



GOVERNMENT OF MAHARASHTRA

REPORT
OF THE
FACT-FINDING COMMITTEE
FOR SURVEY OF SCARCITY AREAS
IN
BOMBAY STATE
1960

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PART I—MAHARASHTRA

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A—DETERMINATION OF SCARCITY AREAS

NAGPUR DIVISION

CHAPTER I.

BULDANA DISTRICT.

Part I—Background.

1. *Location.*—Buldana is one of the eight districts of Vidarbha region. It is bounded on the north by the Nimar district of Madhya Pradesh, on the east by Akola district, on the south by Parbhani district and on the west by Aurangabad and East Khandesh districts. The district has an area of 3746 sq. miles and total population of 8,70,168 persons living in 1188 villages and 9 towns.

2. *Administrative Set-up.*—For administrative purposes the district is divided into five talukas viz., Malkapur, Chikhli, Mehkar, Jalgaon and Khamgaon. Detailed information about these talukas is given in Statements A to D attached. Chikhli and Mehkar talukas occupy the southern half of the district, while the remaining three talukas occupy the northern half. Jalgaon taluka is at the extreme north at the foot of Satpudas.

3. *Topography.*—The district is divided into two distinct divisions called Balaghat and Payanghat. The Balaghat, an elevated table-land in the south, has an altitude varying from 1,700 ft. to 2,200 ft. with a general slope towards south-east. Some of the hills have an altitude of 2,400 feet above sea level. This part comprises the talukas of Mehkar and Chikhli. The landscape is of varied character, fertile villages alternating with hill sides and downs and steep ridges and deep ravines. Most of the village sites lie in the valleys amidst rich cultivation though there are occasionally high-lying villages on poor soil, their fields scattered in patches amongst jungle. A ridge of low hills bare and arid running from north-west to south-east through the Balaghat forms the watershed of the two valleys of the Penganga and the lower Purna so that this part is again divided into two sub-divisions. These two rivers with their numerous distributaries carry during the greater part of the year an abundant water supply, but during the hot weather they become dry leaving unconnected pools. In the villages, sub-soil water is high and furnishes perennial supply of good water but the ridge between the valleys is practically a waterless tract. The soils near the rivers are very fertile and rabi crops are grown to a much greater extent and trees are finer and more abundant than in the Payanghat. There is little forest except in the extreme east and south of Mehkar. Buldhana town, which is situated on the ridge at the northern border of the plateau, is 2190 feet above sea level and is noted for its excellent climate. This high plateau is a continuation of the Ajanta hill range. Below the Balaghat, the country is quite different, being flat and monotonous. The elevation of the three talukas in the plains which form the Payanghat varies from 800 to 900 ft. above sea level. There is only a single perennial river Purna which is fed by its three minor tributaries, the Nalganga, the Viswaganga and the Gyan from the south and by Wan and a number of other streams from the north. The Jalgaon taluka drains towards the south while the Khamgaon and Malkapur talukas having a slope in the north drain in river Purna. Purna is one of the distributaries of the Tapti. The plains contain a wide expanse of black cotton soil which undulates just enough to maintain a natural system of drainage.

4. *Forests.*—The district has an area of 413 sq. miles under forests which are mainly on the hill sides in Mehkar and Chikhli talukas. These forests are more or less of scrub type.

5. *Soils.*—The soils are derived from the trap rock of volcanic origin. Those formed on the plateau are of sedentary type and thin due to the hilly nature of the tract, while the soils in the northern talukas of the Purna valley are deep black, formed by transported material. The soils of the plain are largely deep black loam. The largest stretches of such heavy soils are found in strips of about eight miles on either side of the Purna. On the plateau there are considerable areas of medium black soil interspersed amidst the light and shallow soils which grow cotton, jowar, pulses and bajri. The Chikhli and Mehkar talukas are well known for their wheat which is grown in the low lands between the plateau. These soils have a murum sub-stratum and are therefore well-drained. The existence of rock sub-soil is also not uncommon and the soils formed on such rocky beds suffer

both during scanty and heavy rains. The 'Kali' soils of the plain are deeper. Inferior soils are also found in the south of the Khamgaon and Malkapur talukas and in the north of Jalgaon taluka.

6. *Cropping Pattern.*—The district is mainly a kharif tract as the rains during the period June to September are most assured, while October showers are generally absent.

The main crops of the district are :—

Crops.	Acres.
Kharif Jowar	5,56,810
Cotton	6,42,268
Bajri	14,915
Pulses	2,07,045
Oil seeds	1,44,784

There used to be a large area under wheat in the past, particularly in Mehkar and Chikhli talukas which has been gradually replaced by cotton.

7. *Irrigation.*—The total area under irrigation in the district is 40,461 acres. The talukawise details are given below :—

Name of Taluka.	Area irrigated by different sources.				Total.
	Wells.	Bundharas.	Tanks.	Other sources.	
Mehkar	4,497	....	185	224	....
Chikhli	8,562	....	100	26	....
Khamgaon	1,426	....	....	91	....
Jalgaon	705	....	....	....	....
Malkapur	4,737	....	....	81	20,534

The underground water in the talukas situated in the northern low-lying plain is brackish, while that in the talukas located on the plateau is scanty. A large number of wells are therefore in disuse due to one or the other reason. Harnessing of rivers and streams seems to be the only way to increase acreage under irrigation.

8. *Rainfall.*—The annual average rainfall of the district is 34". The talukawise average rainfall and minimum rainfall recorded are as under :—

Taluka.	Average.	Minimum.
Khamgaon	30.11"	16.23" in 30 years.
Malkapur	30.39"	16.08" in 30 years.
Jalgaon	33.72"	13.07" in 30 years.
Chikhli	32.57"	18.93" in 10 years.
Mehkar	33.54"	17.22" in 10 years.

} for the last ten years

The rainfall in this district is rather on the lower side than the districts of Vidarbha situated on the east. The existing rainfall pattern is, however, quite suitable for crops like cotton, jowar and groundnut. A closer study of the rainfall figures given above show that the minimum rainfall in the case of Khamgaon, Malkapur and Jalgaon was recorded during the year 1952. During 1950 also the total rainfall was below the average, though it was higher than that of 1952. Thus, in case of these three talukas, there are only two years during which the total rainfall was much below the average, in respect of the

other years; the total rainfall was mostly above 25". In the case of Chikhli and Mehkar talukas, the rainfall data is available for the last 10 years only. The lean years were 1950 and 1952. In 1950 the total rainfall in Chikhli taluka was 18.93" and in Mehkar it was 17.22". In 1952 the total rainfall in Chikhli was 26.06"; while in the case of Mehkar it was 17.99". The monthwise rainfall data for Chikhli is not available.

Part II.—Determination of Chronic Scarcity and Precarious Areas.

According to the annavari data, 1948-49, 1949-50, 1951-52, 1952-53, and 1955-56 are shown to be the years in which some villages were affected in most of the talukas. The total rainfall figures for 1948, 1949, 1951, 1952 and 1956 for these talukas are as under—

Taluka.	1948	1949	1951	1952	1956
Chikhli	N.A.	38.02	31.50	28.06	35.90
Mehkar	34.30	47.54	33.18	17.99	25.47
Khamgaon	34.74	41.48	28.38	16.23	24.64
Malkapur	24.92	51.81	26.89	16.08	30.09
Jalgaon	40.65	54.15	28.43	13.07	27.47

The total rainfall does not appear to have been inadequate in any of the talukas during the years in which certain areas are reported to have been affected except in the case of Chikhli and Mehkar in which it was less during 1952 only. The scrutiny of monthwise rainfall data has shown that the distribution of rain was fairly normal during the year 1948 and 1951. During 1949, however, it was high and the crops must have suffered due to heavy rainfall. In the year 1956, the late rains were scanty and the crops must have suffered badly.

According to the annavari data, Chikhli, Mehkar and Khamgaon were affected more frequently than the other talukas. The number of affected villages is, however, not large and the incidence of failure of crops is not high. In Chikhli, according to annavari data for the last 10 years, 11 villages out of 267 had $1\frac{1}{2}$ to $2\frac{1}{2}$ full suspensions, while according to the land revenue suspension data available for 30 years, 6 villages had 3 full suspensions, 3 villages had $3\frac{1}{2}$ full suspensions and one village had 4 full suspensions, and the rest were free. Thus a very small number of villages were affected more than once or twice in this taluka. In the case of Mehkar taluka, out of 313 villages, according to the annavari data of the last 10 years, 4 villages had 2 full suspensions, while 2 villages had $1\frac{1}{2}$ full suspensions. According to the land revenue suspension data for the last 30 years, 16 villages had 3 full suspensions, 4 villages had $3\frac{1}{2}$ full suspensions and 1 village had 4 full suspensions. Here too, the number of villages affected frequently was very small. In the case of Khamgaon, out of 209 villages, 4 villages had more than 3 but not more than 4 full suspensions according to the annavari data of the last 10 years. 19 villages had $2\frac{1}{2}$ full suspensions while 26 had 2 full suspensions. The remaining 160 villages had $\frac{1}{2}$ to 1 full suspension or no suspension. According to land revenue suspension data for the last 30 years, 30 villages had 3 to 5 full suspensions and the rest had between $\frac{1}{2}$ to 2 full suspensions. Thus, the areas shown above are shown to have been affected off and on, but the number of villages affected was not large and these villages were scattered. The talukas of Jalgaon and Malkapur are situated in the Purna valley and have more retentive soils. According to the annavari and land revenue suspension data for these talukas, very few villages were affected and those not frequently.

Though a few isolated villages in some of the talukas have suffered from scarcity conditions, there is no tract frequently affected. As such, this district may be considered as free from scarcity.

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STATEMENT "A"

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross area.		Popula- tion.	Density per sq. mile.	Gross cropped area.	Net cropped area.	Area under forest.
			in sq. miles.	in aeres.					
1	2	3	4	5	6	7	8	9	10
1	Malkapur	238	651	4,17,350	2,06,153	317	3,23,439	3,21,500	28,824
2	Chikhli	207	924	5,92,095	2,04,572	221	4,14,594	3,93,328	73,173
3	Mohkar	313	1,007	6,47,658	1,94,164	192	4,52,560	4,37,349	66,492
4	Jalgaon	161	474	3,03,345	91,547	193	1,93,445	1,92,810	72,333
5	Khamgaon	208	710	4,54,156	1,73,732	245	3,10,488	3,10,028	61,790
		1,188	3,766	24,14,504	8,70,168	231	16,94,524	16,55,015	3,02,512

STATEMENT "B"

Rainfall Data.

(Fig. in inches.)

Year.	Khamgaon.	Malkapur.	Jalgaon.	Chikhli.	Mohkar.
1	2	3	4	5	6
1931	..	39.25	40.84	..	..
1932	..	34.60	29.67	..	29.55
1933	..	35.80	35.68	..	35.92
1934	..	27.91	28.07	..	33.35
1935	..	56.66	35.50	..	47.12
1936	..	39.52	32.99	..	40.17
1937	..	42.08	37.13	..	41.07
1938	..	41.21	38.51	..	39.35
1939	..	22.45	27.35	..	25.04
1940	..	33.29	23.70	..	35.62
1941	..	19.91	24.72	..	41.33
1942	..	32.45	26.89	..	33.89
1943	..	24.91	35.58	..	31.96
1944	..	31.37	42.08	..	54.58
1945	..	34.63	29.50	..	30.10
1946	..	29.09	32.13	..	28.62
1947	..	29.40	26.76	..	35.33
1948	..	34.74	24.92	..	40.65
1949	..	41.48	51.81	..	54.15
1950	..	17.67	16.33	..	17.68
1951	..	28.38	26.69	..	26.43
1952	..	16.23	16.03	..	13.07
1953	..	32.65	27.83	..	23.77
1954	..	26.14	28.14	..	26.12
1955	..	32.96	27.47	..	39.76
1956	..	24.64	30.00	..	27.47
1957	..	24.43	24.04	..	22.73
1958	..	28.58	23.14	..	28.60
Average	..	30.11	30.39	..	32.57
Minimum	..	16.23	16.08	..	13.07
		(1952)	(1952)		(1952)
					18.93
					(1950)
					33.64
					17.22
					(1950)

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka	Area under irrigation				Total area under irrigation and its percentage to cropped area		
		Canals	Tanks	Wells	Other sources	7		
1	2	3	4	5	6	7		
						Acrea	%	
1	Malkapur	..	....	....	4,596	....	4,596	1.4
2	Chikhil	..	....	....	7,397	....	7,397	1.8
3	Mehkar	..	....	180	2,330	....	2,510	0.6
4	Jalgaon	..	....	....	814	....	814	0.4
5	Khamgaon	..	....	....	1,342	....	1,342	0.4
		....	180	16,476	....	16,659	1.0	

STATEMENT "D".

Distribution of crops.

Serial No.	Taluka	Rice	Wheat	Jawar		Bajri	Total cereals	Total pulses	Total food crops	Oil-seeds	Cotton	Total non-food crops
				Kharif	Rabi							
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Malkapur ..	280	5,848	1,09,005	24	3,911	1,19,212	40,346	1,60,888	23,572	1,33,313	1,62,651
2	Chikhli ..	1,537	23,046	1,49,371	1,142	5,158	1,85,908	55,554	2,43,194	48,842	1,20,591	1,71,400
3	Mohkar ..	2,976	56,592	1,50,378	696	2,075	2,13,673	53,464	2,63,716	37,160	1,45,056	1,83,845
4	Jalgaon ..	21	2,822	49,883	....	1,393	54,175	23,957	78,619	2,764	1,11,136	1,14,826
5	Khamgaon ..	2,980	9,019	98,173	....	2,378	1,09,778	33,725	1,44,507	32,437	1,32,172	1,65,978
District Total ..		7,794	1,02,327	5,58,810	1,862	14,915	6,82,746	2,07,046	8,95,924	1,44,784	6,42,268	7,98,600

CHAPTER II.

AKOLA DISTRICT.

Part I—Background.

1. *Location.*—Akola, one of the eight districts of Vidarbha (Nagpur Division) has an area of 4091 sq. miles and is divided into six talukas, viz. Akot, Balapur, Akola, Washim, Mangrul and Murtazapur. From north to south it is 80 to 90 miles in length and east to west it has a maximum breadth of 60 miles. It occupies the central position in the region with Amraoti district on the north, Yeotmal district on the east, Parbhani district on the south and Buldhana on the west. On the northern border lies Akot taluka between Satpura Ghats and Purna river. Balapur taluka lies on the west, Akola and Murtazapur on the east and Washim and Mangrul to the south. The population of the district is $9\frac{1}{2}$ lakhs scattered over 1477 villages and 10 towns. 69 per cent. of the total area is occupied by crops while forest occupy 8 per cent. leaving the rest to be accounted for as fallow and uncultivable waste. Statistical data about these talukas is contained in Statements A to D attached.

2. *Physical Features.*—The greater part of the district is a fertile plain country but the Satpura plateau rises abruptly on its northern border and a range of steep hills runs across the middle of the southern talukas. The chief hills are the Satpuras in the north and part of the Ajanta system of the south forming a plateau. The Satpuras guard the northern boundary of the Purna valley or plain 40 to 50 miles in breadth called the Payenghat. The river Purna flows westward through this plain draining the talukas of Balapur, Akola, Murtazapur and Akot. South of this plain lies the Balaghat, a region hilly in most parts but containing some considerable expanses of high-lying plain. This is drained partly by Penganga and partly by Aran rivers. The talukas of Washim and Mangrul occupy the high-lying plateau, which is quite undulating and rugged due to the number of low hill ranges and valleys. The elevation of this plateau varies from 1800' in Washim taluka to 1200' in the east of Mangrul taluka. The Balaghat plateau forms one of the great water sheds of the Indian Continent, as the country to its north is drained by Purna in the western direction to Tapti while the terrain situated on the plateau and beyond south is drained by Penganga towards east ultimately joining Godavari.

3. *Soils.*—The soils are basically derived from volcanic trap rock and are quite fertile. The great plain of the Payanghat occupies the northern half of the district and contains chiefly rich black soil. The central parts of Washim and north-western part of Mangrul have also good soils. The plain country is not entirely flat but forms very broad and gentle undulations. Rabi crops were extensively grown in good lands in the past but cotton and jowar are now the most common crops in all parts. On the plateau the soils are shallow with murum sub-stratum with good drainage. Rocky sub-stratum is also to be met with in certain patches. Thin forests cover most of the ridges of the Satpura and Balaghat hill ranges.

