PROBLEMS AND PROSPECTS FOR INDUSTRIAL DEVELOPMENT IN CHANDRAPUR DISTRICT, MAHARASHTRA

BY

A.H. SHAMKULE

Dissertation Submitted in Partial Fulfilment of the Requirement for the Degree Of

'Master of Philosophy'
(M.Phil)

Under the supervision of:

Dr. B.K. Roy Burman,
Nehru Fellow

CENTRE FOR THE STUDY OF REGIONAL DEVELOPMENT
SCHOOL OF SOCIAL SCIENCES
JAWAHARLAL NEHRU UNIVERSITY

NEW DELHI-110067

Gram—JAYENU
Telephone :
New Mehrauli Road,
NEW DELHI-110057.

JAWAHARLAL NEHRU UNIVERSITY

Centre for the Study of Regional Dev,
School of Social Sciences.

I certify that the dissertation entitled "Problems and Prospects for Industrial Development in Chandrapur District, Maharashtra, submitted by Shri A.H. Shamkule, in fulfilment of six credits out of the total requirements of twentyfour credits for the degree of Master of Philosophy (M.Phil) of the University, is, to the best of my knowledge, a bonafide work and may be placed before the examiners for evaluation.

Dated: 4.1.77

SUPERVISOR

G.S. Bhalla

Dated:

CHAIRMAN

CPM:

C O N T E N T S

A_C_K_N_O_W_L_E_D_G_E_M_E_N_T

I am grateful to my professors particularly to my guide, Dr. B.K. Roy Burman. I am grateful not only for his guidance but also for the corrections and valuable suggestions given by him from time to time to complete my dissertation work.

I am also thankful to my friends, for their kind help during the work.

New Delhi:
4th January, 1977

A.H. SHAMKULE

LIST OF MAPS AND TABLES

LIST OF MAPS

LIST OF TABLES

PREFACE

The industrial development is dependent upon the availability of raw-material in a region. Infra-structure facilities are also important besides raw-material. Therefore, industria-l concentration have been observed around big market centres or near the source of raw-material.

Objectives of the Study -

The present study proposed to make an assessment of the potentialities of the industrial development in the district on the background of evolution of present industries therein. The underlying assumption here is that though raw-material ava-ilable in plenty, why industrial development did not takes place. The available natural resources in the district have been accounted and an assessment has been made for the development of the infra-structure in the district and the fields of industrial activities have been identified based on the feasibility and economic viability. These industrial activities will act as a nucleus for further development.

An assessment has made of effectiveness of the various schemes of regional development implemented in the district and certain guidelines have been provided for the polic y matter of future development of the district.

Methodology -

The study is mainly geographical in spirit, and hence suitable cartographic techniques have been used where ever necessa-ry.

(i) The appropriate techniques have been used for the description and interpretation of data systematically to bring out the regional variations within district.

(ii) The industries have been classified on the basis of their types and industrial development on the basis of existing manpower has been taken into consideration.

(iii) Suitable cartographic techniques have been adopted to show the distribution of minerals and forests.

Data-Base -

The basic data for this study have been drawn from the socio-economic review and district statistical abstract, Chandra-pur district 1971-72.

Chapter Scheme:

The industrial distribution is uneven in the state as well as in the country. In this study an attempt has been made to highlight the contraints for the further development of industries in the district. The first Chapter deals with an introduction to the problems of industrial development taking into consideration the 5th Plan perspective of industrial development. The infra-

structure facilities and social amenities have been studied to understand the overall position of the district. The Second Chapter gives an idea about physical resources such as minerals, forests, agriculture and livestock and also shows the distribution of these resources in the district. The manpower structure and the industrial development in the given manpower structure in the region presented in Chapter Three. The role and importance of capital for industrial development and available financial agencies and their financial position have been given in Chapter four. The Fifth Chapter deals with an existing industries. The possibility of future industrial development taking into account raw-material, manpower, capital and market centres have been discussed in the same chapter.

Chapter I

Introduction

The whole hearted efforts for industrial development in the various states of India really started only after independence. But, the picture of industrial development of this country till today is extremely lop sided. Only a few states viz., West Bengal, Tamil Nadu, Punjab and Maharashtra are industrially developed and rest of the states are still backward. Though Maharashtra occupies an important position on the industrial map of the country, its industrial development is, however, not well balanced in all the districts. Very few districts such as Nagpur, Kolhapur, Sholapur, Nasik and thana etc. besides Bombay-Poona belt shows certain signs of industrial development and the rest of the districts are as backward as any other (industrially) backward part of the country.

Chandrapur is one of the 26 districts of Maharashtra, which occupied probably the last or last but one position in order of districts arranged according to the industrial development. It is as backward as the most backward part of the country. Therefore, it has been included in the scheme for development of backward regions.

This industrial backwardness of the district may give

the impression that the district has no potentials for industrial development at all. But, it is not so, because surprisingly enough the district enjoys sufficient bounty of nature in the matter of resource endowment. There are two distinct natural regions of the district:

(i) The eastern part which is mainly a forested area. The district possesses larger forest area than any other district of the state, and the forest in the district is considered one of the best forests in India in quality.

(ii) The Wh part is known as Wardha and Wainganga barin, mainly characterised by agricultural activities.

Not only a part, but by and large, particularly entire district plays significant role in state's economy through forest resources. Conservation as well as utilisation of these resources are possible and can be maintained for industrial development. It is not only by protection and bio-aesthetic role, but also through supply of industrial wood and other forest products of commercial value. The main sources of income are timber, bamboo, fuelwood, tendu leaves and other forest products. The forest would offer a good scope for forest base industries such as pulp, paper and newsprint, plywood, particle board, match industry, ka tha railway sleepers, sandalwood, bidi and saw mills.

The availability of mieral resources are dependent upon the geology of a region; Chandrapur district claims

most of the more useful deposits. The coal reserves occur varies from first to medium grade and higher grade of iron-ore. Besides this, good quality of lime-stone, clay and copper are available only in Chandrapur district of Maharashtra.

Locationally, Chandrapur district is land locked, too far away from ports, therefore, not profitable to export. However, limestone, coal and iron-ore are in proximity of H.Q. i.e. within about 100 miles. This shows that there is ample scope for resource based industries. Similarly, there could be an induced development if infrastructure is planned.

The creation of a complex needs the development of minerals that will release techno-economic forces by a process of interaction between extractive industries and the direct and indirect users in other industries. This is possible in case of Chandrapur district. Thus, promoting proper exploitation and utilisation of minerals, is one of the major tasks in economic development not only of the district but that of the state.

The government has been laying emphasise on two objectives of self-reliance and growth with social justice, during the Fifth Plan for the development of industrial and mineral sectors. The main purpose of the industrial programmes are to achieve the other socio-economic objectives of diffusion of ownership, dispersed growth of industries, maximisation of employment and upgradation of scientific and

technological capabilities. This can be done through (i) encouragement of village and small scale industries; (ii) development of industrially backward areas; and (iii) application of science and technology to industrial development.

The preference and priority have been given to backward area for industrial developments and hence those who will set up industrial undertakings, are exempted from paying taxes for a period of 10 years. Therefore, in the Fifth Plan it is proposed to create an appropriate machinery that is capable of identifying industries suited to the need and potentialities of the backward areas through techno-economic surveys and feasibility studies; undertaking integrated planning and development of the infrastructure, such as roads, water supply, power etc. in selected growth centres located in the backward areas and providing a package of financial, marketing and other services to potential entrepreneurs for setting up new units in the backward areas.1..... in the industrial development of the backward areas[1].

To set up industrial units is not an early thing, while doing so, one will have to take into account the physical as well as socio-cultural factors which influence the industrial development of the region. Since the study area is confined to one district, it is necessary to throw light on the setting of the district and physical features.

---

1. Planning Commission, Govt. of India, Draft Fifth Five Year Plan 1974-79, Vol.II P.134

The Setting -

Maharashtra State consists of three regions namely, western Maharashtra, Vidarbha (Berar) and Marathwada which were the parts of three different states i.e. Bombay stage, Madhya Pradesh (central provinces and Berar) and that of Hyderabad State respectively. On 1st of May, 1960 Maharashtra state came into existence as a single unilingual state, as a result of the bifurcation of the composite Bombay state. Chandrapur is one of the 26 districts of Maharashtra falling in Vidarbha region and in Madhya Pradesh previously.

Location -

Chandrapur district has an area of 25641 sq. kms (9900 sq. miles). The east to west length is about 192 kms while the length from northern point to southern base is about 240 kms. It is the biggest district in the state as a whole in terms of area and is situated between $18^{\circ}41'$ and $20^{\circ}30'$ north latitude and $78^{\circ}48'$ and $80^{\circ}55'$ east longitude.

In the map of India, Chandrapur occupies a central position and is situated in the extreme east part of the (Figure No.I) Maharashtra State, surrounded by Wardha, Nagpur and Bhandara districts on the north, Madhya Pradesh on the east, Andhra Pradesh on the s-outh and the southwest, yeotmal and Wardha districts towards the west and

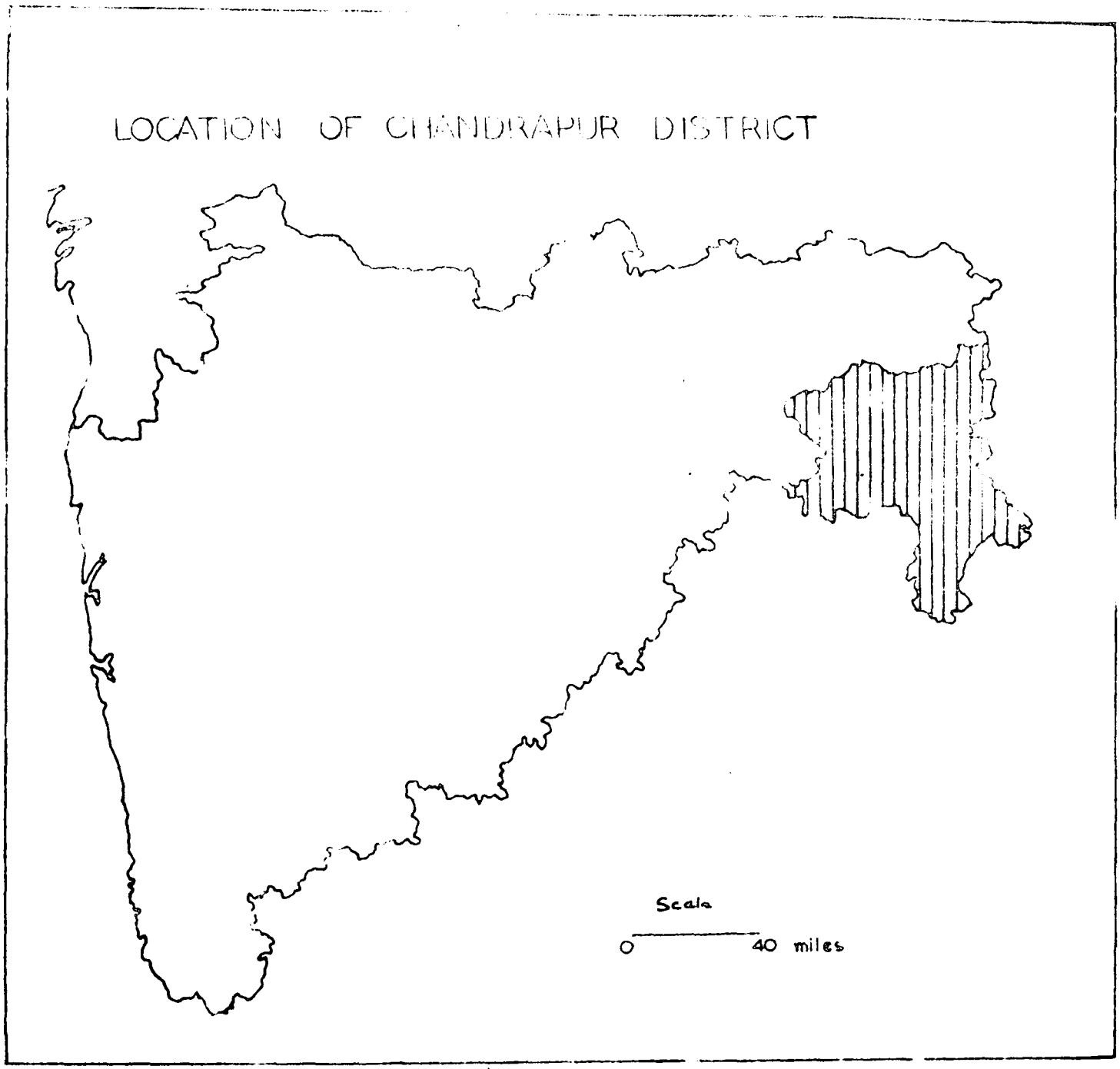

FIG. 1

north-west. The whole of the western and southern border is continuously bound by the Wardha, the Pranhita and the Godwari rivers. There is also another river called Indravati, which flows along south-east boundary of the district.

History -

Chandrapur has a separate political background and geographically it stands as an unrestrained unit by its climates fertile land, rich forests and precious minerals. There have been some changes in the district boundaries since 1853. Chandrapur district was a part of the assets Bhonsle dynasty and was finally annexed by the east- India Company in 1854. It has a very long history. In 639 A.D. Buddhist Kings known as Kosala kings were ruling over the region. According to one source its capital was Chandrapur and from other source the same was at Bhadravati and Vairagarh. It has been recorded by Hsium Tsiang, the Chinese Pilgrim, that he visited the capital of Kosala in 639 A.D. (However, we arrive at the first authentic historical record in the history about the distinct). From the records it is clear that a strong kingdom ruled in the early days at Bhadravati with flourishing civilisation existing there.

Chandrapur district was formed as an independent district in 1854. There were only three tehsils namely, Mul, Warora and Bramhapuri upto 1874. During the same year upper Godawari district of Madras was abolished and four tehsils were adjoined to Chandrapur district to form one

tehsil with Sironcha as its headquarters. The zamindari systems were prevailing in Bramhapuri and Chandrapur, due to the effect of which a new tehsil with headquarter at Gadchiroli came into existence.

In 1956 with the reorganisation of states the district was transferred from former Madhya Pradesh to Bilingual Madhya Bombay State.

One of the tehsils of Nanded district called Rajura was transferred to Chandrapur district in March, 1950 and declared as an independent district. With the re-organisation of the states in 1956, Chandrapur district with other districts of central provinces (Madhya Pradesh) were transferred to the Bombay State and now it is a part of Maharashtra State since 1st of May, 1960.

Physical Features -

The district lies in the basin of the river Wainganga, the western part of the district, however, lies in the part of the Wardha river valley. There are no mountains in the district but there are hills. The Chimur and Mul hills running north-south in the western part of the district separate the basin of the two rivers. The eastern and the southern part is hilly and forms a separate part, unique by its character called the eastern upland zone.

The important hill ranges in this eastern part are the Tipagarh range, Sironda range near Sironcha, Surajgadh

hills and Gadulgatta hills which are continuation of the eastern ghats. These hill ranges continue northwards in the eastern part of the Bhandara district. The hills in the south-west part run along the southern boundary of the Rajura Tehsil of Chandrapur district.

Climate, Temperature and Rainfall -

Chandrapur district is supposed to be one of the hottest districts of Maharashtra May and June are the hottest months of the year which are uncomfortable. The climate becomes uncomfortable because the immense heat combined with high percentage of humidity due to the large forests in the district. In winter it is equally severe. The maximum temperature during the month of May varies from 40°C to 46°C, the highest temperature recorded so far is 48.4°C on 18th May, 1887 and lowest on 10th January, 1899.

The main source of rain in the district is the south western monsoons. There are three rainfall zones viz., (1) Eastern zone includes Gadchiroli, Sironcha and Brahmapuri talukas having heavy and assured rainfall, the average rainfall being about 1524 M.M. or 60 inches; (2) the central zone comprising Rajura and Chanda tehsils with sufficient rainfa-ll has upto 1302 M.M. or 50 inches and (3) the western zone comprising Warora tehsil with moderate rainfall, average rainfall being 1143 M.M. or 45 inches.

Transport and Communication

The strategy for planned development is firstly at the national level or state level, defining the relationship between planning at the national or state and regional level, which would take into consideration the intra-regional priorities for development in addition to sectoral priorities; and secondly, at the regional level; i.e., intra-regional strategy establishing relationship between the natural sector of economy in the region. As Hicks says .... particularly places within a country are marked out by geographical advantages, proximity to minerals or resources of power or to areas particularly suitable for specialised crops; alternatively they may have naturally good communications so that their source of supply are at a distance. They can be supplied from many sources rather easily[2]. The provision of necessary infra-structure including improvement of transport and communication, provision of water and power supply, development of marketing centres and facilities for technical and vocational education etc. can help in the development and utilisation of natural resources and thereby exploiting the development potentials of such regions in the interest of the nation as a whole. Therefore, transport and communication is very important, besides social overhead for the industrial development.

---

2. A.J. Singh and M.V. George: Regional Economic Development in India: Indian Economic Association 1969, P.10

Now-a-days, transport and communications is very important without which the progress of the country cannot take place, then it is essential to study transport and communications in detail to find out the difficulties and how it can solve for the further (development) progress of that particular district, region or a country. They help to extend the radius of a markets, trading centres and productive centres, to transfer the raw material as well as finished goods from one place to another, and to carry the ideas of the people of different regions. The gap between producer and consumer has been reduced upto certain extent; and also isolated economy of a village or a town has been destroyed due to transport and communications. M.R. Bonavia pointed out that there must be a division of land and capital as well as of labour. And in promoting this specialised use of land and capital the two essential agents are transport and communications[3].

Railways -

Chandrapur district is traversed by central and south-eastern railways. Though railway network is well served in the district, it did not connect all the tehsils. Two tehsils are not connected by railway namely, Mirencha and Gadchiroli, therefore, near about 1/3 area of the

---

3. M.R. Bonavia - "The Economics of Transport Digs well place James Nisbet and Co. Ltd., Cambridge 1963 PP.7

district is away from transport facilities like railway. Nagbhir is a junction of Narrow gauge, which connects Chandrapur, Nagpur and Gondia. It serves for three districts. The Delhi-Madras route runs through Chandrapur and Ballarshah while connecting business centres like Warora, Mul and Rajura in the district. The total length of railways was 296 kms in year 1972, out of which 155 kms was narrow gauge and 141 kms broad gauge. Table No.1.1 shows the railway in Chandrapur district in year 1972.

In order to fight the drought and provide employment to the scarcity affected people, the State Government has suggested the advanced action of the ten railway lines in the Maharashtra State[4]. Chandrapur district will get the benefit of this scheme because Ballapur-Asti line in Chandrapur District has been suggested by the State Government. Dr. Arnold of Rugby rejoiced to see the railway "and to think that feudality is gone far ever". The compiler of Osbarne's Grand Junction Railway Guide wrote in 1838: "By means of railways, institutions and customs, laws and languages, will make rapid progress in assimilation, over every part of the United Kingdom, and the world at large. Newspaper and periodicals, pamphlets and small volumes, containing the seeds of improvement, civil, scientific, moral and religious, will be dispersed with tenfold rapidity. Orators

---

4. P.Z. Palsapure - Industrial Development of Vidarbha. Popular Prakashan Bombay, 1975.

lecturers and Missionaries will be multiplied ..... villages and small towns will gradually exchange their dialect for the national tongue, by the increased frequency of communion with other places and persons; and customs and superstitions that have for ages resisted the progress of other agents, will give way to the force and rapidity of this[5]. This makes clear that how for railways are important to play the inevitable role in the development or to improve economic condition in a region or in a country.

