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CHAPTER [II]

GEOGRAPHICAL SETTING

2.1.0 INTRODUCTION :

The State of Maharashtra is one of the largest States of the Republic of India, which took shape on the First of May, 1960. From locational point of view, it extends from 15°44' N. to 22°06' N. latitude and 72°36' E. to 80°54' E. longitude, covering an area of 307713 km^2 and population of 78,748,215. Thus, the Maharashtra State is bounded by the Arabian Sea in the west, the State of Gujarat in the northwest, the State of Madhya Pradesh in the north and east, the State of Andhra Pradesh in the south-east, the State of Karnataka in the south and the State of Goa in the south-west (Fig.2.1).

From administrative point of view Maharashtra State consists of six administrative divisions - Bombay, Pune, Nashik, Aurangabad, Amravati and Nagpur comprising 30 districts.

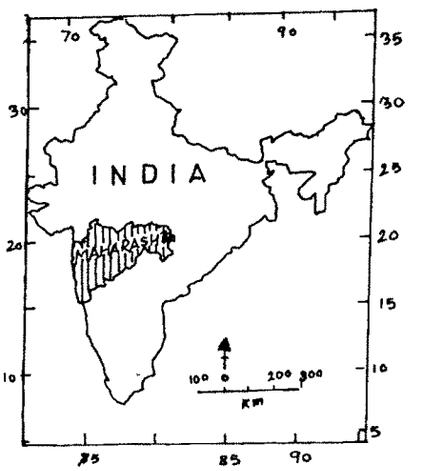
2.2.0 PHYSICAL SETTING

2.2.1 PHYSIOGRAPHY:

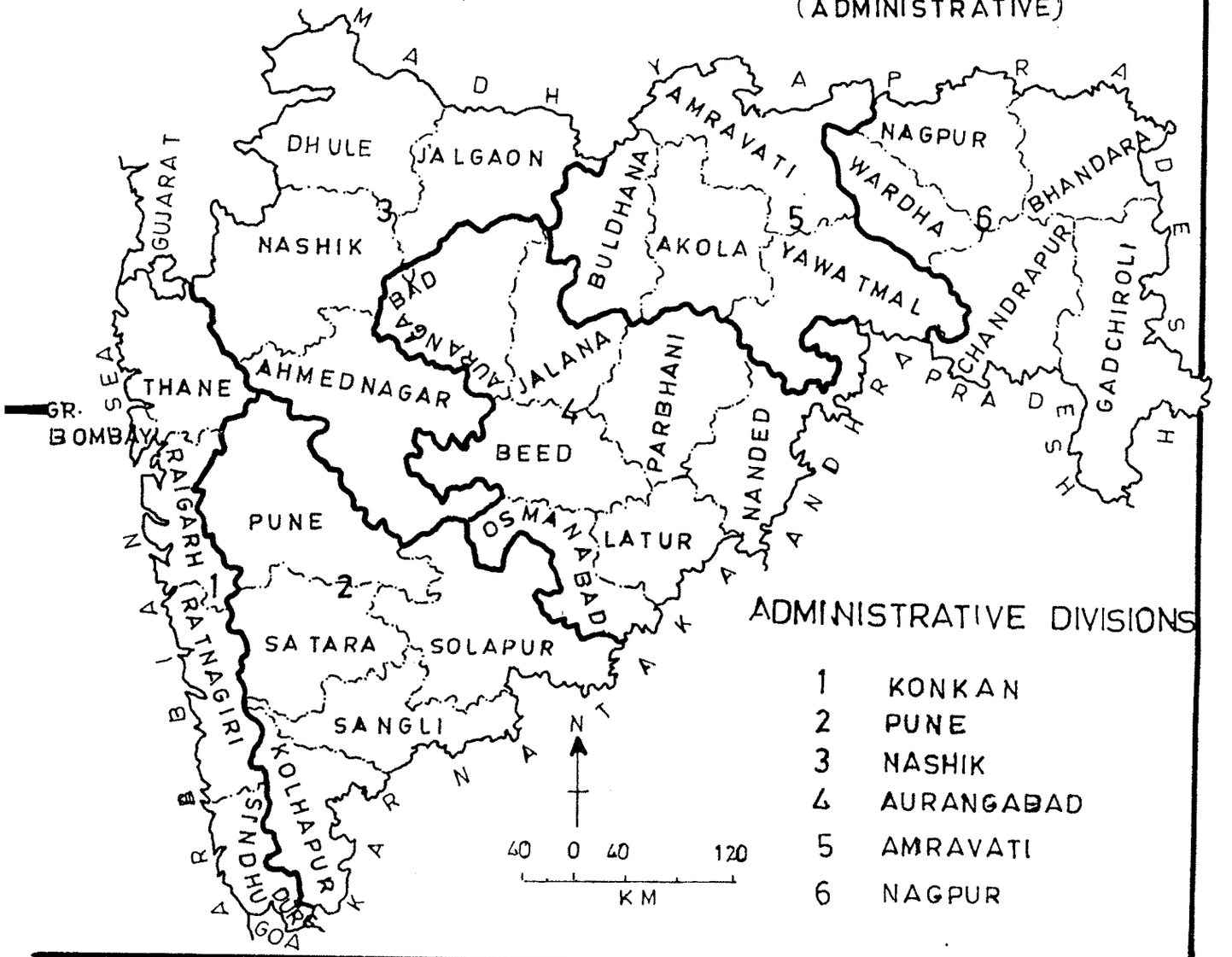
The physiography of a particular region constitutes general surface features which includes topography, relief, slope, drainage and other natural conditions of the ground which in turn, directly and indirectly influence the nature of distribution and density of population. The study of physiography is, therefore, significant for an appraisal of the various problems of the study region.

THE MAHARASHTRA

LOCATION MAP



KEY MAP
(ADMINISTRATIVE)



ADMINISTRATIVE DIVISIONS

1 KONKAN
2 PUNE
3 NASHIK
4 AURANGABAD
5 AMRAVATI
6 NAGPUR

FIG·2·1

Physiographically, the State can be divided into four first order regions, the Maharashtra Sahyadri and coastal lowlands, the Tapi-Purna valley, Maharashtra plateau and Vidharbha region (Fig.2.2).Dikshit[1] has been attempted to divide the State into 11 second order and 22 third order regions.

Topographically, Maharashtra is by and large, a plateau slopping gently eastwards[2]. The altitude ranges from 1500 metres in Sahyadri west to 100 metres in the east of Chandrapur characterised by the varied relief features.

[1] MAHARASHTRA SAHYADRI AND COASTAL LOW LANDS:

