

CHAPTER: II

THE REGION

INTRODUCTION

The Sangli district is one of the leading districts in Maharashtra State. It represents every aspect of the State. It has high hills and green forests on the western slopes, wide stretched of denuded land, pastures and mal lands on east. It has rolling lands and wide plains both fertile as well as barren. Western part experiences heavy rainfall while eastern part has scanty and uncertain rainfall. Western part has rich basin soils of Krishna and Warna which represents a picture of ampleness and richness. Eastern part has poor soil and climatic conditions which represents a picture of scarcity and poverty. Western and southern parts are agriculturally developed while climatic conditions in northern and eastern part has restricted agricultural development.

Sangli and Miraj are important cities in the district. Sangli is world famous for markets of trading in turmeric. The district has sound network of co-operatives, which are responsible for rural development. "The district is best owed with unusual resources in men material and a built in capacity to face the vagaries of nature and constant adverse circumstances".¹

It is a leading district in agriculture, which

produces high grade variety of rice in west, wheat, Jowar, Bajara on long stretched of land. It has green sugar belts along river banks and areas producing oil seeds and cotton in the rest of the part. It is only district where active farmers are changing agricultural production with change in demand from market. Soil is an important factor from the agricultural point of view. It is indirectly responsible to economic development. Therefore present study concerns with soil, where attempt has been made to find the present condition of soil in respect of its nutrient contents.

Formation & Extension of the district -

Up to July 1949 some northern part of the district was included in the Satara district and other part was under the different princely states like Sangli, Miraj junior, Miraj senior, Jat and Aundh. After Independence all the princely states were merged in Indian Union. Combination of these have formed an independent district, the 'South Satara' on 1st August 1949. The same was renamed as Sangli district on 1st November 1960.

The Sangli district has eight talukas, which are named as Shirala, Walwa, Tasgaon, Miraj, Atpadi, Khanapur, Kawathe-Mahankal and Jat. For administrative purposes the district at present is divided in two sub-divisions, Walwa and Miraj. The Walwa sub-division comprises, Khanapur, Shirala and Walwa talukas. Whereas the Miraj sub-division comprises Tasgaon, Miraj and Jat talukas. On first August 1964

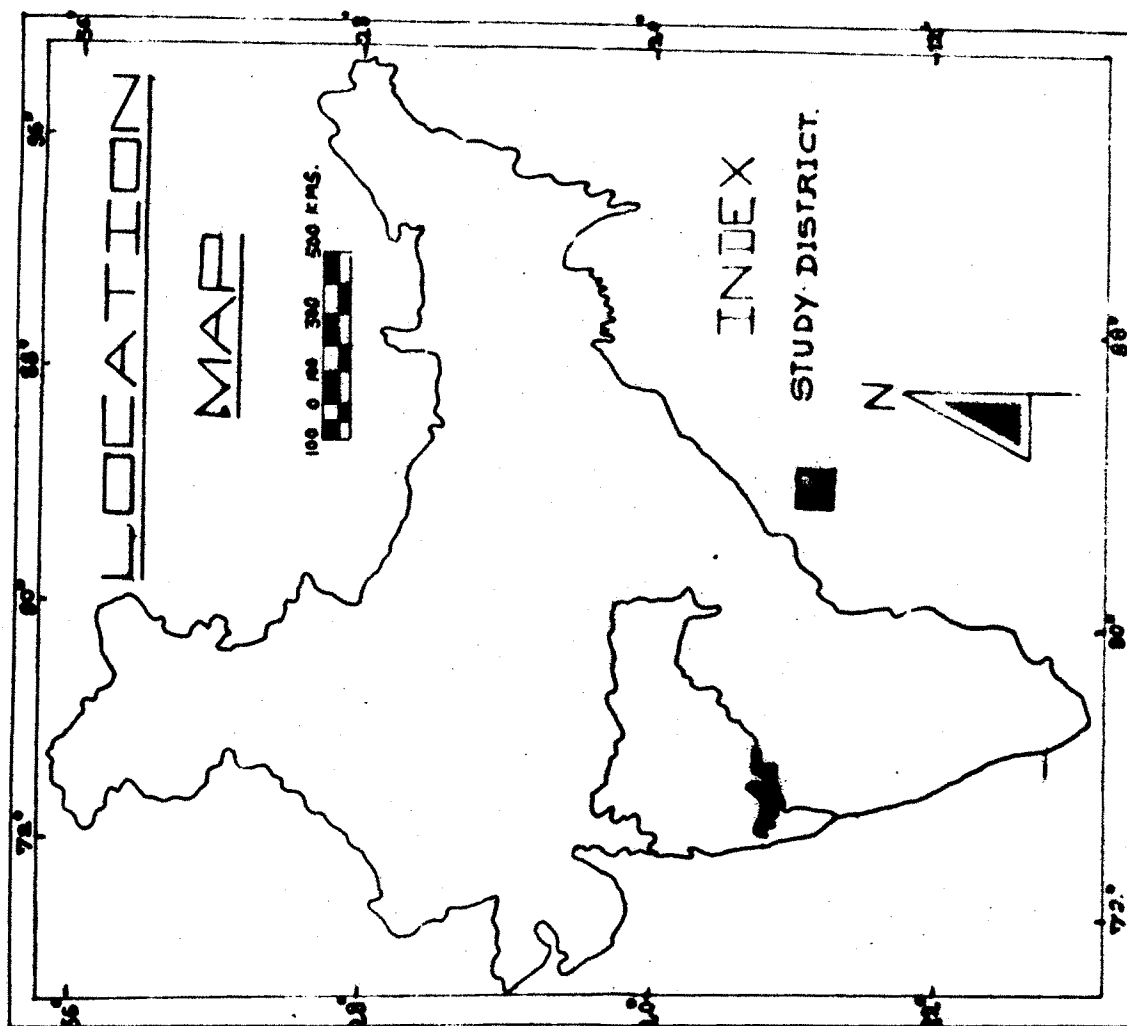


Fig NO.1

Khanapur and Miraj talukas were reconstituted into Khanapur taluka and Atpadi-Mahal and Miraj taluka and Kawathe-Mahankal Mahal respectively!"²

The district is extended from $16^{\circ}-43'$ N to $17^{\circ}-38'$ N latitude and $73^{\circ}-41'$ E to $75^{\circ}-41'$ E longitudes. Maximum east-west extension is 205 kms. In north-south it has varying length from 10 to 20 kms on the east and 96 kms in the centre. The district has 543 villages and 7 urban centres. The total area of the district is 8564.96 sq.kms. The district is bounded by Satara and Solapur district on the north, Ratnagiri district on the west, Warana river & Kolhapur district to the south and common boundaries of Maharashtra and Karnataka states on south-east and east.