Roads -

The Maharashtra State is not well served by railways and it is, however, poorly furnished in case of road transport as well. Chandrapur is one of the backward districts of the state facing some problem, due to the absence of proper expansion of railway network in the district; road transport has become an important means of transport, particularly for the areas which have not been covered by the railways. Roads are the most important means of transportation because loading and unloading can be done anywhere at any place. Prof. V.S. Ganapathan also came to the conclusion that road transport is one of the best and more convenient among the Airway, Railway, Road and Water transport. Three qualities are very desirable in the transportation

---

5. M.R. Benavia.. "The Economics of Transport" PP.10

facility available in a country; they are QUICKNESS (including punctuality), CHEAPNESS and EASE OF TRANSPORTATION (including loading, traction and unloading). Airways satisfy the first requirement very well, but go against the second very much. Railways satisfy the first and second requirements but not the third so well. Waterways satisfy only the second requirement, viz., cheapness. Roads, properly developed, could achieve most of these desirable qualities to the largest extent[6]. The development of road system is lopsided, it is necessary to construct more roads in future for the development of the district.

Though road system is one of the best and comparatively cheaper than any other means of transport, the district lacks very much in a good transport system and by the end of March, 1972 there were only 10.41 km of roads per 100 sq. km of area. There is considerable improvement in 1972, if compared with that of 1960-61 since the road length was 2.54 km per 100 sq. km of area. Table No.1.2 shows the distribution of roads in the year 1960-61 and 1971-72.

The total length of roads in the district as on 31st March, 1972 was 2719.70 kilometres except municipal roads; separate among the different types of roads is given in Table No.1.3.

---

6. V.S. Gananatham - Roads in western India, Bombay Geographical Magazine Vol.III Dec.1955 No.1

From the table it is clear that not a single National Highway is passing through the district. State Highways account of 928.34 kilometers length and 1/3 of the total road length in the district. Major district roads, other district roads and village roads till 1972 are not increased substantially and show very poor progress. Table No.1.4 shows surface classification of roads in the same year (1972).

Within the district, Chandrapur, Bramhapuri and Warora tehsils exist better road facilities than rest of the tehsils. Hence, construction of roads is very essential in other tehsils which are mainly backward with tribal population, to utilise the natural resources as well as man power. Only then transport by road is possible and also roads can play important role for the further investigation of forest resources and endowment of natural resources; other means of communications cannot be fruitful and convenient as of dence forest.

Roads in Chandrapur district are not enough to serve properly and inadequate and also qualitatively impecunious. Except few, the roads are mainly unmetalled and are not fit for all season traffic. Road system should be as such will provide side by side, co-ordination to supplementary services to the railways.

Posts, Telegraphs, Telephones and Radio-sets

Not only transportation is important for the development of any region but at the same time, simultaneously a communication system also plays important role for the development of a region. Hence, by and large, transportation and communication both are very essential for the development and progress of a region. There were 231 post offices in 1961-62 as against 275 in 1971-72. Over a decade number of post offices increased by 44. The enormous increase has been observed in case of telegraph offices from 15 in 1961-62 to 24 in 1971-72. The number of telephones installed has increased from 208 in 1961-62 to 1060 in 1971-72; it increased by five times over a decade (See table No.1.5). In the year 1961-62, there were 3431 radio licences issued (including renewals). Data is not available for the year 1971-72.

Electricity -

For the development of industries electric supply is essential without which industrial progress cannot be possible. Due to the technological innovation all modern machines cannot run without electricity. Power stations should be constructed to supply electricity for industrial as well as agriculture development.

(A) Per Capita Consumption of Electricity -

There is very less spread of electricity net work in Chandrapur district by the end of March, 1972. Therefore, it is obvious that per capita consumption of electricity for domestic purposes as well as total electricity consumption including for all other purposes is very less and are given in the table No.1.6 for the years 1960-61 and 1971-72.

From the table it is very clear that per capita consumption of electricity for the year 1971-72 is 90.56 KWH. The consumption of electricity has gone up because of heavy consumption of electricity for Industrial establishments like Ballarpur Paper Mill, A.C.C. Factory Ghugus and Defence Project, Bhadravati. Though total per capita consumption is high, per capita domestic consumption during 1971-72 is as low as 2.11 KWH. Consumption of electricity in Chandrapur district is given in table No.1.7. Thermal Power is more important major unit of electric supply in the district. Chandrapur district is not getting any benefit from Hydro-power supply but by other type of generation it received 312000 KWH. District gets 14818900 KWH from thermal power supply. Industries consume maximum electricity viz., 14030600 KWH out of 14843100 KWH. Next to industries, domestic electricity consumption comes in second and consumes 3459000 KWH. Talukwise figure for electricity consumption is not available therefore, talukwise analysis is not possible.

(5) Rural Electrification -

Chandrapur district was having very less spread over of electricity by the end of March, 1961, there were only 14 villages electrified out of the total 2755 villages. The Government of India paid more attention towards rural electrification, hence, after that there is increase in number of electrified villages in the country. Maharashtra State Electricity Board is the only agency in the State which is entrusted with the work of rural electrification in the District. The number increased (See table No.1.8) upto 70 by end of March, 1966. Only 353 villages were elctrified out of total 2755 villages by end of March, 1972. The number of electrified villages increased but the progress is very low. Electricity brings out complete change in rural economy. It also helps to increase agricultural production as well as small scale industries and upto certain extent helps to make a village self-sufficient.

Education -

Education is one of the most important factors which constitute the overhead of development and also help to improve the quantity and quality of manpower. Though contribution to output is very small, it plays a vital role in the process of economic development. Education helps to make people aware of the need for development and equip them with specific skills to participate in the development

process[7]. It is also important that people should get machine-minded and take delight in using their hands and fingers as also tools and implements. It also means that the inverse relationship between superiority in caste or social status and intensity of war, especially manual work, that exists in a pre-industrial society should not get altered. All this requires that the educational system and the system of social values get re-oriented towards economic development[8].

Emphasis was given on the development of education under the social services during the plan period. To promote primary education 5 District level schemes were included in the annual plan 1971-72, and primary education is made free and compulsory to the age group 6 to 11 and is clearly specified in the Constitution as one of the Directive Principles of State Policy. Tremendous increase in both the number of institutions and students was observed since 1960-61. In education of girls remarkable progress was noticeable where the percentage increase was 183.17 and 365.47 respectively for primary and secondary standards in 1970-71 over 1960-61.

---

7. NCAER - Techno-Economic Survey of Maharashtra New Delhi, 1963.

8. V.K.R.V. Rao: "Values and Economic Development" the Indian Challange.

   Vikas Publications, 1971.

Primary and Secondary Schools increased by 87.62% and 118.03 per cent respectively by March, 1971 (See table No.1.9); also number of students increase during same decade is 110.18% and 132.16 per cent. The college education facility also shows enormous increase in 1970-71 and number of colleges increased from 5 to 9 during 1970-71 as four new colleges were opened in the same year. There are near about 8 schemes for the development of secondary education. Only 26.77% of the population is literate which is less than the state average. Over all lack of educational facilities is amongst other causes mainly due to the fact that more than 1/2 of the whole area of the district is under forest known as tribal areas, where provision of educational facilities was never considered a duty by the administration and education among the masses was, in fact, discouraged. Several schemes have been adopted for the spread of education particularly secondary education. Side by side, at the same time, government or education department should give much stress for the development of vocational and technical institutions; which are job oriented and also helpful to the economic growth of the district and adjoining areas.

Public Health -

Next to education, health is also an important factor for development. Over all standard of health is not

poor only in Chandrapur district, but also in the state and most of the parts of the country. From and most of the parts of the country. From available information State's population can be judged from the health point of view and it is worse than the average standard of the country. Chandrapure is one of the backward districts in the State also facing the same problem. The public health services are less developed in relation to population. The general aim of the health programme is .... to expand existing health services, to bring them increasingly within the reach of all the people and to promote a progressive improvement in the level of national health. The specific programmes to this end include the following[9].:

(i) Provision of adequate institutional facilities to serve as a basis for organising health services;

(ii) Control of communicable diseases;

(iii) family planning;

(iv) improvement of environmental hygiene, specially rural and urban water supply; and

(v) training facilities for medical and health personnel.

In 1971, the district had 112 hospitals, dispensaries, maternity homes and primary health centres with 480 beds.

---

9. NCAER - Techno-Economic Survey of Maharashtra New Delhi 1963, PP.150-51.

The talukawise distribution is indicated in table No.1.10. Chandrapur taluka had more hospitals and beds. Broadly, speaking, medical institutions can be classified into four categories viz., (i) the dispensaires, which are meant exclusively for treatment of outdoor patients; (ii) the primary health centres for rural areas; (iii) the referral hospitals, which are bigger and offer a wider range of services than the primary units; and (iv) the district hospitals which provide all facilities necessary for modern medical practice as well as supervising staff responsible for the health administration of the district[10]. The state Study Group on public health has suggested one primary centre for 5000 rural population. But to achieve the goal is not possible just now; it will take long time as being costly to construct the centres with ample facilities.

In addition to institutional facilities for medical treatment, the district has to organise a programme for controlling and finally eliminating such communicable diseases as Malaria, Cholera, tuberculosis, filaria and leprosy. Steps have been taken to control these deseases and leprasy centres were started.

To prevent communicable deseases it is necessary to provide safe and purified water supply and adequate facilities for dispersal of sewage and waste matter. An attention should

be paid to rural areas as their main resources of drinking water are rivers, wells, tanks, streams and ponds are polluted by various sources. The problem is very serious in case of urban areas.

Certain schemes are under operation to provide municipal water supply and drainage i.e., in Ballarpur, Warora and Rajura towns. Water pipe lines set up to provide water in rural areas namely, Mul, Brahmapuri, Sindewahi, Nagbhid and Bhadravati, same scheme for Sironcha and Armori were started in 1971-72. There are 5 rural water supply scheme in the local sector. One of the major sources of water supply by way of wells also progressed well and 291 wells were completed during 1971-72. An expenditure incurred is Rs.9.39 lakhs.

Day by day, increasing population is facing the problem of improving and maintaining high standards of health, also a proper balance between population and resources. Therefore, birth rate should be reduced family planning was introduced during the second plan period to check increasing birth rate. Talukwise distribution of family planning centres is given in table No.1.11. There are 20 family planning centres in the district during 1971-72.

To improve public health condition proper measures are essential, unless and until, it is thoroughly controlled through proper channel health problem can not be solved.

It is only possible only if government will successful to chalk out specific programmes and implement them properly.

Housing -

Housing condition in India is appalling. A recent survey of housing condition showed that about 38.5 per cent of the rural and 46 per cent of the urban house holders have less than 100 square feet of floor space per capita. The quality of housing is also bad. Most of the houses are of poor construction, ill-ventilated and lacking in even rudimentary sanitary facilities[11]. Of course, housing problem is more critical in urban areas than rural. House construction programmes fails because pace has not been kept talking into consideration the growth of population, therefore, slums are growing in urban areas. Construction of the houses in urban areas was supposed to be good, but it is not so, nearly 46 per cent of the houses are made of mud and of such other inferior materials and 44 per cent lack lavatory and bath room facilities[12].

With the growth of population, the housing need also is increasing day by day. Chandrapur district adopted 4 schemes to solve the housing problem but only the scheme of

---

11. Ibid PP.154
12. Ibid PP.155

extension of village Gaothans was in progress. Attention have been paid for construction of 200 tenements at Ballarpur to support industrial housing. The schemes for construction of 100 tenements under economically weaker section housing and 90 tenements under low income group housing have not yet been approved by the administration.

Industrial Policy

During the IInd World War, eight industrialists of Bombay published a plan of economic development of India, which is known as the 'Bombay Plan'. The main idea behind it is as to establishing a 'balanced economy' through industrialisation. Bombay plan does not recognise the importance of regional planning. It is clear from thestatement that we consider it essential for the success of our economic plan that the basic industries on which ultimately the whole economic development of the country depends, should be developed as rapidly as possible[13]. But industrial development depends upon availability of raw material, power, capital and market. During the First Five Year Plan preference had been given to industrially backward areas. The excessive concentration of industries brings in its train certain economic and social disadvantages and a wider diffusion of industry is desirable from this larger point of view. Further,

---

13. Radharani Choudhury: The plans for Economic Development in India. Bookland Private Ltd., Calcutta, 1969 P.61

if industrial development in the country is to be paid to proceed rapidly and in a balanced manner, increasingly greater attention will have to be paid to the development of those states and regions which have so far remained backward[14]. While giving preference and priority to backward regions balanced development can be achieved in coming future. Industrial policy has to be governed by the objective of bringing about a socialistic pattern of society[15]. In each of the plan, planners about the welfare of the society, balance economy and dispersal of industries, but Government has not yet achieved the target. In Fourth Plan[16], the objectives of investments in the industrial field are:-

(i) completing investment in relation to which commitments have already been made;

(ii) increasing existing capacities to levels required for present or future development, in particular, providing for more adequate internal supplies of essentials in increasing demand or needed by import substitution or for export promotions; and

(iii) taking advantage of internal developments or availabilities to build new industries or new bases for industries. Whereas the during the Fifth Plan[17], the

---

14. Planning Commission, Govt. of India, First Five Year Plan P.442.

15. Planning Commission, Govt. of India, The Second Five Year Plan, Draft Memorandum 1955 P.6.

16. Planning Commission, Govt. of India, Fourth Five Year Plan 1969-74 Draft P.237

17. Planning Commission, Govt. of India, Draft Fifth Five Year Plan, Vol. II P. 1974-79 P.134

objectives of industrial growth, are proposed to be achieved by means of:

(a) the maximisation of output from existing capacity;

(b) speedy completion of projects already taken up for implementation;

(c) technological improvements and expansion of existing units where substantial additional production could be achieved expeditiously;

(d) the creation of new capacity in accordance with the priorities in the plan; and

(e) the initiation of advance action longgertion projects keeping in view the requirements in the Sixth Plan.

Decentralisation of Industries -

Industrial distribution is uneven in the country, States, regions or districts, a few areas enjoy more industries whereas other areas nil or negligible. To make even distribution of industries, in the planning era industrial policy has been introduced. Industrial units should be located in such a way that indigeneous raw material, transport facilities and capital may be used to the maximum extent for the development of backward areas. It is suggested that a decentralised pattern of industrial development, while reducing local or regional unemployment and rural

---

17. Planning Commission, Govt. of India, Draft Fifth Five Year Plan. Vol.II

under-employment, will also be instrumented in distributing the people and evenly among regions, thereby contributing to the emergence of an economically sound, politically and strategically stable and regionally balanced democratic society[18].

(i) Relieving congestion in industrial area in big cities and towns;

(ii) rectifying the phenomena of a regionally unbalanced economy with pockets of industrial concentration surrounded by vast depressed areas; and

(iii) Decentralisation and dispersal of productive efforts generally to bring about an all-round rise in about per capita income and living standards and to bring about a wider devolution of economic and political power among the masses.

In one of the report on Industrial Estates the sub-committee[19] has suggested that the industrial estates are expected to:

(i) stimulate the growth of small industries in and around townships of some major industrial plants

---

18. M.C. Shetty: Small Scale and Household Industries in a Developing Economy, Asia publishing House, Bombay, 1963, P.26

19. H.M. Mathur: Industrial Economy of Developing region. Prakash Publishers. Alwar, Jaipur, 1968.

(thus promoting growth of auxiliary industries);

(ii) relieve the existing congestion in industrial areas and towns;

(iii) decentralise industries, involving suitable pattern of development in small towns and large villages; &

(iv) meet the special requirement of certain areas.

The objectives for industrial development is not only to achieve output target, but also to remove regional disparities and imbalances in the country. Various corporations have been set up on central level as well as state level for industrial programme.

=====

Chapter II

Physical Resources

Industrial development mainly depends upon the indigenous resources within a country. Therefore, it is an essential pre-requisite to study the availability of physical resources and their location in the district. This will give an idea about the resources, on the basis of which future development plan can be prepared. The resources which are included in this chapter are such as minerals, forests, agriculture and live-stock etc.

Mineral Resource

What is a mineral?

It is a problem to many people, what the term 'Mineral' comprises of. So, firstly it should be clear as to what is a mineral? Of course it is not very easy to define but, generally, the definition which can be found in books which deal with geology, mineralogy and crystallography and in the dictionary is:- A mineral is a naturally occuring inorganic solid crystalline substance with a definite chemical composition and a characteristic crystal structure[1].

---

1 Piler T. Flun: Mineral Resources.
Rand McNally and Company Chicago. 1966, P.1.

Importance of Minerals

Mineral resources date back to the history of civilisation. It means that by and large, the history of human civilization was due to the development of mineral resources. With the evolution of civilisation and development of modern industrial economy, minerals gain more and more importance. Structures, roads and machines are built largely by minerals; the energy to heat the structures and to power the machines, is mostly minerals, agricultural fertility is maintained by minerals fertilizer and water; and military strength is provided by fortresses, armaments, and ammunitions, largely of mineral origin. Thus in the material world in the productivity of the economy access to minerals has paramount importance[2]. Minerals are the basis of industrial progress, whether it may be country, state, region or a district. Industrial development mainly depends upon the availability of mineral resources and their proper utilisation, like water and soil, minerals are a bounty of the nature. If the lands are not fertile, the fertility can be increased; if the rivers are wild, they can be tamed; but minerals cannot be created and once excavated they cannot be replaced. It is, therefore, essential that minerals are exploited and concerved carefully. For us, in India, the exploitation of minerals is, no doubt, necessary to industrialise the country. It is also necessary for us to step up the mineral production with a view to export

---

2 N.L. Sethi - "Economy and Industrial Minerals of Rajasthan". P.1.

them to earn the direly needed foreign exchange. The fact that some nations possess certain minerals on a much larger scale, does not, however, in any way, mean that only single nation can meet the demands of all the minerals required for its industrialisation.[3] In fact, Maharashtra, and thereby Chandrapur district is no exception to this rule. Taking into consideration the importance of minerals, in Five Year Plan more emphasis has been given to raise production of minerals namely, coal, iron ore, oil, manganese, copper and a number of other minerals. Development of industrial complex in different regions depends upon availability and utilisation of indigenous mineral resources.

Mineral wealth is unevenly distributed in the Maharashtra State. Out of the 26 districts mineral wealth is largly confined to the districts of Chandrapur, Nagpur, Bhandara, Yeotmal, Ratnagiri, Kolaba, Kolhapur and Thana etc.

Chandrapur district is rich in mineral resources and occupies an important place in (See fig. 2) coal, iron ore, limestone and copper in the State as well as on the map of national mineral resources.

Coal

Energy has played an important and leading role in creating wealth, to improve standard of living and to continue industrial progress. Coal is one of the resources of energy out of all the fossil fuel resources and it is more than enough. It

---

3 Directorate of Geology and Mining Government of Maharashtra, "Geology and Mineral Resources of Maharashtra". Nagpur 1968, P.1.