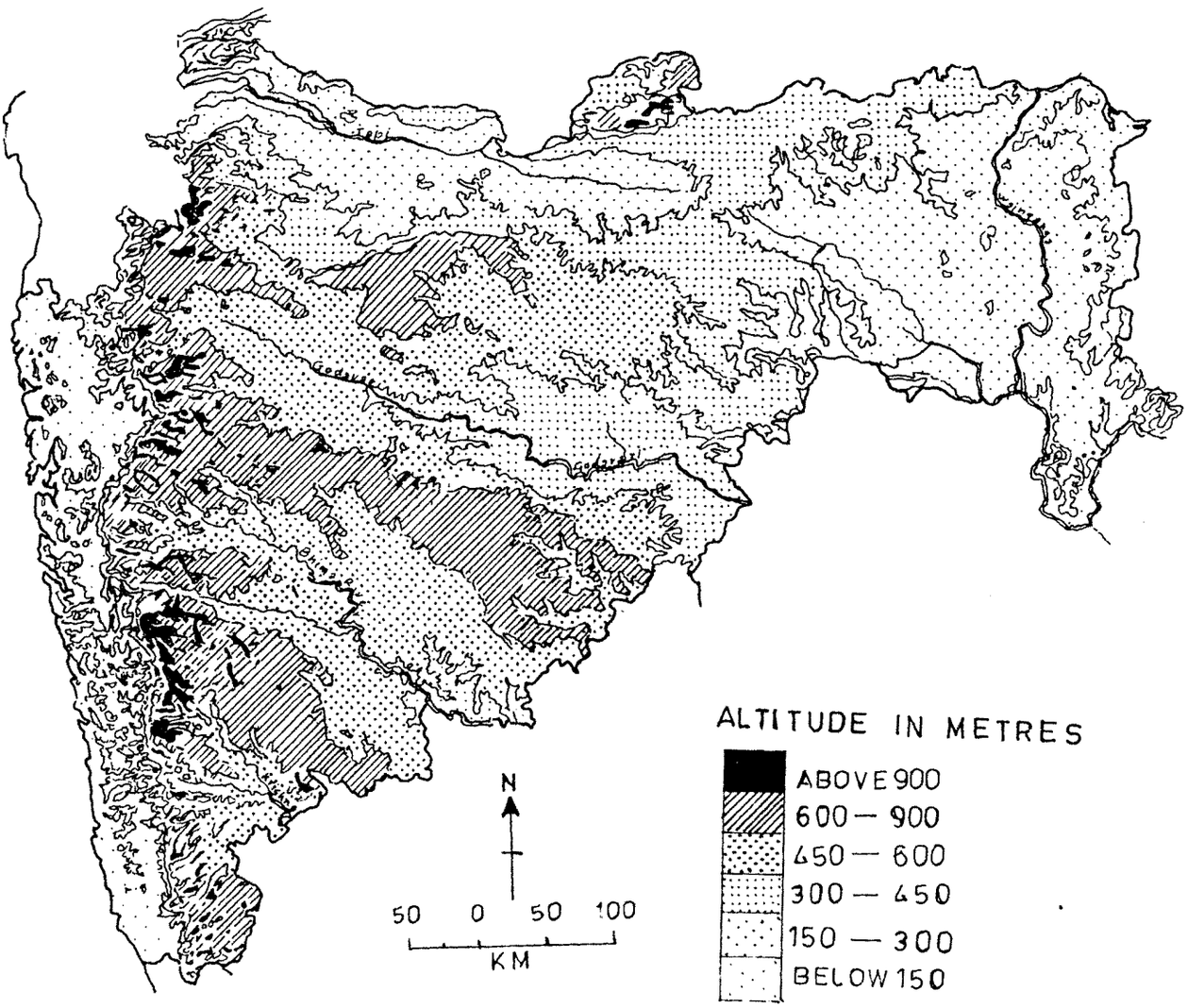
The Maharashtra Sahyadri or Western Ghats runs as an almost continuous range parallel to Arabian Sea, right from the northern limits of the State to beyond the southern limits of the State with length of 440 km. and width of 15.25 km. The height ranges from 1200 to 1300 metres with the increase from south to north. The range is without a break in its entire length, except for a few gaps through which communication between plateau and Konkan has been linked. Of these Thal and Bhor Ghats are the most important, being a routes through which the railway routes run, connecting the port and city of Bombay with the interior of Maharashtra. In the south Kumbharli, Amba and Phonda gaps are important.

The upper parts of the escarpments in Western Ghats are very steep, vertical break rock precipices, suggesting a freshness which one may describe to the phenomena of faulting in some places[3].

THE MAHARASHTRA

PHYSIOGRAPHY

[RELIEF AND DRAINAGE]



FIG·2·2

The west-facing slopes are rubbed by the numerous short, swift flowing rivers that have cut deep narrow valleys in the scarp slope. The Ghats are the main watershades of the plateau rivers, separating the short west flowing streams from the long cources of the eastward rivers, which have developed valley plains.

The lowlands between Sahyadri and Arabian sea, in the west, are parallel to the coast which stretch over 720 km. They are undulating lowlandss, but not plains. On an average, these lowlands are 30 to 60 km broad, narrowing towards north to south. The proportion of lowlands is more in the north than in the south where the protrusions of the Sahyadri, in the form of transverse hill ranges reaching upto the Arabian Sea, forming bays and headlands of several places all along the coastline[4]. The ridges, hills and undulating topography have more appeared in the south than the north[5]. The height of the Konkan coastal region increases from west to eastwards.

Eastwards, close to Sahyadri, is known as 'Maval' platau where the ruggedness persists in a gently sloping terrain with projecting spurs and ravines. In this part the crestline (800 to 900 metres height) is breached by headward erosion of the east flowing streams[6].

[2] TAPI - PURNA VALLEY REGION :

To the north of the Ajanta and Satamala hills lie the Tapi-Purna valleys in the extreme northern part of the State extending over a distance of 300 km, is asymmetrical in cross

profile and covered with alluvial[7]. The entire basin is an alluvial lowland with the range in altitude from 250 to 300 metres. Topographically, the Tapi-Purna valley is a broad, gently inclined trough. In the east, Amravati-badnera plateau is characterised by the remnants of old surfaces preserved in the monadnocks of various sizes.

[3] MAHARASHTRA PLATEAU :

The Maharashtra plateau is formed of plateau basalt. This is drained by Godavari, Bhima, Krishna and their tributaries. The region is bounded by the Western Ghats on the west and Satpuda on the north covering an area of 110.30 lakh sq.km. It is a part of Deccan plateau which is locally known as 'Desh' with the average height of 450 metres. The height of the plateau, however varies from 600 metres in the east to 700 metres in the west. The ground rises westward through a series of low hills to the high peaks and mesas of the Sahyadri. The slope, eastward, is rather gentle about a metre per kilometer[8]. From north to south, the plateau exhibits an alternate arrangement of hills and plateaus which form the divides and the river valleys.

The valleys are broad, bordered by 100-200 m. high escarpments abutted by flat and extensive interfluves. Down these escarpments, locally known as ghats, are the pediments, gently inclined surfaces, particularly in dry areas, that merge with the terraces on either side of the stream channels. The major divides are flat topped with no convexity in their cross profiles. On either side, but more frequently

on one side, they are characterised by a steep descent to the valleys.

Between the tributaries of the principle rivers, which are more frequent in the west than in the dry core of the plateau, the divides are much lower and remain as mere swells. The flat surfaces at various altitudes are the old erosional surfaces well identified in the field. Further east as the interfluves become narrower and lower, the valley plains broaden out. This however, does not apply to Balaghat plateau which not only retain its width but even expands to compress the flood plain of Godawari at Nanded. Thus, the divides, much to the east, are higher than the places in the valley plains even close to Sahyadris[9].

Topographically, there are two more areas in Maharashtra which command considerable heights. One is the Satmala - Ajanta chain that forms the southern rim of the Tapi trough, and the other is the Melaghat - Gawilgarh hills which is sandwiched in the Tapi-Purna fork. In all probability, the northern part of the tributaries and the sub-tributaries of Godavari river. The Satmala - Ajanta complex branches off from Saptashringi peak close to the Sahyadris, with progressively decreasing heights. About 120 km. east of the Western Ghats, Ajanta hills are pierced by the tributaries of Girna river in the north and Godavari in the south, developing a saddle that could be called the Nandgaon Saddle[10].

[4] VIDHARBHA REGION

The Vidharbha region covering about 87.90 lakh sq.km. area has varied relief features such as plateau, flood plains, dissected rolling lands and residual hills. The height varies from 150 to 600 metres.

Because of the different underlying rocks, the eastern margin of Vidharbha presents a variation in the general aspects and scenery. Outcrops of granite, limestone and associated rock types have, under a wet climate, produced irregular and craggy hill features. In Bhandara, Chandrapur and Gadchiroli districts a 'hummocky' landscape of low and irregular hills and sluggish streams is much in evidence. The Ramtek Hill (400 m) is a representative though more prominent, feature in this landscape[11].

2.2.2 D R A I N A G E :

In Geography, drainage refers to the manner in which precipitation falling within an area or brought from outside is drained off[12]. The drainage system of the Maharashtra comprises many rivers such as Krishna, Godavari, Bhima (eastward flowing) Ulhas, Vaitarna, Vashisthi, Terekhol (westward flowing) Tapi, Narmada (westward flowing) and Vainganga, Painganga (southward flowing).

The Godavari, with its tributaries, drains the largest percentage of the area of the State. The river debouches from the Sahyadri at Trimbak, 25 km west to Nashik. It appears graded to its source. From the base of the escarpment, appearing on the eastern face of the Sahyadri, as a result of

the headward erosion of the river, upto Nashik, there is no preceptible slope and its broad & flat valley appears a trickle[13]. The river flows east and southeast for 1465 km through the State before entering into Andhra Pradesh. The basin covers a total area of 151083 sq.km. within the State limits.

The Godavari basin has a number of subsidiary basins belonging to its tributaries. The Pravara and Mula in the upper Godavari basin, the Manjara river draining the Balaghat plateau and the Wardha - Wainganga and Pranhita basins in the eastern part of the State form part of Godavari basin. The Manjara river, which rises in Beed district, runs dry during the non-rainy season. Pravara and Mula are the two right bank tributaries of Godavari coming from the Sahyadri. Wardha - Wainganga basin is the most important tributary basin of river Godavari. The Penganga rises on the northeastern slopes of the Ajanta hills and runs east before joining the Wardha. The Wardha rises in the southern slopes of the Satpudas and is separated from the west flowing Purna by a feeble watershade in the southern parts of the Amaravati district & has a eastward and south-eastward flow. The Wainganga rises in the Maikal ranges outside the State and flows southwards to join the Wardha-Penganga at Seoni. It is after this confluence, the river is called Pranhita.