The face of the Sangli district -

The surface of the district is formed by highlands, lowlands and flat areas (fig.No.3) which are the main features of our earth surface.

Relief - " Relief influences soil formation primarily through its effect upon drainage, runoff, erosion, and secondarily through variations in exposure to the sun, wind and air drainage."³ Relief causes runoff and percolation of water in different amount. Because of runoff, strongly sloping soils receive less water than the average and soils in depressions. Relief also affects the depth of soil. In hilly and steeply sloping regions, due to washing

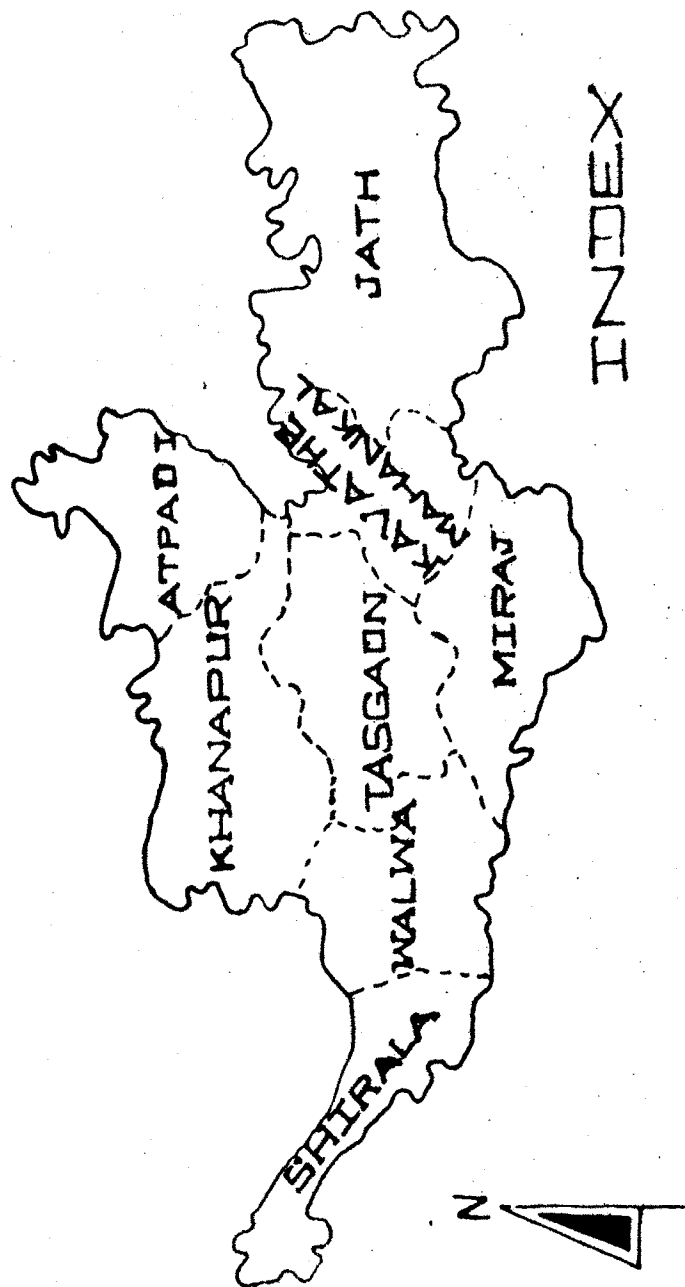
of soil with more runoff, soils are thin and have coarse particles. On flat surfaces and in depressions due to deposition, soils are deep and fine textured. In study region in western hilly part runoff is more. Therefore soils are thin and have very less under ground water. The runoff is less in river valleys due to the depression. They have more underground water; while remaining parts of district have moderate slopes and have moderate runoff.

The Sangli district has hill ranges of Sahyadri in west. These ranges occupy large area of Shirala taluka. This part has eastern slopes of sahyadri and has formed rugged topography. The main sahyadrian range rises to over 1472 mtr., which forms the highest hill range in the district. Fort of prachitgad is situated on this range. To the south of prachitgad Tivara pass connects this district with Konkan by footpath. The Shirala taluka has southern slopes of the Bhairavgad-Kandur hills. In this part hills rises steeply from the river bank leaving a little land for tillage. The slopes are covered with dense mixed forests with isolated patches of agricultural land, which is used mainly for Ragi.

Inspite of main sahyadrian range in west, the district has some following hill ranges, which runs in different directions in the district. From the main range of the Bhairavgad-Kandur hills near Girija-wada and Dhamwada, some branches radiate towards south-east and

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District Boundary



Taluka Boundary



Fig.No.2

north-east separating the valleys of Morana, Karmala and Kasegaon rivers. These branches enter in Walwa taluka. The south-easterly spur of this range is broken by streams and it ends in Mallikarjun Dongar and Santoshgiri. Three spurs extend north-east and east from this main spur. Wategaon, Nerla and Kameri are the important villages which are situated at the end of the main spur. These ranges have narrow and flat tops.

The Machhindragad-K^amal-Bhairav hill range extends in north-west, south-east direction. This range is offshoot of Mahadeo range, which runs along the borders of Walwa, Tasgaon and Khanapur tahsils. North of Krishna river it has 762 Mt. height above M.S.L. with the table lands. The southern tip of this range is ended at Kundal. It rises fairly steep from the flood plain of the Krishna river. But descends more gently to the Sonhira stream whose level is 300 Mt. above that of Krishna.

North of Machhindragad, these hills continue as Machhindragad-Vardhangad range which is an offshoot of the Mahadeo hills. Here also the range presents a steeper slope towards the Krishna basin to west and a gentle slope to the east. From this range few spurs extend eastward and produce several valleys between them. Dongrai Devi temple is situated on one of these spur of which height is 900 Mt.