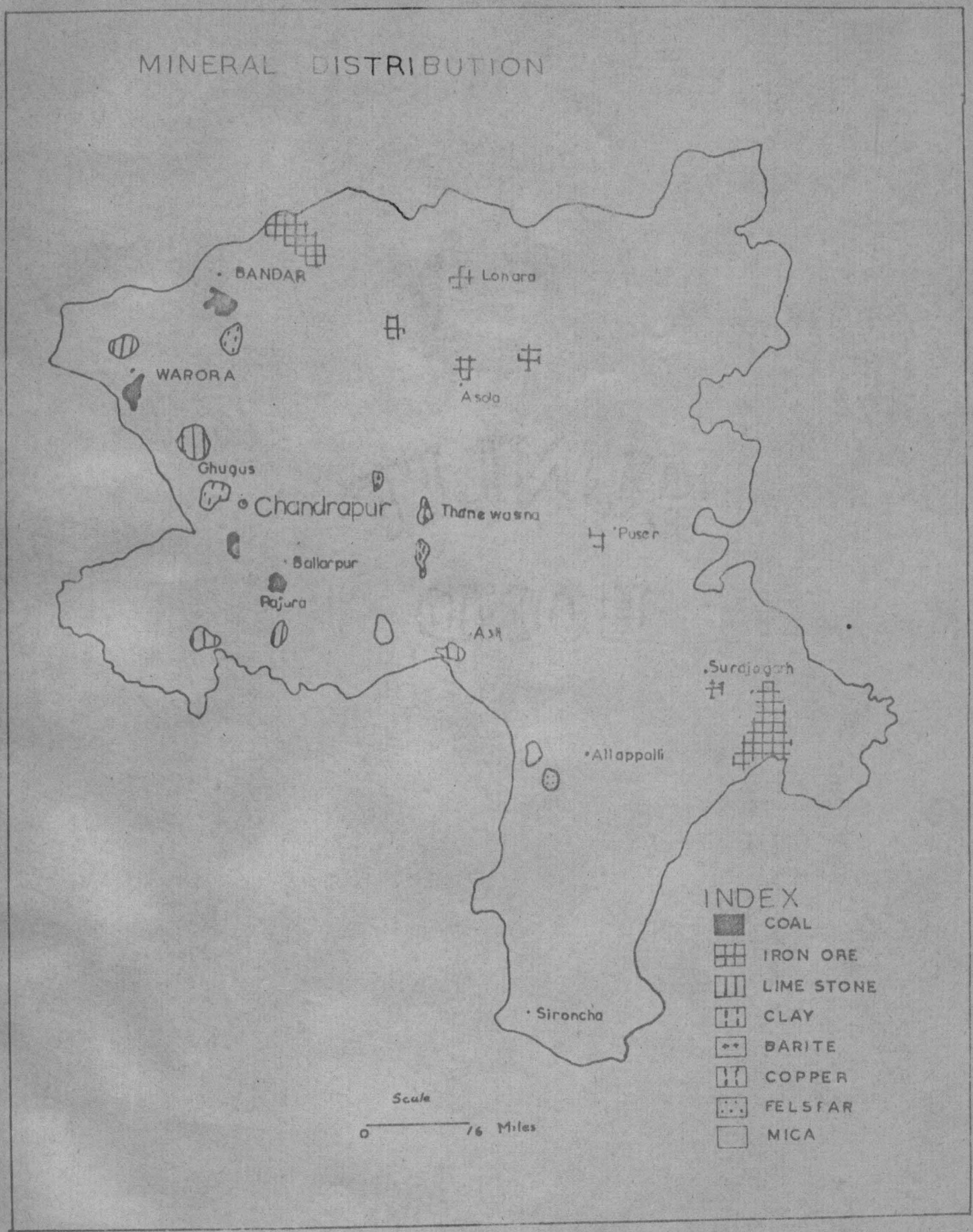
MINERAL DISTRIBUTION
BANDAR
Lohara
WARORA
Asola
Ghugus
Chandrapur
Thanewasna
Puser
Ballarpur
Rajura
Ash
Surdiagarh
Allapalli
Sironcha
INDEX
COAL
IRON ORE
LIME STONE
CLAY
BARITE
COPPER
FELSPAR
MICA
Scale
0
16 Miles

FIG. 2

is, therefore, even today the largest supplier of energy and produces near about 70 per cent of all energy generated in the world for industrial purposes as well as other purposes, and though it has been utilised since the history of human civilisation still continues to be the greatest source of energy. Therefore, it is said that coal is the backbone of industrial development, and useful for the daily life of a human being in the modern world. So, it cannot be an exaggeration and wonder that millions of people, their health and prosparity, employment is dependent upon production, distribution and utilisation of coal.

Chandrapur district enjoyes bounty of coal reserves, as it comes in Wardha Valley coal fields. The length of Wardha Valley coal fields is 116 kms. from NW to SE covering an area of about 4140 Sq.kms. with maximum width about 48 km. The major portion of the area of this field is situated in Chandrapur district. The coal fields include 8 different areas out of which 7 areas occur in Chandrapur district, namely:-

(1) Chandrapur coal-field
(2) Ghugus - Telwasa coal-field
(3) Ballarpur coal-field
(4) Warora coal-field
(5) Sasti-Rajura coal-field
(6) Majri coal-field and
(7) Bandar coal-field.

All these areas lie within 13 to 19 kilometres from Wardha river and the fields are connected structurally with each other except that of Bandar area.

1. Chandrapur coal-field:- The field is located close to Chandrapur town and extends from Durgapur in the north to the Wardha Valley in the south. There are three working collieries viz. Mahakali, Rayatwari, and Hindustan lalpelt. The thickness of the coal seams varies from 8 to 16 metres. In all these collieries, the strike of coal seam is generally, NW/SE varying from 12° to 14° towards North-East. The coal is non-cocking grade and has high moisture. In 1966, the production of coal from these three collieries was 19,161.8 tonnes, 84,847.0 and 1,95,792.6 tonnes respectively. The estimated reserves have been 138 million tonnes. The chief consumers of the coal are the railways and industries in nearby areas. Table 2.1 reveals the analysis of samples collected from these collieries.

2. Ghugus - Telwasa coal-field:- The field consists of two parts northern and southern. The northern one is Telwasa and the Southern part extends from Nilai to Ghugus. It extends further up to Penganga river. The first colliery was opened at Ghugus, in March 1870. The field covered total reserves area of 259 Sq.kms. and the estimated reserves have been 1000 million tonnes. In 1966, the production of coal from Ghugus Colliery was 1,50,239.0 tonnes. Table 2.2 shows the analysis of coal. The coal is mainly used by railways and industries.

3. Ballarpur coal-field:- This field is a resumption of the Chandrapur field to the south. The mining operation started in 1908. There are two seams. The top seam 4.26 metres and the bottom seam 3.2 metres. At present both seams are being

exploited and produce non-cocking coal of Grade II. It has been estimated 2032 million tonnes of coal reserves within a depth of 243 metres. The annual production of coal in 1966, was 182,612.3 tonnes. The analysis of coal is given in table 2.3.

4. Sasti - Rajura coal-field:- The field is located on the south west bank of Wardha river. There is only one colliery under exploitation at Sasti in this field. It covers total area of 18.23 sq.kms. The thickness of seam is 10.64 metres. The coal contain 12 per cent of moisture, 33 per cent of volatile matter and ash ranging from 15 to 18 per cent. The estimated reserves of 100 million tonnes with average thickness of 12 metres. In 1966, the production of coal was 1,21,484.4 tonnes.

5. Warora coal-field:- It forms the northern part of the Wardha Valley coal-field. It is very near to the Warora station on Nagpur-Madras broad-gauge railway line. Through investigation and detail survey of the field the Directorate of Geology and Mining Government of Maharashtra has proved one workable coal seam ranging in thickness from 4.8 metres to 8.86 metres in an area of 16.7 sq.kilometres. The various portions of the seam of Grade II, III and IV variety and the estimated reserves are about 60 million tonnes.

6. Majri coal-field:- The thickness of coal seam is 9.14 metres. Another seam, more than 15.24 metres was found west of Majri near Maglon. The estimated reserves of this field are 51 million tonnes within 1.6 kms area. The coal field produced

second grade coal and the production in 1966 was 1,49,866.1 tonnes. Table No. 2.4 gives the analysis of coal.

7. Bandar coal-field:- The Department of Geology and Mining Government of Maharashtra has surveyed the areas and indicated five workable coal seam ranging in thickness from 1.2 metres to 2.4 metres. The grade of the coal is from I to grade IV with 21.9 kilometres area. The reserves have been estimated about 110 million tonnes.

Industrial Possibilities:- Chandrapur district alone contributes more than a million tonnes coal to the total production. This coal is utilised extensively by railways, thermal power stations and industries in Bombay-Ahmedabad regions.

The coal is mainly consumed within the State by the Maharashtra State Electricity Board, the low temperature carbonisation plant and the cement plants. Therefore, to meet the increasing demand of coal, it is necessary to discover new coal-fields and to increase the production of existing collieries. It has been predicted that in the coming next 5 to 10 years coal would be used in the low temperature carbonisation plant, the cement plant, the pig iron plant and the Mahrashtra State Electricity Board's thermal power stations.

Iron Ore:-

Iron stands the second most abundant and important metal in the earth's crust. It has been treated as milestone in the development of human civilisation. Since pre-historic times, iron smelting was known to India and had world-wide reputation.

The distribution of iron ore in India, pointed out that the large deposits of good quality ores occur in the Chandrapur

district of Mahrashtra. In the Chandrapur district, iron ore, associated with Dharwar rocks, belongs to the Iron Ore series. The ore is mainly haematite, but sometimes magnetic is present. The district has a least ten reparate deposits and out of them only six viz. Lohara, Pipalgaon, Asola, Devalgaon, Bissi and Ratnapur are important. But out of them the two best known are Lohara and secondly Pipalgaon. The important deposits of iron ore are located at the following places in the district.

(1)	Lohara	(6)	Ratnapur
(2)	Pipalgaon	(7)	Fusar
(3)	Asola	(8)	Surjagarh Range
(4)	Devalgaon	(9)	Damkod-Wadi Range and
(5)	Bissi	(10)	Dhamragarh Range.

1. Lohara:- The Lohara iron ore deposit is located 1.6 km south of Lohara village in the Brahmapuri taluka. Alewahi is the nearest railway station, it is 4 km south-west of the deposit on the Nagbhir-Chandrapur narrow-gauge railway line. It is also accessible by road. The length of the ore body is 411 metres and the width varies from 60 metres to 131 metres. The thickness varies from 8.1 to 15 metres. The estimated reserves are more than 21 million tonnes. The analysis is as follows:

	Percentages			
Iron	Silica dioxide	Aluminium oxide	Phosphorus	Sulphur
69.23	0.82	1.83	0.008	0.012

2. Pipalgaon:- The iron ore deposit is found about 0.8 km to the south of the village Pipalgaon in the Warora tehsil. They are easily available from the Talodhi-Balapur railway station on the Nagbhir-Chandrapur branch line of South-Eastern Railway. The distance from the deposits and the station is 36 km and connected by road as well. The deposits are also available 27 km from the Tempa railway station on the Nagpur-Naghbir narrow-gauge railway line. This iron ore body is 183 metres long, 12.19 metres wide and more than 9 metres thick. The estimated reserves are about 0.29 million tonnes. The analysis of ore is as follows:

	Percentages			
Iron	Silicon dioxide	Aluminium oxide	Phasphorus	Sulphur
69.92	1.86	1.07	0.09	0.10

2. Asola:- The iron ore deposits of Asola also called iron ore deposits of Gunjewahi, as it is 3.2 km south-east of Gunjewahi. The iron ore deposits are at a distance of 4 km west of the Asola and easily accessible cart track from Sindewahi railway station on the Nagbhir-Chandrapur narrow-gauge railway line. The estimated reserves are about 0.4 million tonnes. The analysis of the ore is given below:

	Percentages			
Iron	Silicon dioxide	Aluminium oxide	Phasphorus	Sulphur
62.91	8.26	2.48	0.08	0.11

4. Dewalgaon:- The iron ore deposits occur at a distance of about 0.8 km south of Dewalgaon village in the Gadchiroli taluka. Warsa is the nearest railway station only 27 km away from the village. The length of the ore body is about 503 metres, the width varies from 9 to 18 metres and the depth is about 8 to 9 metres. The reserves are estimated at about 0.23 million tonnes. The analysis of the ore is mentioned below:

Iron	Silicon dioxide	Aluminium oxide	Phosphorus	Sulphur
66.90%	2.90%	2.24%	0.02%	0.14%

5. Bissi:- The ore body lies about 1.6 km east of the Bissi village. The iron content is about 69.8 per cent but reserves are very less.

6. Ratnapur:- The iron ore deposit is located near Ratnapur in the Brahmapuri taluka and easily accessible by cart track from Palasgaon on the Nagbhir-Chandrapur road. The width varies from 10 to 15 metres and thickness is about 1.5 to 3.5 metres. A detail survey has not yet been done therefore, reserves and chemical analysis of this ore cannot be estimated.

7. Kisan:- The iron ore deposits are situated about 3.2 km ESE of village Mutnoor in the Gadchirali taluka. It has been proved by recent investigation that ore occurs in three different hills with 510 metres length and estimated at about 0.57 million tonnes. The analysis of the ore is given below:

Iron	Silicon dioxide	Phosphorus
60.87 to 69.81%	0.05 to 3.02%	0.002%

8. Surjagarh Range:- Iron ore deposits are located about 3.2 km north of Bonde village in Surjagarh hill range in Sironcha taluka. It has been indicated by the Department of Geology and Mining Government of Maharashtra after surveying the area in 1963 that huge deposits of iron ore are available. The deposits are in easy reach of 64 km from Ahiri and 112 km from Ballarshah railway station. There are 15 ore bodies located in the three hills viz., East Wuria, West Wuria and laiya. The length is varying from 30 to 345 metres and the width from 10 to 150 metres. Three types of ore are available (1) Massive (2) laminated and (3) Pordes and soft. The reserves have been estimated at about 138 million tonnes. The analysis of the ore is given below:

Iron	Silicon dioxide	Aluminium	Phosphorus	Sulphur
64.05% to 68.52%	1.82% to 6.10%	0.68% to 2.83%	0.017% to 0.076%	0.010% to 0.032%

9. Damkod-Wadi Range:- The discovery of iron ore deposits is the result of the geological survey of the hill ranges. High grade iron ore has been found which contains more than 64 per cent of iron, and the survey is still in progress in this area. The estimated probable reserves (in m.tonnes) of the different deposits are given below:

Matvarsi	4.4	Mesmeta	4.8
Wadvi I	2.9	Kakad Guda Meta	2.7
Wadvi II	0.8	Karanjer Meta	0.2
Damkod I	2.2	Gurumjer Meta	1.8

Damkod II	3.4	Kumdur Meta	0.2
Udaykoti	1.6	Katcha meta	0.2
Mohondi	0.2	Tar Maka meta - not estimated.	
Hitaparmeta	4.5		

10. Bhamragarh Range:- The geological survey of the hill ranges is going on. The estimated reserves are about 10.2 million tonnes, with high grade iron content. The deposits have been so far found in the following places:

(in M.tonnes)

Padkawada Gudra	3.72	Gundruwaya meta	3.09
Ghangra meta	2.40	Pirandit Padvimeta	0.09
Pupurpur meta	0.03		

Limestone and Dolomite

Limestone is one of the non-metallic minerals mainly used in the cement industry and other industries, i.e., paper, glass, and sugar etc. due to its chemical properties. Chandrapur district is rich in the high grade limestone deposits in the State.

1. Warora Taluka:- The limestone deposits are situated at five places viz. Kandhala, Purkepar, Kamargaon, Mardha and Niljai near the Delhi-Madras broad gauge railway line. Kandhal limestone deposits are available at 3.2 km south-west of the Chikri Road Railway Station. The length of the belt is about 1216 metres, width 300 metres and workable thickness of about 9 metres. The reserves have been estimated at about 8 million tonnes. The analysis is given below:

Place	Ca CO_3 %	Mg CO_3 %	$Si O_2$ %
1. Purkepar	86.77	2.23	9.60
2. Kamargaon	77.29	1.69	17.97
3. Mardha	79.77	0.68	15.36
4. Miljai (Dolomite)	22.55	37.10	6.19

2. Rajura Taluka:- Limestone deposits occur in the areas of the villages, Lakhampur, Palegaon, Gopalpur, Nawkari, Sangoda and Chandur. These deposits are situated 32 km west of Manikgad railway station on Delhi-Madras railway line. There are two belts, one is 11 to 12.8 km long and 182 to 213 metres wide; second belt 2.4 km long and 90 to 121 metre wide. The first belt has had soft and black-coloured limestone whereas the second belt is hard and siliceous quality.

The Department of Geology and Mining carried out survey in the Rajura taluka and thereby discovered three important limestone belts.

1. Sangoda limestone belt:- This belt is 1600 metres long and 400 metres wide. It has a NW to SE trend with steep dips. The estimated reserves are about 23 million tonnes up to a depth of 20 metres. The analysis is given below:

CaO	46.59 per cent
MgO	1.24 per cent
SiO_2	12.33 per cent

2. Avarpur - Gangapur - Bakardi Belt:- The length of the belt is 4500 metres and width 600 metres. Up to a depth of 20 metres the reserves have been estimated at 108 million tonnes. The analysis is as follows:

CaO	48.47 per cent
MgO	1.91 per cent
SiO_2	7.76 per cent

3. Maranda - Pimpri - Vanvia Belt:- The belt is 4800 metres long and 1600 metres wide. The estimated reserves are at about 307 million tonnes up to a depth of 20 metres.

Clay

Clay deposits are available at a number of places in Chandrapur district, and it varies in both quality and quantity from place to place.

1. Bhandak:- Bhandak is 22 km away from Chandrapur and situated on Chandrapur-Nagpur road and is also a railway station on Wardha-Kazipeth line. The white clay occurs in Mohorli forest area near Bhandak. The clay is similar to china clay in quality.

2. Kothari:- The clay occurs near Kothari village are on both the sides of the Chandrapur-Allapalli road close to the Kukai nala. The clay varies from white to brown and red. The estimated reserves are near about one million tonnes.

Fire clays occuring in Ballarpur area is suitable for the manufacture of salt glazed sewer pipes, low heat duty fire bricks and Manglore tiles. There is possibility of more producing units in coming future.

Copper

The deposits occur at Thanewasna, Govindpur and other places in Chandrapur district. The exploration work is going on at Thanewasna. The analysis of ore shows 0.1 per cent to

0.8 per cent copper. The estimated reserves of copper ore with about 0.6 per cent, copper is near about 13.4 million tonnes.

Mineral Pigments

Orches are naturally coloured mineral pigments, and used for the manufacture of paints and colour washing. The deposits occur in Chandrapur district, particularly red orches near Babupeth in Chandrapur area.

Mica

Mica occurs at Ahiri village associated with pegmatite type of rocks in Chandrapur district.

Felspar and Quartz

Felspar and Quartz deposits occur in these regions which are covered by metamarphic rocks and Chandrapur district is one of them. Felspar can be used in the manufacture of potteries.