The Godavari and its tributaries have carved their valleys on the Deccan lavas. The main tributaries have developed longitudinal courses, probably due to dictates of structure, before sharply turning to enter into the main

river. The steep scarp slopes on either side of the main valley forming the water divides are highly dissected.

The Krishna is another important river of Maharashtra rises on the northern slopes of Western Ghats near Mahabaleshwar. The river follows a straight south-easterly course for 1400 km and enters Karnataka south of Miraj. It has a number of tributaries, the most important of which in Maharashtra are Bhima, Koyana, Ghod, Mula-Mutha, Nira, Warana, Panchaganga, Yerala. The basin covers an area of 74069 sq.km. in the State.

Koyana is the main right bank tributary of Krishna, rises on the southern slopes of Mahabaleshwar hills, flows in narrow steep sided valley and joins the Krishna near Karad.

The Warna, Panchaganga and Dudhganga are the other right bank tributaries of Krishna and drain the eastern slopes of the Ghats.

Bhima which joins Krishna outside the State also important tributary of Krishna, rises at Bhimashankar hills and flows southeastward. The river in its meandering course near Pandharpur. The Mula-Mutha, Nira and Man are its main right bank tributaries, while Ghod and Sina are its left bank tributaries.

All these Deccan rivers, with their eastward and south-eastward drainage flow in broad open valleys except close to their sources. These rivers have fairly steep banks, ranging in heights between 10 and 15 m. They have a distinct monsoon regime, with high waters during July-September. The

low water in April-May when the river flow dwindles to trickles and stagnant pools locally.

Tapi is the only larger river of Maharashtra joining the Arabian Sea, rises from Betul plateau in Madhya Pradesh. The river has a total length of 724 km. It has a number of parallel tributaries which join it at right angles. Thus, the entire length of the basin is divided into north-south segments of fingerlike basin of these transverse tributaries.

The Narmada, forming the northern boundary of the State in the Dhule district flows west in a deep gorge separated from the Tapi valley to its south by the Akhrani hills, a part of Satpudas. The Narmada valley is inaccessible and literally cut off by its flanking scarps.

The Purna is the main tributary of Tapi joining it on the left bank about 50 km east of Bhusawal, through a narrow neck between the Ajanta and Gawilgad hills.

Both Tapi and Purna rivers receive countless number of tributaries. The most important tributary of Purna is Chandrabhaga that descends from Malghat. Among the left bank tributaries Murna, Mun and Nalganga are important, while left bank tributaries include Vaghur, Bori, Panjhara and Buray.

The longest of the Konkan rivers are the Vaitarna and Ulhas that drain the northern sections. The central and south Konkan rivers are Patalganga, Amba, Kundlika, Savitri, Vashisthi, Shastri, Kajvi, Vaghothan, Karli and Terekol.

The Konkan rivers are short and joint-oriented which flow east-west roughly parallel to each other, particularly

in South Konkan. The Konkan rivers rising in the steep western scarp of the Ghats at height of about a thousand metres or more, they fall through steep gradients to empty their currents through swift currents into the Arabian Sea. The basins being small and terrain being lateritic, the recharge from the ground water is limited. The rain water is easily and most expeditiously disposed off to the sea and after the rains the rivers turn dry. None of the coastal rivers are navigable except in their lower courses, close to their mouth.

Bhandara and Chandrapur have numerous small lakes. The best known of these is the Tadoba lake in Chandrapur district. Other large lakes outside this region are Ramsagar in Nagpur district, Visapur lake in Bhima valley, Dhampur lake in Ratnagiri district, Valvhallake near Lonavla, Lonar lake in southern slope of Ajanta hills.

All along the western flanks of the Sahyadri and in the foothill debris slopes to it east, a number of springs are found. There are also springs in Nagpur and Bhandara districts.

Apart from fresh water springs along valley flanks and scarp slopes, many hot springs are also observed particularly along north and central Konkan i.e. near Vajreshwari in Tansa river valley, Surya and lower Vaitarna valleys, near Pali and Mahad in Raigarh and near Rajapur, Khed, Arvali and Rajewadi in Ratnagiri. Some hot springs are also observed near Unapdeo, Soonapdeo and Nazardeo in Dhule and near Silotma in Nashik.

2.2.3 **C L I M A T E :**

The climate of a region is considered as one of the most important geographical factors which influence the distribution of population and activities of man. It has its bearing on man - land relations. In the State climate plays a vital role especially in the distribution and pattern of crops.

In general the climate of Maharashtra State is characterised by hot and dry summers and moderately cold winters. The State has sub-tropical monsoonal type of climate.

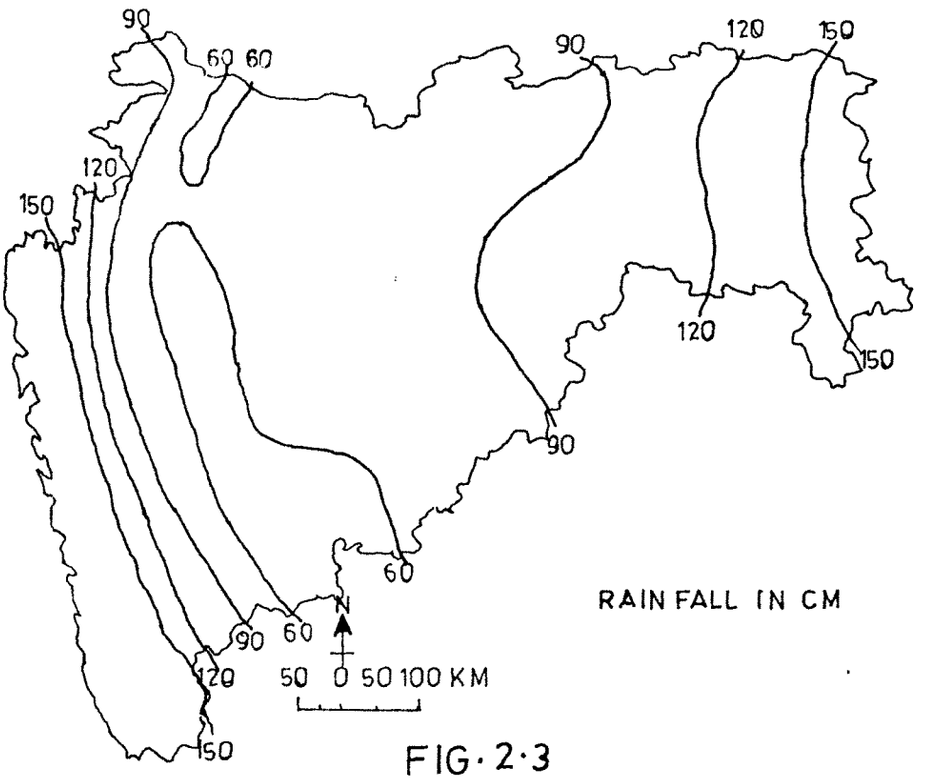
The physiography of the region has made great effect on the characteristics of climate. In the coastal region the influences of Sea are occured as the mildness and moistness of climate, whereas the interior parts of Deccan plateau have experienced dry climatic conditions with considerable high range of temperature.

Over 80% of annual rainfall of the State occurs during the southwest monsoon period (June to September). The Konkan and extreme eastern parts of the State experiences high rainfall ranging between 120 to 400 cm (Fig.2.3), while central part receives low rainfall (between 60 to 90 cm).

The drought prone zone (i.e. southern part of Nashik district, western part of Ahmednagar district) eastern part of Pune district and central part of Dhule district) receives annual average rainfall less than 60 cm in fact this is the rainshadow belt.