The Machhindragad-Panhala range is another offshoot of Mahadev range running from north-west to

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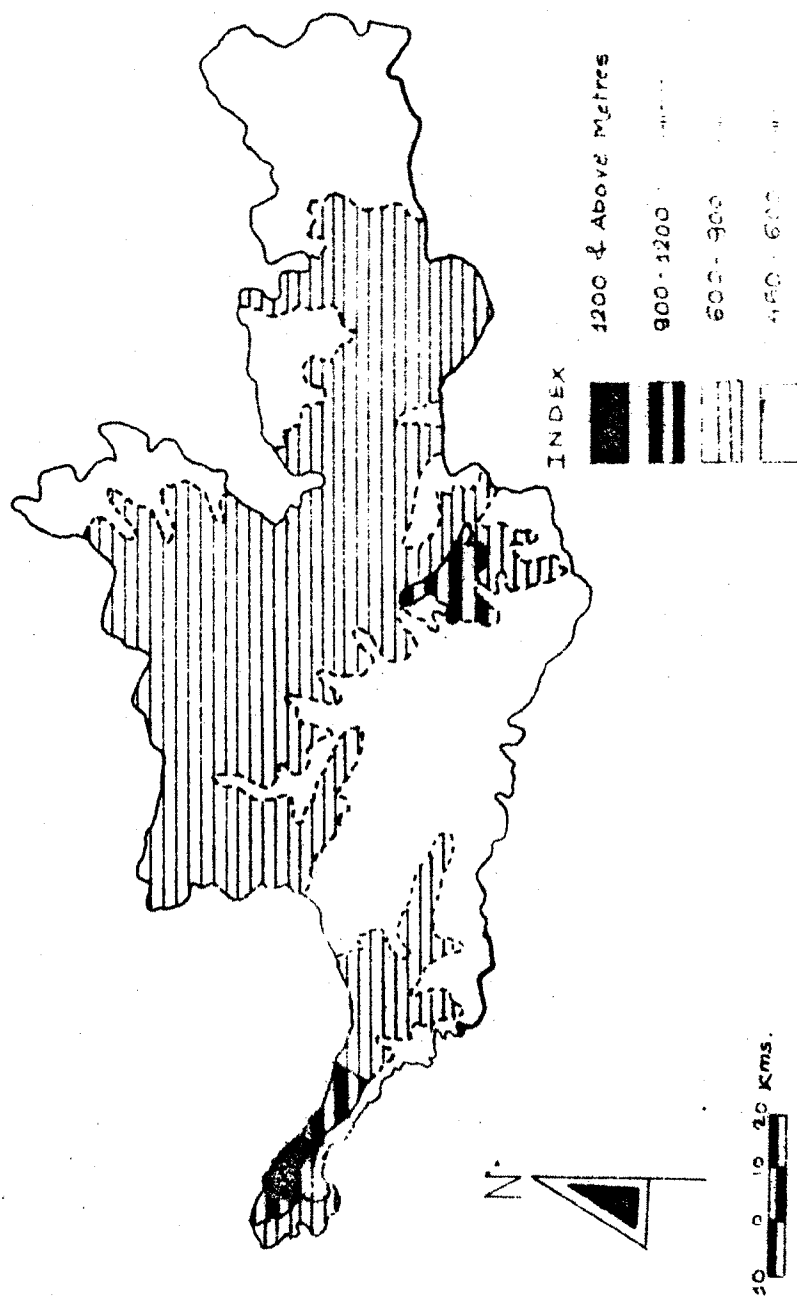


Fig.NO 5

south-east direction and divides the region into Krishna and Bhima basin. This range lies to the east of Yerela basin. In these hills the land rises in two or three distinctⁿ terraces separated by precipitous slopes. The Taras-Khind ghat is a major break in this range which is negotiated by the road from Mayani to Diganchi. Towards south this range broadens out into a wide Khanapur plateau. The western edge forming group of hills extends as far as Juna Panhalgad. The hills bounding this plateau on the eastern side form the water divide between Krishna and Bhima basins. The eastern range has several broad and flat tops. The flat tops of these hills are much wider in extent than those of the western part of the district. In this water divide the northward flowing streams belong to the Bhima drainage and the southward flowing streams belong to the Krishna basin. On this triangular Khanapur plateau the higher plateau tops are over 1212 mts. in height.

There is another plateau which lies to the east of Vita-Jat uplands. This plateau is at lower level and is at about 967 mts. and comprises the western part of Jat taluka. It is bounded on the north by a hill of about 1000 mtrs. above M.S.L. This hill separates this plateau from the Sangola basin on the north. To the east this plateau descends up to east of Jath by a scarp face, which still at lower level of about 868 mts. It comprises eastern part of the Jath taluka.

Drainage -

The district is drained by number of rivers like the Krishna, Warana, Maan, Agrani, Morana and number of other small tributaries of these rivers. The Krishna, Warana are important rivers, in the western part of district while the Agrani, Maan, Bor are the important rivers in eastern part of district. These rivers are the 'Jeewan Dhara' of the district. Out of all the Krishna is important in respect of irrigation for agriculture, industries and for the drinking purposes. (fig.No.⁴~~5~~)

The Krishna -

The river Krishna is main source of supply of water for drinking, industries and irrigation. The Krishna is one of the great river of south India like the Godawari and the Kaveri. It rises in western ghat at Mahambaleshwar near Arabian sea but joint to Bay of Bengal by travelling long distance on plateau in south India.

In the Sangli district krishna flows for a distance of about 108 kms. The warana and the Yerla meet to it in this district. The bed is 40 to 45 mtrs. wide. In monsoon the water reaches upto both banks of the river but in summer season it is so shallow that bed becomes has ⁿkee-deep water. Catchment area of the river is 5285.5 sq.kms.

The Krishna valley is most fertile part of the district. River has narrow strips of land on both the banks.

They have very fertile soils. Locally these soils are termed as mali. The soil at about 30 to 50 mtrs. above the channel bed is used for sugarcane and Jawar production and the strip of land immediately near the river banks is used for plantation of Shevari. It is fodder crop. Besides fodder, the Shevari plantation checks soil erosion and prevents land slips in monsoon season.

There are a number of small streams which meet to Krishna in this district. On the right bank, tributaries of Krishna except Warana are small ones, like the Peth river. Katora odha. The Kasegaon river passes by the village of that name where it is crossed by the national highway No.4 and runs north-eastward to join the Krishna just outside the district. The Peth odha having similar north-easterly direction receives the waters of the Kotara odha and joins the Krishna near Bahe. The Khara odha flows through the area east of Kameri and joins to the Krishna at Nagthane. The Valu odha flows through the area east of Islampur and joins to the Krishna at Walwa. Even though all these streams are dry for a major part of the year in their valley troughs, the water table is close to the surface which is very useful for well-irrigation. They supply water to several villages along them.