Barite

The deposits occur at a number of places in Chandrapur district. They are Phutana, Mahadwari, Maulajhari, Agri and Jalana (Janara) village. The deposits in the district is enough to start quarrying. Industries for manufacture of lithopone or barium chemicals can be started. The estimated reserves at Phutana is about 26,450 tonnes and of Maulajhari and Mahadwari of 17000 tonnes.

Gold

Gold is extracted from the river sands in the valley of the Wainganga river in Chandrapur district by a tribe called Sonjharias.

Soapstone

It is used for kettles, refractory material, pots and vessels. The stone is crystalline in structure and buff in colour. Dark coloured stone is available at Jamalghat and used for carving idols and household vessels.

Abrasives

The diamond, corundum, emery and garnet are included in high grade abrasives. Garnet is found in Chandrapur district.

Building Material

The different types of rocks suitable for building construction and roads are available in Chandrapur district.

Forests

Forests always reserve mankind by its supply of economic needs in a comprehensive way in all its stages. But it is dependent on a scientific exploitation of the forest resources of a region. Forests are renewable resource, unlike mineral resources and therefore their continuous availability for use would be possible or ensured on an endured way. Forests on our watersheds, often referred to as protective forests, prevent soil eronion, detain surface waters and release them flowing clear and regularly, and replenish ground-water reserves by induced perloation. A major

portion of our forest land needs no commendation to the conservator beyond its function in the regulation of stream flow, the prevention of stream pollution and silting, and the prevention or moderation of floods ! Woodlands are about as important to wild life conservation as they are to the conservation of water and soil.[1]

In Maharashtra State area under forest is more than 20 per cent and it stands third in the country. Chandrapur district has covered vast forests area, and it is the only district in the State with more than 50 per cent of the forests area. In 1971, near about 56.35 per cent of the area was under forests. Talukawise distribution of forests is uneven. The Sironcha and Gadchiroli talukas have 83.5 per cent and 62 per cent of the area under forests. Southern part of the district is covered by dense (fig. No. 3) forests and gradually decreases from east to west. The area under forest in the two central tehsils namely Chandrapur and Bramhapuri was 45 per cent and 40 per cent respectively. Whereas, in the western tehsils of Warora and Rajura was 28.6 per cent and 10.5 per cent only. Table No. 2.5 shows the forest area in the district during 1971-72.

Forest Products

Since, Chandrapur is the most forested district, enjoys enough forest wealth. It carries many economically valuable species of trees. There is one of the most important timber species of the forests in the district. Other

---

1 Ruben L Parson : "Conserving American Resources".

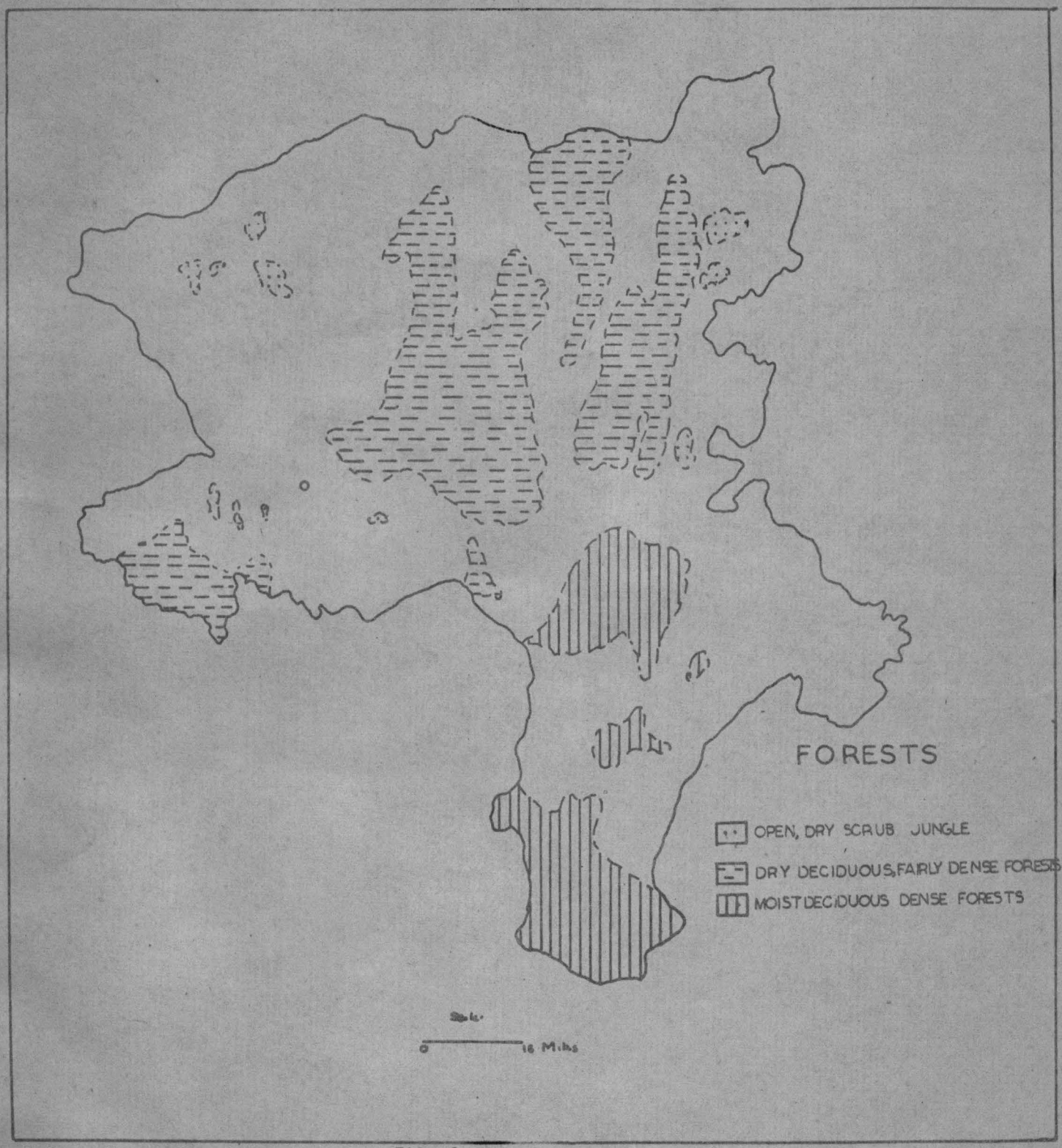
FORESTS
OPEN, DRY SCRUB JUNGLE
DRY DECIDUOUS, FAIRLY DENSE FORESTS
MOIST DECIDUOUS DENSE FORESTS
Scale
0
16 Miles

FIG. 3

useful as timer are ain, sernal, khair, haldu, etc., and used in building and construction works, and in the making of furniture and agricultural implements. There are other species used as fire wood are babul, hirda, khair, jambul and other. There are a variety (Table 2.6) of minor forest products like grasses, tan-stuff, bamboos, fibres, gums, resins, oil, herbs, roots, honey, lac and tendu leaves for bidi wrapping.

Distribution of Forests

The Department of Forest has divided Chandrapur district into five different divisions. The divisions are as follows:

(I) Central Chandrapur Division
(II) East Chandrapur Division
(III) South Chandrapur Division
(IV) West Chandrapur Division
(V) Rajura Sub-Division

(I) Central Chandrapur Division

This division was separated while dividing the previous South Chandrapur Division in August 1959. The division contained seven ranges with 4042.99 Sq.kms. of area. The forest is moist deciduous and tropical dry deciduous types. It brings revenue of Rs.47 lakhs annually.

The high percentage of teak is available up to 3 metres in girth in the forest. In year 1918, a depot of 73.47 acre of land was started for sales of timer at Balarshah and now its annual capacity of turnover is about 100,000 cft. of round

timer and 50000 cft. of sawn timber. Charcoal is also manufactured on a large scale. Bamboo trees are scattered all over the forest area and are mainly used in the paper and pulp industry at Ballarpur. Beside these tendu leaves are supplied for bidi industry.

II East Chandrapur Division

The East Chandrapur Division was commenced in May, 1951. It covered 4439.26 sq.kms. of area with six ranges. The forest is tropical dry deciduous type and earns an annual revenue of Rs. 12 lakhs. Teak and bamboos are the main products from this forest.

The forests help to develop silk industry, on the leaves of Ain to grow silk worms breed. It is particularly in Sindewali and Wairagarh ranges and about 1000 acres are leased out for 'Tassar' silk cultivation every year.

III South Chandrapur Division

There are six ranges with 6223.77 sq.kms. of the forest area. Out of them three are reserved and other three are in protected forests namely Pirnilli, Bhamragarh and Repanpalli. The reserved forest consists of the forest of Aheri, Sironcha and Asarali. It gives revenue of Rs. 25 lakhs annually. The forest comes under tropical moist and dry deciduous types. There is mixed teak forest of high and low quality in most of the ranges. For the high quality of teak the main market is at Baharshah and for low quality teak the market is at Rajhmundry in Andhra Pradesh.

IV West Chandrapur Division

This division occupied 2836.05 sq.kms. area with seven ranges. Tropical dry deciduous type of forest is seen. It is famous for teak and timber. The annual revenue of the division is near about Rs. 21 lakhs. The area around Taroba lake has been declared as a National Park in Maharashtra State. Near about 518 sq.kms. of bamboo forest is given on contract basis for certain period to the Ballarpur Paper and Straw Board Mills.

V Rajura Sub-Division

Rajura forest range was attached to the Chandrapur District in March, 1969. The area under forest is 756.28 sq.kms. It earns annual revenue about Rs. 6 lakhs. It is tropical dry deciduous type of forest.

Development Plan

Since, more than half of the area of the district is under forest, the development of forest occupied most important place in the development programme of the district. During the year 1971-72, Rs. 13.14 lakhs were spent on the 8 plan schemes out of a provision of Rs. 14.84 lakhs for the development of forests. During the same year plantation have been done in 44 hectares under the scheme of farm forestry, 300 hectares under the scheme of bamboo plantation, 742 hectares under the scheme of plantation of general utility timber and 455 hectares under the scheme of plantation of fast growing species and also fodder plantation in 16 hectares was completed. Under the scheme of conservancy Rs. 0.28 lakhs were spent for the development of National Park.

Agriculture

India is an agricultural country, and hence, Chandrapur District cannot be an exception being a part of her, as more than 80 per cent of working population engages in agricultural activities as cultivation and agricultural labour. The area available for cultivation depends upon the topography, soil and climate. The plains are fertile which fall on Wardha and Wangang basin. The climate is also favourable for food-grain and non-food-grain crops.

Land-use

The total geographical area of the Chandrapur district is 25641 sq.kms. or 2583475 hectares. The net sown area has covered 25.10 per cent or 1/4 area out of the total area in 1970-71. The area sown more than once in a year was 2.21 per cent in 1970.71. Table No. 2.7 shows land utilisation in Chandrapur district in 1970-71. From the table it is clear that the highest net sown area is in Warora tehsil and 51.99 per cent whereas only 6.70 per cent area in Sironcha tehsil.

Cropping Pattern

During the year 1970-71, the area under food crops was 85.84 per cent of the grass cropped area, and only 14.16 per cent of the grass cropped area was under non-food crops. During the same year rice occupied 32.86 per cent of the grass cropped area and 38.42 per cent of total area under food crops. Jowar is the second important food crop next to rice accounting for 28.64 per cent of the gross cropped area and 33.48 per cent of the total area under food crops. The table No. 2.8 shows talukawise percentage of area under important

crops to gross cropped area for the years 1960-61 and 1970-71. Pulses occupied 15.63 per cent of the total cropped area. Cotton and oilseeds accounting 5.11 and 9.00 per cent area respectively of the gross cropped area and 35.36 and 62.24 per cent area under non-food crops. The area under Jowar crop is high in Warora, Chandrapur and Rajura talukas. Oilseeds and cotton are also the important crops in these talukas.

The production of crops depends upon many factors such as fertility of soil, adequate and timely water supply or rains, absence of crop-diseases and area under particular crop etc. Higher production can be achieved while introducing improved agricultural practices viz. improved, hybrid and high yielding seeds, adoption of chemical fertilisers, irrigation facilities and to check spread of diseases.

Irrigation:- Irrigation is important to the crops and 17.13 per cent of the area was irrigated in year 1970-71. The paddy is the main crop which gets the benefit and occupied 95.59 percentage of the total irrigated area. Table No. 2.9 reveals the percentage of net irrigated area to net cultivated area. The area under irrigation is high in Bramhapuri (42.97), Gadchiloli (23.41) and Chandrapur (21.84) talukas which are paddy growing areas.

Productions:- Rice, Jowar, Wheat and pulses are the main foodgrain crops. Cotton and oilseeds are the main important cash crops. The area as well as production of the important crops increased over a period of ten years is shown in Table No. 2.10.

The average yield per hectare of principal crops is given in Table 2.11. The average per hectare yield of rice is highest and it is 1104 Kgs. in 1970-71.

Paddy:- Rice is one of the Major cereal crops in the district and rice husking mills are very widespread over the rural as well as urban area of the district. Ricebran is used for oil. In year 1970-71 the total area under paddy was 231878 hectares. The total annual output was 255300 metric tonnes in 1970-71, and yield per hectare was 1104 Kgs.

Oilseeds:- Oilseeds are sources of oils and fats. Oilseeds come under cash crop. The principal oil seeds are groundnut, seasamum, linseed, caster seed and etc. The area under total oilseeds was 63486 hectares in 1970-71 with 13100 metric tonnes of production and per hectare yield was 346 Kgs.

Oil-mills are located in the district and it is one of the developed rural industries for crushing the different oil-seeds for oil. Hydrogeneration plants can be developed and mainly depend upon groundnut. Soap and paints industries depend upon vegetable oil. Therefore, there is great demand for oilseeds, as a source of raw material.

Cotton:- Cotton is a cash crop mainly grown in Chandrapur, Warora, and Rajura talukas. The total area under cotton was 36068 hectares in 1970-71, which accounting 5.11 per cent of gross cropped area. The annual output was 8900 bales in 1970-71 and per hectare yield was 44 bales.

Sugarcane:- It is a cash crop and grown in all the talukas. In 1970-71, the total area under sugarcane was 169 hectares and production was 1600 metric tonnes in term of gur. Industrial alcohol can be produced from molesses and bagase by-product of the sugar industry if started.

Tobacco:- Tobacco cultivated in Sirancha talukas and it is of virginia variety. This variety is suitable for manufacturing cigarette. The area under tobacco was 138 hectares in 1970-71 and the production was 200 metric tonnes. They yield per hectare was 500 kg.

Fruits and Vegetables:- The total area under fruits and vegetables was 2224 hectares in the district in 1970-71. Canning of fruits and vegetables is not yet developed but there is possibility of canning and preservation factories in future.

Plans

The economy of the district is based on agriculture. Therefore, agriculture and allied programmes got major share from the total outlay of the district. To implement the programmes a provision of Rs. 80.35 lakhs is made available. The main motto behind this was to raise agriciture production. Soil conservation and minor irrigations along with allied programmes such as Animal Husbandry, Forests, Fisheries and ware-housing and Marketing. Agricultural school started at Mul. The purpose of this school is to give training for the systematic development of horticulture.

Livestock

Livestock plays an important role in agricultural economy through supply of drought power and manure. It is also the main source of supply of milk, meat, wool, hides and skins. The total livestock accounted 13,71,667 animals, in year 1966. There were 69.45 per cent cattle, 9.03 per cent buffaloes, 3.80 sheep, 16.80 per cent goats and 0.93 per cent other livestock. Table No. 2.12 reveals the talukawise distribution of livestock in 1966.

Cattle

Cattle are important in all the talukas, accounting more than 60 per cent out of the total livestock. The high percentage of male cattle used for breeding is in Chandrapur taluka, whereas those used for breeding and work and also only for work are in Gadchirali taluka. Out of the total female cattle (275324), only 88845 are used for milk and rest even either dry or not calved even once. The highest number of female cattle (22227) lowest 6024 female cattle used for milk are in Gadchirali and Rajura talukas respectively.

Buffaloes

In year 1966, there were 123811 buffaloes (9.03%) in the district. Male breeding buffaloes were 654 out of which 175 in Chandrapur taluka and lowest 34 buffaloes in Sironch taluka. Female buffaloes used for milk accounting 13947, out of them 4089 she-buffaloes are in Chandrapur taluka and the No. is highest than any other taluka. Rest of female-buffaloes were dry or not calved even once.

Others:- There were 52,053 sheep (3.80%), 230418 goates (16.80%) and 12774 other livestock (0.93%) in year 1966. Out of the sheep, in the district there were 19871 sheep in Chandrapur taluka. Comparatively more goats as well as other livestock were in Gadchiroli taluka. The total poultry was accounting 4,09,394 in the district in 1966.

An attention has been paid in the plan periods in popularising poultry keeping specially in rural areas. According to livestock census 1961 poultry keeping was accounting for 319.13 birds per 100 households, but in 1966 decreased considdrably, and accounted only 159.68 birds per 100 households. The table No. 2.13 shows talukawise position of poultry per 100 house-holds in 1961 and 1966.

It can be seen from the table that poultry keeping is very popular in tribal areas. Two talukas namely Gadchiloli and Sironcha having considerable tribal population showed high averages of poultry birds per 100 households.

Development Schemes:-

For Animal Husbandry Rs. 0.12 lakhs were spent during the year 1970-71, and two new aid centres were established. For the development of Dairy industry, there was a provision of Rs. 0.17 lakhs, to provide for dairy unions. But dairy union has not yet been formed to start dairy industry in the district. Since, capital to assist dairy industry is available there is possibility of dairy development.

-x-x-x

CHAPTER-III

MAN-POWER

Manpower is one of the important but a scare resources. Therefore, it should be planned and controlled like other resources which promote industrial development or are necessary for the industrial development. But at the same time man-power planning, therefore, has links with and interacts with, the other planning activites of management. Before talking about man-power structure in the region in connection with industrial development. There are two important reasons while studying man-power that to insure what will be the requirement of labour in future to increase the productivity. The main need for the industrial man-power is to know the local availability of manpower by age, type of skill, sex ratio etc., and the requirement of the man-power in future.

If one would like to study manpower structure in a region, then, it is necessary to know the population and its growth. There is difference in the working capacity of male and female so, sex ratio should be studied. Literacy is one of the important factors which effects the manpower structure.

Population -

According to the Census of 1971, the population of Chandrapur district is 16,40,137 out of this 14,73,037 (89.81

per cent) living in rural areas and 1,67,100 (10.19 per cent) living in urban areas. In year 1961, the population of the district was 12,38,070 and hence there is a net increase of 402,067 (+32.48 per cent) persons in the decade. Since 1901, the population has nearly tribled within the period of 70 year (Table No.3.1). The average population per tehsil of this region works out to 273356.

Sex Ratio -

Comparatively, male working force is mostly engaged in industrial activities. Mainly skilled, semi-skilled or unskilled labour force which is working in the factories comes from male side and a few from female side except in case of urban areas. The study area is only one district, therefore, it is necessary to see the over all situation. The total population is 1640137, in the year 1971, which broken down in sex is 832,567 males and 807570 females. The sex ratio in the Chandrapur district in 1971 is 970 females per 1000 males and in the rural and urban areas is 780 and 878 respectively. In 1961, the sex ratio was 986 females per 1000 males.