THE MAHARASHTRA

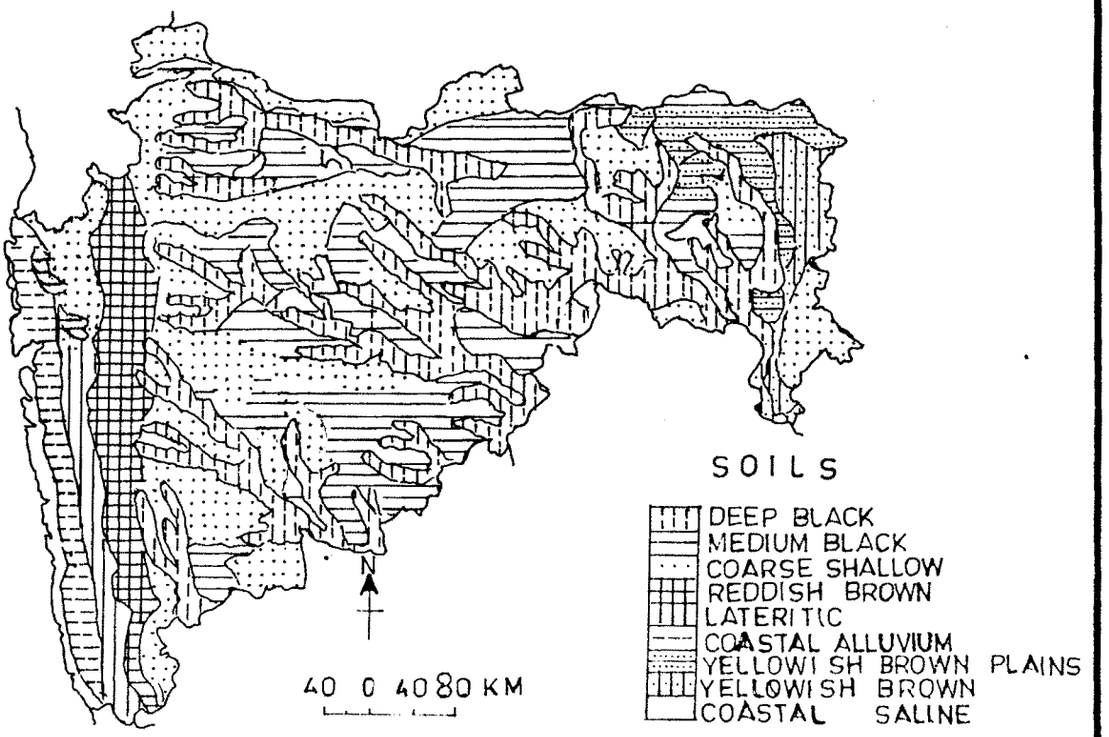
DISTRIBUTION OF RAIN FALL



FIG·2·3

THE MAHARASHTRA

DISTRIBUTION OF SOILS



FIG·2·4

In Maharashtra the mean minimum temperature ranges from 20°C to 22°C while, the mean maximum temperature ranges from 40°C to 48°C. The Konkan region records mean minimum temperature of 22°C while interior of the plateau region records 20°C. The Konkan region records 40°C maximum temperature in June while the Vidarbha region records highest temperature above 46°C.

2.2.4 S O I L S :

The quality of the soil is an important determinant of population density. Other things remaining the same, the higher the fertility of soil, the higher the density of population. The soils of Maharashtra are greatly influenced by the geology and climate up of the various tracts. Thus, the State endowed by wide variety of soils shows anomaly in their occurrance, physio-chemical characteristics as well as suitability for cultivation. However, there are six major types of soils found in the State.

TABLE NO.2.1

THE MAHARASHTRA

CLASSIFICATION OF SOILS

Sr No	Categories	Area in lakh hectares	Percentage
1	Coastal saline and Alluvium soil	2.33	1.15
2	Lateritic soil	9.15	4.53
3	Reddish brown soil	10.81	5.36
4	Coarse shallow soil	55.82	27.66
5	Black(deep & med.)soil	113.93	56.45
6	Yellowish Brown soil	9.79	4.85
	Total ...	201.83	100.00

SOURCE: Statistical Information of Agriculture Deptt. 1985.

[1] COASTAL SALINE AND ALLUVIUM SOILS :

The coastal lowlands of Konkan are covered by saline and alluvium soils. It occupies an area of about 2.33 lakh hectares. The depth of this soil group is varying and fertility is rather poor. Along the coast the soils are sandy in nature. They are also impregnated with salts just near the seashores.

The coastal alluvium soil is found along the river basins of Konkan region (Fig.2.4).

[2] LATERITIC SOILS :

This type of soils has covered an area about 9.15 lakh hectares. It is found in western side of Kolhapur, Pune, Satara and Nashik districts and in eastern parts of Raigarh, Ratnagiri and Sindhudurg districts, especially in low-lying areas of plateau and on residual hills of above mentioned districts. Laterites soil is also found in Gadchiroli district. The tropical humid climate and disintegration of basaltic rocks have given rise to lateritic soils. In these soils silica has been leached out with consequent concentration of iron and aluminium oxides giving them brick red colour. These soils are rich in iron, aluminium, titanium and manganese oxides, but poor in lime and organic material, and possess an extreme acidity, which make these soils sterile, from an agricultural view point, but suit well for tree crops, like cashewnut and mango etc.

[3] COARSE SHALLOW SOILS :

This group of soils has covered an area about 55.82

lakh hectares on upper side in Yawatmal, Ahmednagar, Dhule, Parbhani, Solapur, Nashik, Beed and Wardha districts. This soil group is poor in texture and structure. This is sandy in nature and light brown in colour.

[4] **MEDIUM AND DEEP BLACK SOILS** :

The medium and deep black soils has covered vast area of the State. It occupies an area of 113.93 lakh hectares. It is made by basalt rock. It contains ferrow- magnesian group of minerals. This soil is also known as a 'Regur soils' which is mostly clayey in texture with less or no gravel and course sand. The black colour of the soil was formerly attributed to the high humus and high iron contents. The soil is very rich in calcium and magnesium carbonates but poor in nitrogen, potash and phosphates. The retentivity of the soil makes it unsuitable for irrigation and excessive water application leads to water logging.

The soil is very deep along the river valleys of Krishna, Bhima, Godavari and their tributaries while, medium black soil found in Parbhani, Akola, Solapur, Beed, Ahmednagar, Amravati and Nanded districts. These soils are most suitable for cotton and sugarcane.

[5] REDDISH BROWN SOILS :

Reddish brown soils are found on hill slopes of Pune, Satara, Kolhapur, Nashik districts. This occupies an area about 10.81 lakh hectares. The deficiency of lime, carbonate, phospharic acid, humus and potash is found in this soils and make it poor from the cultivation point of view. These soils are under forest cover.

[6] YELLOWISH BROWN SOILS :

In north and central part of Nagpur, entire Bhandara district and eastern and western parts of Chandrapur and Gadchiroli districts are occupied by this type of soils. It has covered an area of 9.79 lakh hectares. It is poor in iron and potash but rich in calcium and carbonate. In general, it is infertile, and are associated with poor pasture or inferior crops like millets.