The Warana -

The Warana is main tributary of Krishna from right side in the district. It originates in Sahyadrian ranges at about 6.3 kms to the north of this subregion.

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DRAINAGE

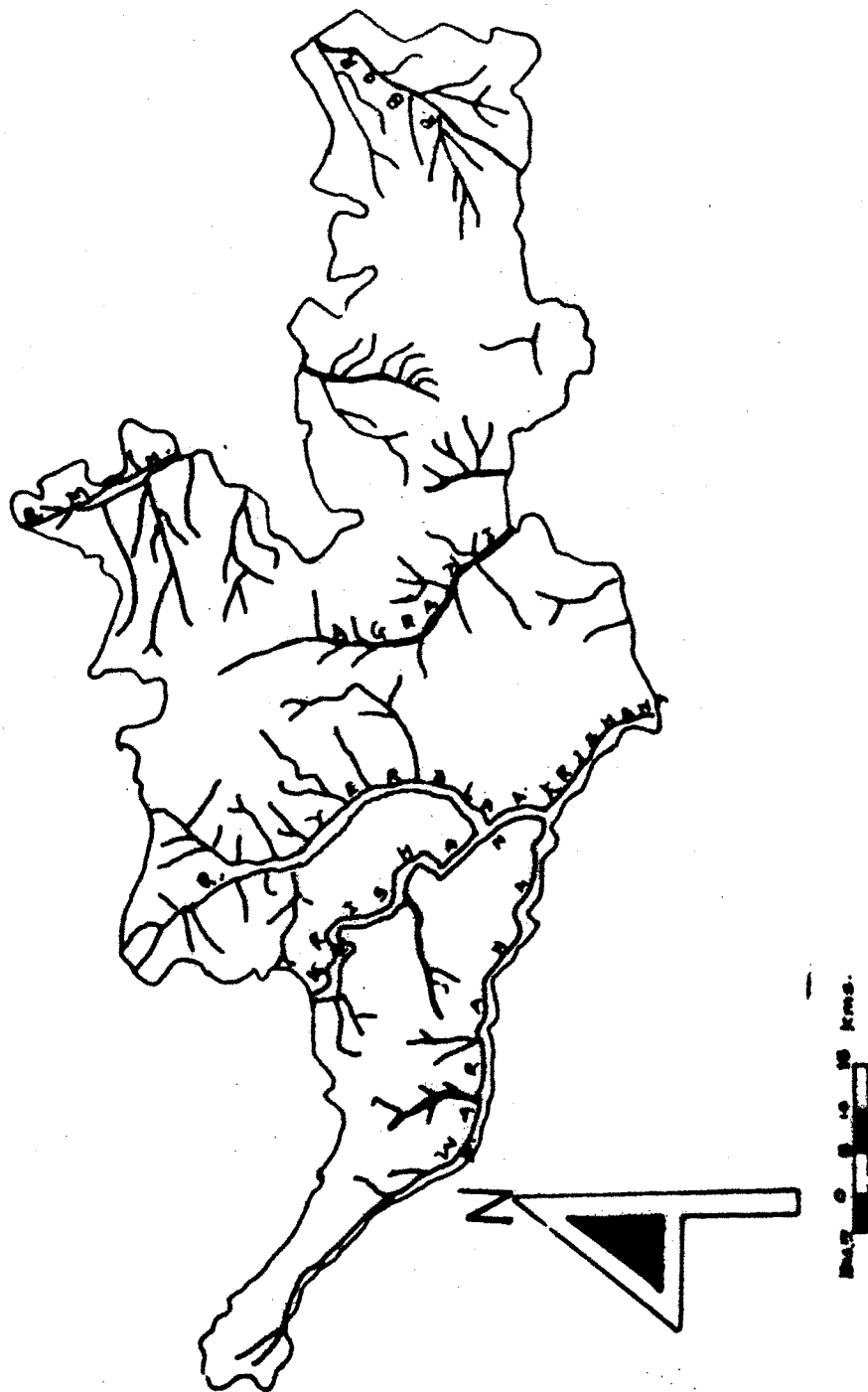


FIG. No. 4

In western part of shirala, for few kms she flows in south-easterly direction, where she forms a southern boundary of the district. The warana has 990⁵⁹ kms. catchment area in Sangli district, which is less than the catchment area of Yerala, Agrani & Bor rivers. The warana joins to the krishna near Haripur at about 3.21 kms west of the Sangli city.

The banks of warana are steep and broken. To the south-east of Charan she over-flows its banks every year. So banks are gentle in slope^{pe} near the charan. There are small strips of very fertile soil on both the banks. It is mainly used to sugar-cane cultivation. Sugar-cane plots are irrigated by oil pumps and electric motors, which sucks water from the river. The sucking of water makes bed completely dry in summer season. The land just near the river bed is planted with Shevari. It is used as fodder and it also helps to check soil erosion and land sliding on the banks. The river warana, like krishna is main source of water for irrigation and drinking in south-western part of the district.

The river Morana, tributary of warana originates from a place near the Dhamaveda hill knot. There are number of small streams which pours the water in warana mainly in monsoon season.

The Yerala -

The yerala and her tributaries are the main source of water in eastern part of district. Yerala basin has

1646.5 sq.kms of catchment area, and it is more than that of warana river within the district. She has longer and more direct tributaries than Krishna in the district. The river flows north to east in a valley flanked by the Vardhangad-Machhindragad-Panhala range on the east. The important right bank tributary of Yerala is the Nanni river. Her water course is somewhat parallel to the Vardhangad-Machhindragad range.

The Agrani -

The Agrani river is tributary of the Krishna river. It rises near Balawadi in Khanapur plateau. She flows from about 3.29 kms east of Khanapur. The river flows in south direction. After flowing about 32.18 kms in southward direction. She turns towards the south-east at Vajra Chounde in conformity with the change in trend of Mahimangad-panhala range and leaves the district at about 8 kms below Dhalgaon and meets the Krishna. The catchment area of Agrani river is about 1045.5 sq.kms in the district.

