

CHAPTER III

STUDY AREA: DHANBAD DISTRICT

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Dhanbad was a part of Manbhum district which was first in Bengal and then came over to Bihar when Bihar was separated from Bengal. The headquarters town was then known as Dhanbaid. Later when Manbhum was a district in Bihar, Dhanbad

subdivision was raised to the status of a sub district and the letter 'i' in the name of the headquarters station was dropped. As a result of the recommendation of the states Reorganisation Commission, the district of Dhanbad was carved out in 1956 and remained in Bihar while the other portion of Manbhum district went over to West Bengal. It was officially created under Government notification no. A. 9911, dated 24th October, 1956, and came into existence from 1st of November, 1956.

In the course of the last few decades, the district of Dhanbad has had phenomenal changes in all spheres. Bagsuma, the first headquarters of Dhanbad subdivision is a forgotten village now, although Govindpur, the second headquarters of the subdivision had some importance because of location on the Grand Trunk Road. The headquarters of the subdivision had to be shifted to Dhanbad due to the growing importance of the coalfields. Dhanbad has become one of the industrialised districts in India and is known all over the world because of the rich coalfields and other natural resources. On the one hand, the coalfields, railways and roadways have developed enormously, industrialization, trade and commerce have gone ahead rapidly, educational and technical institutions have multiplied and the principal towns have become cosmopolitan while, on the other hand, the Adivasis and the other indigenous elements of the culture, presents a complex picture and offers a rich field for investigation.

The present district of Dhanbad has an area of 2,885.25 square km. The principal town and administrative headquarters is Dhanbad situated almost in the centre of the district. This district is bounded on the north and north-east by the Barakar River which separates it from Hazaribagh and Burdwan districts, on the south there is no natural boundary. The limits of Chas and Chandankeary thanas and a portion of the Damodar River now constitute the boundary. On the west it has Hazaribagh district. On the east the Barakar River forms the boundary.

Earlier, the district was split into two sub - divisions – Dhanbad Sadar and Baghmara. The former incorporated 6 blocks, while the latter had four and together they enclosed 30 Nagar Palikas, 228 Panchayats and 1654 villages. The then vastness of the district called for two police headquarters, based at Bokaro and Dhanbad respectively. Meanwhile, the district as it stands today, has only one sub-division called the Dhanbad Sadar. There are presently, 8 blocks here viz. Jharia, Baghmara, Dhanbad, Nirsa, Gobindpur, Baliapur, Tundi, and Topchanchi, as presented in the

administrative map of the district (Fig 3.1). The blocks in turn have 181 panchayats and 1432 villages (2001 Census). As of now the Dhanbad district is situated in the state of Jharkhand and lies between 23°37.3" N and 24°4' N latitude and between 86°6'30" E and 86°50' E longitude.

3.1 Physical Divisions

Three distinct characteristics of the landscape are perceptible. They are:

- (i) the ranges of ridges sent out by the Parasnath in the remote northern and north-western region occupying an area of about 217.86 square kilometres ,
- (ii) the coal-fields having approximately an area of 518 square kilometres in the southern and eastern parts and
- (iii) the series of uplands and intervening hollows with isolated bare ridges of varying elevation dotted here and there between them.

Broadly speaking Dhanbad district has two physical divisions – southern and northern. The southern portion is the colliery area with the industrial towns and the northern portion is the area of hills and scattered villages. The landscape of the southern portion is undulating and monotonous with the smoke, the chimney and the stack of coal scattered here and there with intermittent scrubs of vegetation. The existence of underground working of collieries has affected the surface with many scars of subsidence.

Hills

Dhangi hills run from Pradhankhanta to Gobindpur in this district. They lie between the Grand Chord line of the Eastern Railway and the Grand Trunk Road. The highest peak in these hills is at Dhangi, P.S. Gobindpur and is 385.57 metres high. The Parasnath hills (1365.50 metres) send out spurs, one of which passes through this district via Topchanchi and Tundi. This spur has no noteworthy conspicuous hills but contains two places, viz. Lalki (457.2 metres) and Dholkatta (381 metres) from where channels have been constructed for carrying water to Topchanchi reservoir. The