4. *Cropping Pattern.*—On account of the assured monsoon rains from June to September and uncertainty of October rains, the kharif crops are generally favoured. Wheat is grown in parts of Washim, Akola and Akot talukas to some extent. The main crops are—

Kharif Jowar	...	...	585462 acres.
Cotton	...	...	786185 "
Pulses	...	...	206630 "
Oil seeds	...	...	137499 "
Wheat	...	...	119271 "

5. *Irrigation.*—The area under irrigation is 6787 acres which is only 0.3 per cent. of the cropped area.

6. **Rainfall.**—The average rainfall of the district is 35.5". Talukawise figures of average annual rainfall are as under :—

(1) Akola	...	...	34.69" of 30 years.
(2) Balapur	...	...	31.26" of 30 years.
(3) Washim	...	...	40.97" of 30 years.
(4) Mangrul	...	...	38.01" of 30 years.
(5) Murtazapur	...	...	35.53" of 30 years.
(6) Akot	...	...	26.50" of 10 years.

The minimum rainfall recorded during the period shown above in each taluka was as under :—

(1) Akola	...	...	22.31" (1951)
(2) Balapur	..	...	15.36" (1952).
(3) Washim	...	...	23.10" (1952)
(4) Mangrul	...	...	20.23" (1952)
(5) Murtazapur	...	...	23.27" (1953)
(6) Akot	...	...	14.3" (1952)

The above figures show that the total rainfall was less in some talukas during 1951, 1952 and 1953 only. In Balapur it was less than 25" twice, once in 1950 when it was 19.81" and then in 1952 when it was 15.36". In Akola it was never less than 22.31" and in Washim less than 23.10" during a period of 30 years. In Mangrul, except in 1952, when it was 20.23", the total has always been over 25". So also in Murtazapur except in 1953 when it was 23.27", the total fall has never been less than 25" during 30 years. In case of Akot taluka, however, the average rainfall has been less as compared to other talukas. It recorded less than 20" twice (14.3 in 1952 and 17.3" in 1953). The C. V. of all talukas are on the low side.

Part II.—Determination of Chronic Scarcity and Precarious Areas.

It appears from the annavari data that no taluka was affected by scarcity prior to 1948-49. Certain parts of the District were however affected during the period 1948-49 to 1957-58. The following statement gives information regarding the number of suspensions granted to the affected villages as per suspension rules of the former Madhya Pradesh State as also according to the rules prevalent in the present Bombay State. The latter information is given for purposes of application of a uniform standard to the data in all districts.

Taluka,	According to L.R. suspensions Rules applicable to the area.		According to annavari rule of Bombay.	
	No. of villages.	No. of full suspensions (i.e. Nagpur Division.)	No. of villages.	No. of full suspensions.
Akola	2	3½	4	1
	1	3	28	½
	12	1½	76	NIL
	50	1	108	
	39	½		
	4	NIL		
Total	108			

(15 villages had over one full suspension out of 292 in Akola Taluka)

Taluka	According to L. R. suspensions Rules applicable to the area.		According to annavari rule of Bombay.	
	No. of villages.	No. of full suspensions (i.e. Nagpur Division.)	No. of villages.	No. of full suspensions.
Akot	80	$\frac{1}{2}$	30	$\frac{1}{2}$
	1	5	17	$1\frac{1}{2}$
	1	$4\frac{1}{2}$	14	1
	6	4	13	$\frac{1}{2}$
	13	$3\frac{1}{2}$	28	Nil.
	16	3	72	
	13	$2\frac{1}{2}$	....	....
	12	2	....	....
	10	$1\frac{1}{2}$		
		<u>72</u>		
(72 villages out of 162 villages had over one full suspension. They are scattered villages. The minimum rainfall in the Taluka was 31" in 10 years. Damage was sometimes due to excessive rains.)				
Murtazapur	1	2	16	1
	11	$1\frac{1}{2}$	56	$\frac{1}{2}$
	46	1	10	Nil.
	24	$\frac{1}{2}$	82	....
		<u>82</u>		
58 villages out of 266 villages had over one full suspension.)				
Washim	12	1	10	1
	124	$\frac{1}{2}$	126	$\frac{1}{2}$
	<u>136</u>		<u>136</u>	
Mangrul	20	$1\frac{1}{2}$	20	$\frac{1}{2}$

None of the villages in any taluka has more than $1\frac{1}{2}$ full suspensions during the last 10 years as shown above. Considering the rainfall and annavari data, no area in Akola district can be regarded as scarcity area.

STATEMENT "A".

Basic Data.

Serial No.	Taluka	No. of villages	Gross area		Population	Density per sq. mile	Gross cropped area	Net cropped area.	Area under forest.
			in Sq. miles	in acres.					
1	2	3	4	5	6	7	8	9	10
1	Balapur	162	530	3,39,211	1,19,069	221	23,397	2,39,326	52,247
2	Washim	320	1,046	6,78,044	2,03,786	194	4,58,820	4,48,638	38,191
3	Akot	237	550	3,53,148	1,47,004	267	3,05,046	3,05,437	4,947
4	Murtazapur	266	610	3,72,794	1,44,233	236	2,95,032	2,94,071	21,020
5	Mangrul	200	616	3,89,956	1,10,036	178	2,37,273	2,36,579	45,194
District Total.		1,477	4,091	26,09,403	9,50,994	232	18,91,759	18,78,275	2,16,862

STATEMENT "B".

Rainfall Data.

(Fig. in Inches.)

Years	Akola	Balapur	Washim	Mangrul.	Murtazapur	Akot.
1	2	3	4	5	6	7
1931	36.71	38.62	46.01	45.31	50.86	....
1932	28.25	30.96	44.60	33.84	30.42	....
1933	41.63	34.52	53.90	49.52	37.40	....
1934	34.43	33.61	40.46	37.07	43.25	....
1935	40.96	34.92	53.96	35.59	41.87	....
1936	45.70	37.12	41.48	49.51	40.18	....
1937	49.08	40.65	49.60	43.67	42.70	....
1938	42.17	35.43	45.52	38.55	44.17	....
1939	27.23	29.88	27.23	26.02	25.29	....
1940	36.46	38.17	38.30	35.45	34.41	....
1941	27.90	23.49	28.93	27.55	28.02	....
1942	40.55	31.04	47.49	42.40	37.19	....
1943	32.19	36.72	31.40	25.65	35.61	....
1944	53.03	34.84	35.52	53.05	42.59	....
1945	41.22	40.82	41.51	41.01	28.84	....
1946	32.34	25.50	38.15	44.68	44.26	....
1947	28.29	25.18	31.12	29.12	33.75	....
1948	33.81	29.12	37.74	37.74	41.05	....
1949	42.34	38.60	64.55	52.72	44.07	42.09
1950	22.87	19.81	23.41	26.97	23.89	20.02
1951	22.31	28.38	34.66	35.26	31.84	29.07
1952	23.44	15.36	23.10	20.23	27.58	14.03
1953	23.92	30.58	47.08	38.89	23.27	17.30
1954	28.60	35.86	52.93	33.71	27.90	24.04
1955	36.50	29.55	50.05	39.66	42.25	41.01
1956	39.02	26.03	42.75	37.48	35.64	30.06
1957	28.15	23.25	33.94	35.24	31.66	20.05
1958	32.17	27.31	40.50	47.03	27.11	22.04
Average	34.69	31.26	40.97	38.01	35.53	26.05
Minimum	22.31 (1951)	15.36 (1952)	23.10 (1952)	20.23 (1952)	23.27 (1953)	14.03 (1952)

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under irrigation by				Total area under irrigation and its percentage to cropped area.
		Canals.	Tanks.	Wells	Other Sources.	
1	2	3	4	5	6	7
1	Balspur .. ..	..	..	557	..	557 0·2
2	Washim .. ..	..	113	1,822	..	1,935 0·4
3	Akot .. ..	..	..	1,518	..	1,518 0·5
4	Murtezapur .. ..	..	..	1,163	..	1,163 0·4
5	Akola .. ..	..	..	757	..	757 0·2
6	Mangrul .. ..	..	..	857	..	857 0·3
District Total ..		..	113	6,674	..	6,787 0·3

STATEMENT " D ".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total cereals.	Total Pulses.	Total Food crops.	Oil seeds.	Cotton.	Total non-Food crops.
				Kharif.	Rabi.							
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Balapur ..	159	9,481	75,971	....	1,281	87,121	25,138	1,13,669	15,338	1,09,327	1,25,728
2	Washim ..	12,463	43,548	1,43,147	....	1,335	2,01,819	74,502	2,79,695	26,192	1,50,084	1,73,125
3	Akot ..	45	22,678	78,061	....	455	1,01,283	25,682	1,29,631	4,200	1,70,977	1,76,435
4	Murtazapur ..	913	17,711	89,820	....	4,947	1,13,507	25,482	1,41,772	27,465	1,24,431	1,51,260
5	Akola ..	705	23,832	1,16,980	....	3,316	1,45,008	31,394	1,78,420	36,222	1,39,505	1,76,751
6	Mangrul ..	2,162	2,029	81,493	....	4,288	90,517	24,372	1,16,361	28,073	91,861	1,20,912
District Total ..		16,447	1,19,271	5,85,462	....	15,622	7,39,255	2,06,630	9,59,548	1,37,499	7,86,185	9,32,211

CHAPTER III.

AMRAVATI DISTRICT.

Part I—Background.

1. *Location.*—The district of Amravati is bounded in the north by the Nimar and Betul districts of Madhya Pradesh State, in the east by Wardha district, in the south by Akola and Yeotmal districts and in the west by the Akola district.

2. *Administrative Set-up.*—For administrative purposes the district is divided into the following talukas. Detailed information is given in Statements A to D attached :—

Serial No.	Name of Taluka.	No. of villages.	Area in sq. miles.	Density per mile.
1	2	3	4	5
1	Amravati	353	833	378
2	Marsi	228	623	258
3	Chandur	237	694	257
4	Daryapur	240	505	288
5	Achalpur	230	490	364
6	Melghat	279	1,546	33

3. *Physical Features.*—The district can be divided into two different tracts viz. the low lying plain and the hilly area. The former comprises the talukas of Marsi, Chandur, Dariapur, Amravati and Achalpur and is formed by the river valleys of the Purna, the Chandrabhaga, the Pedhi and the Wardha. The latter is a stretch of high mountainous country—a continuation of the Satpura hills covered with forests known as “Banda”, “Melghat” and “Gangra”. The total area of the district is 4,754 sq. miles, of which 3,123 sq. miles are in the plain. Melghat, the mountainous region, has an area of 1,546 sq. miles with a density of population of only 33 per sq. mile. This population consists mostly of aboriginals. The River Tapti runs along the north-west boundary, the Wardha river along the eastern boundary, while the Purna cuts through the middle of the district. Daryapur, a Taluka town on Chandrabhaga in the south-western part of the district is only 928 ft. above sea level while the highest level in the district is 3,664 ft. near Chikhaldia in the north-west of this district, amidst the Satpura hills. The district slopes gradually towards south and south-west.

4. *Soils.*—The geological formation of the district is the Deccan trap. The soils of the district vary from fertile deep loam of the plains commonly known as black cotton soils to thin red soils of the plateau, and the hilly terrain in the Satpuras. The river Purna in the centre with its tributaries in the west and the Wardha and its tributaries in the east provide natural drainage. On account of the uniformity in climatic conditions and in the parent material which is mainly volcanic trap, the soils of the district vary only in their depth according to topography. The Purna valley contains the best soil, which is deep black and retentive of moisture. The largest stretches of this soil are found in the Daryapur, in the west of Amravati, in the south-west of Marsi and east of Chandur. The retentive nature of the soil causes water-logging in years of excessive rainfall. In such years, cotton which is the principle crop suffers badly, while in years of short but well distributed rainfall the same soil gives a bumper crop. Nearly 50 per cent. (7,96,870) of the net cropped area of the District is under cotton, while the next important crop is Kharif Jowar which accounts for 4,82,329 acres. These two crops

together cover 75 per cent. of the cultivated area. In the light of the cropping pattern in the district, the following figures of average rainfall of the different talukas and the minimum recorded during the last 10 years would be of interest:—

Taluka.	Average	Minimum.
1. Amravati ...	32.6	17.8 (1952)
2. Morsi ...	36.7	20.2 (1952)
3. Chandur ...	32.4	19.5 (1951)
4. Daryapur ...	25.0	15.1 (1952)
5. Achalpur ...	35.5	15.1 (1952)
6. Melghat ...	49.9	28.8 (1953)

The total rainfall is generally adequate.

5. *Forests.*—The forests are divided in two parts. The rich dense forests of Melghat and the forests of plain area of Amravati Division. The total area of the forests in the District is 8,63,454 acres.

Part II—Precarious and Chronic Scarcity Areas.

There is no record of declaration of scarcity during the past 50 years. The annavari data of the last 10 years shows that only in 1952-53 were the majority of the villages in each taluka affected. In other years a few villages here and there were affected due to local variation in rainfall. The details are given below:—

Serial No.	Taluka.	No. of villages.	No. of full suspensions.
1.	Amravati ...	86	1
		263	$\frac{1}{2}$
		+ 4	Nil
		253	
2.	Chandur ...	1	2
		2	$1\frac{1}{2}$
		16	1
		58	$\frac{1}{2}$
		160	Nil
		237	

ACHALPUR.

No. of villages.	No. of times entitled to full suspensions.
1	$2\frac{1}{2}$
3	2
50	$1\frac{1}{2}$
124	1
22	$\frac{1}{2}$
23	Nil.
223	

DARYAFUR.

No. of villages.	No. of times entitled to full suspension.
1	2½
6	2
48	1½
89	1
86	½
10	Nil
<hr/> 240	

MORSI.

No. of villages.	No. of times entitled to full suspension.
1	2½
10	2
10	1½
57	1
198	½
<hr/> 276	

MELGHAT.

No. of villages.	No. of times entitled to full suspension.
15	½

As the villages affected more than once are few and not in a compact area and further as the rainfall in all talukas has been generally adequate except in 1952, no area of this district can be considered as having been affected by chronic scarcity. This district may therefore be regarded as free from scarcity.

STATEMENT "C".
Irrigation Data.

Serial No.	Taluka.	Area under irrigation.				Total area under irrigation and its percentage to cropped area.	
		Canals.	Tanks.	Wells.	Other sources.		
1	2	3	4	5	6	7	
1	Amravati ..	....	19	1,831	....	1,850	0.4
2	Morsi ..	25	20	4,638	....	4,683	1.6
3	Chandur ..	....	....	2,393	....	2,393	0.8
4	Daryapur ..	....	....	873	....	873	0.3
5	Achalpur ..	106	....	2,887	....	2,993	1.2
6	Melghat ..	....	....	22	....	22	N. A.
District Total ..		131	30	12,644	....	12,814	0.7

STATEMENT " D ".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total cereals.	Total pulses.	Total Food crops.	Oil seeds.	Cotton.	Total non-food crops.
				Under Kharif	Under Rabi.							
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Amravati	783	37,373	1,32,306	....	4,807	17,530	34,717	2,17,018	23,263	1,93,492	2,17,050
2	Marsi	203	7,267	90,025	....	3,222	1,01,370	27,788	1,35,466	3,896	1,49,135	1,53,141
3	Chandur	1,066	8,427	1,06,815	....	6,486	1,20,851	31,984	1,55,454	23,481	1,46,710	1,70,267
4	Daryapur	71	33,056	70,530	....	526	1,04,209	22,031	1,28,781	11,880	1,46,622	1,58,932
5	Achalpur	50	9,084	63,794	....	986	73,971	25,085	1,04,880	2,588	1,48,534	1,51,845
6	Melghat	970	8,488	18,259	....	179	45,739	14,715	61,364	3,950	12,377	16,327
District Total ..		3,143	1,03,694	4,82,329	....	14,206	6,21,445	1,56,320	8,02,972	69,058	7,96,870	8,67,202

CHAPTER IV.

YEOTMAL DISTRICT.

Part I—Background.

1. *Location.*—Yeotmal district formerly known as Wun district forms part of Vidarbha division and has an area of 5219 sq. miles and a population of 9,31,982. It is divided into five talukas viz. Yeotmal, Darwha, Pusad, Wani and Kelapur. Detailed information about these talukas is given in Statements A to D. The district is bounded by Amravati and Wardha districts on the north, by Akola and Parbhani districts on the west, by Wardha and Chanda districts on the east and by Nanded district and Andhra State on the south.