Density -

Availability of manpower in local area is dependent upon the density of population in that area. Where the density of population is more man power suppose to be more. It may be skilled or unskilled. The average density of population of Chandrapur district is 6 persons per sq. km.

according to the Census of 1971, and it is the lowest in the State. There are some reasons why population density of Chandrapur district is lov because as much as 56% of its land is covered by the forest and is also industrially backward. The tehsilwise density of population varies from 62 persons per sq. km. to 132 persons per sq. km. in the four tehsils of the district except that of Gadchiroli and Sironcha tehsil where the same is respectively 51 persons per sq. km. and 18 persons per sq. km. due to the fact that more than 62% of the area and 83.5% of the area is under forest.

Literacy -

Literacy is one of the important factors, which is related to manpower. Literate persons handled machinery and also help to raise the production. It depends upon the level of education. So, one must try to know the skill, unskilled or semi-skilled labour force.

A person who can read and write is called a literate person. Literacy depends upon literature persons in the district, on the basis of which percentage of literacy can be calculated. The percentage of literacy in Chandrapur district is 26.77% in 1971. Unhappily, Chandrapur is undoubtedly one of the backward districts in point of education, therefore, percentage of literacy is lowest as its more than 60 per cent of the area is under forest and more than 14 per cent is the tribal population. The increase has been

observed as against 1961, due to the policy of the State Government, viz., free and compulsory education upto age of 14 years. It helped considerably, especially in rural areas, not only to educate boys, even girls and has been responsible for the slow rise in the literacy amongst females, and ultimately the total percentage of literacy has gone up. Table No.3.2 shows the number of literate persons and percentage of literacy in the district.

Age Groups -

If one would like to study working force in a region, then it is necessary to study age groups because working population is mainly dependent upon it. Since the Govt. has abolished child as well as bonded labour, working population comes under age groups of 15 to 59 years. This gives clear cut idea of working population in a region.

In year 1961, the total population which comes under the working age groups was 54.76 per cent and in rural areas it was 54.65 per cent; and in urban areas it was 55.98 per cent. There is no difference (See Table No.3.3) at all except only 1 per cent in case of urban areas. Generally, near about 45 per cent of population in all cases is not coming under working age groups. The table shows that near about 40 per cent children were there.

Workers -

The population is classified into two parts, firstly

workers and non-workers. As far as manpower is concerned population which belongs to working part is important. It is important because the development of a particular region or area depends upon the working population of that area or a region. But again which type of working force, skilled, semi-skilled or unskilled? Here, workers or working population is classified into nine categories os of economic activity, a method adopted by Census of India and as follows:

(i) Cultivation

(ii) Agricultural labourer

(iii) Mining, quarrying, livestock, forestry, fishing, hunting and allied activities

(iv) House-hold Industry

(v) Manufacturing other than house-hold industry

(vi) Construction

(vii) Trade and Commerce

(viii) Transport, storage, communication, and

(ix) Other Services.

In Chandrapur district near about 90% population is living in villages, and hence main occupation is agriculture. Therefore, most of the working force or population is engaged in agricultural activities, as cultivators and agricultural labourers. Table No.3.4 reveals that out of the total population 40.51 per cent are workers. Near about 60 per cent of population belongs to non-working population. If one would consider only male population then out of it

55.12 per cent of male working force is engaged in various types of activities where as female participation is very less and it is only 25.45 per cent out of total female in the district. In case of rural areas total centres are about 41.77 per cent slightly higher than the total workers in the district. There is also wide gap between male and female workers. In urban areas total workers are very less and are about 89 per cent. There are only 8.11 per cent female workers in urban areas.

Now, let us see the workers engaged in primary, secondary and tertiary activities. Out of the total workers 84.79 per cent workers comes under primary sector, and 79.78 per cent male and 93.39 per cent female respectively. The over all picture of the workers in district shows that priniary sector is dominating workers in rural areas also give the same picture as its 88.74 per cent of the total workers in primary sector and 86.58 per cent male and 95.34 per cent female. But in urban areas not more than one fourth working force is engaged in primary sector except that of females.

In secondary sector, there are only 6.58 per cent of the workers out of the total working force. Where as 8.18 per cent of male workers are out of total male workers and 3.02 female workers respectively. Workers from rural areas are very less in secondary sector and out of the total workers 5.04 per cent workers are there. In urban areas near about 25.83 per cent workers are out of the total urban

workers and 26.23 per cent and 23.13 per cent male and female workers respectively.

Not more than 10 per cent workers out of the total workers are working in tertiary sector. There are 13 per cent of male workers and 3.55 per cent of female workers. Workers from rural areas engaged in tertiary activities are comparatively less and out of the total rural workers only 6.18 per cent working force is there. Out of the total urban workers round about 50 per cent of workers are in tertiary sector. It is not only in case of total workers but in case of male and female workers separately.

The distribution of the workers in primary, secondary and tertiary sectors is uneven. Primary sector is predominate, where near about 84.79 per cent of working force is engaged out of the total workers and 6.58 per cent and 9.38 per cent in secondary and tertiary sector. The district does not have enough skilled labour force which can satisfy the increasing demand some time ahead.

Industrial Development in the given manpower Structure:

There is a close relation between availability of manpower and industrial development in a particular region. Industrial development more or less depends upon the indigenous manpower structure. Here, in connection of industrial development skilled labour is important. Semi-skilled to some extent but unskilled labour is not worth while. Therefore, it is an essential pre-requisite for industrial development

and ultimately economic development of the region. An attempt has been made to study the total working force or workers engaged in different types of industries, on the basis of which assessment can be made to study existing industrial pattern in the available manpower in the district.

Total number of workers are 4,816 which are engaged in industrial activities out of which 4,413 are male workers and 403 female workers during 1971. There are 53 registered factories out of which 9 factories are closed and 34 factories submitting return. These industries are classified into 17 sub-groups. The Table No.3.6 shows the average daily employment of workers in factories in Chandrapur district during 1971.

It can be seen from the table that only 5 Gins and Presses are there out of which three are submitting return and providing jobs to 193 workers out of which 120 are male workers and 73 female workers. The second is manufacturing of grain mill products and there are 11 registered factories out of which two are closed. Total workers are 82 out of them 50 male and 32 female workers respectively. Third is manufacturing of miscellaneous food preparations and only 3 factories are there out of which one is closed. These factories are providing work to the 132 workers out of which 118 are male and 14 are female workers. There are four tobacco manufacturing factories but two are closed and not

a single working factory is submitting return. The total workers are 220, working in these factories. Five factories have been registered as manufacture of wood and cork except manufacture of furniture. Out of them one is closed and three are submitting return. These factories are providing work to 140 workers out of which are 112 male and 28 female. There are 95 workers in one factory which is not submitting return. There are two pulp, paper and paper board mills and are in working condition providing employment to as much as 2,403 workers,a considerable number than any other factory. Out of the total workers 2,387, are male and 16 female. There is only one factory called Basic Chemicals including fertilizers and 55 persons are working there 52 male and 3 female respectively. Only one factory is there viz., Manufacture of Miscellaneous Chemicals Products providing employment to 23 persons out of which 13 are male and 10 female.

So far 10 factories have been registered as manufacture of structural and clay products. Out of them one is closed and 6 are submitting return. There are 249 workers out of which 129 are male and 120 female. Three factories are not submitting return and 61 workers are working there. Two factories are running as manufacture of glass and glass products (except optical lences) and providing service to 442 persons out of which 337 are male and 105 female. Only one factory is working as manufacture of pottery, china and earthen-ware but not submitting return

and there are 35 workers. There is one cement factory providing employment to 829 persons out of which 828 are male and one female.

There are two factories called manufacture of non-metallic mineral products. One is closed and another is not submitting return with its 14 workers. There is one manufacture of metal products factory which is closed. Two factories manufacturing machines (except electrical machinery) and are providing jobs to the 10 persons out of them 9 male and one female. There is only one repair of motor vehicles and cycles factory proving work to the 33 persons and all are male. There is only one eletric light and power factory providing employment to the 320 persons.

From the above description it is clear that except pulp, paper and paper board mills, cement factory and glass manufacturing factories others are small factories providing employment to very few people. These are the three major factories in the district which provides employment to more than three thousand people, it mean that 2/3rd workers working only in these three factories.

Employment in Different Industries -

There are eight types of industries including agriculture and mining and quarrying as a seperate type of industry. The total number of establishments are 289, providing employment to the 48,526 persons as on 31st

March, 1972. (See Table 3.6). Employees have been divided into three parts as a government, quasi-government and private. In agriculture industry, there are 15 government and quasi-government establishments providing employment to the 2,318 and 319 persons. There are six establishments in mining and quarrying industry. All these establishments are ~~based~~ owned by private companies and provide work to the 6,209 persons. In manufacturing industry, there are 39 government private establishment providing employment to the 2,819 and 6,858 persons. For constructions, there are 16 government and quasi-government establishments and 1,857 and 222 workers are engaged in constructions. There are 4 government and quasi-government establishments to look after electricity and gas water and sanitation service. Total employees are 1053 and out of them 110 workers are in government and 943 workers in quasi-government establishments. Trade, commerce and miscellaneous activities are mainly controlled by the quasi-government and private establishments. There are 23 establishments providing employment to 234 and 425 persons. There are 9 establishments handling transport, storage and communication and providing employment to 1716 persons out of which 1661 are in government and 55 persons in private. There are as many as 178 establishments providing services to 16,486 persons out of which 5,606 persons are in government, 8,532 persons quasi-government and 2,358 persons in private establishments.

CHAPTER-IV

CAPITAL

To develop industries capital is pre-requisite. The capital has been considered in terms of the cost of labour in relation to the demand for machinery. Of course, it is necessary to introduce new and sophisticated machinery. A firm must have the capital available to purchase such equipment, and for this supply of capital is required. Unless, there is sufficient capital industrial development cannot take place.

Capital can be made available through private savings, corporations, co-operative societies, banks, government and semi-government bodies etc. Demand for capital comes not only from industries but agriculture, trade and commerce as well. Some saving institutions such as investment trusts or investment companies, saving banks, specialized financial corporations, and stock exchanges are the important constituents of capital. Capital is required to serve the need of industry. Economic development depends upon availability of capital and capital depends upon availability of savings, proper organisation of intermediary institutions to bring the investment, regulation of investment and business activity together for mutual interests etc.

The larger managing agencing can make capital available to other firms which control firms banks and insurance companies as well. It is not necessary that in industrially under-developed country reserves are not enough or are comparatively less than developed one. The proportion with respect to reserves are roughly same in both an industrially developed country like America and an industrially less developed country like India.

Financing industrial operations is a genuine problem. The nature of financial requirement may be different for the rural and urban enterprises. Finance is the life blood of every industry or every form of production, therefore, it is essential to study the financial situation in the region which will help to highlight the constraints for the future planning and development of industries.

Co-operative Banks -

There are as much as 31 branches of co-operative banks. There are only two co-operative banks working in the district namely, district central co-operative bank and district Land Development Bank with Taluka branches. There are 22 branches of District Central Co-operative Bank with (See Table No.4.1) working capital of Rs.404.65 lakhs in 1971-72. Share capital is Rs.54.98 lakhs and reserve and other funds of Rs.25.38 lakhs respectively. This bank gives advance loans for short and medium term. The outstanding advanced loan for short term is Rs.185.04 lakhs

and for medium term is Rs.1.53 lakhs during the year 1971-72.

District Land Development Bank is operating through its 9 branches in the district with working capital of Rs.171.74 lakhs. The share capital of the bank is 20 77 lakhs, of rupees but reserve and other funds are very less and amounted Rs.0.48 lakh only. There is a provision of long term loan here and Rs.13.09 lakhs have been advanced on long term basis during 1971-72.

The main purpose of District Industrial Co-operative Bank is to grant loan to the industries to serve the need. But, unfortunately, there is not a single branch of the bank in the district which would help to promote industrial activities in the district.

Agricultural Credit Societies -

These societies give loans only to agriculture to ra-ise the production. Agricultural development is responsible for agro-industrial development as well as development of other industries. There are 1,189 societies in the district, and their talukawise distribution is given in Table No.4.2. Working capital of these societies is Rs.394.05 lakhs rupees. There are 346 societies with working capital of Rs.75.42 lakhs in Gad Chiroli taluka where as 82 societies in Rajura taluka with Rs.20.87 lakhs of working capital. The highest working capital is Rs.118.59 lakhs in Warora taluka with 222 societies and the lowest is in

Sironcha taluka near about Rs.8.67 lakhs during 1971-72.

During 1971-72, loan advanced in Bramhapuri taluka is Rs.48.05 lakhs, Warara Rs.41.35 lakhs, Gadchiroli Rs.20.22 lakhs, Chandrapur Rs.16.33 lakhs, Rajura Rs.4.00 lakhs and Sironcha Rs.1.90 lakhs. During the same year outstanding loan is Rs.288.81 lakhs in the district.

These societies are running smoothly to satisfy the need of the former while providing them loan on credit basis properly and in time. These societies provide loan for a short term period, only to the members.

Co-operative Societies (Other than agricultural credit & Banks)

There are three broad categories such as:

I. Agricultural Non-credit societies.

II. Non-Agricultural Credit Societies, and

III. Non-Agricultural Non-Credit Societies.

These are again classified into different types of societies. Let us see on after another.

I. Agricultural Non Credit Societies -

There are seven typ-es of societies falling under this are given below:

1. Agricultural Marketing Societies

2. Fisheries Societies

3. Animal Husbandary Societies

4. Irrigation Societies

5. Farming Societies

6. Agricultural Processing, and

7. Other Agricultural Non-Credit Societies.

1. Agricultural Marketing Societies -

There are 16 societies with working capital of Rs.37.85 lakhs in the district. These are mainly concerned with the agricultural commodities. The main business of these societies is to purchase and sale agricultural commodities (Table No.4.3).

2. Fisheries Societies -

There are 63 societies in the district. The main target of these societies is to develop fishing industries in the district and to increase the production and preservation of fishes. Working capital is near about 5.08 lakhs rupees during 1971-72.

3. Farming Societies -

The working capital is Rs.1.45 lakh in 40 societies. These are mainly concerned with farms and farming activities.

4. Agricultural Processing -

Eighteen societies are running with working capital of Rs.35.36 lakhs. These are mainly concerned with the processing of agricultural commodities.

5. Other Agricultural Non-Credit Societies -

There are 21 societies with working capital of Rs.1500/-.

II. Non-Agricultural Credit Societies -

There are three different types of societies under this category.

1. Urban Credit Societies
2. Salary Corners Societies (including factory workers), and
3. Thrift and Credit Societies & Bhisis and others.

There is not a single urban credit society in the district. But in case of salary earners societies, there are 52 societies with working capital of Rs.36.40 lakhs. Factory workers are also included in these societies. Loan allotment is possible only to the members and others. There is only one society which is called thrift and credit societies and Bhisis and others. Working capital of this society is 37 hundred only.

III. Non-Agricultural Non-Credit Societies -

Six different types of societies are coming under this third category of societies and are as follows:

1. Handloom Weavers Societies
2. Other Industrial Societies
3. Consumers Stores
4. Housing
5. Supervising Unions, and
6. Other non-agricultural non-credit societies.

Out of these six types of societies first two are

most important in connection with industrial development particularly household and small scale industries. Rest are not equally important.

1. Handloom Weavers Societies -

Six societies are working with Rs.5.90 lakhs to satisfy the need of handloom weavers in the district. The main purpose of these societies is to encourage handloom weavers by grouting loans to raise the production of handloom goods. It helps to solve the unemployment problem upto certain extent because in less capital more people can work in handloom industry to earn their livelihood.

2. Other Industrial Societies -

There are 32 societies in existence to provide finance to the industries and their working capital is near about Rs.13.48 lakhs. Since working capital is less these societies can provide loans to only small scale industries for short-term. For small industries capital is available in a smaller absolute total quantity and within a range of much higher rates of interest and without satisfactory financial connections; it is not profitable and possible to begin or expand small factory.

3. Consumers Stores -

There are 21 societies with working capital of Rs.3.57 lakhs. The share capital is Rs.1.14 lakhs and reserve and other fund is near about Rs.1,28,500.

4. Housing -

There are 86 societies and working capital is Rs. 15.40 lakhs. The share capital is Rs.1,65,000and reserve and loan is near about Rs.12,600.

5. Supervising Unions -

There are 18 supervising unions in the district.

6. Other non-agricultural Non-Credit societies -

One hundred and three societies are functioning in the district with working capital of Rs.24.69 lakhs. The share capital and reserve and loan is Rs.5.82 lakhs and Rs.1.84 lakhs respectively.

There are some societies which can invest the capital for industrial development. But such societies are very less in number and more over working capital is very less which cannot be given for long period and hence more capital is not possible through such societies, therefore, medium and large scale industries cannot begin.

Money Lenders -

Money lenders provide capital in rural areas and there is no close contact between the different constituents. There are 369 registered money lenders in the district during 1971-72, and loan advanced by them to the traders and non-traders is near about 37,26,640 rupees during (See Table 4.4) the same year. The table shows talukwise money lenders and money lent by them. In Chandrapur taluka, there are as many

as 173 registered money lenders and loan advanced by them is 10,47,116 rupees, where as in Rajura and Sironcha taluk there are only 10 money lenders five each and loan given by them is Rs.5,401 and Rs.1,949 respectively. Gadchiroli taluk enjoys comparatively more finance-loan than any other taluka from money lenders and it is 13,84,351 rupees. In Bramhapuri taluka 59 money lenders have been registered during 1971-72 and loan advances given by them to the traders and non-traders is 10,20,397 rupees.

Money lenders provide finance for short period and at much higher rates of interests and moreover finance is less which cannot serve the need, therefore, for an individual wishings to begin or expand a small firm it is a difficult task.

The district is facing a serious financial problem as there is not a single industrial bank or corporation which would satisfy the need. To start an industry huge amount of capital is required without availability of capital it is not possible to develop in-dustries though the resources are enough to cope-up with industrial development. The Central Government and State Government should provide the finance, but again question will arise upto what extent? It is not possible for the government to look after only one district, therefore, mobilisation of indigenous personal savings for industrial development is necessary. People are

not much conscious that is why it is a slow process. It requires imaginative and co-ordinated efforst in various directions besides creating a measure of confidence that savings invested in industrial concern would be safe, secure, remmerative and readily marketable[1]. This can be done through government agencies as well as private agencies which are mainly concerned to finance the industries.

---

1. S.C. Kuechal "The Industrial Economy of India". Chaitanya Publishing House, Ahmedabad 1969, P.250

CHAPTER-V

INDUSTRIES

Maharashtra is one of the industrially developed states and has the highest rate of investment, savings and accounts for more than 36% of the paid up capital of the joint stock companies in India. During 1952-71, near about (27.80 per cent) 3528 licences were issued for new industries and is highest in the country. However, industrial development is uneven in the State. Taking into consideration industrialisation (index no.) Chandrapur district belongs to Non-Industrial district of Maharashtra. In spite of abundant resource endowment, the district is lacking behind. There were only 53 registered factories in the district (Table 3.6) as per 1971.

From the table, it is quite obvious that the 41.51 per cent of the factories are based on agricultural products, 45.29 per cent mineral based and 13.20 per cent forest based. But, by and large industrial development of the district is very poor which accounts 0.43 per cent of industries out of the total industries in the State.