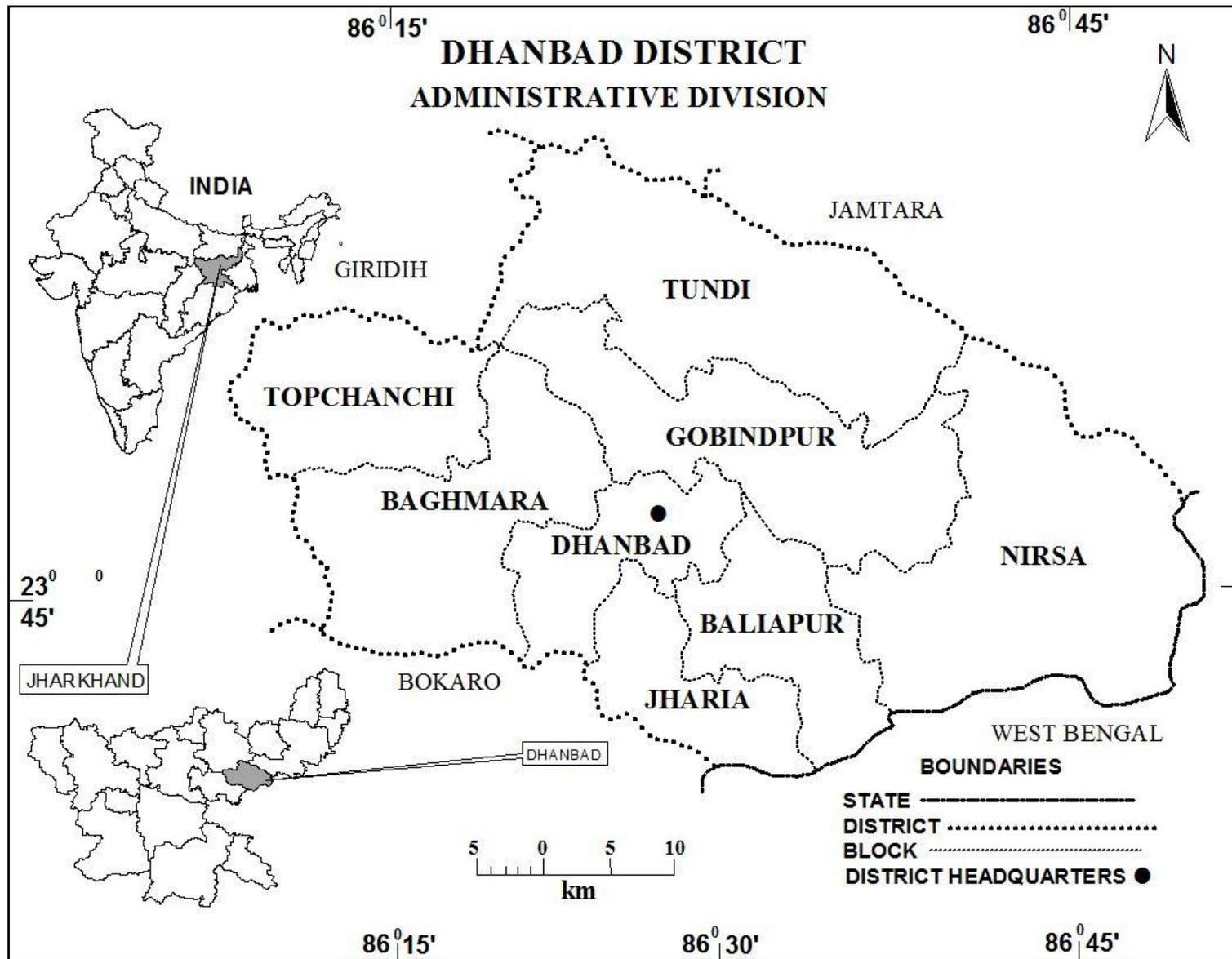


Fig 3.1

Dhangi hills are dry for the most part of the year, but during the rains some grasses grow on them. The spur of the Parasnath hills running in Dhanbad district is forested and the non-forested area grows paddy in terraces.

Rivers

The Damodar is the most important river of the Chotanagpur plateau (Fig 3.2). It rises in Palamu and flows eastward between the plateaus of Ranchi and Hazaribagh. It is joined by the Bokaro, the Konar and the Barakar rivers. The Damodar enters Dhanbad district at its confluence with the Jamuria, a stream which marks the western boundary of Dhanbad with Hazaribagh District. Further east, the Damodar is joined by the Katri River which rises in the foot hills below Parasnath and traverses through the Coal-field Area. The Damodar flows for about 77 km through the district, being joined by the Barakar at its eastern border near Chirkunda. The Panchet dam extending to roughly 6 Kms. is built on river Damodar. The hydel station there generates 40,000 K.W. per hour. The Barakar, which forms the northern boundary of the district, traverses about 77 Kms. in the district. It flows in south westerly direction up to Durgapur and then south till it joins the Damodar near Chirkuda. The Maithon dam is located on this river about 13 Kms. off its confluence with the Damodar. Attached to it is the Maithan Power Station with a generating capacity of 60,000 K.W.H. Among other small rivers in the district are Gobai, the Irji, the Khudia besides the river Katri.

3.3 Topography

The Topography of the southern half of the area is undulating and rather dull with very few conspicuous features. The northern portion is, however, characterized by greater variation in relief (Fig 3.3). Apart from the several low ridges which occur north of the Grand Chord Railway, line between Pradhankhanta and Gomoh stations, the highest peak of Parasnath (1365.5 metres above sea-level) send out its spurs up to north-western corner of the district where the famous Topchanchi dam is built to supply drinking water to the Jharia coal field. The more or less continuous ridges of the Parasnath range run for a long distance eastwards from this place and from the northern hilly portion of the district. The general slope of the country is towards south and south-east, so that most of the tributaries of the Damodar River flow in these directions. The Damodar River is itself flowing from west to east, along the southern