2. *Physical Features.*—The whole district is a hilly country broken by broad valleys and partially surrounded by plains. The central portion of the district is a plateau with very steep ghats and hence the district is named "Yeotmal". The rivers Wardha and Painganga with their tributaries provide strips of plains during their course in the district. The general elevation of the plain country is between 840 ft. and 940 ft., while various parts above the ghats are over 1500 to 1600 feet above sea level. The few rivers in the district have the characteristics of the Deccan plateau rivers viz., very deep beds and raised banks which render them almost useless for irrigation purposes, unless big dams are constructed. The flow during summer is very meagre. The chief rivers are the Wardha and the Painganga which actually encircle the district on three sides excepting the western boundary. The tributaries of these rivers, originating in the district itself traverse all parts of the district.

3. *Soils.*—The soils of the district as a whole are light to medium and are subjected to heavy erosion, on account of the undulating topography. They are generally found to contain lime, kankar and sand. These vary from very fertile alluviums in valleys to light shallow murmad soils on the plateau. About 20 per cent. of the cultivated area has heavy black soils, while the rest is light to medium. The type of the soils generally found in different parts of the district is detailed below :—

Type of soil and location.

- | | |
|---|---|
| (1) Uniform but coarse texture and of reddish colour. | Wani taluka. |
| (2) Coarse, gravelly or loose triable and of a colour varying from light-brown to grey. | Kelapur taluka, central and southern part of Yeotmal taluka, and hilly parts of Pusad taluka. |
| (3) Rich fertile alluvial soil. | Northern part of Yeotmal taluka. Middle of Dharwha and middle portion of Pusad. |

4. *Livelihood Pattern.*—The density of population is 178 per sq. mile which is low. 78.66 per cent. population depends on agriculture out of whom 22.71 per cent. are owner cultivators, 13.48 per cent. tenants and 40.50 per cent. are labourers. The percentage of agricultural labour is rather high.

5. *Forest.*—The total area under forest is 7,66,373 acres which works out to 22.6 per cent. of the gross area of the district. Pusad taluka has the largest area under forest.

6. *Cropping Pattern.*—The area under cultivation is roughly 51 per cent. of the total acreage of the district. The main crops of the district are kharif due to assured rainfall during the period of June to September. The areas covered by the major crops are :—

Crop.	Acres.
Kharif Jowar	6,60,848 (36.4 per cent.)
Cotton	6,96,698 (38.4 per cent.)
Pulses	2,20,319 (12.0 per cent.)
Groundnut	75,976 (4.0 per cent.)
Other Oil Seeds	37,922 (1.9 per cent.)

The total area irrigated in the district is negligible being 5,938 acres or 0.3 per cent. of the cropped area. About two-third of the land holdings are between 1 to 15 acres. The percentage of holdings between 1 to 5 acres is 36, of 7½ to 15 acres is 29 and of 17½ to 25 acres is 14.

7. Rainfall.—The average rainfall of the different talukas is as shown below :—

Darwaha	..	..	39.29	Average of last 30 years:
Pusad	..	..	37.91	Average of last 30 years.
Yeotmal	..	..	44.44	Average of last 30 years.
Kelapur	..	..	47.30	Average of last 10 years.
Wani	..	..	47.10	Average of last 10 years.

The minimum recorded during the period shown above in each taluka was as under :—

Darwaha	..	..	21.44 (1950)
Pusad	..	..	18.83 (1941)
Yeotmal	..	..	29.66 (1950)
Kelapur	..	..	33.30 (1952)
Wani	..	..	25.60 (1950)

The minimum rainfall in Pusad was probably an exception as during the remaining 29 years it was never so low, and the total precipitation was usually around 30 inches.

Part II.—Determination of Chronic Scarcity and Precarious Areas.

According to the annavari data only a few villages in Pusad taluka were affected during 1955-56 and 1957-58. According to this data 126 villages out of 323 villages were affected in 1955-56 and 9 villages in 1957-58. This data shows that 3 villages had 2 full suspensions, 4 villages had 1½ full suspensions and 19 had 1 full suspension, while the rest of the villages has had no suspensions at all. In view of this and the information relating to rainfall, the Committee does not consider that there is any tract in this district which can be regarded as a chronic scarcity or precarious area.

STATEMENT " A ".

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross area.		Population.	Density per sq. mile.	Gross cropped area.	Net cropped area.	Area under Forest.
			Sq. miles.	In acres.					
1	2	3	4	5	6	7	8	9	10
1	Yeotmal	315	608	5,80,918	1,77,457	195	3,23,933	3,21,817	1,36,529
2	Darwha	340	1,078	6,90,540	2,11,259	196	4,16,271	4,14,774	1,38,680
3	Pusad	323	1,285	8,22,245	2,21,577	172	4,07,004	4,04,488	2,28,012
4	Kelapur	340	1,086	6,94,942	1,54,969	142	3,62,371	3,58,527	1,53,447
5	Wani	316	862	5,52,083	1,66,720	193	3,05,592	3,04,126	1,11,755
District Total		1,634	5,219	33,40,728	9,31,962	898	18,15,171	18,03,742	7,68,373

STATEMENT " B ".

Rainfall Data.

(Fig. in Inches.)

Year.	Darwha.	Pusad.	Yeotmal.	Kelapur.	Wani.
1	2	3	4	5	6
193	51.20	51.42	49.22	....	....
1932	28.40	36.67	36.94	....	....
1933	51.37	47.11	55.30	....	....
1934	46.53	44.72	42.96	....	....
1935	35.81	30.43	42.26	....	....
1936	49.22	43.09	53.87	....	....
1937	43.66	36.35	52.36	....	....
1938	49.92	40.21	44.41	....	....
1939	27.53	30.43	33.57	....	....
1940	50.47	52.63	55.56	....	....
1941	28.56	18.83	37.11	....	....
1942	48.62	41.43	46.28	....	....
1943	28.60	31.69	37.85	....	....
1944	44.80	33.51	44.47	....	....
1945	35.85	40.71	40.78	....	....
1946	52.89	37.95	40.78	....	....
1947	31.79	28.98	31.96	....	....
1948	38.90	48.04	49.72	....	....
1949	49.28	41.95	54.82	50.02	58.0
1950	21.44	25.22	29.66	36.0	25.6
1951	40.76	28.65	43.20	44.9	44.8
1952	25.54	22.19	41.74	33.3	31.4
1953	34.43	33.48	38.87	40.3	34.9
1954	31.39	37.51	42.27	43.9	64.2
1955	52.85	59.79	65.77	59.6	61.0
1956	32.19	33.70	47.00	60.2	59.6
1957	31.34	31.17	36.18	45.5	37.7
1958	35.29	49.64	46.88	59.4	54.4
Average	39.20	37.91	44.44	47.3	47.1
Minimum	21.44 (1950)	18.83 (1941)	29.66 (1950)	33.3 (1952)	25.6 (1950)

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under irrigation.				Total area under irrigation and its percentage to cropped area.
		Canals.	Tanks.	Wells.	Other Sources.	
1	2	3	4	5	6	7
1	Yeotmal .. ..	....	....	1,238	....	1,238 0.4
2	Darwaha .. ..	....	....	1,121	.. 12	1,133 0.3
3	Pusad .. ..	....	....	1,441	206	1,647 0.4
4	Kelapur .. ..	....	....	1,280	....	1,280 0.3
5	Wani	190	10	440	....	640 0.2
District—Total ..		190	10	5,520	218	5,938 0.3

STATEMENT " D ".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total cereals.	Total pulses.	Total foodcrops.	Oilseeds.	Cotton.	Total non-foodcrops.
				Kharif.	Rabi.							
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Yeotmal ..	3,300	6,494	1,12,865	..	5,973	1,28,743	37,492	1,67,178	1633.0	1,36,956	1,56,758
2	Darwaha ..	3,343	3,434	1,41,864	..	7,509	1,56,291	43,312	1,99,950	47,352	1,65,029	2,16,221
3	Pusad ..	8,900	16,380	1,53,356	4	5,799	1,85,333	50,113	2,36,792	17,571	1,47,181	1,70,212
4	Kelapur ..	5,281	6,341	1,36,424	..	4,745	1,52,872	45,709	1,99,472	9,177	1,49,725	1,62,599
5	Wan ..	2,914	14,805	1,16,340	..	743	1,34,563	43,693	1,79,169	28,760	98,807	1,26,433
District Total ..		23,638	46,154	6,60,842	4	24,769	7,56,804	2,20,319	9,82,548	1,13,898	6,96,698	8,32,623

CHAPTER V.

WARDHA DISTRICT.

Part I—Background.

1. *Situation and Physical Features.*—Wardha is one of the districts of Vidarbha bounded on the north by Madhya Pradesh, on the east by Nagpur district, on the south by part of Yeotmal and Chanda districts and on the west by Amraoti and Yeotmal districts. The total area of the district is 2443 sq. miles divided in 3 talukas—Wardha, Hinganghat and Arvi. The population of the district is 5,38,903 persons with a density of 220 per sq. mile. Statistical data about each taluka is given in Statements A to D attached.

The district is an undulating plain gradually sloping in the south-easterly direction excepting a narrow strip on the north of Arvi taluka draining towards the north. Except for some hills in the north and east, the whole district is an undulating plain drained by the rivers Wardha, Warna and a number of small streams. The river Wardha forms the south-west border of the district and is the only river of good dimensions. The other river of importance is Wunna which runs from north-east to south-east and drains the central part of the district and joins the river Wardha on the boundary of the district.

2. *Soils.*—The soils of this district can be grouped under the following categories, viz., shallow, medium and deep. The eastern half of Hinganghat taluka, the northernmost corner of Wardha taluka and the central part of Arvi taluka have the shallow type of soils. The western quarter of Hinganghat taluka and the western strip of Arvi taluka contain medium soils, while the rest of the district has good soils capable of growing both kharif and rabi crops. The soils are all derived from volcanic trap and are therefore quite fertile, capable of producing very good cotton and jowar crops.

3. *Cropping pattern.*—The district is mainly a kharif crop zones having large acreage under cotton, kharif jowar and pulses. Wheat is cultivated in Hinganghat and Wardha talukas to a fair extent. The areas under major crops are given below :—

Crops.		Acres.
Kharif Jowar	.. ..	3,34,616
Cotton	.. ..	3,70,407
Pulses	.. ..	1,28,203
Oil seeds	.. ..	41,354
Wheat	.. ..	1,07,519

4. *Irrigation.*—The total area under irrigation in the district is 10,185 acres which works out at 1.04 p.c. of the cropped area. The average rainfall of different talukas and the minimum recorded in each taluka is as shown below.

5. *Rainfall*—

No. of taluka.	Average.	Minimum.
Hinganghat	.. 47.80 (last 27 years).	.. 34.16
Arvi	... 41.1 (last 10 years).	.. 19
Wardha	.. 40.3 (last 10 years).	.. 29.7

The annual total rainfall for different areas is given in Statement A. The rainfall data would show that the district lies in an assured rainfall tract. Except during 1950 in which the total rainfall was 19" in Arvi taluka, it has been all along more than 25" in all the talukas. A partial failure of crops occurs sometimes due to excessive rainfall but not due to deficient rains.

Part II.—Determination of Chronic Scarcity and Precarious Areas.

According to Land Revenue suspension data parts of Hinganghat, Arvi and Wardha talukas were affected during 1948-49, 1949-50, 1950-51 and 1955-56, but due to excessive rains. The rainfall data would support this fact. The number of villages affected in the three talukas according to annavari data is as shown below :—

Name of Taluka.	No. of villages affected.	Total No. of full suspensions.
Arvi	81	1
	63	$\frac{1}{2}$
Hinganghat	19	$2\frac{1}{2}$
	38	2
	141	$1\frac{1}{2}$
	69	1
Wardha	1	3
	4	$2\frac{1}{2}$
	15	2
	113	$1\frac{1}{2}$
	184	1
	143	$\frac{1}{2}$

The above data would show that the incidence of failure of crops is very low and that it was due to generally excessive rains. Looking to the annavari data and the rainfall data none of the talukas of this district would be regarded as scarcity area.

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross area.		Population.	Density per sq. mile.	Gross cropped area.	Net cropped area.	Area under forest.
			In sq. miles.	In acres.					
1	2	3	4	5	6	7	8	9	10
1	Wardha	472	818	5,08,827	2,50,855	306	3,79,248	3,78,184	11,401
2	Hinganghat	411	731	4,57,300	1,43,658	197	3,31,882	3,31,484	2,761
3	Arv	486	894	4,59,695	1,44,390	161	2,77,767	2,74,868	26,786
District Total..		1,369	2,443	14,25,822	5,38,903	220	9,88,897	9,84,536	40,948

STATEMENT "B".

Rainfall Data.

(Fig. in Inches.)

Serial No.	Year.	Hinganghat.			Arvi.	Wardha.	
		3	4	5			
1	2	3	4	5	6	7	
1	1931	..	..	..	53.11	....
2	1932	..	..	..	38.87	....
3	1933	..	..	..	71.41	....
4	1934	..	..	..	67.07	....
5	1935	..	..	..	50.79	....
6	1936	..	..	..	52.61	....
7	1937	..	..	..	50.48	....
8	1938	..	..	..	48.60	....
9	1939	..	..	..	84.16	....
10	1940	..	..	..	51.54	....
11	1941	..	..	..	41.76	....
12	1942	..	..	..	50.53	....
13	1943	..	..	..	48.38	....
14	1944	..	..	..	49.66	....
15	1945	..	..	..	37.78	....
16	1946	..	..	..	40.09	....
17	1947	..	..	..	36.89	....
18	1948	..	..	..	51.80	....
19	1949	..	..	..	50.98	50.6
20	1950	..	..	..	37.88	19.0
21	1951	..	..	..	46.31	79.0
22	1952	..	..	..	36.07	25.0
23	1953	..	..	..	47.83	28.3
24	1954	..	..	..	46.69	46.1
25	1955	..	..	..	49.92	50.07
26	1956	..	..	..	48.61	35.3
27	1957	..	..	..	44.32	31.3
28	1958	..	..	..	42.30	46.4
		Average			47.18	41.1	40.3
		Minimum			34.16 (1939)	19.0 (1959)	26.7 (1952)

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka	Area under irrigation				Other sources	Total area under irrigation and its percentage, to cropped area.	
		Canals	Tanks	Wells	6		7	
1		3	4	5	6			
1	Wardha	..	....	....	4,276	29	4,305	1.1
2	Hinganghat	..	....	48	1,161	40	1,249	0.4
3	Arvi	..	....	....	4,575	56	4,631	1.7
	District Total	..	....	48	10,012	125	10,185	1.04

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka	Rice.	Wheat.	Jowar.		Bajri	Total cereals	Total pulses	Total food crops	Oil seeds	Cotton	Total non-food crops.
				Kharif	Rabi							
				5	6							
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Wardha	460	30,688	1,06,564	....	26	1,08,002	49,626	2,22,477	12,665	1,43,186	1,56,771
2	Hinganghat	243	69,285	1,40,840	287	5	1,00,657	37,882	2,01,601	27,116	1,02,816	1,30,231
3	Arvi	2,087	7,546	87,212	1,051	35	1,04,269	40,695	1,49,075	1,573	1,24,405	1,28,692
	District Total	2,790	1,07,519	3,34,616	1,338	66	4,32,928	1,28,203	5,73,153	41,354	3,70,407	4,15,744

CHAPTER VI.

NAGPUR DISTRICT.

Part I—Background.

1. *Location and Area.*—Nagpur district situated on the southern flank of the Satpuda Range, is bounded by Chhindwara and Betul districts of the Madhya Pradesh on the north, Bhandara district on the east, Chanda and Wardha districts on the south and Wardha and Amravati districts on the west. The area of the district is 3,834 sq. miles. It has a total population of 12,34,536 persons and a fairly high density of 322 persons per sq. mile. The district is divided in the following talukas :—

1. Nagpur, 2. Ramtek, 3. Umrer, 4. Saoner and 5. Katol.

Detailed information about them is given in Statements A to D attached.

2. *Topography.*—The greater part of the district is an undulating plain traversed by low hill ranges in the western and southern parts. The whole district excepting the taluka of Katol, drains towards east or south-east. The Katol taluka, however, drains in the western direction. The Kanhan, the Pench, the Waruna and the Amba, drain the talukas of Ramtek, Saoner, Nagpur and Umrer, while the Katol taluka is drained by the river Jam.