Mineral-based Industries -

Industries based on minerals are mainly concerned in the main mining area in the close proximity of power and

transportation facilities.

Power Plant -

Coal is the important raw-material which is used to generate electric power in the thermal plants. At present there is only one thermal plant at Ballarshah (18 MW). There is possibility of another thermal plant in the district; considering the resource endowment which is required for the plant.

Iron Plant -

The essential raw-materials required for the iron and steel plant are available in the district and adjoining area in the proximity of 100 km. While considering the potentialities a licence for manufacturing pig-iron has been issued at Chandrapur.

Cement Factory -

Cement industry plays important role in our economy. Cement requirement is increasing day by day in the modern world. Rapid industrialisation, construction of houses, roads, bridges and dams raise the demand for cement. There is only one cement factory in the district. Since, there is limestone belt near Ghugus from which limestone can be made available very easily and more than 600 tonnes of coal per day can be produced from Ghugus Colliery and power supply can be made available from Ballarshah power station.

Therefore, Ghugus is the appropriate place for locating cement factory in future.

Coal Carbonisation Plant -

The district has abundant deposits of coal, particularly non-coking coal. The available coal can be processed to coke which can be used for domestic purposes. This can be done through establishing low temperature carbonisation plant. The coal available at Ghugus coal field is suitable for the plant. Therefore, low temperature carbonisation plant can be started at Ghugus or Chandrapur.

Glass Industry -

There are two factories in the district and produce variety of glass (except optical lences) and glass articles. These factories depend on indigenous raw-material and coal for power.

Other Industries -

Ten industries are there for the manufacture of structural and clay products. Clay deposits of Bhandak are used in pottery works in the district. There is one factory for manufacture of pottery, China and earthen-ware.

Forest Based Industries:

Paper and Paper Board Industry -

Forest is the main source of raw-material of paper industry particularly bamboo and various types of grasses. More than 56 per cent of the area is occupied by the forests, and hence, there is a wide scope for the development of paper

industry. The Ballarpur paper and straw Board Mills Ltd., Ballarpur is the main unit in the district producing writing and printing paper. The annual capacity is more than 14000 tonnes and likely to extend upto 27500 tonnes of paper and pulp per year.

There are two pulp, paper and paper board Mills in the district. Paper board and packing paper can be manufactured from paddy straw, paper, waste, linseed fibre, rags and grass. Chandrapur district is the paddy and linseed producing area, so waste materials of paddy and linseed can be used to manufacture paper board and packing paper.

Furniture Industry -

There is great demand for furniture particularly in towns and cities. Teak is the important raw-material for furniture industry. Five units are in Chandrapur district to meet the increasing demand of the people. A number of artisans in rural as well as urban areas are earning their livelihood.

Saw Mills -

Saw Mill is essential for the proper cutting or conversion of timber into different parts. More than 60 Mills are in Chandrapur district. This is a small scale industry and the units are located close to other wood-based industries.

Fibre Board Industry -

The Government has issued a licence to start fibre board industry for the manufacture of chip-board of 7600 tonnes per year. Due to the inadequacy of durable wood, the waste wood can be used for making board. This may help to utilise wood in a proper way.

Other Industries -

There are other industries based on forest products such as Match Industry, lack industry and bidi industry etc., Chandrapur is one of the main lac producing districts not only in the State but also in the country. Bidi industry is just like a cottage industry. It is a source of income for the villagers and farm labourers, by providing full-time and part-time work.

Agro-Based Industry -

Development of processing and manufacturing depends upon food and raw-materials derived from agricultural particularly in a developing country like India, where the economy is largely agro-based[1].

Gins and Presses -

Neither much power nor skilled labour is required for cotton ginning and pressing units. There are five factories in the district and most of the processing is done mechanically.

Flour and Oil Crushing Mills -

Rice husking and flour mills are available in all parts of the district. Crushing of various oil seeds for

oil is another developed rural industry. Chandrapur is one of districts producing oil seeds, therefore, further development is possible. Eleven factories are in the district to process food grain.

Tobacco Industry -

Four tobacco processing factories are registered, out of them only two are working now. Sironcha taluka is the main producer of tobacco, particularly virginia variety. Since, the production is less, a small virginia cigarette factory could be started.

Small-Scale and Cottage Industry -

The effort has been made by the government to encourage small-scale and cottage apart from the factory industries. Powerlooms and handloom are the most important cottage industries. Most of these industries are dependent upon agricultural and forest products. Manufacture of cotton cloth bags (Savli) and getting kath, tendu leaves, charcoal, and making baskets in the forest regions are the main small-scale industries. Some towns are famous for their craftsmanship and skill of the local people, such as Savli and Bhadi are known for a kind of silk cloth.

Industrial Development in Future:

During the plan periods much attention has been paid to bring out a gradual decentralisation and diversification of industries to avoid a heavy concentration of industries

in a particular region. But, decentralisation, however, depends upon the power facilities, raw-material and developed transport net-work. Taking into account the availability of indigenous raw-material in plenty with power facility, it is profitable and useful to start with power large scale industries on the basis of which other small scale industries can be developed. Since, the policy of the government is to establish new industrial complex in the backward region to make balanced development in the country, and moreover, according to overall labour force projections as constrained in the CIDCO study, for Maharashtra, about 15 such centres will have to be developed and out of them Chandrapur is one of the important centres which would provide the lead.

Hence, Chandrapur district enjoys bounty of natural resources and being a backward district, it is supposed to get chance and preparance to start industries, and also the government policy of the dispersal of industries in backward and remote areas is also favourable in case of the district, in spite of this industrial development does not take place. Therefore, the demand for a seperate vidarbha finds some profits in the Governments dispersal policies. It is argued that as a seperate state, Vidarbha would be more favourably treated in the matter of location of major central projects. Secondly, its claims for incentives would also improve e.g., there is a scheme for an outright grant of 15 per cent of the cost of a new project, for which six

districts in each of the backward states, and three districts in each of the other states are eligible. In Maharashtra, Ratnagiri (in Konkan), Aurangabad (in Marathawada) and Chandrapur (in Vidarbha) are eligible[2]. This gives an impression that Chandrapur district is proper and suitable for industrial development particularly large-scale establishments.

However, it should be clear that which industries are feasible on the basis of available resources and infrastructure facilities in the district or are there some problems or hindrances which will make industrial development somewhat difficult and how these difficulties can be solved. This is only then possible, if an attempt has been made to study individual industries in detail.

The Iron and Steel Industry:

Iron and steel is a backbone of modern civilisation, it means that modern civilisation mainly depends upon iron and steel. And, therefore, the present age is called as the Iron age. Most of the modern machines are made from steel. Industrial prosperity of any country is dependent upon the production and consumption of steel.

---

2. D.R. Pande, "Maharashtra's Experience, Regional Development-III, Financial Express.

Locational Factors -

In India, iron and steel plants enjoy marvellous locational advantage. This industry is mainly based on the utilisation of weight-losing materials i.e. coal and iron ore which lose weight in the process of manufacture. Therefore, industries are attracted by availability of either coal or iron ore field and are based on utilisation of coal and iron ore. The pig iron industry requires more coal than iron ore, therefore, it is imperative to locate such factories in the vicinity of coal fields to reduce the transport cost. The steel plant consumes more iron than coal, so it is set up very near to iron ore field. The iron and steel producing centres of India are located in most cases, in the river valleys. This is due to the availability of water for cooling the furnaces which is important factor in the development of iron and steel industry. For making one tonne of pig iron, 57 tonnes of water is used. It shows the importance of water as a raw-material.

Besides these, limestone plays important role in the smelting of iron ore. Therefore, availability of limestone dolomite is also essential for the development of the iron and steel industry. Apart from this, there are other factors determining the location of the iron and steel industry such as refractory silica and ferro alloys.

On the basis of above analysis it will be clear that all the above factors are in favour of iron and steel

industry in Chandrapur district.

Chandrapur:

Though, at present there is no iron and steel plant, it can be started taking into account the necessary raw-material available which is required for iron and steel plant. There is possibility that Chandrapur will become one of the important centres of iron and steel industry in India.

The selection of Chandrapur to start iron and steel factory perhaps would be right as it is situated in Wardh river valley. Adequate supply of water for cooling the furnaces can be ensured from the river and its tributory. Chandrapur is suitable location in point of view of power and raw-materials. Raw-material is available in plenty in the close proximity of 100 miles.

Iron-ore:

The supply of iron-ore can be obtained from the existing iron-ore fields in the district itself as well as from Nagpur district. The iron ore in most of the mines is accessible by roads as well railways and available in close proximity of 100 miles and most of the mines are located near to railway stations on Nagbhir-Chandrapur narrow gauge line of the South Eastern Railway. The supply of iron ore is possible from the mines such as Loharia, Pipalgaon, Asida, Devalgaon, Bissi, Ratnapur Pusar, Surajagarh Range, Damkod-Wadi range and Dhamragarh range. These mines

are situated in the district and contains high to medium grade of iron-ore.

Coal -

Plenty of coal is available in the district very near to Chandrapur which can fulfil the requirement of the iron and steel plant. Chandrapur district alone contributes more than a million tonnes of coal to the total production. There are seven coal fields out of them one at Chandrapur, Ballarpur, Ghugus, Wasti-Rajura, Warora, Majri and Bandari.next These coal fields are lying between 15 to 30 miles north of Chandrapur except a few.

Limestone and Dolomite:

Supplies of limestone and dolomite can be obtained mostly from (1) Kondhala, Purkopar, Kamargaon, Wardha and Niljai near the Delhi-Madras broad gauge railway line, in Warora taluka; (2) Lakhampur, Palegaon, Gopalpur, Nawkari, Sangoda and Chandur in Rajur taluka. These deposits are located 32 km west of Manikgad railway station, on Delhi-Madras broad gauge railway line.

Refractory Materials -

Fire clay can be obtained from Bhandak which is 32 km from Chandrapur on Chandrapur-Nagpur road and also a railway sation on Wardha Kazipeth line. Fire clay also can be obtained from Kothari village on both the sides of the Chandrapur-Allapatti road.

Manganese -

The supply of this essential raw-material for the manufacture of carbon steel can be obtained from the adjoining districts such as Nagpur and Bhandara.

Water Supply -

The location of the plant will be near to Wardh river, therefore, water supply for the steel plant at Chandrapur can be drawn from the river. The tributory of the river Wardha called Iravati is flowing close to Chandrapur so water can be supplied from it. In summer flow of the Iravati river is reduced considerably. Therefore, a dam can be constructed on Iravati near to Chandrapur to fulfil the requirements of water supply.

Other facilities -

The plant will enjoy locational advantage as Chandrapur is situated on Delhi-Madras broad gauge line. Labour supply can be obtained from local areas and adjoining states.

The Cement Industry:

The cement serves in innumerable ways to the development of modern civilization. The use of cement is not a new thing and it has been used since ancient period. Cement has been known as a building material. It has been used at the time of the ancient sind civilization at Mohanjodaro in India. Limestone blocks were used while constructing pyramids by ancient Egyptian engineers to the heavy

civilization of the Nile. Cement has been used in some form of mortar in the Greek civilization.

Now a days the production and consumption of cement in any country is considered as an index of its industrial prosperity. Apart from natural advantages, the development of industry was much delayed; this is due to the fact that the demand for cement in the country in a real sense was created when urbanisation and industrial development assumed considerable importance in the early part of the 20th century.

During the Third Plan period Government adopted deliberate policies for the development of the cement industry. One company is set up and owned by Government, called the cement corporation of India with the objectives of surveying, prospecting and proving limestone deposits in the country, which erects cement manufacturing factories and promotes ancillary and other activity for the development of the industry.

Ghugus -

Ghugus will be a suitable site to locate cement factory in the district. It is very near to Chandrapur and accessible by road. Raw-materials are available close to Ghugus.

Limestone -

Limestone is the most important raw-material for the

cement industry. In the district there are no chalk deposits, hence the cement industry can be primarily based on limestone. Limestone belt is very near to Ghugus and can be obtained from Kandhala, Purtepar, Kamargaon, Mardha villages in Warora taluka. Apart from this limestone can be brought from the villages, Lalthanpur, Palegaon, Gopalpur, Nawkari, Sangoda and Chandur in Rajura taluka. For the manufacture of a tonne of cement 1.6 tonnes of limestone is necessary. Therefore, taking into account the importance of limestone as a raw-material for manufacture of cement Ghugus will be suitable place.

Coal -

For the manufacture of a tonne of cement 38 per cent coal is necessary. Coal is available in hand and can be drawn from Ghugus colliery. The first colliery was opened at Ghugus, in March, 1870. The estimated reserves have been 1000 million tonnes and will be sufficient to fulfil the need of coal.

Power -

There is no problem of power supply. It can be supplied from Chandrapur. Since Chandrapur is near to Ghugus, power supply will be made available at cheaper rate.

Clay -

The requirement of clay depends upon the quality and quantity of limestone. The clay deposits are available in many places in the district and it varies in quality and quantity; and can be obtained from Bhandak and Kothari

village. The quarries are near Chugus.

Gypsum -

Upto 5 per cent raw gypsum stone may be necessary. Since, transport cost is not much it can be delivered at the cement factory at lower rate than the cost of Clinker.

Water -

Water can be made available locally, since water requirements of a cement factory are not large. It depends upon the process used. In case of wet process kiln, requirement are much more then for a dry process kiln. The requirement of water can be reduced by introducing other methods.

Paper and Pulp Industry:

In early days, India had been an important producer of hand made paper. The first paper mill was established in 1832 at Serampore in West Bengal. The development of the paper industry in a real sense in the country started only after the establishment of the Bally Paper Mills in 1867. The development of paper industry had been much delayed due to the absence of a good home market because large section of the society were illiterate.

Production and consumption of paper in a country not only considered as index of its education and cultural advancement but along with steel, electricity and fertilizers, the per capita consumption of paper may be considered as index of the economic development of a country. The demand for paper

is increasing day by day and, therefore, to meet the demand of paper it is necessary to establish new paper mills where raw-material is available in plenty.

Taking into account some factors such as income and per capita consumption, the growth rate in literacy and educational expenditure of government required a total demand of about 1.44 million tonnes of paper in 1975, for all types of paper and 2.19 million tonnes in 1980, estimated by the pre-investment survey team. Whereas NRCI's estimates while taking into consideration per capita income, expenditure on education and industriall production the total demand for all types of paper will be near about 2.54 million tonnes in 1980.

The paper and pulp mill was established at Ballarpur in Chandrapur district. It is one of the major paper mills in the country, manufacturing writing and printing paper. The annual capacity is about 1400 tonnes and likely to be extended upto 27,800 tonnes. More than 56 per cent of the area of the district is covered by forest, therefore, raw material is available in plenty which is essential for paper mill. Taking into consideration the forest resources another paper mill can be established to grasify the increasing demand for paper.

Asti:

Asti may be a suitable place to locate paper and pulp mill in the district. Asti is situated on Sironch-Chandrapur

road near to Wainganga river. Paper mill is forest based industry, more than 82 per cent of the area of Sironcha taluka is under forest and hence raw-material can be obtained from Sironcha forest and also from Andhra Pradesh and Madhya Pradesh.

Raw-Materials -

Really speaking, industry should utilise indigenous raw-material. Bamboos and various types of grasses are raw material for manufacture of paper and can be obtained from the forests of the district. Paper board and packing paper can be manufactured from linseed fibre, rags, grass and paddy straw. Since Chandrapur is the linseed and paddy producing area, so waste material of paddy and linseed can be used to manufacture paper board and packing paper.

Power and Fuel -

Power is necessary for a industry. The power supply can be made from Chandrapur. Coal can be drawn from Chandrapur, Rajura, Warora, Majri and Bandar coal-fields which are situated within the district.

Since, Asti is very near to Wainganga river, water can be supplied from the river to fulfil the requirement. Labour can be drawn from local areas as well as from adjacent districts.

Once major industries are developed in the district other small scale industries can be developed which are partly

or fully dependent upon the products and by-products of the major industries. But, industrial growth depends upon some factors such as raw-material, capital, labour, marketing centres and infra-structure facilities such as transport and communication level of education, and vocational and technical institutions.

Capital Requirement for Industrial Development:

Huge amount of capital is required to establish major industries such as iron and steel, cement, paper, chemicals etc. The under-developed country like our is facing the problem of capital, which is ~~scat~~ not enough in relation to the population and natural resources. This is due to continuation of tradition labour intensive occupations their low productivity. The development and prosperity of any backward and under-developed region or country mainly depends upon adequate supply of capital. Professor Kuznets pointed out that the major capital stock of an industrially advanced country is not in its physical equipment, it is the body of knowledge amassed from tested findings and the capacity and training of the population to use this knowledge effectively: Capital is but one of a number of economic factors that combined with social, political and cultural forces in bringing about the changes inherent in development[3]. Therefore, it is generally accepted that capital is necessary for the overall development of arregion or a country.

---

3. Alan B. Mountjoy, "Industrialization and Under-developed countries". Hutchinson and Co.Ltd., London 1966, P.84

The district has limited indigenous capital. It is not enough to start major industries, since the capital requirements is in crores of rupees. ~~Though~~ There is not a single Industrial Co-operative Bank which can provide finance for industries. There are other co-operatives societies providing loan to agriculture. But for industrial purpose, there is scarcity of capital. This is due to low saving, because of low productivity. Taking into account the financial position the district is unable to provide enough finance to establish industries.

But suggested industries comes in public sector, therefore, it is upto the government to provide finance to start the industries in the backward regions since priority is given to backward regions. Private entreprenuer may not be ready to establish the factories in backward and remote areas. Take for instance the case of cement industry itself. It has never been able to meet the demand. The government has issued letters of intent to interested and resourceful business houses but they could not go ahead, as indigenous plant and equipment take about four years to be delivered[4]. It shows that private entreprenuer are not ready to take risk while establishing industrial units.

For the development of the backward areas the State

---

4. D.P. Maloo, "Industrial Policy: Financial Express 5th December, 1974.

Government has been offering a package of special incentives through the Maharashtra Industrial Development Corporation (MIDC), the Maharashtra State Financial Corporation (MSFC) and the State Industrial and Investment Corporation of Majarashtra (SICOM)[5]. The capital can be provided through government corporation to establish industries in backward areas and hence, Chandrapur is one of the backward districts of the state that can get the benefits. Mr. S.B. Chavan (CM) has just announced two other important incentives. One is that entrepreneurs willing to set up industries and having a power consumption of 2.5 MV would be exampted from power cut. Secondly, the State Government would revive the scheme of extending financial assistance to industrial units proposed to be set up in backward regions in case they failed to secure the necessary loans from commercial bansk[6]. Though, government is ready to provide loans to these business houses who will set up industrial units in backward areas, and if supposed private entrepreneurs will not agree then the government should set up industrial units in public sectors.

Labour -

Cheap labour supply is another important factor to

---

5. Editorial: Backward Areas. The Economic Times 28th October, 1975.

6. Ibid

decide the location of a factory. More than 82 per cent of the working force engaged in agricultural activities, so it is obvious that skilled labour force is comparatively very less in the district and cannot fulfil the requirement of the industries. Labour can be drawn from the adjoining district since plenty of labour force is available. The available labour force should be trained by giving them training. Of course, it will take some time and also more expenditure may occur but, it will profitable in course of long run. Because in the long run success or failure must depend upon the capacity and adaptability of the people in adopting new techniques and new ways of life in the will to work and to make sacrifices in their understanding and discipline as traditional ways are superseded and new social orders and conditions arise[7]. For the development, participation of the mass of the people should be required from local as well as surrounding areas. It is hoped that industries cannot face labour problem in future.