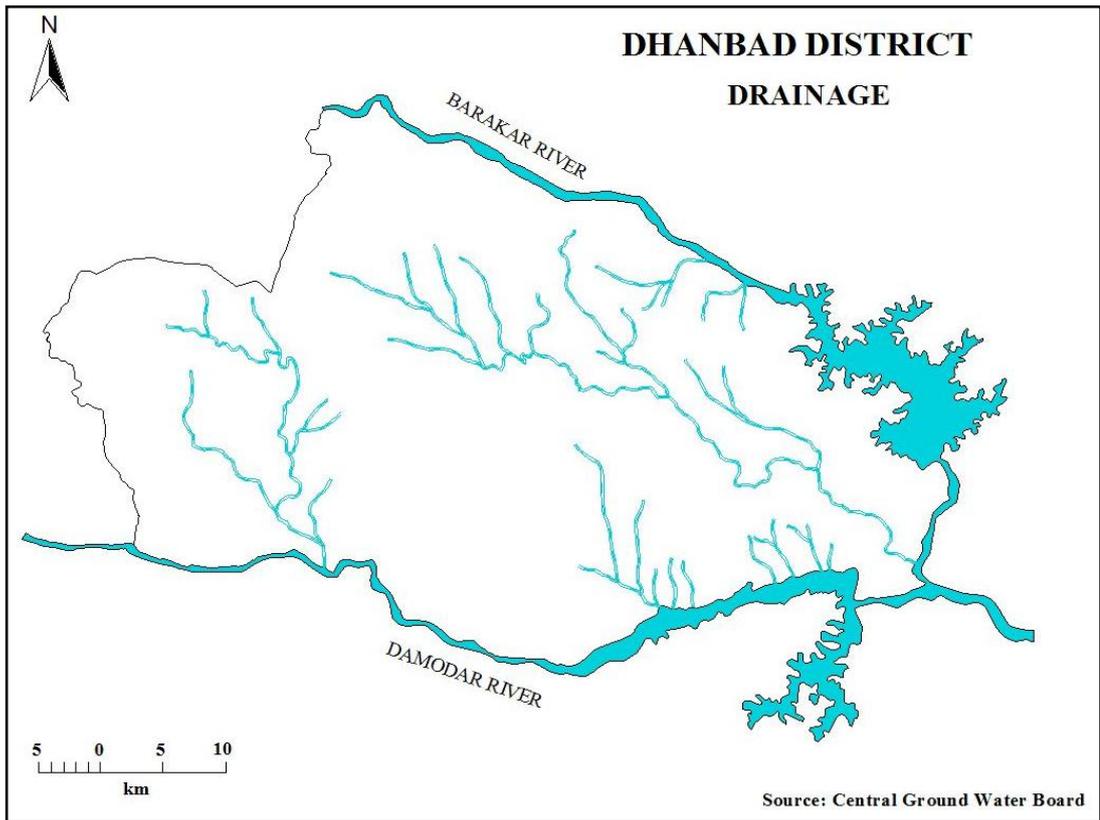


Fig 3.2

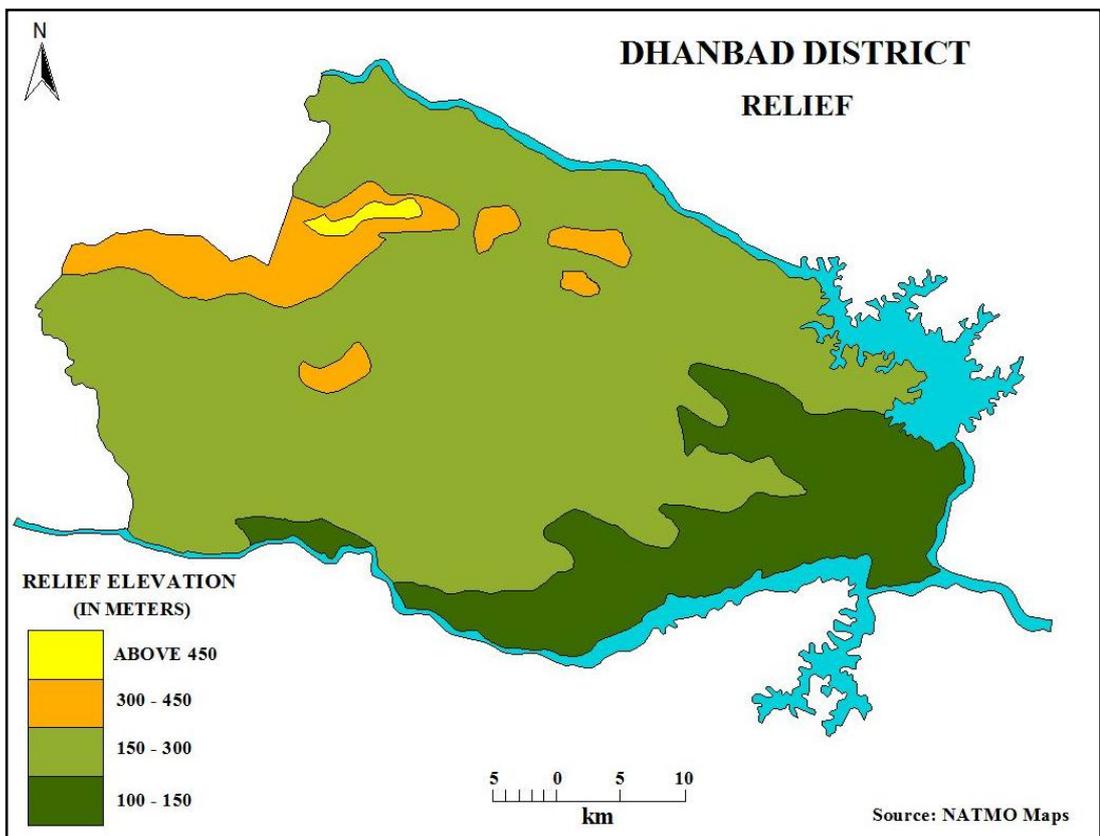


Fig 3.3

boundary of the district, but its course has been determined more or less by the great boundary fault of the Jharia coalfield. The main tributaries of the Damodar River, which flow in from north are the Jamunia River which marks the north-western boundary of Dhanbad district, and the Barakar River which marks the eastern boundary. Other tributaries which flow from the north are, beginning from west, Katri River near Katras with its western tributary Khudia, Chinadi south of Dhangri ridge, east of Dhanbad, and the main Khudia River flowing south-east-wards, north of Govindpur, with its tributary Pusal. Due to the prolonged denudation to which this region has been subjected, there is not much correspondence between the structural features and the directions of drainage in case of rivers other than the Damodar. Most of the hills and ridges of the area owe their preservation due to the greater hardness of the rocks which constitute them compared to that of the surrounding rocks. The common types of rocks which give rise to outstanding hills are the metamorphic rocks like epidiorites, amphibolites, metadolerites and metanorites. Some of these hills may thus be regarded as igneous in region. A few ridges are composed of quartzites, granulites and micaceous schists and gneisses, and they may be regarded as relict type of ridges which have suffered less erosion than the surrounding area. The veins of white quartz (often brecciated) which are so common in the metamorphic terrain of the district also form low ridges due to their resistance to denudation. These ridges may, however, be regarded as tectonic in origin as they usually indicate fault zones. Inside the coal basins, the sandstones form long low ridges with characteristic scarp and dip slopes, and the accompanying shales and coal seams form depressions running more or less along the strike direction. The so-called “burnt” outcrops of coal streams and dolerite dykes also form small mounds and ridges.