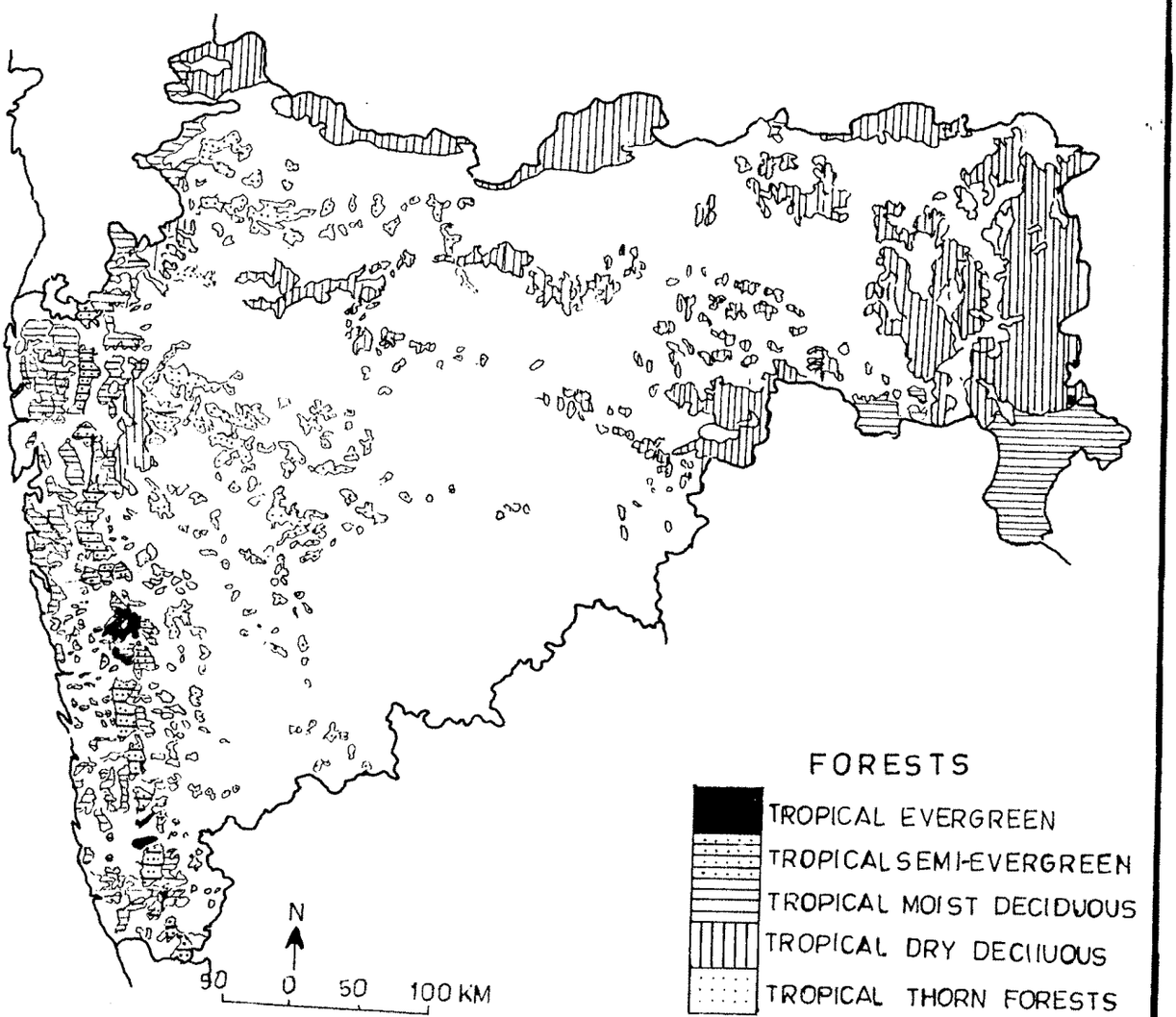
2.2.5 VEGETATION :

Vegetation here means natural vegetation. In strict botaical sense, the natural vegetation of India or for that matter of Maharashtra is forest and not grasses. Climate, particularly rainfall is the paramount geographical factor determining the nature of vegetation in this region. Other factors, such as soil, topographic and biotic factors play a secondary but important role creating variety within the general monotony.

The nature of distribution of total and seasonal rainfall, temperature and evaporation conditions over the different parts of the State result in broadly categorising the vegetation of the State into two groups[14]. (1) the humid type consisting of tropical and sub-tropical evergreen, semi-evergreen type forest and jungles found in the rainy Konkan, Ghats, Satpudas and in the districts of Chandrapur and Gadchiroli in the extreme east of the State, and (2) the dry type found in areas with rainfall, less than 100 cm. This type consists of the thorn and scrub jungles found over

THE MAHARASHTRA

DISTRIBUTION OF FOREST



FIG·2·5

almost the entire plateau except the wetter slopes.

During 1990-91, in Maharashtra 5410 thousand hectares of land is under forest cover which constitutes 17.59 percent of the total area of the State. Distribution of forests occuring to types of forests is shown in Fig.2.5. The figure clearly reveals that Tropical Evergreen forests are mainly found in the foot of the Ghats and on gorges, slopes and summits of the loftier Ghats. Mahabaleshwar, Bamnoli, Amboli, Bhimashankar ranges are clothed with evergreen forests. While tropical semi-evergreen forests occur in patches along the crests of the Ghats and in Konkan region (Fig.2.5).

Tropical Moist deciduous forests are found in Chandrapur, Gadchiroli, Bhandara and in Amravati districts in east and on the slopes of Western Ghats that spread into Nashik, Thane, Dhule and Kolhapur districts in western part of the State. Tropical Dry deciduous forests are found in eastern slopes of Western Ghats, northern part of Dhule, Jalgaon, Amravati districts and also found in Yawatmal, Bhandara, Nagpur, Chandrapur and Gadchiroli districts.

Tropical Thorn forests are found in the dry tracts of Western Maharashtra.

2.3.0 ECONOMIC SETTING :

Economic setting of the Maharashtra is basically described in the subheads of land utilization, agriculture, irrigation, minerals, industry and transportation. All these factors, directly and indirectly govern the distribution and growth of population of any region.

TABLE NO.2.2

THE MAHARASHTRA

LAND UTILIZATION (1991)

Sr No	Item	Area in 000 hectares	Percentage
1	Total geographical area	30758	
2	Area under forest	5410	17.6
3	Barren & uncultivable land	1717	5.6
4	Land put to non-agricultural use	1111	3.6
5	Cultivable waste	1028	3.3
6	Permanent pastures, grazing and tree crops	1699	5.5
7	Current fallow	973	3.2
8	Other fallow	910	3.0
9	Net area sown	17910	58.2
10	Area sown more than once	3116	17.4
11	Gross cropped area	21026	68.3

SOURCE: 1) Government of Maharashtra, Directorate of Economics And Statistics, Bombay, Handbook of Basic Statistics of Maharashtra State 1992, Table 3.1, P.38.

2) Author.

2.3.1 **LAND UTILIZATION** :

Table 2.2 presents the picture of land utilization in Maharashtra State in 1991. In the State 5410 thousand hectares of land is under forest which accounts for 17.6 percent of the total geographical area of the State. But as regards to areal distribution, Gadchiroli, Thane, Dhule, Chandrapur districts have more than 35 percent of the total geographical area under forests while Gr.Bombay, Solapur, Parbhani, Beed districts have less than five percent of the total area under forest and in Latur, Osmanabad, Jalna, Ratnagiri districts the percentage of area under forest is below one percent.

Uncultivable land including cultivable waste land and barren land covers 8.9 percent of the total area of the State. But this is higher than the State's average figure (8.9 percent) in Raigarh, Ratnagiri districts (more than 25 percent), Pune, Satara, Thane and Nashik districts (above 10 percent).

Uncultivated land, including land put to non-agricultural use, permanent pastures, grazing and tree crops, accounts for 9.1 percent of the total area of the State. Percentage of such land is more in Nagpur, Bhandara, Pune and Satara districts.

Fallows include two types of land, namely, other fallow (for 2 to 5 years) and current fallow (1 year). The largest acreage of land under fallow is in Ratnagiri district.

The net sown area covers 58.5 percent of the total State's area. Comparatively Akola, Buldhana, Latur,Osmanabad, Nanded, Ahmednagar, Beed, Jalna, Parbhani, Aurangabad, Solapur, Sangli and Jalgaon districts have higher net sown area (above 65 percent). While Gr.Bombay, Thane, Raigarh, Ratnagiri, Sindhudurg and Gadchiroli districts have less net sown area (below 30 percent).

17.4 percent of the total cultivated area of the State is sown more than once. The percentage of area sown more than once is the highest in Bhandara district (34.7) followed by Parbhani (32.6), Satara (28.4), Latur (25.8), Osmanabad (23.1), Jalgaon (22.5), Pune (19.2) and Aurangabad (18.3) districts (Table 2.3).

2.3.2 A G R I C U L T U R E :

Farming is a product not merely a physical setting but also manmade frame[15]. Seasonal cropping is the main characteristics of agricultural practice in the Maharashtra. The agricultural operation may be divided into two harvesting periods (i) SE Monsoon Period (Kharip) and (ii) Spring Period (Rabi).

Maharashtra State has an area of 179995 hectares of land under cultivation which constitutes 58.5 percent of the total area of the State and 69.7 percent of the working population of the State is engaged in agriculture and its allied activities. It shows that the agriculture is backboon of economy of the State.