The river has narrow valley bottom. There are number of small tributaries locally termed as odha meets to this river on right and left bank. The tributaries have also narrow and incised valley bottoms. The narrow valley bottoms of these river have only fertile soils. The east bank tributaries of the Agrani river have cut down relatively broader valleys and hence there is greater intensity of agricultural practices. These valleys have

provided facilities for well irrigation.

The Morana -

The morana is tributary of warana. She rises from a place near the Dhamwada hill knot and it flows between the southerly and easterly trending spurs. The narrow valley bottom of this river has also provided fertile soils and water for well irrigation. Due to water supply more number of villages are situated in trough area of this river.

The Maan -

The maan is important river is eastern part of district. She has only about 16 kms. of ~~her~~ course within or on the border of the district. Maan and her tributaries drains north-eastern part of khanapur taluka, miraj taluka and nothern part of Jath taluka. Total catchment area of this river is about 850 sq.kms. Number of tributories on the west of the river drains the slopes of khanapur plateau easterwards into it. Nothern most is the Statvai and to the south of it are masira, Bhakar, Ghanakada and Balateda. Balateda is formed by the union of the Bhandara Sikir and Dabucha streams. There are two more tributaries, the Gondira-Ramghat have only their upper courses in the district. The Korada river rising just to the west of Jath, flows northwards to join the maan outside the district. alongwith ~~her~~ number of tributories it drains the north western part of Jath taluka towards the maan. The

Mhaswad canal is created on maan just before her entry into the district, it provides irrigation facilities to the east of the river in Khanapur taluka.

The Bor -

The river Bor flows in far east part of the district. The Bor drains the eastern part of Jath taluka. The Bor river rises on the northern slopes of the water divide, at about 4.28 kms to the north-east of Jath where it is known as Don. The Bor has semicircular course on the plateau. After semicircular course on the plateau she enters the lower plateau to the east by a gorge and flows via Daribadchi. Where it is known as saval. The catchment area of this river is 2475.00 sq.kms in the district.

On the Jath plateau there is a southerly stream known as Kasari, which first flows eastwards and after a small deviation to the south of the district joins to the Bor river, 4.28 kms below Sankh under the name 'Darai'. The Patna river rises at about 9.65 kms south of the district and flows more or less in a northerly direction across the eastern part of the taluka to join the Bor at Karajaga'. Besides Dodda is another tributary which joins to the Bor river.

All these rivers have provided deep fertile soils on both the banks and these soils have helped for development of agriculture in the district. The soils are deep on the banks of river, because of alluvial deposition by them.

Geology -

It is well known fact that, specific rocks give rise to specific types of soil. Variations in the rock causes wide differences in the overlying soils in regard to consistency, depth, and composition. The soils are of course, liable to important secondary modifications through climate, topography organic agencies etc. But the fundamental characters of soil groups remain more or less the same as those deduced from the general nature of parent geological formation.

The geological formation of study area is only the Deccan trap.⁴ The Deccan lava flows are found usually in the form of horizontally bedded sheets. At a place a gentle cliff of about 5° to the west of district is noticed. The traps belong to the type called 'plateau basalt'. They are more or less uniform in composition corresponding to dolerite or basalt. These are dark grey or greenish grey in colour.

Some parts of the district, especially the river valley areas are occupied by the typical black soils. These soils are formed from the Deccan trap. All the types though varying in quality, in general are fertile. The black soil contains high alumina and carbonates of calcium and magnesium with variable amount of potash, low nitrogen and phosphorous. Because a group of lava, is of basic composition and is rich in aluminous and ferromagnesia compounds.

The deposits of calcium carbonate are found in the form of 'Kankar' in the eastern part of the miraj tahsil. Bauxite deposits are found on the plateau in extreme western part of Shirala tahsil. The hills in the region contains hard basalt rock which is used for construction work. Sand is found in beds of krishna, warana, yerala rivers. The river beds are main source of sand for construction.

Climate -

Climate is important aspect in soil formation. Soil types, their colour, texture and structure. The nutrient contents depend on the climate. A basic principal of pedology states that soils, as they appear in nature, are essentially the result of climate. Any permanent change in climate is reflected in the appearance and constitutional makeup of the soil. "Hence the soils of the world, as we see them in their geographic distribution are the result of the present day climate!"⁵

Climate specially its elements rainfall and temperature plays active role in the soil forming process. Water is most active agent and entire soil forming process is connected with water. It acts both mechanically and chemically by acting as solvent. There is large amount of runoff in the western part, which has heavy rainfall. There is considerable erosion on steeper slopes and in a thin soils which are not much productive.

There is wide variation in the area coming under different climatic conditions of the district. In fact there is no much variation in temperature in different zones of the district. But the difference is however found in the amount of rainfall. The area under heavy rainfall is 70 sq.kms in western part of Shirala tahsil, area under ghat zone is only 40 sq.kms. in Shirala tahsil, area under transition zone I & II are 242 & 627 sq.kms. respectively in middle part of Shirala tahsil and western part of walwa tahsil. The largest area is under scarcity zone covering area about 7612 sq.kms. in the Tasgaon, Miraj, Jath, Kavathe-Mahankal and Khanapur tahsils. In general the climate gets hotter and drier towards the east and humidity goes on increasing towards the west.

Temperature - The Sangli has annual maximum temperature of 41.5° C and minimum temperature of 10.3° C. However the maximum temperature ranges between 31.1° C in July and 41.5° C in April. Similarly minimum temperature ranges from 10.3° C in December to 21.5° C from April to June.

The humidity varies from 54% in March to 87% in August at 8.30 hours. The district experiences three different seasons. The winter is pleasant from December to mid February. The hot summer season starts from mid February to the end of May. June to September are the months of normal rainy season, when percentage of humidity

SANGLI DISTRICT DISTRIBUTION OF RAINFALL

(ISOHYTES IN MM.)