3.4 Climate

The climate of Dhanbad (Fig 3.4) district is very pleasant especially in the cold weather months-November to February-during which the temperature varies from lowest minimum of 8.3° C to the highest maximum of 34.4° C. After February the climate becomes warmer and warmer until the rains break in the middle of June. The temperature during these four months March to June varies from the lowest minimum of 13.3° C to the highest maximum of 45.6° C. During the remaining months, July to October, which include the rainy season, the temperature range is from the lowest minimum 15° C to 37° C. The average annual rainfall of the area is

139.7 cm most of which is precipitated during the rainy season from middle of June to middle of October. The rainfall around Parasnath hills is reported to be more than the average.

3.5 Vegetation

Vegetation of this district (Fig 3.8) is of profound interest, consisting of a number of closely related processes, so important that each form a special field of study. The vegetation is passing under a tremendous change due to burning and grazing, denudation, ruthless exploitation of forests by human invasion and industrialization, etc. Species observed two or three decades back have reached at the point of extinction and are surviving with a few scattered representatives.

The district is divided into three following vegetation zones:

- (i) Zones-covering forests.
- (ii) Zone-covering hills and rocks fields.
- (iii) Zone –covering plains old disused coal mines, etc.)

3.6 Soils

The soil of this district is infertile laterite of no great depth having a general tendency towards continual deterioration, the process being continued till the underlying heavier gravel is exposed. The climatic condition prevailing in the district is of a fairly copious rainfall and high temperature which lead to the formation of lateritic type of soil of the district. Iron, aluminium and manganese oxides are removed less rapidly than the other bases. National Atlas and Thematic Organisation has classified the soil of Dhanbad into two broad categories – red sandy soil and red and yellow soil (Fig 3.5). However, the Gazetteer of India has made has divided these two categories of soil in to following type four classes.

i. Stony and gravelly - These soils are found near the foot of hillocks which have a large admixture of large fragments of stones, gravels, pebbles, etc. This type of soil may be classed as low grade soil.

ii. Sandy soils - This soil is locally known as *bali*. In the district this type of soil is found near river and stream beds. Soils containing more than 60 per cent of sand are classified and are easily drained as they let the water through too readily and necessitate frequent watering. These soils are poor in respect of plant food and require