3. *Rainfall.*—The figures of annual rainfall of each taluka for the period 1931 to 1958 are given in Statement B. The average rainfall for the period for each taluka and the minimum recorded during the same period is shown below :—

Taluka	Average rainfall (1931-58)	Minimum
Ramtek	48.71	27.85 (52)
Umrer	52.98	35.00 (41)
Saoner	43.98	22.41 (50)
Katol	43.23	26.83 (52)
Nagpur	49.16	27.88 (50)

It will be seen from these figures that the district has adequate and assured rainfall in all the talukas.

4. *Soils.*—Kali (Deep black cotton), Morand (comparatively light depth, light brown in colour), Khardi (shallow with grey colour) and Bardi (red gravel with boulders) are the main soils of the district which determine the crop pattern. Deep black soil is found round Kamleswar and Saoner and the Wardha valley and in the Nagpur and Kamptee plains. It forms about 2 per cent. of the cultivated land of the district. Morand soil which is very suitable for cotton and jowar is found in all talukas and forms 66 per cent. of the total cultivable area of the district. Khardi, which is the regular rice land, forms 27 per cent., while Bardi which is an inferior and poor soil accounts for about 5 per cent. The percentage of good soil in each taluka is as shown below :—

Taluka	Percentage.
1. Umrer	79
2. Ramtek	67
3. Nagpur	82
4. Saoner	31
5. Katol	45

5. *Crops.*—The principal crops of the district are—

Crop	Acres.
1. Cotton	1,65,032
2. Jowar (Kharif)	1,43,656
3. Oil seeds	1,19,871
4. Chillies	34,314
5. Wheat	1,83,607
6. Jowar (Rabi)	1,02,820

The main crops are kharif crops. However, Ramtek and Umrer grow about 40 and 43 per cent. of the total cropped area under rabi crops respectively.

6. *Irrigation*.—The total area under irrigation is 65,014 acres which comes to 5 per cent. of the cropped area. The Bor river project included in the Second Five-Year Plan is expected to irrigate 50,534 acres under kharif crops and 12,500 acres under rabi crops.

Part II—Determination of Scarcity Areas.

No famine or scarcity, on account of failure of crops as a result of shortage of rains, has been declared in this area during the past several years. However, suspension of land revenue was given in 1950-51 in certain villages of different talukas on account of failure of crops as a result of prolonged drought during August and September. The areas affected and the extent of distress was as shown below :—

Name of taluka.	No. of villages in the taluka.	Total rainfall of 1950-51.	No. of villages affected.	Less than 4 as.	Annasari Over 4 as. and below 6 as.
Nagpur	367	27.88	81	10	71
Ramtek	376	33.79	79	22	57
Umrer	311	36.04	96	24	72
Katol	422	26.84	134	39	95
Saoner	291	22.41	32	Not available.	

It appears that a small amount of land revenue was suspended on account of damage to crops by hailstorm and excess of rains in 1952-53, 1954-55 and 1955-56.

The above data shows that this district is rarely affected on account of shortage of rains. Failure of crops however occurs occasionally on account of excessive rains. This district would not, therefore, be regarded as a scarcity affected area.

STATEMENT "A".

Statement showing Basic Data of Nagpur District.

Serial No.	Taluka	No. of villages.	Gross Area.		Population	Density per Sq. Miles	Gross cropped area	Net cropped Area.	Area under forest.
			in Sq. miles.	in acres.					
1	2	3	4	5	6	7	8	9	10
1	Nagpur	367	811	4,78,659	6,46,090	796	2,89,732	2,88,293	23,961
2	Ramtek	376	397	4,27,897	1,46,958	164	2,57,941	2,63,683	27,699
3	Katol	422	969	3,59,819	1,58,271	164	2,46,803	2,42,237	10,881
4	Umrer	211	543	5,73,615	1,34,922	250	3,26,432	3,20,615	60,266
5	Saoner	291	614	2,76,643	1,48,315	241	1,98,537	1,94,726	4,950
District Total.		1,667	3,834	21,15,033	12,34,586	362	13,16,552	13,00,654	1,27,767,

STATEMENT "B".

Rainfall Data.

(Fig. in Inches.)

Year	Ramtek	Umrer	Saoner.	Katol	Nagpur.
1	2	3	4	5	6
1931	54.24	59.08	48.72	50.25	60.45
1932	47.42	48.08	36.03	44.42	46.48
1933	54.15	67.99	54.75	56.11	76.04
1934	36.86	58.06	42.98	45.46	38.44
1935	49.37	44.05	51.01	36.78	44.95
1936	61.34	56.42	58.34	35.66	63.91
1937	68.86	62.18	51.23	45.32	66.90
1938	38.23	62.88	59.81	41.44	59.22
1939	40.40	42.76	36.23	30.64	36.93
1940	56.36	62.01	52.17	46.85	66.87
1941	38.29	35.00	35.53	33.17	41.58
1942	49.92	58.70	52.23	49.25	59.52
1943	49.95	44.50	31.11	92.26	39.95
1944	63.14	70.48	55.04	65.16	52.12
1945	44.29	38.02	39.88	38.45	58.63
1946	49.91	48.60	39.83	73.80	54.36
1947	64.44	65.27	39.26	40.42	46.71
1948	45.27	56.65	41.29	47.70	45.30
1949	54.33	48.89	61.16	48.66	54.90
1950	33.79	36.04	22.41	26.84	27.88
1951	47.73	43.21	39.72	38.94	39.68
1952	27.85	35.43	22.89	46.83	26.96
1953	44.55	61.04	34.79	32.34	32.97
1954	52.32	47.17	43.46	39.89	47.73
1955	52.30	58.51	50.15	57.66	48.37
1956	52.40	54.70	47.00	39.41	41.83
1957	39.76	47.55	39.22	35.72	40.50
1958	35.51	40.18	46.00	41.10	43.40
Average	48.71	52.98	43.98	43.23	49.16
Minimum	27.85 (1952)	35.00 (1941)	22.41 (1950)	26.83 (1952)	27.88 (1951)

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under Irrigation.				Total area under Irrigation and its percentage to cropped area.	
		Canals.	Tanks.	Wells.	Other Sources.		
1	2	3	4	5	6	7	
1	Nagpur		96	7,741	781	8,618	3.0
2	Ramtek	10,508	4,976	2,973	1,357	19,814	7.8
3	Katol			15,257	41	15,298	6.3
4	Umier		9,596	1,209	1,942	12,747	3.9
5	Saoner			8,468	69	8,537	4.4
District Total ..		10,509	14,668	35,648	4,190	65,014	5.0

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total cereals.	Total pulses.	Total food crops.	Oil Seeds.	Cotton.	Total non-food crops.	
				Kharif.									Rabi.
				5	6								7
1	2	3	4	5	6	7	8	9	10	11	12	13	
1	Nagpur ..	1,110	44,536	1,18,852	316	10	1,64,898	35,704	2,07,586	22,859	52,950	82,146	
2	Ramtok ..	26,220	53,059	59,946	34,364	60	1,74,244	39,870	2,17,825	28,754	6,364	40,118	
3	Katol ..	1,589	11,026	1,22,819	....	724	1,36,181	29,119	1,74,025	14,925	54,636	72,179
4	Umter ..	19,231	67,136	38,024	68,140	....	1,92,533	41,796	2,36,797	48,149	12,205	89,641
5	Saonor ..	289	7,851	1,04,015	....	36	1,12,208	27,947	1,49,294	5,184	38,877	46,343
District Total ..		48,439	1,83,607	4,43,656	1,02,820	830	7,80,064	1,76,436	9,86,127	1,19,871	1,65,933	3,30,425	

CHAPTER VII.

BHANDARA DISTRICT.

Part I—Background.

1. *Location.*—Bhandara is on the extreme east of the present Bombay State and on the border of Bombay and Madhya Pradesh States. On the north it is bounded by Balaghat and Seoni districts of the Madhya Pradesh State, on the east by Drug district of Madhya Pradesh State, on the south by Nagpur and Chanda districts and on the west by Nagpur district. The area of the district is 3,623 sq. miles; its length and breadth are each approximately 75 miles. It is divided into three talukas, viz. Bhandara, Sakoli and Gondia. Bhandara consists of a long, narrow strip along the western border, while Gondia occupies the northern and Sakoli the southern portion of the remaining area. Statistical data about each Taluka is given in statements A to D attached.

2. *Physical Features.*—The country is generally open and level, broken in a few places by isolated ranges of hills. The lowest and the most northern of these is the Ambagarh range, an extension of the Satpuras, which enters the district from the west and stretching further in a north-easterly direction, cuts off the valley of the Bawanthari river from the rest of the district. In the centre of the district running from the east of Bhandara town to the railway line, near Gondia, is the Gaikhuri range. The highest peak of this range is 2,003 feet. This range divides the valley of Wainganga and Bagh. Just west of Bhandara there is a Ballahi range consisting of a few sand stone hills. In the south-east lies the range of Pratapgarh hills, the highest part of the district. Among these hills there is a lake known as Nawegon lake. The highest peak of Nishani is 2,314 ft. The forests generally cover and surround the hill ranges. Beyond the Pratapgarh range there is a broad belt of jungle extending from Uwara to Chulband.

The main river of the district is Wainganga and practically all others are its tributaries. It enters the district from the north and passes within a mile of Bhandara town on the south-west, its valley being between Ambagarh and Gaikhuri ranges. It flows to the south and then turns to the south-east, cutting off a small and fertile strip of Pauni from the rest of the district. During the fair season it consists only of a small stream everywhere fordable and containing at intervals deep pools full of fine fish. The principal tributary of the Wainganga is Bagh which flows almost north and then west for a course of about 70 miles forming for some distance the boundary between Bhandara and Balaghat districts. The valleys of the Wainganga and the Bagh, called the lake region, form a number of large artificial tanks which have been built for irrigation and give a distinctive feature to the country. The most important among them is at Nawegaon with an area of 5 sq. miles and a circumference of 17 miles. Seoni is over 7 miles round, while smaller tanks are counted in thousands. The Sakoli taluka or the southern portion of the district consists largely of hills and forests. Elsewhere, the country is for the most part open and land is closely cultivated. The expanse of rice and wheat fields thickly studded with fruit-bearing trees and broken by low flat-topped hills present a pleasant and prosperous appearance. The altitude of the plain portion of the district varies from 900 to 1,300 ft.

3. *Soils.*—The main kinds of soils are Kali, Kanhar, Sihar, Morand, Khardi and Bardi. The area under Kali is not very extensive. Kanhar is a very rich alluvial soil. The area covered by this soil is also not very much. Bardi differs from Kanhar by the presence of lime stone nodules. Sihar is a reddish-yellow soil formed mainly of the detritus of the crystalline rock. It racks a little in hot weather. The most important soils of the district are Morand and Sihar, which between them account for approximately 8,24,000 acres of land.

The total area under forest in the district is 5,07,461 acres.

4. *Cropping pattern.*—The district is mainly a paddy growing area and the main crops are as under. Detailed information about each taluka is given in statements A to D.

Crops.				acres.
Rice	...	...	...	6,13,300
Wheat	...	...	...	81,864
Rabi Jowar	...	...	...	84,294
Kharif Jowar	...	...	...	13,475
Pulses	...	...	...	59,574
Oil seeds	...	...	...	1,50,051

5. *Irrigation*.—The total area under irrigation is 2,98,996 acres which works out to 32.2 per cent. of the cropped area. Of these, the area under canals is 49,653 acres, under tanks 2,36,700 acres and under wells 6,381 acres; other sources account for 6,262 acres. The percentage of area under irrigation in each taluka of Bhandara, Sakoli and Gondia is 24.4, 38.2 and 31.6 respectively.

6. *Rainfall*.—The average rainfall is 56". It is a heavy and assured rainfall area. The talukawise figures of average and minimum rainfall are given below :—

	Average.	Minimum.
Bhandara	50.11" (Average of 30 years)	32.24"
Sakoli	55.4" (Average of 10 years)	45.01"
Gondia	51.00" (Average of 10 years)	39.03"

Part II—Determination of Precarious and other Scarcity Areas.

Famine or scarcity has not been declared in this district in the past. Certain areas in the district have however been affected by scarcity conditions in the past, during the last 30 years as shown below :—

Taluka.	Circle.	Year in which annavari of more than 1/3rd Number of villages was between 4 and 6.		Total No. of times affected
Bhandara	Bhandara	1946-47	1952-53	2
	Mohadi	Do.	1952-53	2
	Tumsar	Do.	Do.	1
Gondia	Adyar	Do.	Do.	1
	Gondia	1941-42	1946-47	2
	Tirora	Do.	Do.	1
	Amgaon	1941-42	Do.	2
Sakoli	Goregaon	Do.	Do.	1
	Sakoli	Do.	1946-47	1
	Lakhandur	Do.	Do.	1
	Deori	Do.	Do.	1
	Sadak-Anjuri	Do.	Do.	1

The following number of villages were affected during the last 10 years :—

Taluka.	Circle.	Total No. villages.	No. of villages affected during the years.			
			1947-48	1952-53	1954-55	1957-58
Bhandara	Tumsar	136	..	28	..	23
	Mohadi	107	..	65	..	23
	Bhandara	158	16	52	..	2
Gondia	Adyar	158	..	..	..	..
	Gondia	94	..	..	21	..
	Amgaon	128	..	..	..	21
	Goregaon	112	..	..	..	15
Sakoli	Tirora	130	..	..	..	..
	Sakoli	163	..	..	..	1
	Sakad	..	..	..	..	..
	Anjuri	152	..	..	..	15
	Peori	154	..	..	..	1
	Lakhandur	163	..	..	..	..

According to the annavari data of the last 10 years, 142 villages out of 484 villages in Bhandara taluka were affected during 1952-53 and 48 villages in 1957-58, but none of the villages had suffered more than two full suspensions. In the case of Sakoli taluka, out of 556 villages, 146 were affected in 1950-51 and 14 villages were affected in 1957-58. In Gondia taluka out of 441 villages, 19 villages were affected in 1950-51, 28 villages in 1953-54 and 5 villages were affected in 1957-58. All these villages are scattered and are not in a compact block. The total rainfall during these years was as under :—

	Bhandara.	Sakoli.	Gondia.
1941-42	48.19	N. A.	N. A.
1946-47	48.20	"	"
1950-51	32.24	47.00	44.8
1952-53	34.44	44.10	44.4
1953-54	37.20	53.00	43.3
1957-58	40.35	49.00	44.2

The above data would show that though the total rainfall was adequate, some villages were affected due to untimely rains or local insufficiency. As there is no sizeable area affected by deficiency of rainfall, none of the talukas of this district would be regarded as affected by scarcity. This district may therefore be considered as free from scarcity.

STATEMENT "A".

Basic Data.

Taluka.	No. of villages.	Gross Area		Population.	Density per square mile.	Gross cropped area.	Net cropped area.	Area under forest.
		In sq. miles.	In acres.					
1	2	3	4	5	6	7	8	9
Bhandara	484	967	6,34,023	3,41,318	353	3,73,576	3,11,810	..
Sakoli	556	1,551	9,84,896	2,08,369	192	3,93,836	2,88,515	3,74,757
Gondia	441	1,105	6,64,130	4,31,970	391	4,50,117	3,27,184	1,32,704
District Total ..	1,481	3,623	22,83,049	10,71,657	293	12,46,529	9,47,518	5,07,461

STATEMENT "B".

Rainfall Data.

(Fig. in Inches.)

Year.	Bhandara.	Sakoli.	Gondia.
1931	57.97	....	....
1932	51.26	....	....
1933	84.11	....	....
1934	47.13	....	....
1935	56.91	....	....
1936	70.86	....	....
1937	77.09	....	....
1938	76.00	....	....
1939	40.23	....	....
1940	66.73	....	....
1941	48.91	....	....
1942	75.68	....	....
1943	42.51	....	....
1944	58.59	....	....
1945	50.86	....	....
1946	48.20	....	....
1947	57.37	....	....
1948	49.19	....	....
1949	42.95	74.8	58.3
1950	32.24	47.0	44.8
1951	48.60	50.4	47.5
1952	34.44	44.1	44.4
1953	37.20	53.0	43.3
1954	48.36	59.1	39.3
1955	55.29	66.6	64.4
1956	52.94	62.5	66.1
1957	40.35	49.0	44.2
1958	59.15	45.8	51.0
Average	56.11	55.4	51.0
Minimum	32.24 (1950)	44.1 (1952)	39.3 (1954)

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under irrigation				Total area under irrigation and its percentage to cropped area.	
		Canals.	Tanks.	Wells.	Other sources.		
1	2	3	4	5	6	7	
1	Bhandara	19,137	52,420	3,164	1,456	76,177	24.4
2	Sakoli	456	1,04,518	1,732	3,576	1,10,282	38.2
3	Gondia	30,060	79,762	1,485	1,230	1,12,537	31.6
District Total ..		49,653	2,36,700	6,381	6,262	2,98,996	32.2

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jawar		Bajri.	Total cereals.	Total pulses.	Total food crops.	Oil seeds.	Cotton.	Total non-food crops.
				Kharif.	Rabi.							
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Bhandara	1,32,955	41,281	7,445	....	72,641	2,55,355	85,220	3,50,610	21,916	966	22,966
2	Sakoli	2,14,245	25,106	2,310	....	10,707	2,62,084	94,592	3,64,299	28,245	261	28,537
3	Gondia	2,66,100	15,477	3,720	8	856	2,96,534	79,762	3,79,334	99,890	879	1,00,783
	Total ..	6,13,300	81,864	13,475	8	84,294	8,13,973	2,59,574	10,94,243	1,50,051	2,106	1,52,286

CHAPTER VIII.