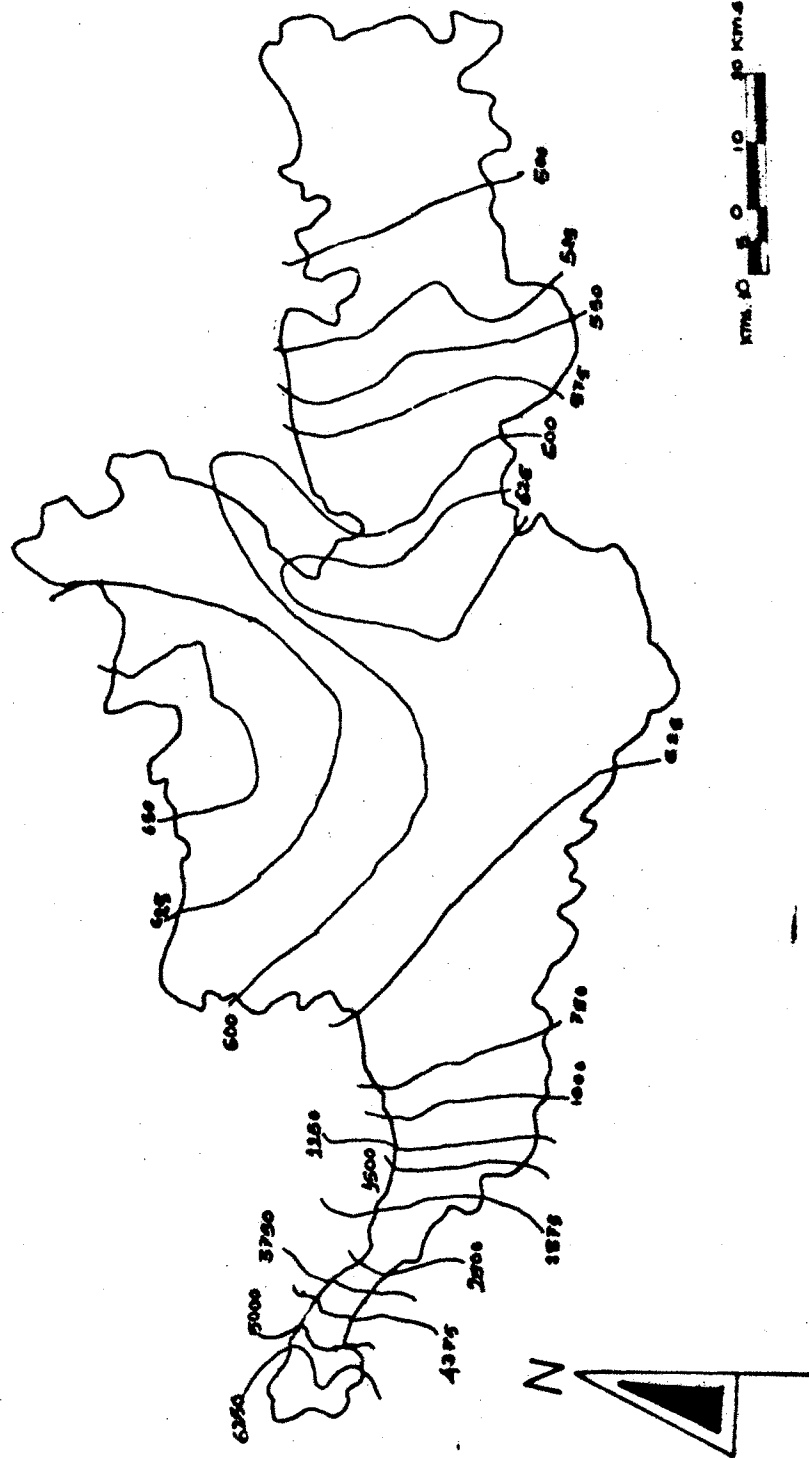


FIG.NO.5

is higher.

Rainfall - Yearly average rainfall in the areas bordering shirala tahsil in east is 1250 mm. Towards the west of the region the rainfall goes on increasing and in the extreme west, the rainfall is about 6000 mm in a year. (fig. No.5)

The walwa, western part of Khanapur, Tasgaon and western part of Miraj fall in the rainfall range of 600 to 1250 mm. The rainfall goes on decreasing towards east from the western boundary of Shirala tahsil. The rest of the region has scanty rainfall which is less than 600 mm.

The peculiar characteristics of the rainfall are that, the average number of rainy days are about 49. Nearly 68% of the total rainfall, falls during June to September and 19% during October and November. The region also receives showers with thunders during the month of May.

Table No. 2.1 shows the normal rainfall in 1975 recorded at selected stations from west to east direction in the district. It is clear from the table that the western part of district has more rainfall, which decreases considerably in the eastern part consisting Vita, Atpadi, Kawathe-Mahankal areas of the district.

The Drought-Prone Zone - The Eastern part of the region comprising areas of Kavathe-Mahankal, Atpadi and Jath tahsils and eastern part of Khanapur, Tasgaon and