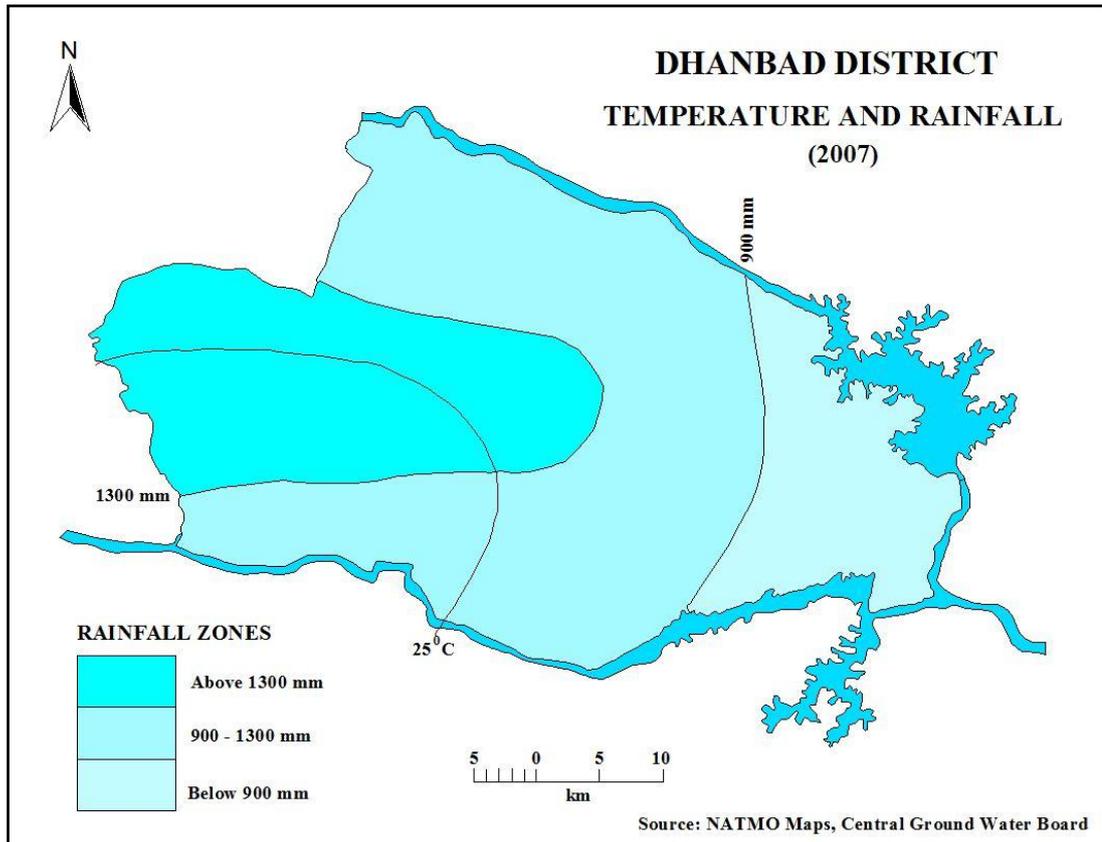


Fig 3.4

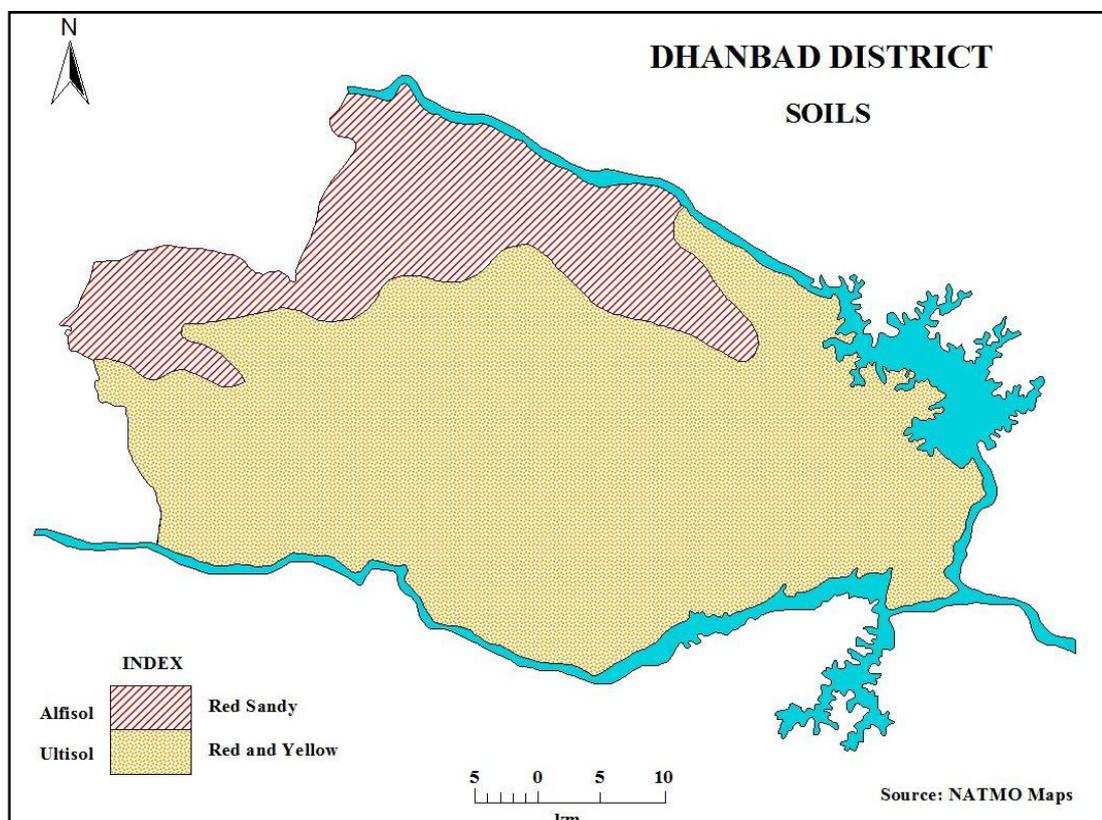


Fig 3.5

heavy manuring and in frequent doses. On account of dearth of water and manure sandy soils are described as hungry soils. Cattle manure and compost, green manuring and the addition of tank slit and clay will bring about great improvement in the retentive capacity of these soils. The soils are used for growing cucurbits.

iii. Loamy soils - This type of soil is found near the hills and formed by rain washing from higher positions and consists of detritus of decomposed rocks and vegetable matter. Soils whose sandy compounds are between 30 and 60 per cent are classed as loamy soils. Agriculturally these soils are best adapted for cultivation. They are suited to every kind of crop but in district this soil is put under paddy, sugarcane, *marua*, wheat, gram *khesari*, etc.

iv. Clayey soils - This soil is found near tank beds. When moist they are sticky and ploughing and other tillage in that condition will reduce them into a pasty mass. When they are dry they become very hard and difficult to break. They are difficult to drain, as the water cannot pass through easily on account of fineness of the particles composing them. They have a high water –holding capacity and are very fertile in respect of plant food contents. The addition of sand, lime, coarse Bulky organic manures will improve their physical condition. Nitrogen applied as organic matter and that in the shape of ammonia free or combined as in the ammonium salts applied as manure becomes fixed in the soil, i.e., they do not pass out of the soil in drainage waters. Paddy is the main crop .The soils for rice cultivation of the district have been differentiated by the cultivator on the basis of their positions into three classes, viz., baad, kanali and bahal.

3.7 Principal Crops

The crops of the district fall under three main harvest: *aghani*, *bhadai*, and *rabi*. The *aghani* is the winter crop which is cut in the month of Aghan and is composed mainly of winter rice . The *bhadai* is the early or autumn crop, reaped in the month of Bhado (August-September) consisting of 60 days` (sathi) rice, gora paddy, *marua* ,maize and less important grains; while the *rabi* crop includes such cold weather crops as wheat, barley ,oats, grams, pulses, etc (Fig 3.8).