CHANDA DISTRICT.

Part I.—Background.

1. *Location*.—Chanda district is on the extreme east of the present Bombay State. To the north it is bounded by Wardha, Nagpur and Bhandara districts, to the south by the Andhra State, to the east by Madhya Pradesh State and to the west by Wardha and Yeotmal districts. North to south the maximum length of the district is 106 miles, east to west is 100 miles, the total area being 9,312 sq. miles. For administrative purposes it is divided into five Talukas, viz. Chanda, Warora, Brahmapuri, Gadchiroli and Sironcha. Statistical data about each is given in Statements A to D attached. The total population is 9,77,618 with a density of 104 persons per square mile. The large areas are under forest reserves. Approximately half of the area is covered by forests.

2. *Topography*.—In the north and south, the terrain is partly hilly and partly plain. The central part is almost plain. The western half of the District is a series of ranges generally of little height. The Wardha, the Indravati, and the Wainganga are the main rivers of the district. The Wardha flows along the western and southern boundary, while the Wainganga drains the central part of the district cutting across from north to south. The Indravati flows along the south-east boundary of the district. The district slopes from north to south. The elevation of the northern part is 750' to 1000' while that of south end is 300' to 500' above sea level.

3. *Rainfall*.—The average rainfall of different talukas and the minimum recorded in each during the period for which data is available is as shown below.

Taluka.	Average.	Minimum.	Period for which data is available.
1. Chanda	49.2	29.0	49 to 58
2. Warora	46.6	32.8	Do.
3. Gadchiroli	72.9	53.4	Do.
4. Brahmapuri	60.0	41.72	31 to 58
5. Sironcha	53.7	42.9	49 to 58
6. Rajura	44.15	25.80	Do.

The above rainfall data shows that it is a heavy and assured rainfall area and the minimum annual rainfall during the last ten years was 25.80" only once in Rajura taluka, a separate unit attached to Chanda district.

4. *Soils*.—Inside the hill ranges to the west of the district, small scattered patches of good soil are found. The most fertile tracts are found in the Wardha and Wainganga valleys. The district contains soils and cultivation of different types. On the banks of the Wardha there is a broad strip of deep soil retentive of moisture. Further inland but immediately adjoining this open tract, there is a range of small hills with poorer soil.

The various kinds of soils are Kali, Kanhar, Bersi Morand, Khurdi, Wardi, Retari, Bardi and Pandhari, Kali or deep black which is the best soil is found in riverain tracts. Morand is the most common agricultural soil in the district. It is a light coloured loam containing more sand and larger particles of stone. It grows kharif and rabi crops as well. Half the total gross area of the district is fallow or unfit for cultivation. The total cropped area is 13,49,830 acres.

5. *Cropping pattern*.—The Statistical information in respect of soils, crops etc. in respect of the different talukas of the district is given in statement D.

This district is mainly kharif but the two western talukas of Warora and Chanda have a fairly large acreage under rabi crops, on account of better soils. Warora taluka is noted for its wheat crop. The acreage under rabi jowar is more than thrice that of kharif jowar in the district. On account of heavy and assured rainfall a large area is under rice cultivation. The main crops of the district are as under :—

Crop.				Acres.
Paddy	...	...	...	4,43,427
Kharif Jowar	...	...	...	1,07,311
Rabi Jowar	...	...	...	3,30,450
Oil seeds	...	...	...	2,06,168
Cotton	...	...	...	75,107

6. *Irrigation*.—The total area under irrigation in the district is 2,06,084 acres mostly under tanks, which accounts for 14.4 per cent. of the total cropped area.

Part II.—Determination of Chronic Scarcity or Precarious Areas.

There are no areas in the district which have suffered from scarcity on account of shortage of rains in the past. The following areas were however affected during the years shown against them by natural calamities such as floods, fire or hailstorm necessitating the grant of suspension or remission of land revenue.

Name of Taluka.				Year in which affected.
1. Sironcha, (a small part)	...	...	...	1949-50
	Do.	...	...	1953-54
	Do.	..	...	1957-58
2. Warora	Do.	...	...	1955-56
	Do.	...	...	1956-57
	Do.	...	...	1957-58
3. Chanda	Do.	...	...	1956-57
	Do.	...	...	1957-58
4. Brahmapuri	Do.	...	...	1957-58
5. Gadchiroli	Do.	...	...	1957-58

Thus there are no parts in the district, which can be regarded as scarcity areas and therefore the district should be considered free from scarcity.

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of Villages.	Gross Area.		Popula- tion.	Density per sq. mile	Gross cropped Area.	Net cropped Area.	Area under forest.
			in sq. miles.	in acres.					
1	2	3	4	5	6	7	8	9	10
1	Chanda ..	378	1,174	8,17,634	2,47,042	210	3,01,361	2,80,694	3,34,100
2	Warora ..	441	1,282	7,75,822	2,10,128	164	4,20,353	4,10,947	2,01,501
3	Gadchiroli ..	830	2,870	16,15,430	2,31,236	80	2,90,290	2,53,406	8,85,547
4	Brahmapuri ..	333	897	5,94,707	1,95,486	218	2,34,284	1,86,641	2,43,802
5	Sironcha ..	512	3,020	23,24,360	93,726	30	1,03,542	1,02,067	20,38,599
6	Rajura ..	231	776	4,15,900	75,357	97	1,95,419	1,95,419	52,049
	District Total ..	2,725	10,088	66,53,853	10,52,975	104	15,45,249	14,28,174	37,55,598
	Rajura Division	231	776	4,15,900	75,357	....	1,95,419	1,95,419	52,049
District Total—excluding Rajura.		2,494	9,312	61,27,953	9,77,618	104	13,49,830	12,32,755	37,03,459

STATEMENT "B".

Rainfall Data.

(Fig. in Inches.)

Year.	Brahmapuri.	Sironcha.	Chanda.	Warora.	Gadchiroli.	Rajura.
1931	63.34	....	....	....	....	....
1932	54.60	....	....	....	....	....
1933	80.35	....	....	....	....	....
1934	61.45	....	....	....	....	....
1935	53.18	....	....	....	....	....
1936	79.39	....	....	....	....	....
1937	68.26	....	....	....	....	....
1938	88.84	....	....	....	....	....
1939	41.86	....	....	....	....	....
1940	73.42	....	....	....	....	....
1941	44.56	....	....	....	....	....
1942	58.34	....	....	....	....	....
1943	48.81	....	....	....	....	....
1944	61.47	....	....	....	....	....
1945	64.31	....	....	....	....	....
1946	47.90	....	....	....	....	....
1947	66.10	....	....	....	....	....
1948	63.68	....	....	....	....	....
1949	66.89	50.7	44.7	54.3	113.8	25.80
1950	41.72	42.9	62.2	37.1	53.4	52.29
1951	56.82	47.2	40.2	46.7	86.3	28.50
1952	42.06	48.2	45.3	32.3	61.7	42.54
1953	55.42	76.0	29.0	48.5	69.7	32.90
1954	44.97	43.4	49.3	54.7	61.8	45.19
1955	74.70	57.1	51.7	58.8	81.3	38.81
1956	54.40	50.7	61.7	55.4	68.1	52.41
1957	54.68	67.4	47.8	43.3	75.6	56.19
1958	57.81	47.7	59.9	42.3	56.4	66.95
Average	60.00	63.7	49.2	43.6	72.9	44.15
Minimum	41.72	42.9	29.0	32.3	53.4	25.80
	(1950)	(1950)	(1953)	(1952)	(1950)	(1949)

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under Irrigation				Total Area under Irrigation and its percentage to cropped area.
		Canals.	Tanks.	Wells.	Other sources.	
1	2	3	4	5	6	7
1	Chanda	17,148	35,845	400	.....	53,393 19.0
2	Warora	55	27,439	377	.....	27,871 6.8
3	Gadchiroli	1,447	42,158	1,545	.....	45,150 17.9
4	Brahmapuri	17,123	59,006	277	.....	76,406 40.9
5	Sironcha .. ..	.....	2,709	162	.....	2,871 2.8
6	Rajura .. ..	.....	323	70	.....	393 0.2
District Total		35,773	1,87,480	2,831	.....	2,06,084 14.4
District Total—excluding Rajura		35,773	1,87,157	2,761	.....	2,05,691 14.4

STATEMENT "D"

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jawar.		Bajri.	Total Cereals.	Total Pulses.	Total Food Crops.	Oils Seed.	Cotton.	Total Non-food crops.
				Kharif.	Rabi.							
				1	2								3	4	5	6	7	8	9	10	11	12	13
1	Chanda	66,046	3,493	15,853	1,13,878	798	2,04,880	41,975	2,52,263	45,037	3,646	49,096
2	Warora	34,643	63,393	39,262	95,975	....	2,33,288	45,869	2,39,715	94,918	34,909	1,30,638
3	Gadchiroli	1,68,604	6,906	44	39,078	....	2,32,161	47,761	2,75,337	13,834	21	14,958
4	Brahmapuri	1,12,374	12,960	2,616	33,664	76	1,61,758	54,317	2,20,974	12,987	....	13,310
5	Sironcha	58,325	222	1	33,834	2	86,280	9,617	96,703	1,757	....	6,839
6	Rajura	3,435	7,161	49,535	24,221	....	84,969	32,086	1,20,077	37,625	36,531	75,342
	District Total	4,43,427	99,135	1,07,311	3,30,450	876	9,94,336	2,31,625	12,55,071	2,06,168	75,107	2,90,178
	Rajura Division	3,425	7,161	49,535	24,221	....	84,969	32,086	1,20,077	37,625	36,531	75,342
	District Total—excluding Rajura.	4,39,992	91,974	57,776	3,06,229	876	9,09,367	1,99,939	11,34,994	1,68,543	38,576	2,14,846

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AURANGABAD DIVISION

CHAPTER IX.

AURANGABAD DISTRICT.

Part I—Background.

1. *Location.*—Aurangabad district has an area of 6,318 sq. miles and a total population of 11,79,404 and a density of 187 persons per sq. mile. It is the largest district of the Marathwada region of the former Hyderabad State, now merged with the new Bombay State. This district is situated in the extreme north-west of Marathwada and is bounded on the north by East Khandesh, on the west by Nasik, on the south by Ahmednagar and on the east by Parbhani and Buldana districts.

2. *Administrative Set-up.*—The district is divided into 11 talukas and 1 mahal as shown below :—

Taluka.	Villages.
1. Aurangabad	233
2. Paithan	184
3. Gangapur	225
4. Vaijapur	160
5. Kannad	194
6. Khuldabad	78
7. Jalna	213
8. Ambad	217
9. Jafrabad	99
10. Bhokardan	165
11. Sillod	166
12. Soegaon	67
	2,001

Statistical data about each taluka is given in Statements A to D attached.

3. *Topography.*—This district has two hill ranges stretching from west to east. The Satmala range enters this district at its north-western corner and runs along the northern border up to the Ajanta caves, beyond which, it forms the Balaghat plateau in Buldhana district. The Daulatabad hill range, which branches off from the Satmala range, runs through the centre of the district eastwards, acting as a watershed between the two fertile river valleys of the Girja and the Purna on the north and the Dudhaha on the south. The river Godavari flows along the southern boundary of this district, giving the advantage of its very fertile black soil basin, all along her course to the southern talukas of the district. The valleys of the Godavari, the Shivganga, the Dudhaha, the Girja and the Purna are low lying fertile plains. There are important and noted hill projections like Daulatabad, Ajanta, Chowka and Josna. Most of the hilly area is like a terrace with black soil capable of growing good cotton and wheat crops. The hilly areas have an elevation ranging from 2,000' to 3,000' above sea level, whereas the Godavari valley has 1,600' to 1,400' elevation. The other rivers which are tributaries of the Godavari have also formed independent fertile valleys which have elevations of 2,000' to 1,500'.

4. *Rainfall.*—The normal rainfall of the district as seen from the figures for the last ten years for which data is available is 28·51". The normal rainfall in the south-western talukas of Vaijapur, Gangapur and Paithan is somewhat lower

than in the other talukas. During 1950 and 1952 the precipitation was as low as 16" in Gangapur, 6·4" in Jafrabad and 11·8" in Vaijapur. The figures of maximum and minimum rainfall during the last ten years are shown below :—

Taluka.	Rainfall			
	Maximum.	Year.	Minimum.	Year.
Kannad	42·5	1958	14·3	1952
Sillod	50·7	1958	24·2	1951
Khuldabad	63·8	1958	21·8	1951
Jalna	42·5	1955	16·8	1952
Gangapur	35·6	1955	16·7	1950
Paithan	69·2	1950	48·3	1958
Bhokardan	40·7	1958	12·8	1952
Jafrabad	43·6	1958	6·4	1950
Vaijapur	29·1	1949	11·8	1952
Soegaon	46·66	1956	20·7	1957
Ambad	33·3	1953	20·8	1952
Aurangabad	38·1	1955	20·2	1951

A statement "B" showing the annual rainfall recorded during the last ten years is attached.

5. *Land Utilization.*—The total geographical area of the district is 40,20,828 acres of which 30,98,598 acres is under crops. The rest of the area is classified under different heads as below :—

(1) Barren and unfit for cultivation	...	58,018 acres.
(2) Cultivable waste	...	46,662 acres.
(3) Fallows	...	3,01,125 acres.
(4) Pasture land	...	2,01,916 acres.
(5) Forests	...	2,02,799 acres.

6. *Soils.*—The soils of Aurangabad district are black cotton soils. They are derived from the trap-volcanic rock and are, therefore, rich in plant food, supporting good kharif and rabi crops like cotton, jowar, bajri, wheat, groundnut and pulses. The soils vary greatly in texture and depth and can be classified as light, medium, and heavy, formed as a result of the location. The soils along the river banks are deep black transported and very fertile, while those on hill tops or along hill slopes are medium to light, with less depth. In short, the tract to the south of the Godavari valley rail road is deep black, while that on the north consists of light and medium soils.

7. *Crop Pattern.*—The main crops of the district are Jowar, Bajri, Wheat, Tur, Gram, Groundnut and Cotton. The gross cropped area of district is 32,09,761 acres and the net cropped area is 30,98,598 acres which is 77·6 per cent. of the total area. According to the figures of 1956-57, the area under fodder crops was 1,92,632 acres, under oilseeds was 4,34,260 acres and under cotton was 5,54,467 acres. The western talukas have large areas under rabi crops, while the eastern talukas mainly depend on kharif crops.

The position of land holdings in the district is as under :—

Size of land holdings.	No. of ownership holdings in the group (converted dry acres).	Total area of the holdings.
Up to 5 acres	27,671	78,351
5-15	59,237	5,72,337
15-25	32,672	6,34,294
25-100	41,671	17,70,928
100-500	2,216	3,40,711
Over 500	54	47,613
	1,63,621	24,44,234

It will be seen from the above figures that the size of the holdings in this area is fairly large.

8. *Irrigation.*—The area under irrigation is roughly 92,000 acres, which is less than 3 per cent. of the cultivated area. There are no canals or large irrigation tanks and hence wells are the main source of irrigation.

9. *Forests.*—The area under forests is over two lakh acres. It is quite extensive in Aurangabad, Kannad and Soegaon talukas, as compared to other talukas of Paithan, Vaijapur, Khuldabad, Sillod and Bhokardan. It is, however, negligible in Gangapur and Jafraabad talukas. These forests have thorny scrubs mostly with barren and rocky patches scattered all over.

10. *Transport and Communications*—The total mileage of metal roads of the district is 524. These roads connect Aurangabad town with Paithan, Ajantha, Gangapur, Sahagad, Kannad, Vaijapur and Jalna. Further, there are roads connecting Jalna and Waghrol, Bhokerdan, Siron and Ambad and Sagal in the south. There is however no national highway in the district. There is a meter gauge railway known as the Godavari Valley Railway, which passes through the middle of the district from east to west. The total length of the track is 107 miles with 15 railway stations in the District.