Variety of crops are being taken in the State in

TABLE NO.2.3

THE MAHARASHTRA

NET AREA SOWN AND AREA SOWN MORE THAN ONCE (1991)

Sr No	District	Net area sown in percentage	Area sown more than once in percentage
1	Gr.Bombay	9.9	..
2	Thane	28.0	5.2
3	Raigarh	26.3	14.4
4	Ratnagiri	28.5	4.7
5	Sindhudurg	21.1	13.6
6	Nashik	58.3	8.2
7	Dhule	56.2	7.4
8	Jalgaon	69.4	22.5
9	Ahmednagar	67.8	14.6
10	Pune	63.9	19.2
11	Satara	55.3	28.4
12	Sangli	68.0	11.5
13	Solapur	75.0	7.2
14	Kolhapur	53.0	15.5
15	Aurangabad	72.3	18.3
16	Jalna	77.5	6.7
17	Parbhani	76.6	32.6
18	Beed	76.3	10.8
19	Nanded	69.8	9.2

Sr No	District	Net area sown in percentage	Area sown more than once in percentage
20	Osmanabad	75.3	23.1
21	Latur	73.1	25.8
22	Buldhana	71.1	13.8
23	Akola	76.7	7.5
24	Amravati	59.0	9.7
25	Yawatmal	62.9	4.8
26	Wardha	68.1	5.8
27	Nagpur	55.4	12.2
28	Bhandara	38.6	34.7
29	Chandrapur	41.2	14.0
30	Gadchiroli	13.5	11.3
	Maharashtra	58.5	17.4

SOURCE: 1) Government of Maharashtra (1992), Epitome in Agriculture Part II.

2) Author.

which main food crops are Jowar, Wheat, Bajari and Rice while main cash-crops are cotton, sugarcane and groundnut although pulses are also acquired considerable area.

61.9 percent of the net sown area in the State is under cereals, out of which 56.8 percent is under Jowar, 17.3 percent under Bajari, 14.2 percent under Rice and 7.8 percent is under Wheat. The production of all the cereals for 1991 is 10740 thousand tonnes.

Jowar is predominent crop in Maharashtra and accounts for 35 percent of the total cultivated land. Solapur district has the highest percentage of cultivated land under Jowar cultivation (63.5) followed by Pune (57.7), Osmanabad (51.6), Ahmednagar (49.8), Parbhani (48.5), Beed (47.7), Sangli (47), Satara (42.7) and Aurangabad (40.8) districts.

Bajari is another important food crop which accounts for 10.7 percent of the total cultivated area of the State. Nashik district has the highest percentage of land under Bajari cultivation (40) followed by Ahmednagar (27), Aurangabad (26.5), Pune (21.8), Dhule (20.6), Beed (20.1) and Satara (20) districts.

Rice is cropped mainly in two areas of the State i.e. (i) eastern part (Bhandara, Chandrapur and Gadchiroli districts) and (ii) Konkan region (Thane, Raigarh, Ratnagiri and Sindhudurg districts). Bhandara district has the highest percentage of land under rice cultivation (92.2) followed by Raigarh (80.8), Sindhudurg (72.7), Gadchiroli (71.3), Thane (56), Chandrapur (33.5) and Ratnagiri (32.9) districts. In

Western Maharashtra only Kolhapur district has more land (25.1) under rice cultivation.

Wheat has acquired low cultivated land (4.8 percent) in the State and is being taken from almost every districts of the State except districts of Konkan region. Nashik district has the highest percentage of land under wheat cultivation (9.8) followed by Nagpur (9.1), Ahmednagar (6.9), Bhandara (6.6), Jalna (6.5), Parbhani (6.2) districts.

The pulses account for 18.1 percent of the total cultivated land of the State. Akola district has the highest percentage of land under pulses (33.5) followed by Latur (33) Buldhana (28.8), Parbhani (28.5), Osmanabad (28),Jalna (26.4) Amravati (25.8) and Aurangabad (23.9) districts.

Sugarcane, cotton and Groundnut together account for 22.5 percent of the net sown area of the State. While cotton is an important cash-crop in the State which accounts for 15.2 percent of the total land under cultivation of the State. Amravati district has highest percentage of the land under cotton cultivation (51.7) followed by Yawatmal (49.7), Akola (45.9), Buldhana (38.6), Wardha (35.8), Parbhani (32.6) Nanded (31), Jalgaon (23) and Jalna (23.2) districts.

Sugarcane is mainly cultivated in Western Maharashtra, and accounts for 2.5 percent of the total cultivated area. Kolhapur district with 15.5 percent of its total cultivated land under sugarcane is on top followed by Satara (6.4 percent), Ahmednagar (4.9 percent), Sangli (4.1 percent), Aurangabad (3.8 percent), Solapur (3.5 percent) and Pune

(3.2 percent) districts. While groundnut is sown by and large in almost every part of the State except Gr.Bombay and Gadchiroli districts. Groundnut accounts for 4.9 percent of the total cultivated land of the State. As compared to State's average Kolhapur (16.9 percent), Dhule (13.7 percent), Satara (13 percent), Jalgaon (8.1 percent), Sangli (8.1 percent) districts have more land under groundnut cultivation.

2.3.3 I R R I G A T I O N :

A highly developed system of irrigation raises the population supporting capacity of the region. In Maharashtra, out of 17999500 hectares of cultivated land 1901800 hectares of land is under irrigation[16] which shows that 10.6 percent of the total cultivated land is under irrigation. Bhandara district has the highest percentage of irrigated land (35.8) followed by Ahmednagar (18.6), Satara (18.2), Gadchiroli (18.2), Pune (16.8), Kolhapur (14.4), Chandrapur (14.2), Beed (14.2) and Sangli (13.1) districts. While districts which have less irrigated area as compared to State's average are Ratnagiri (1.4 percent), Thane (1.9 percent), Yawatmal (2.6 percent), Akola (4 percent), Wardha (4.9 percent), Amravati (5 percent), Buldhana (5.1 percent), Raigarh (5.2 percent), Nanded (5.2 percent), Latur (5.6 percent) and Parbhani (6.7 percent).

The percentage of total irrigated land by different means in the Maharashtra has been shown in Table 2.4.

TABLE 2.4

THE MAHARASHTRA

PERCENTAGE OF IRRIGATED AREA BY DIFFERENT MEANS

Item	Irrigated area in percentage
Surface Irrigation (includes area irrigated by canals, tanks and other sources)	41.9
Well Irrigation	58.1
	100.00

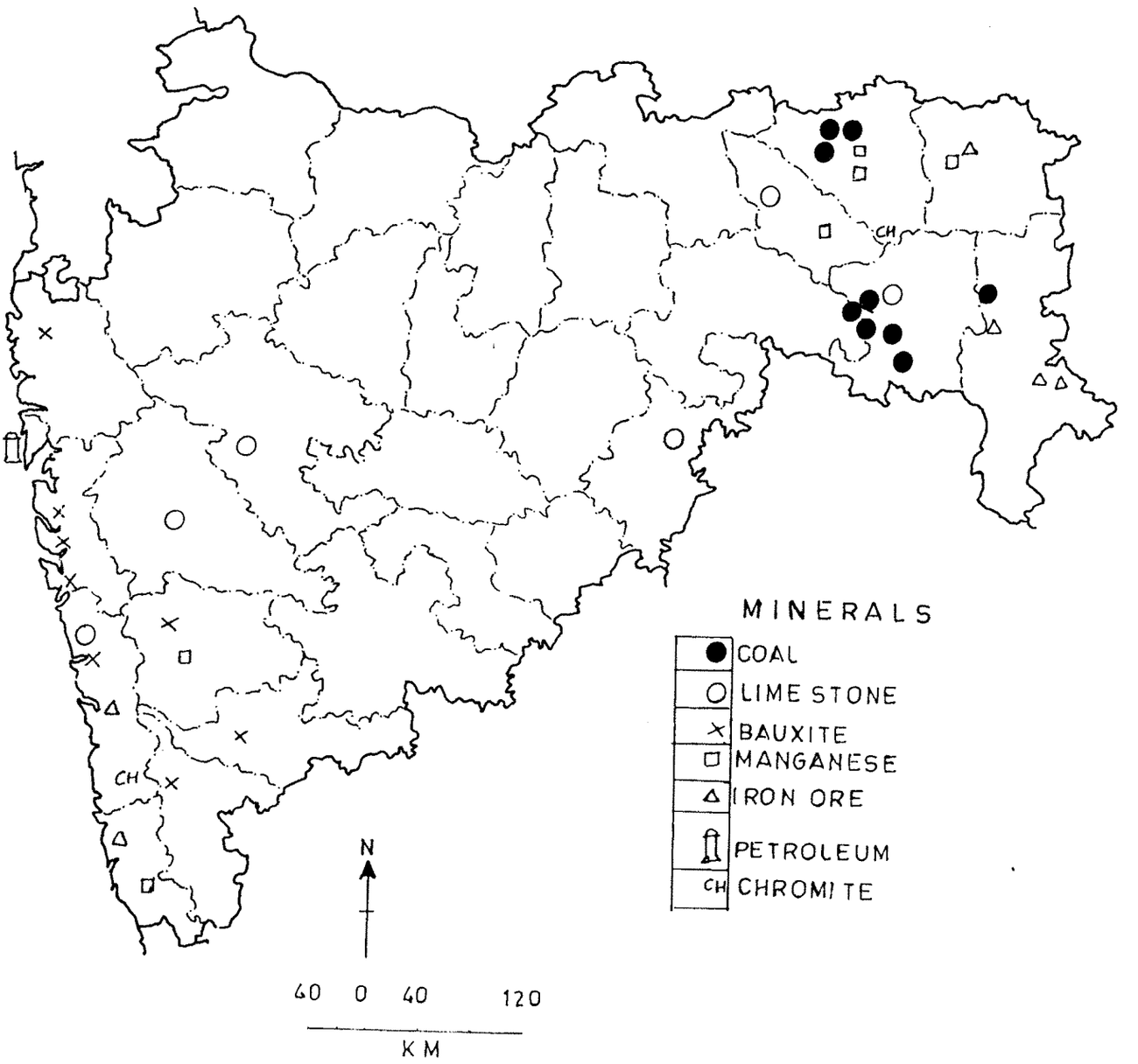
SOURCE : Districtwise General Statistical Information of Agriculture Department 1992, Part-II, Epitome of Agriculture in Maharashtra.