3.8 Industries

Dhanbad is the most highly industrialised district in the State of Jharkhand (Fig 3.7). The dominant industry of the district is coal mining and it is coal which has attracted

and brought about a concentration of numerous other industries within its limits. The metallurgical coal of the Jharia Coalfield within the district which feeds the existing steel plants and has enabled the country to launch upon an ambitious scheme of iron and steel production has given Dhanbad a very important and prominent place in the industrial programme of the nation. There are five coke plants located in this district. They are fed mainly by the metallurgical coal produced in the Jharia Coalfield of Dhanbad. The rich variety of coal by products from these coke plants has provided the basis of a high chemical industry in the country.

The famous Jharia Coalfield in the district is the richest treasure-house of India's metallurgical coal which has brought Dhanbad prominently on the industrial map of the world. In the task of rapid industrialisation of the country with particular emphasis on the development of basic and heavy industries one of the principal objectives of the Five Year Plans, the metallurgical coal of this district has been playing and is destined to play in future a vital role not only as a source of fuel, energy and chemicals but also as the sole supplier of the raw material for manufacture of hard coke for the steel works and other consumers. The availability of Jharia's superior quality metallurgical coal has made it possible for the country to launch upon an ambitious scheme of steel manufacture by starting new iron and steel works - one each at Rourkela, Bhilai and Durgapur and later on one at Bokaro also and by expanding the two existing steel works of TISCO and IISCO at Jamshedpur and Burnpur respectively.

The high grade metallurgical coal of the district is utilised for manufacture of hard coke not only in the coke plants of the various steel works for use in their blast furnaces but also in several unattached coke plants which meet the requirements of various engineering works and other special consumers of hard coke. There are five such coke plants in the district of Dhanbad,- one each at Loyabad, Bararee, Bhowra, Lodna and Sindri. Outside the district, there is one old coke plant at Giridih in the district of Hazaribagh and another new coke plant has been contracted at Durgapur in the Burdwan district in West Bengal. Most of these coke plants produce coal by products, which have laid the foundations of a big chemical industry in the country. The inferior and medium grade coking coals of the district, both in the Jharia and the Mugma Coalfields, are pre-eminently suitable for manufacture of soft coke and in fact

