orissa</td>
</tr>
</tbody>
</table>

Institutions providing medical facilities to the people are of various sizes, descriptions, managements and ownerships. There are government hospitals, dispensaries and medical aid centres (Fig. No. 4.7.1). Besides these health services are also provided by private nursing homes and missionary hospitals. The hospitals with specialist doctors and beds for indoor patients are only available at district headquarters, sub-division head quarters, block headquarters, sub-division head quarters, block head quarters, and urban centres. Taken together all these institutions and centres number 156. Out of this total 93 are entirely financed and managed by the state Government, 52 of them are primary health centres which are located in rural areas (Table 4.7.2). There are 1181 hospital beds in various hospitals in Western Orissa. This gives an average 56 beds for every one lakh of population. In the state as whole there are 61 beds for the same population size.¹ In this region owing to poverty, illiteracy, ignorance and superstitions medical facilities in modern sense are almost inadequate.

TABLE 4.7.2

<table>
<thead>
<tr>
<th>Districts</th>
<th>Health Centres</th>
<th>No. of Beds</th>
<th>No. of beds per 1,00,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Govt.</td>
<td>Private</td>
<td>Total</td>
</tr>
<tr>
<td>Balangir</td>
<td>21</td>
<td>11</td>
<td>454</td>
</tr>
<tr>
<td>Kalahandi</td>
<td>16</td>
<td>9</td>
<td>376</td>
</tr>
<tr>
<td>Phulbani</td>
<td>14</td>
<td>7</td>
<td>351</td>
</tr>
<tr>
<td>Western Orissa</td>
<td>51</td>
<td>27</td>
<td>1181</td>
</tr>
<tr>
<td>Orissa</td>
<td>376</td>
<td>313</td>
<td>12172</td>
</tr>
</tbody>
</table>

Consequently diseases are considered to be the results of God's displeasure and curses. For treatment and cure the sick often takes the shelter of persons with magical or supernatural power. These factors not only lead to higher rate of premature death but renders the people weak and disabled, which in turn tell upon the general efficiency and working capacity of the people.

REFERENCES:

6. Proceedings of Cabinet Meeting (2.8.89), Govt. of Orissa, P-3.


15. Ibid, P-21-22.


18. Ibid, P-55.