11. *Industries.*—Industrially this is one of the most backward district. The lack of cheap power and proper means of communications are the handicaps in the way of industrial development. The district has however one textile mill at Aurangabad providing work to over a thousand persons. There are about 92 small scale factories in the district engaged in different spheres which provide employment to over 5,400 workers.

The ancient artistic crafts like Himroo, Mushroo and Kamkhab at Aurangabad are well known. Silk brocade and jari thread work of Paithan is also an important art. The co-operatives in the industrial field are also getting popular and there are as many as 20 such organisations, concerning weaving, oil crushing, leather works, metal works, soap manufacture and hand-made paper.

12. *Live stock.*—The total bovine population of the district is 8,36,841 as per 1956 census. This population has increased by 7.11 per cent. over that of 1951. Poultry development is also being accepted by the rural people on a greater scale.

Part II—Determination of Precarious and other Scarcity Areas.

According to the history of scarcity the following areas of the district were affected during the last 30 years :—

Taluka.	Circle.	No. of villages in the circle.	Year in which affected			No. of times.	
			1936-37	1937-38	1938-39 1952-53 1953-54.		
1	2	3	4			5	
1. Vaijapur	Veergaon	48	33	11	45	Thrice.	
	Vaijapur	56	..	8	53	Do.	
	Shiver	56	..	..	39	Once.
			160		103		
2. Gangapur	Gangapur	58	..	12	37	41	Thrice.
	Hareul	58	..	24	21	22	Do.
	Turkubad	55	..	19	13	..	Twice.
	Waluj	53	..	8	Once.
		184		71			
3. Paithan	Paithan	49	28	..	Once.
	Lohegaon	44	21	21	Twice.
	Bidkingson	49	33	..	Once.
	Adool	42	15	..	Do.
		184		97			
4. Aurangabad	Pimpri	..	..	..	5	Once.
	Karmad	..	..	..	6	Do.
5. Bhokerdan	Bhokerdan	..	..	..	33	Once.
	Sipora	..	..	..	17	Do.
	Dhavorda	..	..	..	10	Do.
6. Kannad	Kannad	..	..	..	12	Once.
7. Soegaon	Soegaon	..	..	..	37	Once.
	Benoli	..	..	..	30	Do.
8. Sillod	Sillod	..	..	..	34	Once.

The above statement would show that only Vaijapur and Veergaon circles of Vaijapur taluka and Gangapur and Harsul circles of Gangapur taluka were affected about three times during the last 30 years. Lohegaon circle of Paithan taluka was affected twice. The other talukas were affected only once.

Vaijapur Taluka.—There are 160 villages in the taluka. It is situated to the east of Kopergaon taluka of Ahmednagar district and Yeola taluka of Nasik district. The river Godavari forms the southern boundary of the taluka. The rich black cotton soil is restricted to Godavari river valley, while the rest of the area has light to medium black soils. The main crops of the taluka are :—

Crops	Acres
Bajri	81,370
Groundnut	27,589
Cotton	21,248
Rabi Jowar	81,495
Wheat	39,614

The percentage of area under kharif crops is higher as compared to the area under rabi crops. The area irrigated is 9,839 acres which is mostly under wells.

The average rainfall of the taluka is 22.5". During the following years the rainfall was much below the average and ill-distributed during the crop growth periods of last 30 years :—

Year	June	July	August	September	October	Total
1935	5.17	1.40	4.31	2.30	1.92	15.10
1936	2.60	1.25	1.58	2.38	....	7.81
1942	5.51	3.22	1.10	1.58	....	11.41
1946	2.52	1.42	2.12	5.25	....	11.31
1952	2.60	5.06	0.91	3.16	0.05	11.78
1957	4.32	1.30	4.74	3.87	0.46	14.69

The years 1936, 1942, 1946 and 1952 had recorded less than 50 per cent. of the average rainfall and as such great hardships must have been experienced by the people.

According to the previous history of scarcity, 33 villages of Veergaon circle were affected in 1936-37, 11 villages were affected in 1948-49 and 45 villages in 1952-53. According to the annewari data for the last 10 years, 46 villages in the circle had 2 to 3½ full suspensions. In respect of Vaijapur circle, according to the previous history of scarcity, 8 villages were affected in 1937-38, 3 villages in 1938-39 and 9 villages in 1952-53. According to the annewari data for the last 10 years, 9 villages in this circle had 2½ to 3 full suspensions. It appears that most of these villages in both the circles are scattered over the taluka. During 1937-38 and 1938-39, the cause of failure of crops in the affected villages was storm or excessive rains. Thus, the incidence of failure of crops on account of shortage of rains was not high. In view of the above facts, the Committee considers that the whole taluka may be considered as scarcity area of Class "C".

Gangapur Taluka.—There are 225 villages in this taluka. It is situated to the east of the Vaijapur taluka, the river Godavari forming its southern boundary. This part of Aurangabad district is considered to be a better area so far as the soils are concerned. They are mostly deep black, favourable for rabi crops and cotton. The area under rabi crops is about 53 per cent. of the total cropped area. The main crops are :—

Crops	Acres
Rabi Jowar	1,03,635
Bajri	32,856
Cotton	37,100
Wheat	28,552
Groundnut	12,675

The area irrigated in the taluka is 8,689 acres (3.1 per cent). This area is mostly under wells. The average rainfall worked out on the basis of the 1931-57 period is 29.96". It was less than 50 per cent. of the average during the following years :—

Year.	June.	July.	August.	September.	October.	Total.
1941	4.23	1.31	3.16	5.30	0.90	14.90
1945	1.95	3.99	4.70	3.69	0.34	14.67
1946	3.90	2.24	3.31	3.25	0.19	12.89

From the above figures it can be inferred that the crops must have suffered partially during the above years. On account of late rains during 1946 and 1949 after October the annual total had almost reached the normal. According to the history of scarcity, the different circles which were affected are as shown below :—

Circle.	Year during which			Total No. of times.
	No. of villages affected	1937-38.	1938-39.		1952-53.
Gangapur	12	37	41	3
Harsul	24	21	22	3
Turkubad	19	13	....	2
Valuj	8	....	....	1

Thus, quite a large number of villages of Gangapur and Harsul circles were affected three times. Most of the affected villages were on the western side of the taluka. During the years 1937-38 and 1938-39 when all the four circles were partially affected, it appears that the damage to the crops was caused by excessive rains, the total rainfall was 29.28", and 39.47" (the September rainfall alone being more than 12.69" during the two years). According to the annewari data in 1952-53, 20 villages had annewari between 4 and 6 an, and 26 villages had 4 an. crop in this taluka. The information does not agree with the total number shown to have been affected according to past history of scarcity reported in reply to the questionnaire. This was a part of old Nizam State and the procedure of annewari and land revenue suspension was different from that followed in Bombay. The difference may be due to this reason. According to the annewari data during the last ten years, the outturn of crops was about 6 an, in all the villages of the taluka, except in 1952-53. Looking to the incidence of scarcity caused by shortage of rainfall, this taluka would not be regarded as a precarious area. However, looking to the fact that the rainfall during certain period was much below the average and as the data regarding annewari and suspension for the area is not very reliable, the whole taluka may be regarded as scarcity area of Class "C".

Paithan Taluka.—This taluka has 184 villages. According to the previous history, 28 villages of Paithan, 21 villages of Lohegaon, 33 villages of Bidkin and 13 villages of Adool were affected in 1938-39 and 21 villages of Lohegaon were affected in 1952-53. Thus only Lohegaon circle was affected twice during the last 30 years. The average rainfall worked out on the basis of 1931-57 period is 27.02". The rainfall was about 50 per cent. of the average during the following years :—

Year.	June.	July.	August.	September.	October.	Total.
1932	4.43	0.65	4.88	3.18	2.26	15.30
1936	5.30	1.45	1.86	4.53	0.12	13.26
1946	7.24	2.20	1.83	3.15	0.24	14.66
1950	1.80	2.32	1.34	8.76	....	13.22
1952	1.66	4.53	1.11	5.51	0.46	13.27

From the above figures it may be inferred that the farmers must have experienced partial failures of crops. The major area is under kharif crops which comes to 59 per cent. The main crops are as under :—

Crops.	Acres.
Bajri	31,988
Cotton	69,163
Groundnut	11,325
Rabi Jowar	1,01,251
Wheat	14,908

The area irrigated is 9,313 acres mainly under wells. The scrutiny of the village-wise annewari data of the last ten years has, however, shown that 33 villages had $\frac{1}{2}$ full suspension only, while the rest of the villages were free from scarcity. In spite of lower rainfall during the years 1950 and 1952 the crop condition was good, which reflects about the good retentivity of soils and good distribution of kharif and rabi crops. In view of these facts the whole taluka is considered free from scarcity.

As regards Kannad, Soegaon, Aurangabad, Bhokardan and Sillod talukas, the previous history given in paragraph 1 shows that very few villages were affected, and that too only once, except in Bhokardan and Soegaon where large number of villages are shown to have been affected in 1952-53. The year of 1952-53 was a scarcity year in most parts of Gujarat and Deccan area. Barring this year, there was no year in which these talukas had suffered. The average rainfall worked out on the basis of last 10 years' figures of these talukas are—

Aurangabad	28.4"
Kannad	29.5"
Sillod	37.5"
Bhokardan	29.0"
Soegaon	35.0" (worked out only on 4 years' figures).

Except in 1952, the total rainfall was more or less normal in all the talukas, with the exception of Bhokardan where it was 13.8" in 1950. Most of the villages in these talukas had no land revenue suspension during the last 30 years. Only 75 villages out of 165 had one suspension in Bhokardan and 174 villages in Aurangabad had half suspension. In view of all these factors, these talukas may be regarded as free from scarcity.

To sum up, Vaijapur and Gangapur Talukas of Aurangabad District would be regarded as scarcity areas of Class "C" and the rest of the talukas as areas free from scarcity.

STATEMENT " A "

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross area.		Population.	Density per sq. mile.	Gross cropped area.	Net cropped area and Area under forests.		
			In sq. mile.	In acres.				its % to total area.	Area under forests.	
1	2	3	4	5	6	7	8	9	10	
1	Aurangabad ..	233	621.84	3,97,977	1,65,080	265	2,79,326	2,53,326	63.6	57,309
2	Paithan ..	184	551.40	3,52,897	96,921	176	3,05,726	3,01,619	85.4	5,394
3	Gangapur ..	225	505.20	3,23,327	85,724	169	2,87,319	2,75,501	85.2	531
4	Vaijapur ..	160	615.45	3,93,894	1,04,825	168	3,40,928	3,38,307	85.8	8,145
5	Kannad ..	194	600.79	3,84,364	95,598	159	2,56,890	2,44,584	63.6	74,881
6	Khuldabad ..	78	200.12	1,28,115	33,247	166	82,906	76,878	60.0	4,983
7	Sillod ..	166	585.78	3,74,902	1,07,758	184	2,97,747	2,85,689	76.2	7,028
8	Bhokardan ..	165	504.74	3,23,034	86,333	171	2,59,179	2,51,755	77.9	9,241
9	Jafrabad ..	99	280.87	1,79,754	45,685	162	1,41,347	1,37,294	76.3	472
10	Jalna ..	213	739.82	4,73,358	1,81,316	258	3,97,227	3,87,712	80.0	2,208
11	Ambad ..	217	866.55	5,54,591	1,54,216	178	4,81,551	4,75,318	85.7	1,823
12	Soegaon ..	67	210.34	1,34,815	22,641	108	79,615	79,615	59.1	30,787
District Total ..		2001	6282.50	40,20,828	11,79,404	188	32,09,761	30,98,598	77.6	2,02,799

STATEMENT " B "

Rainfall Data.

(Fig. in Inches.)

Taluka.	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	Average for last 10 years.	Average for last 27 years.
Aurangabad .. N. A.	25.61	20.2	23.0	34.5	30.5	38.1	26.5	26.2	31.6	28.4	...	...
*Paithan ..	41.71	15.03	27.77	13.27	23.37	30.10	33.84	26.77	32.77	48.4	..	27.02
*Gangapur ..	27.35	22.92	31.19	16.20	24.65	23.68	34.50	22.30	21.75	24.1	..	29.96
*Vaijapur ..	28.70	22.29	25.44	12.33	20.53	22.87	23.80	25.82	15.04	19.5	..	22.52
Kannad ..	21.4	21.8	25.4	14.2	30.4	35.9	42.8	37.8	22.3	42.9	29.5	..
Khuldabad ..	..	31.6	21.8	28.1	42.3	41.1	40.5	43.5	35.4	53.5	38.6	..
Sillod ..	48.8	48.5	27.1	27.1	31.3	34.4	40.7	36.7	80.3	50.7	37.5	..
Bhokardan ..	..	13.8	31.2	12.8	30.1	29.4	33.0	32.8	28.4	40.7	28.0	..
Jafrabad ..	..	6.4	29.8	21.8	35.4	28.7	39.1	37.1	32.3	43.6	30.4	..
Jalna ..	32.8	27.6	20.6	16.8	34.9	24.6	42.1	29.3	29.3	29.3	27.8	..
Ambad ..	32.9	23.9	28.7	20.8	33.3	30.0	31.4	28.9	30.2	30.6	29.0	..
Soegaon ..	..	..	..	..	..	..	35.3	46.6	20.70	37.78	35.0	..

(*Monthwise rainfall figures given in Statement B-I.)

STATEMENT "B-I".

Monthwise Rainfall Data.

Taluka Paithan.

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September	October.	Total.	Total annual.	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	0.80	9.96	3.69	1.54	16.10	5.60	37.69	39.44	1.75	
1932	.....	4.43	0.65	4.88	3.18	2.26	15.30	16.31	1.01
1933	2.46	3.09	2.71	7.27	10.57	0.50	27.50	29.70	2.20	
1934	.....	6.34	9.56	2.74	4.22	6.17	29.03	29.03	.....
1935	.....	11.97	1.66	11.68	2.88	1.60	29.79	30.59	0.80
1936	0.20	5.30	1.45	1.86	4.53	0.12	13.46	18.69	5.23	
1937	0.26	4.42	4.58	2.90	8.25	0.37	20.78	21.07	0.29	
1938	3.85	10.77	7.15	1.47	7.52	0.95	31.71	31.71	.....
1939	0.50	10.76	1.61	2.76	0.45	3.22	19.30	19.30	.....
1940	0.43	8.20	1.85	5.53	2.11	2.47	20.59	22.57	1.98	
1941	0.90	2.74	0.53	5.50	7.60	.....	17.27	19.40	2.13
1942	0.50	7.56	4.73	10.79	5.51	0.21	29.30	34.32	6.02	
1943	4.58	6.50	1.75	2.65	8.28	7.19	30.75	30.95	.....
1944	.....	10.43	6.76	1.95	5.60	2.83	27.57	28.99	1.42
1945	1.47	2.50	2.41	5.58	3.59	0.45	16.36	17.12	0.76	
1946	0.88	7.24	2.20	1.83	3.15	0.24	15.54	25.65	10.11	
1947	0.80	3.24	6.12	8.10	10.77	0.35	29.38	30.48	1.10	
1948	.....	7.28	4.37	2.73	4.36	1.23	19.97	27.24	7.27
1949	1.13	6.42	3.19	4.69	12.71	13.57	41.71	41.71	.....
1950	0.81	1.80	2.32	1.84	8.76	.....	15.03	16.21	1.18
1951	.....	3.57	9.27	4.64	2.96	7.33	27.77	29.35	1.58
1952	.....	1.66	4.53	1.11	5.51	0.46	13.27	13.59	0.32
1953	.....	8.00	5.98	2.75	2.44	4.20	23.37	23.37	.....
1954	.....	6.90	8.30	7.50	7.40	.....	30.10	30.56	0.46
1955	0.27	6.90	6.21	8.95	7.31	4.20	33.84	35.14	1.30	
1956	3.17	4.42	7.69	4.10	7.40	0.30	26.77	30.42	3.65	
1957	1.99	5.88	11.40	9.93	3.32	0.55	32.77	36.75	0.98	
							Average =	27.02		

STATEMENT "B-I"
 Monthly Rainfall Data.
 Taluka Gangapur.