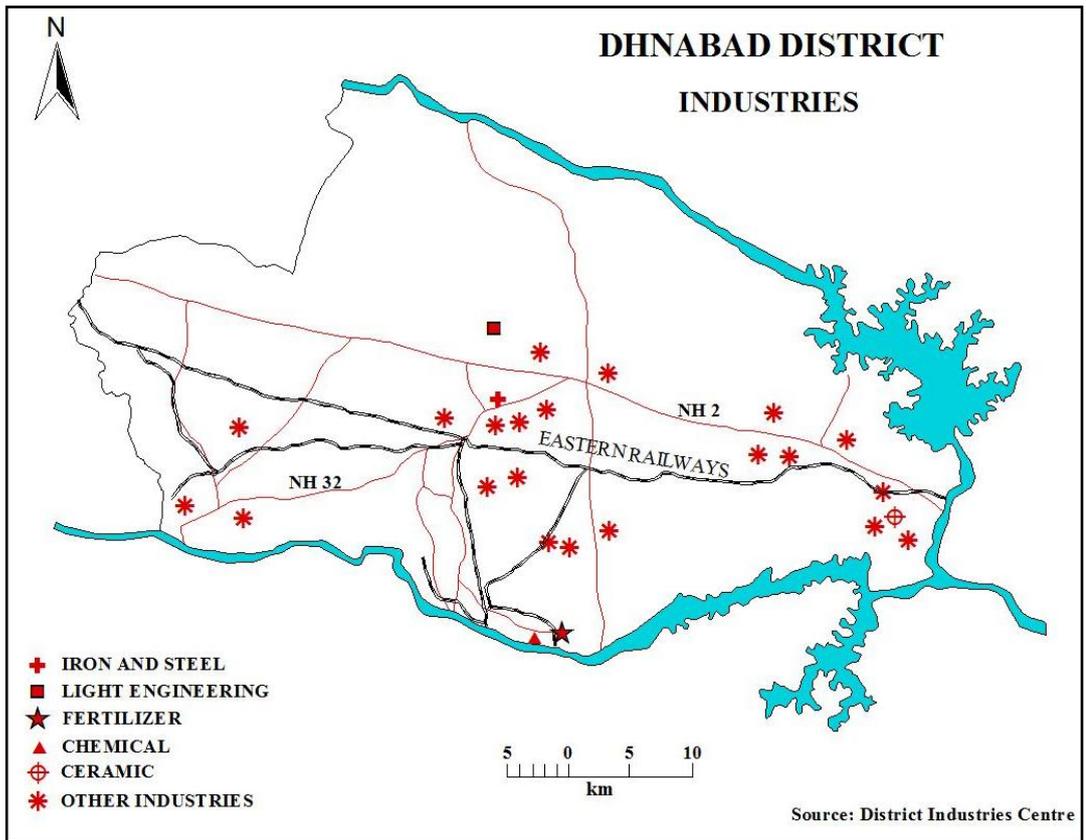


Fig 3.7

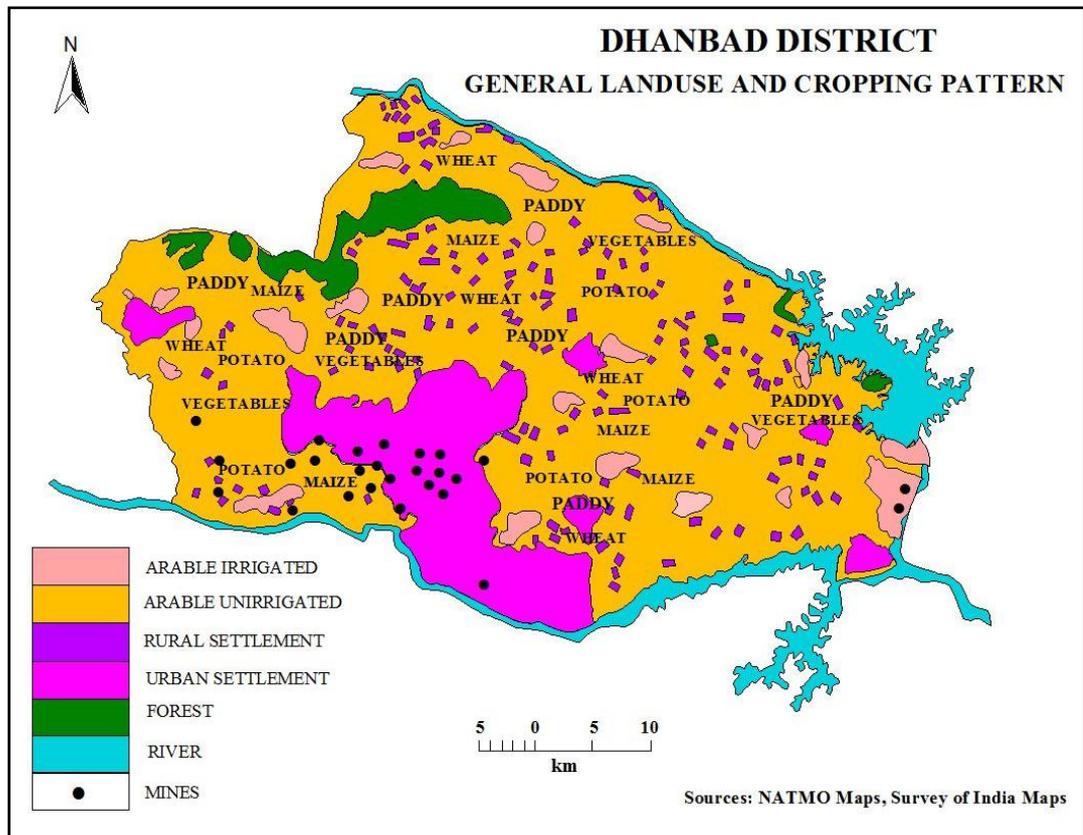


Fig 3.8

the entire soft coke at present being manufactured in the country is the product of the lower seams of coal of this district of Dhanbad. The expanded use of soft coke throughout the country, particularly in the countryside, has become imperative in view of the urgent necessity of conserving cattle dung and forest products, so extensively used for domestic fuel purposes, for the benefit of agricultural lands as natural manures and fertilisers. For replacement of cattle dung and forest products by soft coke as domestic fuel in increasing quantities, the manufacture of soft coke will have to be stepped up rapidly during the coming years. As the only raw material for this manufacture of soft coke, the lower grade coking coals of the district are thus called upon to play another important role in the interest of the country's agriculture even as the higher grade coking coals of the district are providing the basis of the country's steel and other heavy industries. The rich deposit of coal in the district with its immense potentialities in so many directions has attracted to this coalfield a number of industries and it is due to this concentration of so many industries within the Jharia Coalfield that it has come to be regarded as the Ruhr of India. The coalfield of Jharia was selected in preference to the gypsum field of Rajasthan for location of the great Fertiliser and Chemical Industry at Sindri which is the biggest Fertiliser and Chemical Factory in Asia and which has also brought into existence a modern coke plant and a cement factory close to it within the limits of Sindri. Other industries which have grown up round about the coalfields of the district of Dhanbad are a large size ceramic industry, pottery works, lead and zinc smelting industry, a superphosphate industry and numerous other mills, factories, workshops and engineering establishments. Due to its coal wealth, Dhanbad is thus the most industrialised district in the State of Jharkhand. Next in importance among the industries in this district is the Fertilisers and Chemical Industry at Sindri and the Bihar Government's Superphosphate Factory there. The Sindri Fertiliser and Chemical Industry have brought in Sindri two other undertakings, a cement factory and a coke plant. There is one lead and silver refining and smelting industry in the district, the only one of its kind in India, run by the Metal Corporation of India, Ltd., at Tundoo. It is producing lead and silver from the ores received from the Zawar mines in Rajasthan and other raw materials from different places. One other major industry in the district is the Refractory and Ceramic Industry. The various large concerns engaged in this industry within the district are the Kumardhubi Fireclay and Silica Works, the Reliance Firebricks and Pottery Co., at Chanch the Bihar Firebricks

and potteries, Ltd., at Mugma, the Gulfabari Fire Clay and Silica Works, the Bengal Bihar Firebricks and pottery Works, the Nirsa Refractory, the Jharia Firebricks and pottery Works, etc. A very big industry has grown up and is being further developed to meet the increasing demands of the country in refractory ceramics, firebricks potteries, etc.

3.9 Mines and Minerals

The Jharia coalfields cover an area of about 448 sq. Kms entirely situated within the district. The total reserve of this field is estimated at 5,000 million tons. The coal seams found here are, however, thinner and also fewer than in the Barakar field. A large part of the Jharia field is made up of Talchar rocks. The moisture content of the Barakar coals is comparatively low. Among other important minerals found in the district are fire clay for the manufacture of fire bricks and iron ore. Mica is found in the eastern portion of Baliapur. China clay and graphite are also available in certain pockets of the district.

Total No. of Coal Mines in this District = 112 (BCCL= 86, ECL= 17, TISCO= 6, IISCO= 3)

3.10 Demographic Profile

The demographic profile of Dhanbad district and Jharkhand state is shown in Table 3.1. The total population of Jharkhand state increased from 26945829 in 2001 to 32966238 in 2011 Census at with average annual exponential growth rate of 2.23 per cent. Population of Dhanbad district increased at much lower annual growth rate of 1.19 from 2001 to 2011. The total population of the district increased from 2397102 in 2001 to 2682662 in 2011. However the population density of the district considerably from 1176 persons per sq. km to 1284 persons per sq. km as compared to the state's density of 414 persons per sq. km in 2011.