Markets -

In most of the cases industrial development revolves around the potential market. Industry must sell its goods, either at home or abroad. There will be no problem of market since Chandrapur is situated on Delhi-Madras broad gauge railways line. Therefore, finished goods can be sent directly

---

7. Alan B. Mountjoy, "Industrialization and Under-developed Countries", Hutchinson & Co. Ltd., London. 1966, PP.117-18.

to Delhi and Madras. Besides, Nagpur another market place which can supply goods to the local areas, and also to the Big Market Places like Bombay and Calcutta. Nagpur is one of the important market places close to Chandrapur which occupied middle position in the country and it is accessible by roads and railways.

As far as development is concerned, proper planning, availability of capital and infra-structure facilities are essential. If it has been done properly, then number of industries can be established in next 5 to 10 years apart from major industries. After full-fledged development, growth and expansion of industries, there is possibility of a industrial belt, which may be called as Chandrapur - Nagpur Industrial Belt, in future.

===

CHAPTER-VI

A SUMMARY OF CONCLUSIONS

The industrial development not yet started in a real sense. There are only 0.43 per cent of industries in the district out of total industries in the state. This study gives an outline to understand the problems of restricted industrial growth, though anormous raw-material is available to promote industries in the district. The inferences drawn from the study are as follows:

(i) Transport plays an important role for industrial development. The district is not well served by transport. Due to the paucity of transport and communication facilities industrial growth is restricted.

(ii) Power supply is not enough to meet the increasing demand of industries.

(iii) There is not a single vocational and technical institution, due to the fact that the increasing demand of skilled labour cannot be fulfilled.

(iv) Abundant raw-material is available to start major industries i.e., power plant, steel plant, cement plant, paper and pulp mill and other ancillary industries.

(v) Out of the total working force near about 80 per cent of the workers have been engaged in traditional agricultural activities and only 6.52 per cent in industrial activities.

(vi) Finance is the basic need of industries without it industrial development cannot take place. But, there is not a single industrial co-operative Bank or a branch to provide finance to the industries.

(vii) There are agricultural societies and are the main source of finance for the development of agriculture.

(viii) Apart from agricultural-societies, money-lenders are also providing loans in both rural and urban areas.

(ix) Major industries required huge amount of capital and it is possible only if government will take active part to establish while providing finance to the major industries.

(x) The industries are located in western part of the district near Chandrapur in a proximity of 30 miles.

(xi) Infra-structure and necessary facilities like transport and communication, adequate power and water supply and finance through banks and from government is required for the development of the

district as a whole.

(xii) The systematic exploitation and utilisation of the indigenous raw-material within the district is needed to promote various types of industries.

It is clear that the district is industrially backward. The district has been facing some problems. Once, these problem will be solved, then there is an ample scope for rapid industrial development.

====

TABLE NO.1.1

Length of Railway Route in Chandrapur District in 1972.

Sl. No.	Railway Route	Length in km at on 31st March, 1972
1.	Broad Gauge	
	I. Single	127
	II Double	16
	III Tribles and More	Nil
2.	Metre Gauge	Nil
3.	Narrow Gauge	185
	Total Railway Route	296

SOURCE: Socio-econ. review and district statistical abstract Chandrapur District, 1971-72.

TABLE NO.12

Distribution of Roads in Chandrapur District in 1960-61 & 1971-72.

Sl. No.	Categories	Road Length in kms per 100 sq km 1960-61	1971-72
1.	Cement concrete	-	-
2.	Black topped	0.47	0.98
3.	Water bound macca dom	1.37	3.11
4.	Granular material	-	0.73
5.	Lower type	0.71	5.59
	Total All Types	2.54	10.41

SOURCE: Socio-economic review and district statistical abstract Chandrapur District, 1971-72.

TABLE NO. 1.3

Road length According to category in chandrapur District in 1972.

(length in Km.)

Sl. No. 1.	Types of Roads 2.	Municipal			Municipal
		B & C Dept. 3.	Z.P 4.	Grand Total 5.	6.
1.	National Highways	-	-	-	-
2.	State Highways	733.02	195.22	928.24	-
3.	Major District Roads	-	403.85	403.85	-
4.	Other District Roads	1.41	52.76	54.17	-
5.	Village Roads	-	69.70	69.70	-
6.	Others	-	1263.74	1263.74	102.13
	Total	734.43	1985.27	2719.70	102.13

Source:- Socio-econ. review and District Statistical Abstract Chandrapur District 1971-72.

TABLE NO. 1.4

Surface Classification of Roads in Chandrapur District in 1972

(Length in Kms)

Sl. No.	Types of Roads	Extra Municipal			Municipal
		B& C Dept.	Z.P.	Total	
1.	2.	3.	4.	5.	6.
1.	Cement Concrete	-	-	-	7.03
2.	Black Topped	245.74	11.16	256.90	10.52
3.	Water Bound Maccadom	395.55	415.91	811.46	21.51
4.	Granular Material	72.83	118.54	191.37	4.00
5.	Lower Types	20.31	1439.66	1459.97	59.07
6.	Total	734.43	1985.27	2719.70	102.13

Source:- Socio-eco review and District Statistical Abstract, Chandrapur District 1971-72.

TABLE NO.1.5

Number of post, telegraph and telephone offices and Radio licences issued in Chandrapur district during 1961-62, 1965-66, 1971-72.

Sl. No.	Year	No. of post offices	No. of telegraph offices.	No. of letter boxes.	No. of postman.	No. of telephone.	No. of radio licences issued & renewed together.
1.	1961-62	231	15	352	69	208	3431
2.	1965-66	253	19	425	75	614	1919
3.	1971-72	275	34	493	85	1060	N.A.

SOURCE: Socio-economic review and district statistical abstract Chandrapur District, 1971-72.

TABLE NO.1.6

Per capita consumption of electricity (in 1960-61 & 1971-72).

Sl. No.	Years	Domestic consumption KWH.	Total electric consumption KWH.
1.	1960-61	0.88	21.51
2.	1971-72	2.11	90.76
3.	Percentage increases	139.77	321.94

SOURCE: Socio-economic review and district statistical abstract Chandrapur District, 1971-72.

TABLE NO.1.7

Electricity Consumption in Chandrapur District (in '000' k.W.H.)
in 1971-72.

Sl. No.	Types of generation	Year	Domestic consumption	Commercial light and small power	Industrial power	Public light-int.	Agri-culture	Other types	Total
1.	Thermal	1971-72	33.96	27.51	14,0,68	9,68	6,05	2,01	14,81,89
2.	Hydro	1971-72	-	-	-	-	-	-	-
3.	Others	1971-72	63	90	38	30	21	-	2,42
4.	Total	1971-72	34,59	28,41	14,03,06	9,98	6,26	2,01	14,84,31

TABLE NO.1.8

Rural electrification in Chandrapur District.

Sr. No.	Agency	Year	Villages electrified.	Total villages
1.	Maharashtra State Electricity Board	31.3.1961	14	2755
		31.3.1966	70	2755
		31.3.1971	301	2755
		31.3.1972	353	2755

SOURCE: Socio-economic review and district statistical abstract Chandrapur District, 1971-72.

TABLE NO. 1.9

No. of institutions and students in Chandrapur District in 1960-61 and 1970-71

Categories	Years		Percentages increase
	1960-61	1970-71	
1.	2.	3.	4.
I. Primary Educations			
i) Institutions	1,059	1,987	87.62
ii) Students (a) Boys	54,110	99,562	84.00
b) Girls	19,411	54,966	183.17
c) Total	73,521	1,54,528	110.18
II. Secondary			
i) Institutions	61	133	118.03
ii) Students			
a) Boys	14,010	28,635	104.39
b) Girls	2,919	10,668	265.47
c) Total	16,929	39,303	132.16
III. Higher Institutions			
i) Institutions	2	9	350.00
ii) Students	486	5,499	1031.48

Source: Socio -economic Review and Stastical Abstract Chandrapur District 1971-72

Table No. 1.10

Medical facilities available through Public and Public aided bodes in Taluka of Chandrapur District in 1971

Sr. No.	District/ Taluka	No. of Hospitals	No. of dispensaries	No. of maternity Homes	No. of Health centres	No. of primary Health Centres	No. of Doctors	No. of Vaidyas	No. of Nurses	No. of Beds		
										Male	Female	Childre
1	2	3	4	5	6	7	8	9	10	11	12	13
	District	4	83	7	-	18	102	34	178	182	276	22
	Taluka	-	12	2	-	3	17	5	19	8	30	-
1.	Bramhapuri	-	12	2	-	3	17	5	19	8	30	-
2.	Warora	2	17	3	-	3	22	9	29	49	63	7
3.	Gadchiroli	-	18	1	-	5	21	6	29	18	29	.
4.	Chandrapur	2	22	1	-	3	32	10	82	96	141	15
5.	Rajura	-	6	-	-	1	3	4	7	4	10	-
6.	Sironcha	-	8	-	-	3	7	-	12	7	13	-

Source:- Socio-Economic Review and District Statistical Abstract, Chandrapur District - 1971-72

TABLE NO.1.11

Number of family planning centres in Chandrapur district in 1971-72.

Sl. No.	District/Taluka	No. of family planning centres as on 31.3.1972.
	District Total	20
	Taluka	
1.	Brahampuri	3
2.	Warora	3
3.	Gadchiroli	5
4.	Chandrapur	4
5.	Rajura	2
6.	Sironcha	3

SOURCE: Socio-economic review and district statistical abstra-ct Chandra-pur District, 1971-72.

Table No. 2.1

The analysis of coal of Chandrapur Coal field

Name of the Colliery	Ash	Moisture	Volatile Matter	Fixed Carbon
	per cent	per cent	per cent	per cent
1. Mahakali	14.2	11.3	30.7	56.95
2. Rayatwari	12.6	9.7	34.0	57.54
3. Hindustan Lalpeth	13.9	9.6	31.5	57.66

Table No. 2.2

The analysis of coal in Ghugus-Telwasa Coal field

Area	Ash per cent	Moisture per cent	Volatile matter per cent	Fixed carbon per cent
Ghugus area				
Top seam	12.68	14.45	29.40	57.92
Middle seam	8.0	10.0	26.7	30.1
Bottom seam	11.9	11.9	29.6	39.1
Telwasa Area				
Upper seam	22.91	--	33.15	43.94
Lower seam	18.00	--	32.00	50.00

Table No. 2.3

The analysis of coal of Ballarpur Coal field

Moisture	Top seam	Bottom seam
	5.7 per cent	4.1 per cent
Volatile Matter	25.6 per cent	23.1 per cent
Fixed carbon	35.3 per cent	33.0 per cent
Ash	14.6 per cent	10.7 per cent

Table No. 2.4

The analysis of coal of Majri Coal field

Moisture	-----	8.1 per cent
Ash	-----	29.9 per cent
Fixed carbon	-----	55.72 per cent

Table No. 2.5

Forest area in Chandrapur District during the year 1971-72

(In Hectares)

District	Reserved	Protected	Unclassed	Total
1	2	3	4	5
District Total	7,21,940	10,70,354	56,286	18,48,580
Chandrapur				
Revenue	---	---	56,286	56,286
Forest	7,21,940	10,70,354	---	17,92,294

Table No. 2.6

Forest Production in Chandrapur District during the year 1971-72

Timber		Fuel		Minor Forest Production in Value			
Quantity in 000' M^3	Value in Rs.	Quantity in '000' M^3	Value in Rs.	Bamboo in Rs.	Grass and Gracing in Rs.	Other Products in Rs.	Total value in Rs.
1	2	3	4	5	6	7	8
92	2,30,19,865	849	52,12,471	22,09,579	2,58,748	2,23,15,880	5,30,16,543

Table No. 27

Land utilisation in Chandrapur District in 1970-71

(in hectares percentage)

District/ Taluka	Years	Total Geographical area	Area under forests	Area not available for cultivation			Other uncultivated land excluding fallow land				Fallow land			Net area sown	Area sown more than once	Gross cropped area
				land put to non-agricultural uses	Barren & uncultivable land	Total 6 and 7	Cultivable waste	Permanent pasture & other grazing land	Land under Misc. trees crops etc.	Total 9+10+11	Current fallows	Other fallows	Total 13+14			
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
District Total	1970-71	25,83,475 (100%)	56.35	4.39	1.67	6.06	3.07	6.95	00.57	10.59	1.12	0.78	1.90	25.10	2.21	27.31
Taluka																
Bramhapur	1970-71	2,60,996 (100%)	45.39	8.06	0.58	8.65	3.59	8.65	00.43	12.68	0.41	0.49	0.89	32.40	9.24	41.64
Warora	"	3,32,045 (100%)	28.61	4.55	1.71	6.26	2.15	7.12	0.55	9.83	2.80	0.51	3.31	51.99	1.70	53.69
Gadchirali	"	7,22,952 (100%)	61.94	4.11	1.13	5.25	3.91	9.36	0.45	13.72	0.52	0.84	1.36	17.72	2.57	20.29
Chandrapur	"	3,36,749 (100%)	40.22	6.89	1.08	7.97	3.89	6.24	1.26	11.39	1.93	1.09	3.02	37.40	2.50	39.90
Rajura	"	1,62,094 (100%)	10.46	5.41	12.63	18.04	6.59	3.46	2.09	12.14	3.96	2.57	6.53	52.83	-	52.83
Sironcha	"	7,68,639	83.54	2.04	0.46	2.49	1.41	5.07	0.10	6.58	0.26	0.43	0.69	6.70	0.06	6.76

Table No. 2.8

Area under important crops in Chandrapur district in 1960-61 and 1970-71

Sr. No.	Name of the crop	Year	Percentage of area under crops to gross cropped area						
			District Total	Bramha-puri	Warora	Gadchiroli	Chandrapur	Rajura	Sirencha
1	2	3	4	5	6	7	8	9	10
1.	Rice	1960-61	31.11	49.77	9.18	60.64	24.56	2.62	59.76
		1970-71	32.86	51.82	10.53	59.66	26.23	4.65	57.87
2.	Wheat	1960-61	5.79	4.14	14.26	2.08	2.72	3.64	0.13
		1970-71	5.22	5.02	12.22	2.26	2.47	3.37	0.04
3.	Jowar	1960-61	29.64	16.84	35.23	12.79	45.05	39.02	23.83
		1970-71	28.64	17.80	32.89	13.03	45.67	34.70	26.66
4.	Total Cereals	1960-61	67.33	70.89	58.67	77.82	72.57	45.77	86.73
		1970-71	67.74	74.82	55.65	77.89	74.66	43.32	88.17
5.	Total pulses	1960-61	15.02	24.10	10.42	16.93	13.42	18.20	6.74
		1970-71	15.64	21.59	15.78	16.88	11.29	18.85	5.21
6.	Total food-grains	1960-61	85.35	94.96	50.09	94.75	85.99	63.97	93.41
		1970-71	83.39	96.41	71.43	94.77	85.94	62.17	93.38

Table No. 2.8 (Contd.)

1	2	3	4	5	6	7	8	9	10
7.	Total food crops	1960-61	84.27	96.44	71.69	96.08	87.69	66.88	94.34
		1970-71	85.54	97.85	74.72	95.99	88.06	65.24	94.39
8.	Cotton	1960-61	3.82	--	7.49	--	0.26	14.26	--
		1970-71	5.11	--	11.75	--	0.25	17.27	--
9.	Oil Seeds	1960-61	11.55	3.45	26.68	3.45	11.92	18.05	4.48
		1970-71	9.00	2.08	13.33	3.53	11.63	16.85	4.56
10.	Total Non-food crops	1960-61	15.73	3.56	28.31	3.92	12.31	33.12	5.66
		1970-71	14.46	2.15	25.28	4.01	11.94	34.76	5.61

Table No. 2.9

Talukawise percentage of Irrigated area in Chandrapur District in 1960-61 and 1970-71

Sr. No.	Talukas	Percentage of net irrigated area to net area cultivated	
		1960-61	1970-71
1.	Bramhapuri	42.12	42.97
2.	Gadchiroli	22.65	24.34
3.	Chandrapur	20.52	21.84
4.	Warora	7.21	8.18
5.	Sironcha	5.50	5.03
6.	Rajura	0.15	0.55
	District Total	15.88	17.13

Table No. 2.10

Production of important crops in Chandrapur District

Sr. No.	Crops	Area in hectares		Percentage increase or decrease	Out turn in '00' Metric Tonnes		Percentage increase or decrease
		1960-61	1970-71				
1	2	3	4	5	6	7	8
1.	Rice	205,402	231,878	+ 12.89	1659	2663	+ 63.76
2.	Wheat	38,170	36,799	- 3.64	154	158	+ 2.59
3.	Jowar	195,659	202,097	+ 3.29	919	362	- 60.61
4.	Total cereals	444,488	477,970	+ 7.53	2647	3108	+ 17.42
5.	Gram	10,064	11,728	+ 16.53	30	45	+ 50.00
6.	Tur	7,338	11,794	+ 60.72	69	58	- 15.94
7.	Total pulses	99,138	110,357	+ 11.32	293	241	- 17.75
8.	Sugarcane (in terms of gur)	269	169	- 37.17	12	16	+ 33.33
9.	Cotton (bales)	25,213	36,068	+ 43.05	103	89	- 13.59
10.	Seasamum	45,150	38,644	- 14.41	84	79	- 5.95
11.	Linseed	30,269	24,313	- 19.68	71	50	- 29.58

Table No. 2.11

Yield per Hectare of Principal crops in Chandrapur District in 1970-71

Sr. No.	Crops	Yield per Hectare (in ₹)
1.	Rice	1104
2.	Wheat	432
3.	Jowar	169
4.	Bajra	--
5.	Maize	759
6.	Other Cereals	295
7.	Total Cereals	635
8.	Gram	402
9.	Tur	496
10.	Others	170
11.	Total Pulses	231
12.	Sugarcane (in terms of gur)	80
13.	Cotton (in terms of Bales)	44
14.	Ground-nut	500
15.	Seasamum	150
16.	Rape Mustard	--
17.	Linseed	234
18.	Caster seed	500
19.	Tobacco	500
20.	Chillies	336

Table No. 2.12

Livestock in each Taluka of Chandrapur district as per 1966

Sr. No.	District/ Taluka	Cattle	Buffaloes	Total Bovine	Sheep	Goats	Other livestock	Total livestock
1	2	3	4	5	6	7	8	9
	District	9,52,601	1,23,811	10,76,312	52,053	2,30,418	12,774	13,71,557
	Talukas	(69.45)	(9.03)	(78.47)	(3.80)	(16.80)	(0.93	(100.00)
1.	Brahmapuri	139371 (72.63)	14013 (7.30)	153384 (79.93)	9124 (4.75)	28744 (14.98)	647 (0.34)	191899 (100.00)
2.	Warora	188115	16728	204843	6578	48318	1076	260815
		(72.13)	(6.41)	(78.54)	(2.52)	(18.53)	(0.41)	(100.00)
3.	Gadchiroli	244562	36559	281121	10248	65396	4515	361280
		(67.69)	(10.12)	(77.81)	(2.84)	(18.10)	(1.25)	(100.00)
4.	Chandrapur	160590	27130	187710	19871	34157	1335	243073
		(66.06)	(11.16)	(77.22)	(8.17)	(14.06)	(0.55)	(100.00)
5.	Rajura	74489	10099	84588	3495	19425	529	108037
		(68.95)	(9.35)	(78.30)	(3.24)	(7.98)	(0.49)	(100.00)
6.	Sirncha	145384	19282	164666	2737	34378	1672	206453
		(70.42)	(9.34)	(79.76)	(1.33)	(16.65)	(2.26)	(100.00)

Table No. 2.13

Talukawise Poultry in Chandrapur district in 1961 and 1966.