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DROUGHT - PRONE AREA

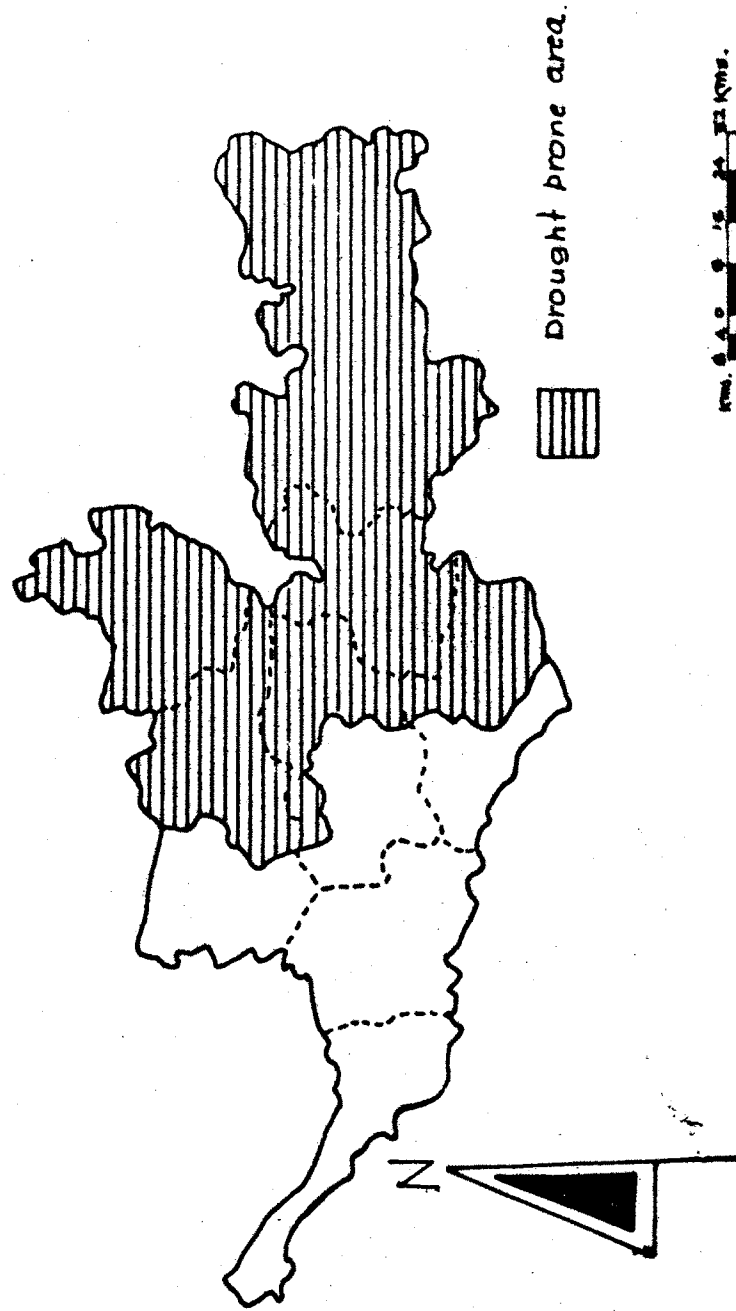


Fig.No.6

Miraj tahsils experiences uncertain and scanty rains creating drought conditions. The fact finding Committee for Survey of scarcity Areas, appointed by the Government of Maharashtra, under the Chairmanship of Shri.Sukhatankar in 1972, surveyed the area of Sangli district. On the basis of 15 years rainfall data, the Committee had identified and delineated the drought-prone zone of the district. "Approximately 62.25% of the geographical area comprising Atpedi, Kawathe-Mahankal and Jath Tahsils and eastern half of Khanapur, Tasgaon and Miraj tahsils falls in the drought-prone zone"⁶ (fig.No.⁶) This zone includes 275 villages and covers 6.13 lakh population of the district.

Climatic conditions of the district described above are responsible for formation of lateritic soils on hill tops in shirala taluka, reddish brown soils on the slopes. The heavy rainfall carries lime and other bases downward along the runoff and helps to form acidic soils. Therefore rainfall conditions in western part of shirala taluka may have made the acidic soils. "In the arid regions, where there is low rainfall and high temperature, there is a tendency for the accumulation of soil salts near the surface. During rainy^{season} these salts may move downward to the lower soil layers but after the rainy season, the intense evaporation bring the salts back to the surface"⁷. Therefore climatic condition in drought-prone area of district may have turned soils into the salty or saline

nature. Therefore attempt has been also made to find in present study, whether soils are turned to acidic ~~or~~ saline nature.

T A B L E NO. 2.1

Rainfall in mm in 1975 for selected centres
in the Sangli District

S.No.	Centre	Rainfall	Normal R.F.
1	Shirala	1291	863
2	Islampur	1136	639
3	Sangli	927	569
4	Miraj	708	635
5	Tasgaon	819	598
6	Vita	958	542
7	Atpadi	967	563
8	K-Mahankal	581	610
9	Jat	1095	529

Source:- Regional plan of Sangli-Miraj Vol.II, pp 2-3.

In short due to higher temperature the growing season is not confined to particular season, but it is through out the year. And the rainfall is sufficient for paddy cultivation in Shirala taluka, but it is scanty in all talukas of the district even for Jawar cultivation also.

Irrigation -

Irrigation helps to farmers to increase their agricultural produces and improve the economic condition. In areas where there is uncertainty of rainfall, irrigation has more importance. The real meaning of the word^{*} 'Jeewan' can be understood in such water scarcity areas. The Jeewan from irrigation keeps alive plant and animal life in summer season. Steeping up in irrigation facilities is therefore is base in the direction to keep the plant alive and healthy and the human beings in progress.

Canals, wells and lifts are main sources of irrigation in the Sangli district. Krishna canal constructed from Krishna river supply water to agriculture to some part of Walwa and Tasgaon tahsils. There are large number of small, medium and large lift irrigation schemes, which are supplying the water to the fields on both the banks of Krishna and Warana rivers. The number of lift irrigation schemes is less on the banks of other rivers, as compared to these two rivers. After completion of Warana project the Warana canal will irrigate the area from Shirala, Walwa and Miraj tahsils.

The percentage of net area irrigated to net sown area is given in table No. 2.2. It is seen from the table that, except drought years there is increase in net area under irrigation from 1960-61 to 1973 to 74. There is decrease in percentage of net area irrigated in Khanapur

^{*} Jeewan - In Marathi, Hindi language water is termed as Jeewan.

and Jath in 1973-74 as compared to net area irrigated in 1960-61. In all other talukas and sangli district as a whole there is increase in net area irrigated in 1973 - 74 as compared to net area irrigated in 1960-61. At present day lift irrigation is more important than other sources. Area under lift irrigation increased by six times in the period of 1960-61 to 1970-71.

Taking into consideration the existing and proposed irrigation schemes, it is estimated that the total irrigation potential of 2,33,195 hectares would be created in the study region. On completion of all irrigation projects, the percentage of net irrigated area to net cropped area would increase from 8.47 to 30.07% in the region.

However due to scarcity conditions during 1970-73. Shows decline in net area irrigated in subsequent years. Also net area irrigated to net area sown is less in sangli district as compared to many other districts from India. But the actual use of water is in excess in irrigated areas along warna and krishna banks. The excessive water supply rises the ground water level sufficiently to permit concentration of salts near surface through intense evaporation and it is responsible to make saline and alkaline soils. Therefore attempt has been made, whether such condition is happened in those areas.

T A B L E NO. 2.2

Percentage of net area irrigated to net
area sown during the year.

S. No.	Tahsils	Year						
		1960- 1961	1965- 1966	1969- 1970	1970- 1971	1971- 1972	1972- 1973	1973- 1974
1	Atpadi	-	9.5	11.09	10.44	08.89	8.43	8.93
2	Khanapur	5.40	5.56	5.44	5.27	4.94	3.06	4.16
3	Shirala	4.40	5.33	5.44	4.48	4.46	8.59	8.48
4	Walwa	9.46	11.08	13.33	13.42	14.78	14.58	13.48
5	Tasgaon	6.91	8.51	14.09	13.43	14.45	12.06	12.98
6	Jat	7.20	5.73	5.73	6.92	5.99	6.58	6.40
7	K-Mahankal	-	9.16	6.26	9.60	7.69	9.27	9.27
8	Miraj	6.98	9.51	14.14	14.19	14.20	13.04	13.39
9	Sangli Dist.	6.73	7.60	9.11	9.41	9.06	8.59	8.48

Source:- S. E. Review and D.S. Abstract, 1975-76.