Sex ratio of the district (908) is very low, compared with sex ratio of the state (947) in 2011 Census. There is a marginal improvement in the sex ratio from 2001 Census, when it was only 874. However, the sex ratio of Jharkhand is the lowest in the state. The literacy rate of the Dhanbad district is much higher than the state's average both by males and female. It recorded literacy rate of 75.71 per cent while the Jharkhand state recorded literacy rate of 65.63 in 2011 Census. The male literacy rate of

Dhanbad district is highest in the state. From the table it is also obvious that while there was only marginal improvement in the male literacy rate of the district from 2001 to 2011 Census, the female literacy rate increased by 11.8 percentage points from 52.9 in 2001 to 64.7 in 2011.

Table 3.1 Demographic Profile of Dhanbad by 2001 and 2011 Census

DEMOGRAPHIC INDICATORS	DHANBAD		JHARKHAND	
	2001	2011	2001	2011
Total Population (in lakh)	23.97	26.82	269.46	329.66
Average annual exponential growth rate	2.29	1.19	2.31	2.23
Population Density (per sq.kms.)	1167	1284	338	414
Sex ratio	874	908	941	947
Percentage of literate population	67.4	75.71	43.71	67.63
Male	80.00	85.68	55.07	78.45
Female	52.90	64.70	31.62	56.21

Source: Census 2001 and Provisional Data from Census 2011

Dhanbad district consists of 1, 121 inhabited villages spread over eight blocks in the district. The highest population (Table 3.2) is found in the block Dhanbad (23.55%), which is also the headquarters of the district, followed by Jharia (19.83%), Baghmara (17.04%) and Nirsa (15.72%). Table also shows that Dhanbad (84.5%) and Jharia (99.5%) are urban blocks of the district, while the rest of the blocks are dominantly rural blocks of the district. Among the rural blocks, Tundi and Baliapur are entirely rural, whereas Gobindpur have more than 99% rural population. The sex ratio of the blocks varies from 837 in Jharia to 958 in Tundi block. It is to be noted that sex ratio decreases with increase in the urbanisation of the blocks. Blocks which are dominantly rural have the highest sex ratio in the district – Tundi (958), Gobindpur (925) and Baliapur (926), whereas Dhanbad (843), Jharia (837), Baghmara (862) have the lowest sex ratio.

The literacy rate of the Dhanbad district varies from 75.4 per cent in Dhanbad block to 45.4 per cent in Tundi district, as per the 2001 Census (Table 3.3).

Table 3.2 Block Wise Distribution of Population by Residence and Sex Ratio in Dhanbad District

Blocks	Total Population	% Population	Rural (%)	Urban (%)	Sex Ratio
Tundi	124126	5.18	100.0	0.0	958
Topchanchi	140378	5.86	75.8	24.2	911
Baghmara	408457	17.04	68.9	31.1	862
Gobindpur	201876	8.42	95.8	4.2	925
Dhanbad	564468	23.55	15.5	84.5	843
Jharia	475341	19.83	0.50	99.5	837
Baliapur	105613	4.41	100.0	0.0	926
Nirsa	376843	15.72	63.9	36.1	904
Dhanbad District	2397102	100	47.6	52.4	874

Source: Based on Census 2001

Table: 3.3 Block Wise Number of Literates and Literacy Rate in Dhanbad District

Blocks	Number of Literates			Literacy in Percentage			
	Total	Male	Female	Total	Male	Female	Gap (m/f)
Tundi	45280	32787	12493	45.5	64.3	25.8	38.5
Topchanchi	73317	48047	25270	63.9	79.7	46.5	33.2
Baghmara	225834	146720	79114	66.3	79.4	50.8	28.7
Gobindpur	89579	62003	27576	54.7	72.6	35.3	37.3
Dhanbad	364531	222333	142198	75.7	84.4	65.2	19.2
Jharia	299908	186288	113620	73.8	83.5	62.0	21.5
Baliapur	52578	35069	17509	60.3	77.1	42.0	35.1
Nirsa	197557	127336	70221	61.8	75.5	46.5	29.0
DHANBAD	1348584	860583	488001	67.4	80.0	52.9	27.1

Source: Based on Census, 2001

The highest literacy rates are recorded by the urban blocks of the district i. e Dhanbad (73.8%), Jharia (73.8%). Blocks Topchanchi (63.9%), Nirsa (61.8%), Baghmara (66.3%), Baliapur (60.3%), Gobindpur (54.7%) and Tundi had literacy rate below the district average of 67.4 per cent. It is to be noted that there is not variation in the male literacy rate of the blocks. Except for Dhanbad (84.4%), Jharia (83.5%) and Tundi (64.3%) blocks, the rest of the blocks have the literacy rate ranging between 70 – 80 per cent. The same is not true for female literacy rate. There is wide range of variation in female literacy rate among the rural and urban blocks of the district. Only Dhanbad (65.2%) and Jharia (62%), the urban blocks have literacy rate above 60 per cent, while the rest of the blocks, i.e. rural have literacy rate below the districts' female literacy rate. The lowest female literacy rate is observed in Tundi (25.8%) and Gobindpur (35.3%). The gap between male and female literacy rate is highest in Tundi (38.5%), Gobindpur (37.3%), Baliapur (35.1%) and Topchanchi (33.2%). It points out towards the fact that there is an urgent need to increase the educational status of the district as a whole.

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