Sr. No.	Talukas	Poultry per 100 households	
		1961	1966
1	2	3	4
1.	Bramhapuri	224.87	97.35
2.	Warora	83.27	124.45
3.	Gadhiroli	432.28	270.23
4.	Chandrapur	270.18	116.83
5.	Rajura	268.21	111.03
6.	Sironcha	384.06	238.19

Table No. 3.1

Population variation in Chandrapur District since 1901

Year	Persons	Decade variation	Percentage decade variation	Male	Female
1	2	3	4	5	6
1901	574323	--	--	283896	290427
1911	729347	+ 155024	+ 26.99	363793	365554
1921	715365	- 13982	- 1.92	357021	358344
1931	823321	+ 107956	+ 15.09	413747	409574
1941	942053	+ 118732	+ 14.42	473672	468381
1951	1052975	+ 110922	+ 11.77	527645	525330
1961	1238070	+ 185095	+ 17.58	623681	614389
1971	1640137	+ 402067	+ 32.48	832567	807570

Table 3.2

Literacy in Chandrapur district in 1971

District	Rural Urban	No. of literates			Percentage of literacy		
		Males	Females	Total	Males	Females	Total
1	2	3	4	5	6	7	8
District Total	Total	321620	117460	439070	38.63	14.54	26.77
	Rural	266172	88414	354686	35.79	12.12	24.07
	Urban	55448	29036	84484	82.31	37.17	50.56

Table No. 3.3

Distribution of population according to age-group in Chandrapur District in 1961 (in '000')

Age groups Classification	All ages	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-44	45-59	60 and above	Not stated
	1	2	3	4	5	6	7	8	9	10	11	12
Total	12381	1871	1746	1248	930	1114	1142	900	1391	1307	686	10
		(15.11)	(14.10)	(10.37)	(7.51)	(9.22)	(9.22)	(7.26)	(11.23)	(10.55)	(5.54)	
Rural	11424	1735	1618	1174	845	1019	1053	831	1287	1213	639	10
		(15.18)	(14.16)	(10.27)	(7.39)	(8.91)	(9.21)	(7.27)	(11.26)	(10.61)	(5.59)	
Urban	957	136	128	110	85	96	89	69	104	94	47	--
		(1421)	(13.37)	(11.49)	(8.88)	(9.92)	(9.29)	(7.21)	(10.86)	(9.82)	(4.91)	

Table No. 3.4
Workers and Non-workers in Chandrapur District in 1971

Sr. No.	Category	Rural			Urban			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8	9	10	11
1.	Total population	743588	729449	1473037	88979	78121	167100	832567	807570	164013
2.	Total workers (I - IX)	416075 (55.95)	199226 (27.31)	615301 (41.77)	42854 (48.16)	6341 (8.11)	49195 (29.44)	458929 (55.12)	205567 (25.46)	66449 (40.51
3.	Cultivator (I)	227224 (54.61)	68699 (34.48)	295923 (48.09)	2705 (6.31)	411 (6.48)	3116 (6.33)	229929 (50.10)	69110 (33.61)	299039 (45.00
4.	Agricultural labourer (II)	110631 (26.58)	119779 (60.12)	230410 (37.44)	1993 (4.65)	1325 (20.89)	3318 (6.74)	112624 (24.54)	121104 (58.91)	233728 (35.17
5.	Livestock, Forestry, Hunting, Plantation, Orchards and allied activities(III)	15527 (3.73)	1165 (0.58)	16692 (2.71)	1698 (3.96)	112 (1.76)	1810 (3.67)	17225 (3.75)	1277 (0.62)	18502 (2.78)
6.	Mining and Quarrying (IV)	2756 (0.66)	333 (0.16)	3089 (0.50)	3656 (8.53)	187 (2.94)	3843 (7.81)	6412 (1.39)	520 (0.25)	6932 (1.04)
7.	Manufacturing Servicing, Processing and repairs (V)									

Table No. 3.4 (contd.)

1	2	3	4	5	6	7	8	9	10	11
a.	Household Industry	16422 (3.94)	3077 (1.54)	19499 (3.16)	1836 (4.28)	471 (7.42)	2307 (4.68)	18258 (3.97)	3548 (1.72)	21806 (3.28
b.	Other than households industry	6221 (1.49)	690 (0.34)	6911 (1.12)	8055 (18.79)	627 (9.88)	8682 (17.64)	14276 (3.11)	1317 (0.64)	15593 (2.34
8.	Construction (VI)	3707 (2.01)	1006 (0.52)	4713 (1.53)	1358 (15.27)	370 (10.10)	1728 (14.60)	5065 (3.25)	1376 (0.82)	6441 (2.50)
9.	Trade and Commerce (VII)	8386 (2.01)	1049 (0.52)	9435 (1.53)	6545 (15.27)	651 (10.10)	7196 (14.60)	14931 (3.25)	1690 (0.82)	16621 (2.50)
10.	Transport Storage and communication (VIII)	1979 (0.47)	191 (0.99)	2170 (0.35)	3877 (9.04)	185 (2.91)	4062 (8.25)	5856 (1.27)	376 (0.18)	6232 (0.93)
11.	Other Services (IX)	23222 (5.58)	3237 (1.62)	26459 (4.30)	11131 (25.97)	2012 (31.73)	13143 (26.71)	34353 (7.48)	5249 (2.55)	3960 (5.95)
12.	Non-workers (X)	327513 (44.05)	530223 (72.69)	857736 (58.23)	46125 (51.84)	71780 (91.89)	117905 (70.56)	373638 (44.88)	602003 (74.55)	975641 (59.49

Table No. 3.6

Average daily employeent workers in Factories in Chandrapur District

Sr. No.	Industry sub-groups	Year	No. of registered factories	No. of closed factories	No. of working factories submitting return	Total workers in (6)			No. of working factories not submitting return	No. of workers in (8)
						Total	Male	Female		
1	2	3	4	5	6	7	7A	7B	8	9
1.	Gins and Presses	1971	5	-	3	193	120	73	2	116
2.	Manufacture of grain Mill Products	"	11	2	9	82	60	32	-	-
3.	Manufacture of Miscellaneous food preparations	"	3	1	2	132	118	14	-	-
4.	Tobacco Manufactures	"	4	2	-	-	-	-	2	220
5.	Manufacture of wood & cork except manufacture of furniture	"	5	1	3	140	112	28	1	95
6.	Pulp, Paper & Paper board Mills	"	2	-	2	2,403	2,387	16	-	-
7.	Basic chemicals including fertilisers	"	1	-	1	55	52	3	-	

Table No. 3.5 (contd.)

1	2	3	4	5	6	7	7A	7B	8	9
8.	Manufacture of Miscellaneous chemicals products	1971	1	-	1	23	13	10	-	-
9.	Manufacture of structural and clay products	"	10	1	6	249	129	120	3	61
10.	Manufacture of glass and glass products (except Optical lenses)	"	2	-	2	442	337	105	-	-
11.	Manufacture of Pottery, China and earthen-ware	"	1	-	-	-	-	-	1	35
12.	Manufacture of cement	"	1	-	1	829	828	1	-	-
13.	Manufacture of non-Metallic Mineral products not elsewhere classified	"	2	1	-	-	-	-	1	14
14.	Manufacture of Metal products (except Machinery equipment)	"	1	1	-	-	-	-	-	

Table No. 3.5 (contd.)

1	2	3	4	5	6	7	7A	7B	8	9
15.	Manufacture of Machinery (except electrical Machinery)	1971	2	-	2	10	9	1	-	-
16.	Repair of Motor Vehicles and Cycles	"	1	-	1	38	38	-	-	-
17.	Electric light and Power	"	1	-	1	220	220	-	-	-
	Total:	"	63	9	34	4,816	4,413	403	10	541

Table No. 3.6

Number of employees in different industries in Chandrapur District

(on 31st March 1972)

Sr. No.	Description of Industry	31st March 1972				
		No. of reporting establishments	Government	Quasi Government	Private	Total
1	2	3	4	5	6	7
1.	Agriculture	15	2,318	319	--	2,637
2.	Mining and Quarrying	6	--	-	6,209	6,209
3.	Manufacturing	39	2,819	-	6,858	9,677
4.	Constructions	15	1,857	222	--	2,079
5.	Electricity and Gas Water	4	110	943	--	1,053
6.	Trade, Commerce and Miscellaneous	23	--	234	425	659
7.	Transport storage and communication	9	1,661	-	55	1,716
8.	Services	178	5,606	8,532	2,358	16,496
9.	Grand Total	289	14,371	10,250	15,905	40,526

TABLE NO. 4.1

Co-operative Banks in Chandrapur District during 1971-72

(Rs. in lakhs)

Sl. No.	Name	Number of Branches	Share Capital (Rs.)	Reserve and other funds (Rs.)	Working capital (Rs.)	Loan advanced		
						Short term (Rs.)	Medium term (Rs.)	Long term (Rs.)
1.	2.	3.	4.	5.	6.	7.	8.	9.
1.	District Central Co-operative Bank.	22	54.98	25.38	404.65	186.04	1.53	-
2.	District Industrial Co-operative Bank.	-	-	-	-	-	-	-
3.	District Land Development Bank with Taluka Branches.	9	20.77	0.48	171.74	-	-	13.09
4.	Urban Bank.	-	-	-	-	-	-	-

TABLE NO.4.2

Agricultural co-operative societies in Chandrapur District during 1971-72
(Rs. in Lakhs)

Sl. No.	District/ Taluka	No. of Societies	Share Capital	Reserve and other funds	Working Capital	Loans Advanced	Loans Recovered	Loans Outstanding
1.	2.	3.	4.	5.	6.	7.	8.	9.
	District	1189	92.72	16.02	384.06	131.85	126.04	288.81
	Taluka							
1.	Brahmapuri	245	25.16	5.68	104.20	48.05	34.66	77.63
2.	Warora	222	30.98	4.52	118.59	41.36	58.14	92.60
3.	Gadchiroli	346	18.19	3.62	75.42	20.22	20.33	56.88
4.	Chandrapur	195	11.50	1.68	56.30	16.33	3.52	40.26
5.	Rajura	82	4.55	0.19	20.87	4.00	8.29	15.37
6.	Sironcha	99	2.34	0.43	8.67	1.90	2.10	6.07

TABLE NO. 4.3

Co. operative societies in Chandrapur District during 1971-72 (Other than Agricultural credit and Banks)

Sl. No.	Types of Societies	Number of Societies	Share capital (Rs.)	Reserve and and other funds (Rs.)	Working capital (Rs.)
1.	2.	3.	4.	5.	6.
I	Agricultural Non credit Societies				
1.	Agricultural Marketing Societies	16	1266000	1876000	3785000
2.	Fisherties societies	63	269000	44000	508000
3.	Animal Husbandry societies	-	-	-	-
4.	Irrigation Societies	-	-	-	-
5.	Farming Societies	40	184000	84500	145000
6.	Agricultural processing	18	1130000	1264000	3536000
7.	Other Agricultural Non-credit societies	21	14000	1000	15000
II	Non-Agricultural credit Societies				
8.	Urban credit societies	-	-	-	-
9.	Salary earners societies (Including factory workers)	52	910000	220000	3640000

TABLE NO. 4.3 (Contd.)

1.	2.	3.	4.	5.	6.
10.	Thrift and credit societies and Bhisis and others.	1	3000	22000	37000
III	Non-Agricultural Non-Credit societies				
11.	Handloom Weavers societies	7	169000	162000	590000
12.	Other Industrial Societies	32	305000	254000	1348000
13.	Consumer stores	21	114000	128500	357000
14.	Housing	56	165000	12600	154000
15.	Supervising Unions	18	-	-	-
16.	Other non-agricultural non-credit societies	103	582000	184000	2469000

TABLE NO. 4.4

Number of Registered Money Lenders and loan advanced by them in Chandrapur District during 1971-72

Sl. No.	District Taluka	Number of money lenders	Loans advanced to traders (in Rs.)	Loan advanced to non-traders (in Rs.)	Total (in Rs.)
1.	2.	3.	4.	5.	6.
	District Total	369	11,65,712	25,60,728	37,26,640
	Taluka				
1.	Brahmapuri	59	5,93,285	4,27,112	10,20,397
2.	Warora	64	13,605	2,53,821	2,67,426
3.	Gadchiroli	63	3,06,200	10,78,151	13,84,351
4.	Chandrapur	173	2,51,122	7,95,994	10,47,116
5.	Rajura	5	-	5,401	5,401
6.	Sironcha	5	1,700	249	1,949

Note: The information of loans advanced to traders and non-traders of 204 money lenders not included in the table since it is not available.

BIBLIOGRAPHY

1. Agarwal, V.K. : Initiative, Enterprise and Economic Choices in India, M.M. Publishers Pvt. Ltd., New Delhi.

2. Arunachalam, B. : Maharashtra. A.R. Sheth and Co., Educational Publishers, Bombay, 1967.

3. Alagh, V.K. : Regional Aspects of Indian Industrialization. University of Bombay, 1972.

4. Bonavia, M.R. : The Economics of Transport, Digswell Place James Nisbet and Co. Ltd., Cambridge, 1963.

5. Business Standard, 27th March, 1975.

6. Barth, Kraft and Wiest : A Portfolio theoretical approach to Industrial Diversification and Regional Employment; Journal of Regional Sciences, Published by the Regional Science Research Institute, University of Pensulvania, Vol.15, No.1, April-1975.

7. Chatterjee, P.K. : Iron-ore deposits of India; Bulletin of the Geological, Mining and Metallurgical Society of India, No.38, December, 1966.

8. Committee on Resources and Man : Resources and Man. Published by W.H. Freeman and Company San Francis Co.

9. Chang, J.K. : Industrial Development of China 1912-1949, Centre for Chinese Studies, the University of Michigaon, 1967.

10. Chang, S.D. : The Role of Cultural Geographer in Industrial Decisions; Philippine Geographical Journal. Vol.XIX, No.3, July-August-September, 1975.

11. Choudhuri, M.R. : Indian Industries Development and location. Published by Oxford and IBH publishing Co., Calcutta, 1970.

12. Choudhury, Radharani : The Plans for Economic Development in India. Bookland Private Ltd., Calcutta, 1959.

13. Deshpande, C.D. : Geography of Maharashtra, National Book Trust, India, New Delhi, 1971.

14. Directorate of Geology and Mining, Government of Maharashtra, Geology and Mineral Resources of Maharashtra, Nagpur, 1968.

15. Entwistle, E.W. : Agrarian-Industrial Complexes in Bulgaria. Journal of the Geographical Association; Vol.57, 1972.

16. Editorial : Industrial Policy, The Economic Times, 26th November, 1974.

17. Flun, P.T. : Mineral Resources Rand McNally and Col, Chicago, 1966

18. Ganapathan, V.S. Roads in Western India. Bombay Geographical Magazine Vol.XIX, Dec., 1966.

19. Ghosh, O.K. : Problems of Economic Planning in India. Kitabistan, Allahabad, 1957.

21. Government of India : A manual of the Geology of India and Burma. Vol.I, 1973.

22. Goyal, V. : Industrial location policy in Maharashtra. The Economic Times, 18th Nov., 1975.

23. Hashim, S.R. : Location, flows and problem of Regional Development. Some view along with an Historical review of Indian situation.

24. Muldu, V.N. : Role of commercial banking in a Developing Economy with special reference to India; Indian Economic Association, Dec., 1969.

25. Kucchal, S.C. : The Industrial Economy of India. Chaitanya Publishing House, Ahmedabad, 1969.

26. Maloo, D.P. : Industrial Policy; Financial Express, 5th Dec., 1974.

27. Mathur, H.M. : Industrial Economy of a Developing region. Prakash Publishers, Alwar-Jaipur, 1968.

28. MSDC : Report of the Research Pabel on "Accommodation for Small-Scale Industries in Bombay City (C. Bombay)". Bombay, 1965.

29. Mountjoy, A.B. : Industrialization and Under-developed countries; Hutchinson and Co. Ltd., London, 1966.

30. Mukherjee, Sudershan: Agricultural Production in Vidarbha; The Deccan Geographer; Vol.V, No.1 & 2 Jan-Dec., 1967.

31. McNoll, John : Factors in Industrial location. The Five case 1958-71. Scottish Geographical Magazine. Vol.90, No.3, Dec.1974.

32. NCAER : Techno-Economic Survey of Maharashtra, New Delhi, 1963.

33. NCAER : Proper Industry Problems and Prospects, New Delhi, 1972.

34. NCAER : Demand Forecast for Bamboo Sulphate Pulp; New Delhi.

35. Pattanshett, C.C. : The Dimension of India Industrial Economy, Somaiya Publishers Pvt. Ltd., Bombay.

36. Palsapure, P.Z. : Industrial Development of Vidarbha. Popular Prakashan, Bombay, 1975.

37. Parson, R.L. : Conserving American Resources.

38. Pathak, C.R. : A note on Problems of Micro-level-planning for integrated area development Indian Journal of Regional Sciences. Vol.III, No.2, 1971.

39. Podder, V. : Cement Industry in India: Published by Rohtas industries Limited Dalmianagar (Bihar).

40. Pende, D.R. : Regional Development III, Maharashtra's experiences, Financial Express.

41. Planning Commission, Govt. of India, First Five Year Plan.

42. Planning Commission, Govt. of India, The Second Five Year Plan, Draft memorandum, 27 Dec., 1955.

43. Planning Commission, Govt. of India, Third Five Year Plan.

44. Planning Commission, Govt. of India, Fourth Five Year Plan 1969-74 Draft.

45. Planning Commission, Govt. of India

46. Rao, V.K.R.V. : Values and Economic Development the Indian challenge, Vikash Publication

47. Shetty, M.C. : Small Scale and Household Industries in a Developing Economy; Aria Publishing House, Bombay, 1969.

48. Singh, A.J. & George, M.V. : Regional Economic Development in India, Indian Economic Association, 1969

49. Smith, T.C. : Political Change and Industrial Development in Japan: Govt. Enterprises, 1868-1880, Stanford University Press, Stanford, California.

50. Singh, Narendra : Industrial Cartels and Research; Economic and Political Weekly; VolX, No.16, April, 19, 1975.

51. Sundram, J.D. : Rural Industrial Development; Vora and Publishers, Bombay.

52. Socio-Economic Review and Statistical Abstract, Chandrapur District, 1971-72.

53. The Economic Times, 28th Oct., 1975.

54. Vhuranes, D.S. : Industrial Policy and Growth, The Economic Times, 5th Dec., 1974.