Irrigation is important cultural factor for development of agriculture. The soils from arid and semi-arid climate have brought under cultivation only due to irrigation. Also it is a factor contributing to the productivity of soil. Now a days it has been possible to increase the yield per unit of land through irrigation. Though it is ~~fx~~ a favourable factor to increase agricultural productivity, the excess and unplanned use of it has

adversely affected the productivity of land due to water logging and accumulation of salts near the surface.

The table No.2.2 shows that there is a constant increase in land under irrigation from 1960-61 to 1973-74. And it is experienced that the water supply from lift and canal irrigation is in excess than requirement. The excess use of water has turned the fertile soils into infertile soils through accumulation of salts and water logging condition. The soils along the Krishna bar is the best example of it, where most of the soils have turned to saline, alkali and saline-alkali soils.

Forests -

Forest is one of the aspect of soil formation. It helps to check the soil erosion. Plants shed their leaves, seeds and fruits. Decomposition of this helps to increase the humus content in soil. In western part of the district, due to thick forest the humus content is more than other parts of the district. Total forest area of district was 47,747 hectares in 1973-74 which constitutes 6.54% of the total geographical area of the district. Out of that 27,356 hectares is administered by forest department and 20,391 hectares is by Revenue department. Following are types of forests in the district.

Argreen forest - This type of forest is found in the western part of the Sangli district, on the Western Ghats range. It consists of the trees like crest

SANGLI DISTRICT

SOILS

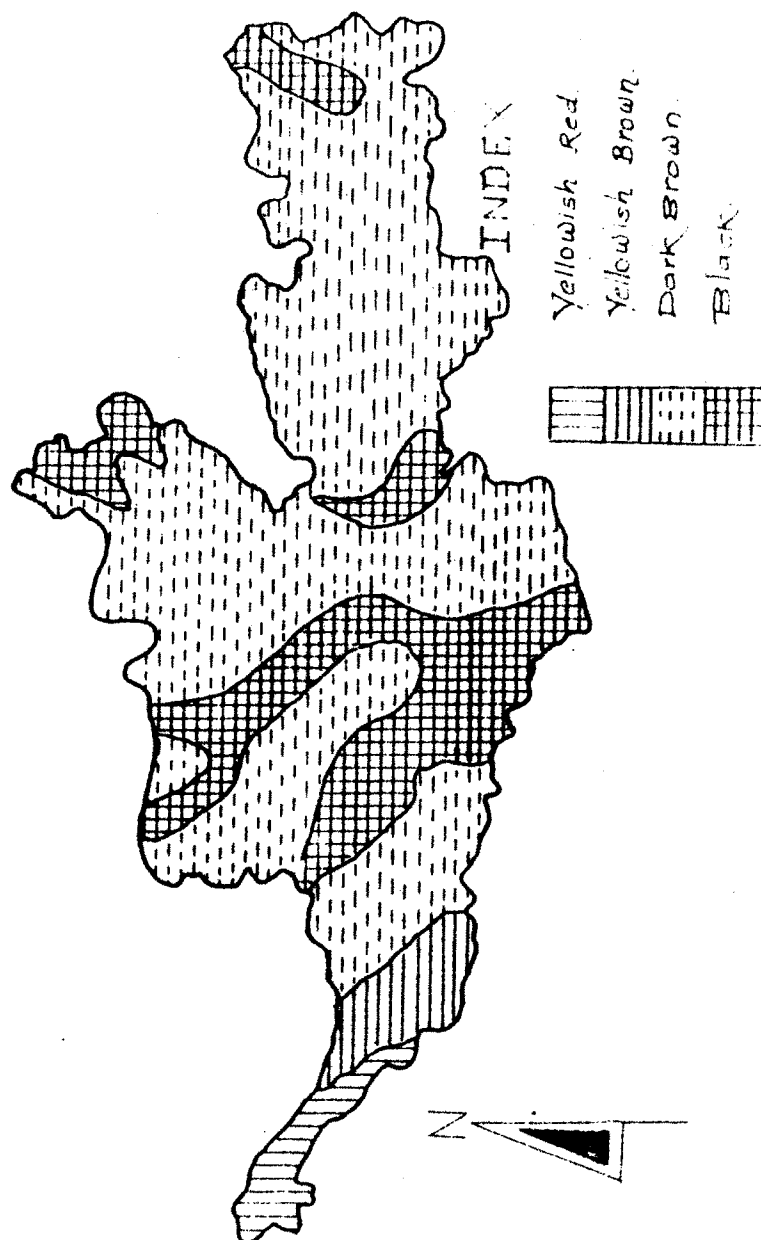


Fig.NO.1

Anjana, Bhoma, Hirada, Jambhul, Pisa etc. trees which have stunted growth.

Mixed Deciduous - Hill slopes and the valleys have mixed deciduous types of forests where teak is almost absent. On the hill slopes vegetation is dense, while luxuriant vegetation is found in valley, because of fertile soils. Ain, Behada, Jambhul, Pisa, Nana etc. are important trees in this forest.

Stunted trees - In the east trees are very sparse and forests are of stunted trees like Babhul, Bor, murmati etc. along with few matured, scattered trees of Jambhul, Karanj and Neem.

The area under forest is very less, so now there is need to increase the area under forest to obtain economic set up in the district.

Soils -

The type and nature of soil is one of the important factors influencing the cropping pattern in the area. The fertility of the land depends on the type of soil, its depth, slope, its chemical composition and the drainage. The study area has following types of soils.

(fig. No. ⁷~~9~~)

Soil formations in the sangli district have been influenced by the climate. The district has three distinct climate zones. The western zone receives heavy rainfall. In this zone lateritic soils on upghats and

reddish brown soils on hill slopes. Reddish brown soils are developed on parent material of trap rock. The transition zone of krishna valley has deep black soils of alluvial origin. The third is the eastern drier zone which has largely granular black soils and poor shallow soils. The types of soils have been discussed in detail in chapter No. **III**.

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