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total	Total annual.	November to April.
1	2	3	4	5	6	7	8	9	10
1931	....	10.00	6.36	2.60	19.41	3.30	42.44	43.36	0.92
1932	....	8.79	7.47	10.86	3.79	2.59	33.60	33.82	0.32
1933	1.78	2.39	6.10	8.13	14.21	....	32.01	34.15	1.54
1934	....	6.44	10.60	4.38	2.18	2.18	25.78	25.80	0.02
1935	....	11.96	1.11	6.41	4.49	5.14	32.11	32.11	....
1936	....	5.80	41.10	0.85	1.65	....	49.40	58.80	9.40
1937	....	3.30	6.52	0.99	12.67	5.80	29.28	30.59	1.31
1938	4.81	11.92	5.41	2.79	13.89	0.65	39.47	40.14	0.67
1939	....	15.12	3.76	4.13	2.48	3.82	29.31	29.51	0.20
1940	0.97	9.10	2.62	5.60	3.68	0.92	22.89	25.42	2.53
1941	0.21	4.23	1.31	3.16	5.30	0.90	15.11	15.37	0.26
1942	0.16	13.87	4.95	10.79	5.51	0.21	35.49	40.87	5.38
1943	3.43	10.28	1.74	5.42	5.55	5.36	31.78	31.78	....
1944	....	8.56	6.97	4.30	3.28	2.70	25.75	26.45	0.70
1945	0.33	1.95	3.99	4.70	3.69	0.34	15.00	15.56	0.56
1946	0.68	3.90	2.24	3.31	3.25	0.19	13.57	22.00	8.98
1947	....	0.30	4.33	9.79	8.58	1.25	24.25	26.43	2.18
1948	....	9.52	6.51	2.56	6.19	3.51	28.29	39.85	9.59
1949	0.39	1.86	1.82	4.82	11.57	6.89	27.35	27.35	....
1950	0.42	3.44	5.80	1.03	10.93	1.30	22.92	23.33	0.41
1951	0.07	7.49	11.23	2.77	2.40	7.29	31.19	33.08	1.89
1952	0.59	4.58	6.03	1.69	3.31	....	16.20	16.39	0.19
1953	....	6.06	5.45	2.77	7.55	2.82	24.65	24.98	0.33
1954	0.06	6.65	3.71	4.29	8.97	....	23.68	24.78	1.10
1955	....	4.88	5.67	7.78	10.07	6.10	34.50	35.61	1.11
1956	3.64	2.77	4.18	3.44	6.38	1.91	22.30	25.86	3.56
1957	0.68	6.40	2.26	6.27	5.23	0.91	21.75	23.18	1.43

Average = 29.96

STATEMENT "B-I".

Monthwise Rainfall Data.

Taluka Vajjapur.

(Fig. in inches).

Year.	May.	June.	July.	August.	September.	October.	Total	Total	November	
1	2	3	4	5	6	7	8	annual.	to April.	
								9	10	
1931	3.81	7.10	2.42	10.68	4.13	28.14	30.42	2.28
1932	2.96	4.46	7.58	6.92	2.15	24.07	25.87	1.80
1933	..	7.14	5.30	3.13	3.94	9.45	0.66	29.62	29.77	0.15
1934	5.34	8.87	5.60	1.88	1.71	23.40	23.40	....
1935	5.17	1.40	4.31	2.30	1.92	15.10	15.10	....
1936	..	0.49	2.60	1.25	1.58	2.38	....	8.28	16.48	8.20
1937	3.64	5.31	1.22	8.14	3.39	21.70	22.74	1.04
1938	..	1.77	3.41	5.18	5.40	5.99	2.20	23.95	24.91	0.96
1939	10.21	1.77	5.58	0.67	1.32	19.55	19.65	0.10
1940	..	0.11	7.19	1.12	2.71	3.51	2.54	17.18	17.37	2.19
1941	..	0.80	4.23	2.31	4.21	4.83	....	16.38	18.00	1.62
1942	5.51	3.22	1.10	1.58	....	11.41	13.51	2.10
1943	..	1.59	7.11	1.88	6.30	4.80	7.55	29.23	29.37	0.14
1944	8.54	6.71	3.18	2.78	2.10	23.31	24.28	0.97
1945	4.33	1.61	8.10	3.83	0.18	18.05	20.45	2.40
1946	..	0.30	2.52	1.42	2.12	5.25	....	11.61	23.17	11.55
1947	1.94	3.80	4.33	10.50	0.94	21.51	22.19	0.68
1948	7.29	2.90	1.99	4.22	0.10	16.50	22.27	5.77
1949	..	1.99	6.86	1.76	4.37	10.22	3.50	28.70	28.90	0.10
1950	..	0.99	....	5.18	3.27	12.66	0.25	22.29	25.50	3.21
1951	..	1.14	5.27	11.40	1.82	1.38	4.43	25.44	26.10	0.66
1952	..	0.55	2.60	5.06	0.91	3.16	0.05	12.33	12.33	....
1953	7.12	5.95	3.15	3.76	0.65	20.53	20.61	0.08
1954	2.84	3.74	2.61	13.68	....	22.87	24.05	1.18
1955	..	0.51	4.03	1.98	7.45	5.87	3.96	23.80	24.41	0.61
1956	..	0.89	2.58	6.49	5.43	4.73	5.70	25.82	31.22	5.40
1957	..	0.85	4.32	1.30	4.74	3.87	0.46	15.04	16.21	1.17

STATEMENT "C",

Irrigation Data.

Serial No.	Taluka.	Area under irrigation by				Total irrigated area and its percentage to cropped areas	7	
		Canals.	Tanks.	Wells	Other sources.			
1	2	3	4	5	6			
1	Aurangabad	..	....	....	15,489	....	15,489	6.1
2	Peithan	..	....	....	9,313	....	9,313	3.8
3	Gangapur	..	....	....	8,689	....	8,689	3.1
4	Vaijapur	..	....	....	9,838	....	9,838	2.9
5	Kannad	..	....	....	4,809	....	4,809	1.9
6	Khuldabad	..	....	....	5,412	....	5,412	7.0
7	Sillod	..	....	....	6,759	....	6,759	2.3
8	Bhokardan	..	....	....	3,443	....	3,443	1.3
9	Jaffrabad	..	....	....	1,976	....	1,976	1.4
10	Jalna	..	....	....	16,229	....	16,229	4.2
11	Ambad	..	....	....	9,431	....	9,431	1.9
12	Soegaon	..	....	....	589	....	589	0.7
District Total		..	....	....	91,977	....	91,977	2.9

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total cereals.	Total pulses.	Total food crops and its percentage to gross cropped area.	Groundnut & its percentage.	Cotton & its percentage	Total non-food crops			
				Under Kharif.	Under Rabi.										
1	2	3	4	5	6	7	8	9	10	11	12	13			
1	Aurangabad ..	714	15,865	5,810	60,663	67,241	1,51,837	58,599	2,13,073	76.2	9,035	3.2	38,169	13.6	66,258
2	Paithan ..	289	14,908	147	1,01,251	31,988	1,51,692	42,754	1,95,375	63.9	11,325	3.7	69,153	22.6	1,10,351
3	Gangapur ..	181	28,552	32	1,03,635	32,856	1,66,217	38,972	2,07,279	72.0	12,075	4.4	37,100	12.8	80,049
4	Vaijapur ..	332	39,614	59	81,495	81,370	2,04,243	54,061	2,62,834	77.1	27,589	8.9	21,248	6.2	78,094
5	Kannad ..	1,835	20,034	22,871	30,326	58,096	1,34,538	57,772	1,95,694	76.1	11,914	4.6	25,506	9.9	61,166
6	Khuldabad ..	894	13,082	1,645	14,599	13,623	44,011	19,389	65,358	78.8	2,409	2.9	2,707	3.3	17,548
7	Shilod ..	3,352	15,956	58,181	4,407	48,459	1,31,549	81,046	2,15,474	72.5	17,436	5.8	47,218	15.8	82,273
8	Bhokardan ..	1,458	9,486	55,188	1,269	30,423	99,740	65,961	1,67,209	64.5	20,313	7.8	53,079	20.9	91,979
9	Jaffrabad ..	323	6,097	31,743	924	7,418	47,511	34,584	82,711	58.5	11,892	8.4	30,441	21.5	58,696
10	Jalna ..	1,342	18,381	37,931	79,853	24,653	1,65,954	81,162	2,49,403	62.7	29,258	7.3	73,520	18.5	1,47,824
11	Ambad ..	720	22,646	3,601	1,55,337	16,471	2,01,714	89,908	2,92,753	60.8	24,438	5.7	1,07,190	2.2	1,88,798
12	Soegaon ..	761	236	12,561	21	9,489	23,335	21,837	45,469	57.1	9,373	11.7	23,142	29.0	34,146
District Total ..		12,201	2,04,851	2,29,775	6,33,880	4,22,087	15,22,341	6,46,045	21,92,632	68.5	1,87,666	5.8	5,28,638	16.5	10,17,112

CHAPTER X.

BHIR DISTRICT.

Part I—Background.

1. *Location.*—Bhir District is situated in the centre of Marathwada region and is bounded by Ahmednagar district on the west, Aurangabad and Parbhani on the north and north-east, and Osmanabad on the south and south-east. The district has an area of 4,278 sq. miles and population of 8,26,046 distributed over 1,029 villages and 8 towns.

2. *Administrative Set-up.*—For administrative purposes, the district is divided into the following talukas :—

Name of Taluka.	No. of villages.	Area in sq. miles.	Population.	Density.
1. Bhir	168	582.40	1,30,380	223
2. Patoda	91	610.08	83,536	164
3. Ashti	120	581.12	86,222	148
4. Georai	154	618.24	18,794	184
5. Mominabad	169	336.72	1,65,174	300
6. Manjalegaon	162	594.56	1,17,020	198
7. Kaij	165	691.34	1,29,920	141

Statistical data about each taluka is given in Statements A to D attached.

3. *Physical features.*—The left branch of the Balaghat range, extending beyond Ahmednagar enters the western talukas of Ashti and Patoda and stretches further east through the centre of the district serving as a water shed between the river valleys of Sindphana on the north and Manjra on the south. As a result of these hill ranges, distinct low-lying plains along the rivers of Godawari, Sindphana, Menra and Sina have been formed. The river Godavari flows along the northern boundary and the river Manjra originating from Patoda taluka flows along the southern boundary. The Sindphana river rising from the hills in Patoda taluka flows along the boundaries of Georai and Bhir talukas and joins the Godavari after crossing Manjalegaon taluka. Besides these rivers, a large number of seasonal streams flow from the central ridge to the rivers.

The district is thus divided into two distinct regions, namely, the upghat plateaus and the low-lying plains or the river valleys. The upghat plateaus are 1500' to 2500' above sea level, while the plains have an elevation of 1000' to 1500'. The high-lying plateau which is also quite rugged and stony is deprived of major irrigation facility on account of its altitude. It is only the plains of river valleys which are likely to get the benefit of major and medium irrigation projects.

4. *Soils.*—The entire district is situated in the trap region and its soils are mostly fertile black cotton soils especially in the talukas of Bhir, Georai, Manjalegaon and Kaij. In the remaining talukas, however the soils are light, shallow and stony, interspersed by strips of black soils. A large variation in soils is observed, although all of them are derived from the volcanic trap rocks. Ashti taluka has fairly good soils on the south. The soils in northern and eastern parts are however undulating and stony, Patoda taluka is almost hilly except in the north, where better soils are met with along the Sindphana river. The central parts of Georai and Bhir talukas are hilly with elevated plateaus which have light to medium black soils. The soils in the river valleys are, however, very fertile deep black, capable of growing a variety of crops. The talukas of Manjalegaon and Kaij have fairly large low-lying plains, growing crops like cotton and wheat. The high-lying plateau, which occupies the southern part of Manjalegaon and northern part of Kaij, has poorer soils with intermittent black soil patches. About 50 per cent. of the cultivated land is medium black, 30 per cent. deep black and the rest light.

5. *Rainfall.*—The average rainfall of the district is 30". The average rainfall of the different talukas has been shown in Statement 'B' attached, while detailed monthwise figures in respect of Ashti, Bhir, Patoda, Georai and Manjalegaon are also given in Statement 'B'.

The eastern and southern areas of the district are favoured by higher precipitation than the western and northern talukas. Because of the inferior soils and uneven distribution of rain, specially the western talukas of Ashti and Patoda, have often suffered.

6. *Land Utilization.*—Of the total area of 25,37,400 acres, the total barren and uncultivable area is 22,900 acres. The area of land used for non-agricultural purposes is 70,300 acres, cultivable waste is 45,000 acres, area under forest is 28,204 acres and area used as permanent pasture and grazing is 1,20,700 acres. The net cropped area is 19,55,333 acres and current fallow is 2,34,700 acres. The current fallow is almost 9 per cent. of the gross area which is abnormal.

Of the forest area of 28,204 acres in the whole District, Patoda taluka accounts for 13,698. The rest of the area is in Bhir, Ashti and Kaij.

7. *Crops.*—The main crops of the district are—

Crops.	Acres.
Bajri	2,54,416
Kharif (Jowar)	1,92,313
Groundnut and other oilseeds	3,82,576
Cotton	1,70,211
Wheat	1,04,192
Rabi (Jowar)	4,87,163

Talukawise areas and crops statistics are given in Statement "D".

8. *Irrigation.*—The total area under irrigation is 62,158 acres which works out to 3 per cent. of the cropped area of the district. Patoda has, however, better irrigation facilities as compared to other talukas. It has about 8.3 per cent. of the cropped area under irrigation. Before the First Plan period, there was only one tank in the district known as Rooti tank which provided irrigation facilities to about 4,600 acres. The small irrigation schemes undertaken in this district are as under—

Name of the Scheme.	Taluka in which situated.	Area likely to be irrigated
Pargaon	Patoda	150 acres.
Jarud	Bhir	350 acres.
Adgaon	Manjalegaon	450 acres.

Besides this, Bandsura project in Bhir taluka which was completed in 1954 has under its command 9,000 acres.

The other schemes taken up during the Plan period are as under. They are still under execution—

Name of the Scheme.	Taluka in which situated	Area likely to be irrigated.
Kada	...	2,500 acres when completed.
War	Mominābād	5,200 acres when completed.
Mekhri	...	2,500 acres.
Ruper	Patoda	12,000 acres.
		3,000 acres.
Dombri	...	1,500 acres.

9. *Communications.*—The means of communications in this district are poor as no railway except one meter gauge passes through the Mominabad taluka. There are however some roads joining the district head-quarters of Bhir with Mominabad, Kaij, Kallam, Patoda, Ashti and Manjalegaon.

10. *Industries and Fisheries.*—There are no important industries in the district. The total number of registered factories is 21, out of which 9 are reporting factories which employ 496 persons.

11. *Live-stock.*—The total number of cattle in the district is 7,43,076 out of which bullocks are 2,22,466, cows 3,47,016, buffaloes 80,351.

12. *Minerals.*—No minerals of importance are found in the district.

13. *Livelihood.*—Of the total population of 8,26,046, those depending on agriculture alone are 6,65,049. The number of agricultural labourers and their dependents is 2,85,238. Those employed in non-agricultural production are 53,729, in commerce are 47,651, in transport 3,855 and finally those employed in services and miscellaneous occupations are 76,371.

Part II—Determination of Precarious and other Scarcity Areas.