2.3.4 M I N E R A L S :

The State of Maharashtra is fairly well endowed with industrial and fuel minerals like iron-ore, manganese, coal, bauxite and limestone. Fairly rich deposits of chromite, ilmenite, dolomite and industrial clays occur in different parts of the State. The State is also immensely rich in building stones and road metal like basalt and laterite. Numerous other minerals like silica, sand, mica, quartz and others occur in small quantities[17].

THE MAHARASHTRA

DISTRIBUTION OF MINERALS



FIG·2·6

By and large, the minerals of the State are heavily concentrated in two zones : (i) Eastern part of the State - mainly in the districts of Chandrapur, Bhandara and Nagpur, and (ii) the extreme southern parts of the State, in Ratnagiri, Sindhudurg and Kolhapur districts (Fig.2.6).

Coal is distributed in Chandrapur, Nagpur and Yawatmal districts. Iron-ore is found in Bhandara, Chandrapur Ratnagiri and Sindhudurg districts. Limestone and Dolomite deposits are found in Yawatmal, Chandrapur and in some parts of Dhule, Nanded, Sangli, Ahmednagar and Pune districts. Manganese is found mainly in Bhandara district and with few quantity in Satara, Yawatmal, Nagpur and Ratnagiri districts. Bauxite is distributed in Kolhapur, Ratnagiri, Thane and Satara districts. And petroleum in Bombay High near Bombay in Arabian Sea.

2.3.5 I N D U S T R Y :

Maharashtra is one of the industrially leading States of the Country. It is obvious from the table 2.5 that Maharashtra has 23410 working factories which provide employment to 1162651 people. Though the State is a whole is industrially developed, there is great disparity at district level.

The Gr.Bombay, Pune, Thane and Solapur districts have more industries, among which Gr.Bombay consists of one third industries of the State (33.9 percent) and 38.3 percent of the State's total factory workers. While Pune district has 10.2 percent of the State's total factories and 12.6 percent

TABLE NO. 2.5

THE MAHARASHTRA

NUMBER OF WORKING FACTORIES AND DAILY WORKERS (1991)

Sr No	District	No.of working factories	No.of daily workers	Percentage to the State's level	
				Factories	Daily workers
1	Gr.Bombay	7933	444834	33.9	38.3
2	Thane	1950	125703	8.3	10.8
3	Raigarh	305	30054	1.3	2.6
4	Ratnagiri	194	6628	0.8	0.6
5	Sindhudurg	131	2765	0.6	0.2
6	Nashik	1086	54304	4.6	4.7
7	Dhule	345	11925	1.5	1.0
8	Jalgaon	653	26926	2.8	2.3
9	Ahmednagar	501	26557	2.1	2.3
10	Pune	2396	146338	10.2	12.6
11	Satara	257	17488	1.1	1.5
12	Sangli	519	17992	2:2	1.5
13	Solapur	1906	29702	8.1	2.6
14	Kolhapur	1070	40411	4.6	3.5
15	Aurangabad	488	35709	2.1	3.1
16	Jalna	139	5469	0.6	0.5
17	Parbhani	110	4289	0.5	0.4
18	Beed	110	4619	0.5	0.4
19	Nanded	133	9353	0.6	0.8

Sr No	District	No.of working factories	No.of daily workers	Percentage to the State's level	
				Factories	Daily workers
20	Osmanabad	28	2258	0.1	0.2
21	Latur	28	3636	0.1	0.3
22	Buldhana	163	6032	0.7	0.5
23	Akola	297	13288	1.3	1.1
24	Amravati	277	8713	1.2	0.7
25	Yawatmal	147	7432	0.6	0.6
26	Wardha	130	9288	0.5	0.8
27	Nagpur	1279	49352	5.5	4.2
28	Bhandara	470	7327	2.0	0.6
29	Chandrapur	298	13556	1.3	1.2
30	Gadchiroli	67	703	0.3	0.1
	Maharashtra	23410	1162651	100.00	100.00

SOURCE : 1) Government of Maharashtra, Directorate of Economics And Statistics, Bombay
Handbook of Basic statistics of Maharashtra State 1992 Tab. 3.1, P.38.

2) Author

of the State's total factory workers. Other districts which are industrially developed are Nashik, Kolhapur and Nagpur.

Osmanabad and Latur districts are less industrially developed (0.1 percent total factories of the State). Ratnagiri, Sindhudurg, Satara, Jalna, Parbhani, Beed, Nanded, Buldhana, Akola, Amravati, Yawatmal, Wardha, Chandrapur and Gadchiroli districts are also industrially less developed.

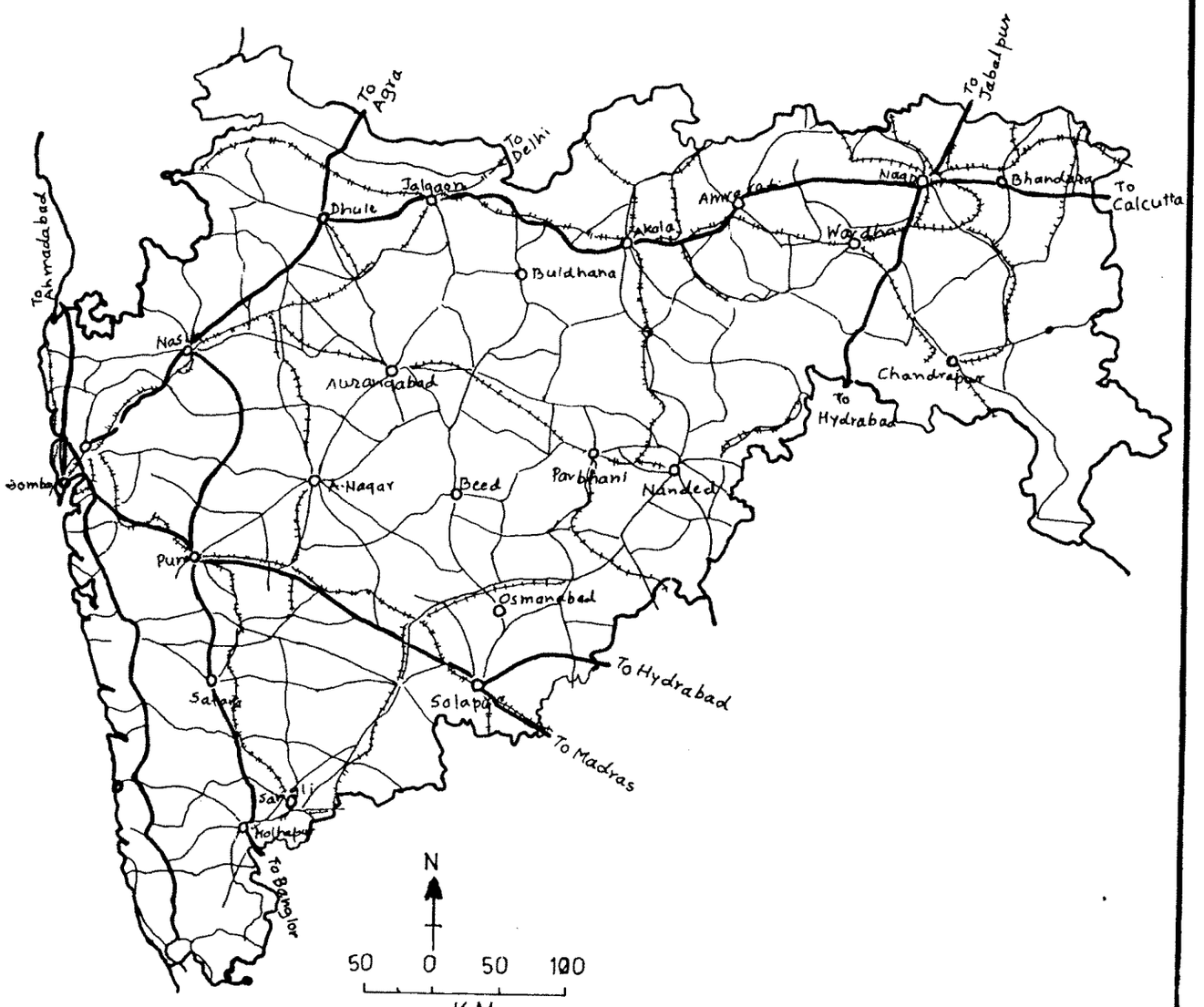
2.3.6 **T R A N S P O R T:**

The development of transport means increases the capacity of region to support population[18]. An efficient system of transport is a pre-requisite to the development of a country or part of it not only because it promotes contact of diverse cultures but also because it is instrumental in the diffusion of innovation and brings the resources of a region within easy reach of capital and enterprise[19]. The State has a relatively good network of transport which includes the roads, the railways, the waterways and airways.

The State has total length of 172965 km of roads. Table 2.6 presents districtwise road density in the State. It is obvious from this table that thirteen districts have higher road density as compared to State's average (56.2 km per 100 sq.km). While ten districts have low road density.

In terms of areal distribution, the south central part of the State is well connected with a criss-cross pattern of roads. In contrast, central, eastern and north eastern parts (except Bhandara and Chandrapur districts) of the State have poor road network. (Fig.2.7)

THE MAHARASHTRA
TRANSPORT NETWORK



FIG·2·7

TABLE NO. 2.6

THE MAHARASHTRA

ROAD AND RAILWAY LENGTH (1991)

Sr No	District	Road length in km	Railway length in km *	Density per '00 sq.km.	
				Raod	Railway
1	Gr.Bombay	49	205.02	8.1	34.0
2	Thane	5354	95.58	56.0	1.0
3	Raigarh	3960	143.04	55.4	2.0
4	Ratnagiri	4993	..	60.8	..
5	Sindhudurg	3242	..	62.3	..
6	Nashik	10340	264.01	66.6	1.7
7	Dhule	7619	26.3	57.9	0.2
8	Jalgaon	8344	505.9	70.9	4.3
9	Ahmednagar	11912	187.5	69.9	1.1
10	Pune	10779	312.9	68.9	2.0
11	Satara	8733	136.2	83.3	1.3
12	Sangli	7865	171.4	91.7	2.0
13	Solapur	9952	446.8	66.8	3.0
14	Kolhapur	5691	38.4	74.0	0.5
15	Aurangabad	4540	70.7	44.9	0.7
16	Jalna	3293	N.A.	42.7	..
17	Parbhani	5848	231.9	53.0	2.1
18	Beed	5418	10.7	50.7	0.1
19	Nanded	7090	221.1	67.3	2.1
20	Osmanabad	4120	68.1	54.4	0.9

Sr No	District	Road length in km	Railway length in km	Density per '00 sq.km. Raod	Railway
21	Latur	3953	66.3	55.2	0.9
22	Buldhana	3710	86.9	38.4	0.9
23	Akola	4229	327.8	40.0	3.1
24	Amravati	4432	170.9	36.3	1.4
25	Yawatmal	4795	67.9	35.3	0.5
26	Wardha	2558	151.4	40.5	2.4
27	Nagpur	4414	375.9	44.6	3.8
28	Bhandara	5401	288.9	57.9	3.1
29	Chandrapur	6088	137.3	53.2	1.2
30	Gadchiroli	4242	N.A.	29.4	..
	Maharashtra	172965	4808.85	56.2	1.56

SOURCE: 1) Government of Maharashtra (1991), Handbook of Basic P.W.D.Statistics of Maharashtra State, Table R.1.

2) Author.

3) Maharashtra Economic Development Council (C) Industrial Maharashtra : Facts, Figures and opportunities - Bombay.

The railway carries an unmistakable imprint on the industrial landscape of the State. Industries have preferred locations that are well linked with different parts of the country. The main industrial centres in the State tethered to railway lines.

The State has 5230 km of total rail length, spread all over, with exception of Ratnagiri and Sindhudurg districts, show the density of 1.7 km per hundred sq. km. Highest railway density (34 km per 100 sq.km) is found in Gr.Bombay district (Table 2.6).

The central and even the eastern part of Maharashtra with an exception of Buldhana and Yawatmal, have a better network of rail transport. Other districts (except Dhule, Kolhapur and Beed districts) also have a better network of rail transport.

2.4.0 **POPULATION CHARACTERISTICS** :

The Maharashtra is the third largest States in India, covering 9.4 percent of its area and 9.3 percent of population. The share of rural and urban population of the State is 7.7 percent and 14 percent respectively. The population growth rate during 1981-91 in the State (25.4 percent) is above the national level (23.6 percent). While rural population growth rate in the State (18.3 percent) is less than the national average (19.71 percent) but it is higher in urban areas (38.66 percent) than the national level (36.19 percent). According to 1991 census the density of population in Maharashtra (256 persons per km^2) is less than national level (267 persons per km^2).

The sex-ratio in Maharashtra (935) is above the national average (929). Sex-ratio is also high in rural areas (975) as compared to country's rural sex-ratio (941). But sex-ratio in urban areas in Maharashtra (876) is low than the national average (893). Sex-ratio in literates in the State (634) is well above the all India level (571). Sex-ratio in literates in both rural (571) and urban (706) areas of Maharashtra is also above the national level (i.e. rural 504 and urban 702).

According to 1991 census, 54.2 percent of the total population in the State is literate which is above the national figure (42.9 percent). Literacy rate in rural male (57.7 percent) and female (38.8 percent) is above the national average (male 46.9 percent, female 25.1 percent). Literacy rate in urban male (74.9 percent) and female (60.4 percent) is also above all India level (male 68.7 percent and female 54 percent).

Maharashtra is the most urbanised among the major States with 38.73 percent of its population is residing in urban areas and the level of urbanisation in the State is well above the national level of 25.72 percent.

REFERENCES

1. Dikshit, K.R.(1971), 'Maharashtra Region in 'India' - A Regional Geography', Singh, R.L. (Ed), Varanashi, P. 730.
2. Dikshit, K.R. (1986), 'Maharashtra in Maps' Maharashtra State Board for Literature and Culture. Bombay, PP. 21-25.
3. Dikshit, K.R. (1981), 'The Western Ghats', A Geographic Over view, in New Perspectives in Geography, Singh, R.L.(Ed), Thinker's Library, Allhabad, PP. 1-31.
4. Deshpande, C.D.(1971), 'Geography of Maharashtra' National Book Trust, India New Delhi, P.14.
5. Shinde, S.D. (1980), 'Environmental Setting of Agricultural Relevance', Agriculture in an Under-developed Region: A Geographical Survey Himalaya Publishing House, Bombay.
6. Dikshit, K.R. (1986), Op. Cit. PP.21-25.
7. Dikshit, K.R. (1986), Op. Cit. PP.21-25
8. Arunachalam, B.(1967), 'Maharashtra, A Study of Physical and Regional Setting and Resource Development, A.R.Sheth and Co. Educational Publishers, Bombay, P.11.
9. Dikshit, K.R. (1986), Op. Cit. P.24.
10. Ibid.

11. Deshpande, C.D. (1971), Op.Cit. PP. 17,18.

12. Ahmed, E.(1965), 'Bihar - A Physical, Economic and Cultural Geography', Ranchi University, PP. 30-35

13. Dikshit, K.R. (1986), Op. Cit. P.26.

14. Arunachalam, B. (1967), Op. Cit. P.70.

15. Singh, Jasbir (1975), 'Agricultural Atlas of India: A Geographical Analysis', Vishal Publication, Kurukshetra.

16. Government of Maharashtra (1992), 'Epitome in Agriculture, Part-II.

17. Arunachalam, B. (1967), Op. Cit. P.80

18. Determinants and Consequences of Population Trends (1953), U.N.Publication, Study No.17, P.170.

19. Dikshit, K.R. (1986), Op. Cit. P.94.