According to the history of famine and scarcity of Bhir District, the talukas of Ashti, Patoda and Bhir have been frequently affected in the past. The years during which these areas were affected were 1899, 1900, 1905 to 1908, 1909 to 1912, 1918-19 and 1921-22. Between 1925-26 to 1957-58, the following talukas or their parts were affected as shown below :—

Name of the taluka	Circle.	Year in which affected.	Total.
Bhir	Bhir, Pimpalner ..	1938—37, 38—39, 46—47, 50—51, 52—53 ..	5
Ashti	Ashti, Pundi, Dadegaon.	1925—26, 37—38, 41—42, 46—47, 53—54 ..	5
Patoda	Patoda, Padali ..	1936—37, 50—51, 52—53, 53—54 ..	4
Georai	Georai ..	1925—26 ..	1
	Khalegaon ..	1925—26, 52—53 ..	2
	Ghategaon ..	1925—26, 52—53 ..	2
Manjalegaon ..	Manjalegaon ..	1936—37, 53—54 ..	2
	Talkhed ..	1936—37, 53—54 ..	2

It would appear from the above statement that out of the seven talukas of the district, 2 talukas, namely, Kaij and Mominabad were not affected by scarcity in the last 30 years. Annawari and land revenue suspension data also shows that these talukas were not affected during this period. The rainfall data for Kaij which is available for only six years for the period from 1950-51 to 1957-58, has shown that the minimum rainfall in this taluka was 15·36" during the year 1950-51. Except this year, the total rainfall was above 23" during the rest of the years. The rainfall data for Mominabad is available for last 30 years from which it appears that the precipitation was less than 20" only during the following years :—

1937-38	...	...	...	19·52"
1941-42	...	...	...	17·40"
1950-51	...	...	...	19·91"

During the remaining years the total rainfall was generally above 30". These two talukas, therefore, appear to be areas of moderate but assured rainfall and may be regarded as free from scarcity. As regards the remaining talukas, a detailed study of the factors such as soil, rainfall and annawari data is made below—

Ashti.—There are 120 villages in this taluka. This taluka is surrounded on three sides by Ahmednagar district, which has large tracts affected by chronic scarcity. The soils of this taluka are reported to be red, with interspersed strips of medium black on the high-lying hill tops and slopes, which are vulnerable

to erosion. The land in the west and the south of the taluka is more or less flat. About 40 per cent. of the land is light murmad and stony, while 50 per cent. is medium black and the rest along the bank of Sina river is deep and very fertile. The main crops grown in this taluka are—

Crops.				Acres.
Rabi Jowar	...	...	...	1,35,880
Bajri	...	...	...	46,451
Pulses	...	...	...	34,736
Cotton	...	...	...	5,623
Wheat	...	...	...	11,888

The percentage of area under rabi crops is about 58.5. The area under irrigation mostly under wells is 10,271 acres i.e. 3.7 per cent. of the net cropped area. The average rainfall for the period 1931 to 1957 is 23.56". The rainfall data has shown that after 1931 it was less than 15" in the year 1946-47 only when the rainfall was 14.46". According to the annewari data the lean years were 1934-35, 1936-37, 1939-40, 1941-42, 1946-47, 1952-53. There appears some difference between these years and the years reported in previous history as shown in the beginning. The rainfall during these years was as under :—

1934-35	...	...	...	28.46"
1936-37	...	...	...	16.52"
1939-40	...	...	...	16.87"
1941-42	...	...	...	24.10"
1946-47	...	...	...	14.46"
1952-53	...	...	...	16.88"

The early and late rains during 1934 and 1941 were favourable, while during 1952 the late rains were favourable.

Considering the years of half suspensions as well as full suspensions and the annewari data, all the villages in this taluka appear to have suffered three full suspensions. It may, therefore, be regarded as other scarcity area of Class C.

Bhir.—In this taluka only two circles viz. Bhir and Pimpalner are reported to have suffered from scarcity in the past. The taluka has 160 villages out of which 83 villages of Bhir and Pimpalner situated in the north of the taluka are reported to have been affected during the years 1936-37, 1939-40, 1941-42, 1946-47, 1950-51, 1952-53, and 1953-54. The soil of this area is reported to be inferior in central parts. The main crops of this taluka are—

Crops.				Acres.
Bajri	...	...	...	42,302
Kharif Jowar	...	...	...	16,244
Rabi Jowar	...	...	...	17,868
Wheat	...	...	...	12,623
Oil seeds	...	...	...	51,197
Cotton	...	...	...	13,009

The taluka is mainly under kharif crops. The area under irrigation is 12,303 acres which is mainly under wells. The area under tank is 3,192 acres. Though the average rainfall over a period of last 27 years has been 27.90" the rainfall was deficient or unevenly distributed during the following years :—

Year.	June.	July.	August.	September.	October.	Total.
1936	1.68	1.97	1.69	4.95	...	10.27
1937	0.51	3.72	0.45	3.11	3.53	11.32
1939	3.68	2.67	3.88	1.96	0.60	12.79
1941	1.17	1.63	1.31	10.12	1.00	15.23
1945	1.66	1.74	1.28	7.82	0.93	17.43
1946	2.44	2.91	1.38	10.80	0.11	17.64
1952	3.27	4.47	3.67	4.71	2.31	18.43

According to the annavari data the years in which these two circles were affected were, 1936-37, 1939-40, 1941-42, 1946-47, 1950-51 and 1952-53. During 1941-42 and 1950-51 all the villages had annavari between 4 and 6 annas, while during 1936-37, 1939-40 and 1946-47, 16 villages had 4 annas and less; and the rest had between 4 and 6 annas. Therefore according to annavari data 16 villages in this circle had 5 full suspensions and the remaining 25 villages had 3½ full suspensions. In Pimpalner 35 villages had 5 full suspensions while the remaining 7 villages had 3 full suspensions. The land revenue suspension data for this taluka is not available in the form desired and has not therefore been taken into consideration. Considering the incidence of scarcity and in view of the fact that the taluka has poor soils, the Bhir and Pimpalner circles of the taluka may be regarded as scarcity area of Class 'C'.

Patoda.—There are in all 91 villages in the Taluka. It is divided in two circles, namely, Patoda and Padali, having 45 villages and 46 villages respectively.

The soils of the Patoda are similar to those of Ashti taluka, i.e. red masad and undulating. The major area is under kharif crops. The main crops are—

Crops.				Acrea.
Bajri	...	...	...	66,284
Rabi Jowar	...	...	...	56,384
Oil seeds	...	...	...	49,508
Cotton	...	...	...	9,078
Wheat	...	...	...	8,806

The annual average rainfall of Patoda for the last 30 years is 29.95". It was less than 15" during the following year :—

1939	14.51"
------	-----	-----	-----	--------

It was less than 20" but over 15" during the following years—

1941-42	...	...	...	18.55"
1945-46	...	...	...	19.92"

During the rest of the years it was above 20". Detailed monthwise rainfall data for the period prior to 1950 is not available for this taluka. However, looking to the annual total rainfall for the period 1925 to 1958 it appears that except in 3 or 4 years when it was between 14" to 19" the rainfall was normal i.e. over 20". The examination of the rainfall data for the period 1950-57 shows that the distribution of the rainfall was generally fair both during the Kharif and Rabi period. The area under irrigation is 19,607 acres (which is 8.3 per cent. of the total cropped area). The area under tanks is 2,502 acres and under wells 17,105 acres. There are no major or medium irrigation schemes in this area. Both the circles of the taluka are reported to have been affected during the years 1936-37, 1939-40, 1941-42, 1946-47, 1950-51, 1952-53 and 1953-54. In Patoda circle 25 villages had 5 full suspensions according to annavari data and 20 villages had 2½ full suspensions. In Padali, 20 villages had 5½ full suspensions, while 26 villages had 4½ full suspensions.

The rainfall conditions are more favourable than in Ashti but looking to the annavari data, it appears that majority of the villages were affected above five times and others a little less frequently during the last 30 years. The taluka should therefore be regarded as scarcity area of Class 'C'.

Georai.—This taluka has 154 villages in three revenue circles, viz. Georai, Khalegaon and Jalegaon with 53, 52 and 49 villages respectively. This taluka lies on the northern border of the district and adjoins Aurangabad district. One spur of Balaghat range also cuts through this taluka from west to east, separating the two river valleys of Sindphana and Godavari. Naturally the soils in the central portion occupied by the hilly plateau are poorer and shallower. However, there are few patches of good soil also further north. The main crops of the taluka are—

Crops.				Acrea.
Rabi Jowar	...	...	...	1,20,414
Bajri	...	...	...	34,819
Wheat	...	...	...	12,881
Oil seeds	...	...	...	55,963
Cotton	...	...	...	57,355

This taluka has considerable area under money crops like Cotton and Groundnut. The area under irrigation is very small viz. 6,304 acres which is all under wells. The average rainfall for the last 12 years is 31.81". During the period 1945 to 1957 for which data is available, it appears that it was never less than 20". The minimum in 1952 was 20.03". The distribution during different months in that year was—

June	...	...	...	2.58
July	...	...	...	4.07
August	...	...	...	4.95
September	...	...	...	4.32
October	...	...	...	3.86

According to the annavari data all the three circles were affected during 1936-37, 1939-40, 1940-41 and 1952-53. During 1936-37, 1941-42 and 1952-53 annavari was between 4 and 6 annas. In all therefore the majority of the villages had suffered not more than 2 full suspensions. A few villages had however suffered 2½ suspensions according to annavari data. Looking to the annavari data and the other factors specially rainfall, this taluka may not be regarded as a scarcity area.

Manjlegaon.—This taluka has 162 villages. The river Sindphana passes through this taluka. The soils of both the sides of this river are black, cotton soils of very good quality. The soils in other parts of this taluka are also reported to be quite good. The main crops grown in this taluka are—

Crops.				Acres.
Kharif Jowar	...	...	...	86,348
Bajri	...	...	...	22,925
Oil seeds	...	...	...	59,720
Cotton	...	...	...	55,324
Rabi Jowar	...	...	...	26,225
Wheat	...	...	...	9,407

The major area is under kharif crops. The area under irrigation is only, 4,857 acres, mostly under wells. There are no major or medium irrigation schemes in this area. The above figures would show that there is a considerable area under money crops like cotton and oil seeds. The average rainfall is 29.98". The scrutiny of the rainfall data has shown that it was deficient during the following years:—

Year.	June.	July.	August.	September.	October.	Total.
1936	2.84	2.01	2.83	2.76	....	10.44
1941	0.20	2.08	3.26	6.00	0.01	12.45
1952	3.07	2.02	3.36	4.89	1.16	14.50

From the above figures it may be inferred that the crop condition during the above three seasons must have been bad and annavari must have been less than 6 annas. During all the remaining years the total rainfall was above 22". According to the annavari data two revenue circles of this taluka viz., Manjlegaon and Talkhed with 45 villages and 40 villages respectively were affected during the years 1936-37, 1939-40, 1941-42, 1946-47 and 1952-53. During 1939-40 and 1946-47 the annavari was between 4 and 6 annas in all the villages. During 1936-37 and during 1952-53 the annavari was 4 annas. Therefore in all there were 3½ full suspensions in all the villages of these two circles during the period of 30 years. Considering these factors, this taluka would be regarded as a scarcity affected area of Class 'C'.

To sum up, Ashti, Patoda and Manjlegaon talukas and Bhir and Pimplener circles of Bhir taluka should be treated as scarcity areas of Class 'C'.

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross area in		Population.	Density per sq. mile.	Gross cropped area.	Net cropped area and its percentage to total area.		Area under forest.
			Sq. miles.	Aces.						
1	2	3	4	5	6	7	8	9	10	
1	Bhir	.. 168	582.40	3,74,654	1,30,380	223	2,48,977	2,32,514	62.0	1,953
2	Patoda	.. 91	510.08	3,24,431	83,536	164	2,34,849	2,12,679	65.5	13,696
3	Ashti	.. 120	581.12	3,63,386	86,222	148	2,73,033	2,45,668	67.4	8,101
4	Georai	.. 154	618.24	3,83,327	13,794	184	3,25,042	3,20,474	83.6	..
5	Mominabad	.. 169	836.72	4,56,793	1,65,174	260	2,92,762	2,91,503	63.7	..
6	Manjlegaon	.. 162	594.56	3,97,572	1,17,020	193	3,41,793	3,36,703	87.1	..
7	Kajj	.. 165	691.84	4,61,078	1,29,920	144	3,26,914	3,16,392	68.6	4,452
District Total..		1,029	4216.96	27,41,241	8,26,046	196	20,43,370	19,55,933	71.2	28,204

STATEMENT "B".

Rainfall Data.

(Fig. in Inches.)

Taluka.	1949.	1950.	1951.	1952.	1953.	1954.	1955.	1956.	1957.	1958.	Average for last 10 years.	Average for last 27 years.
Kajj	.. N.A.	19.3	21.3	30.0	38.1	40.0	37.3	37.3	23.5	24.5	30.1	..
Mominabad	.. 24.37	18.65	19.73	15.30	23.58	26.50	32.92	39.44	28.32	28.80	25.76	..
Ashti*	.. 34.05	21.14	24.32	16.88	20.67	34.34	31.84	34.87	24.66	..	..	23.56
Bhir*	.. 41.20	29.36	25.75	19.78	24.54	33.16	41.76	31.44	24.94	..	..	27.90
Patoda*	.. N.A.	24.20	17.04	23.98	26.55	35.90	46.52	40.82	24.60	..	29.95	..
Georai*	.. 32.32	30.79	28.22	20.33	24.39	28.76	40.17	40.30	31.93	..	..	31.61
Manjlegaon*	.. 21.89	29.14	34.00	14.78	31.85	31.20	34.74	34.38	41.07	..	..	31.55

*Monthwise rainfall figures given in Statement B-I.

STATEMENT "B-I".

Monthwise Rainfall Data.

Taluka Ashti.

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	November to April.	Total Annu l.	
1.	2.	3	4	5	6	7	8	9	10	
1931	2.90	3.90	1.18	2.63	4.72	15.33	4.14	19.47
1932	..	0.20	2.79	6.54	8.41	3.32	7.12	23.38	2.75	31.13
1933	..	2.51	5.92	2.59	5.57	12.36	4.47	33.42	2.15	35.57
1934	..	0.28	1.73	8.76	5.83	8.84	0.55	25.99	2.47	28.46
1935	10.94	1.21	5.85	2.61	3.23	23.91	0.36	24.27
1936	..	0.67	1.80	0.81	3.18	5.60	0.20	12.26	4.26	16.52
1937	2.02	4.06	1.20	8.47	5.49	21.22	2.92	24.14
1938	..	3.37	4.93	5.94	4.18	8.49	1.64	26.56	1.27	27.83
1939	4.62	4.91	0.92	0.80	0.64	11.79	5.08	16.87
1940	5.00	3.77	5.81	4.90	2.12	21.60	1.69	23.29
1941	0.90	4.80	1.75	13.89	1.91	22.45	1.65	24.10
1942	..	1.04	14.15	3.73	5.54	1.68	0.93	27.07	1.33	28.40
1943	..	1.38	6.62	3.39	6.44	10.86	4.66	33.65	0.07	33.72
1944	..	0.85	2.39	5.81	0.35	6.12	4.52	20.14	0.60	20.74
1945	..	N. A.								
1946	..	N. A.	2.50	1.83	..	7.89	..	12.22	2.24	14.46
1947	3.20	5.50	13.20	2.14	1.20	25.34	1.62	26.95
1948	8.49	4.21	3.17	1.39	0.08	17.34	13.82	31.16
1949	..	1.28	7.48	3.89	1.70	12.90	6.88	34.05	..	34.05
1950	..	0.87	3.34	2.87	3.21	9.34	1.29	21.02	0.12	21.14
1951	4.24	7.43	1.12	4.16	6.21	23.16	1.16	24.32
1952	3.53	1.98	0.67	6.87	3.23	16.28	0.60	16.88
1953	2.45	3.90	0.46	9.16	4.70	20.67	..	20.67
1954	..	0.36	10.70	9.16	2.18	8.21	0.64	31.88	2.46	34.34
1955	..	0.25	6.61	5.14	6.25	8.50	5.09	31.84	..	31.84
1956	..	4.94	3.39	9.12	2.67	7.79	3.59	31.50	3.37	34.87
1957	..	2.08	3.24	5.12	4.02	8.82	5.17	23.45	1.21	24.66

Average = 23.56

STATEMENT "B-I".

Monthwise Rainfall Data.

Taluka Bhir.

(Fig. in Inches).

Year.	May.	June.	July.	August.	September.	October.	Total.	November to April.	Total Annual.		
1	2	3	4	5	6	7	8	9	10		
1931		
1932	..	0.29	5.55	9.46	8.73	4.03	3.62	31.68	4.30 35.98		
1933	..	2.06	3.75	4.07	3.20	16.11	1.38	30.57	3.25 33.82		
1934	..	0.18	3.64	7.22	5.85	11.10	0.90	28.84	5.25 34.10		
1935	7.51	7.30	10.46	6.74	4.38	36.39	0.80 37.19		
1936	..	2.58	1.66	1.97	1.69	4.95	..	12.85	8.15 21.00		
1937	..	0.65	0.51	3.72	0.45	3.11	3.53	11.37	2.17 13.54		
1938	..	0.75	4.70	14.06	2.31	12.70	5.65	41.17	1.42 42.59		
1939	3.68	2.67	3.88	1.96	0.60	12.79	0.54 13.33		
1940	..	1.42	4.88	4.45	7.88	7.23	2.18	27.19	1.32 28.51		
1941	1.17	1.63	1.31	10.12	1.00	15.23	0.75 15.98		
1942	8.03	4.86	8.37	3.04	0.36	25.16	4.26 29.42		
1943	..	1.73	6.63	2.24	0.22	11.06	7.70	29.75	0.59 30.34		
1944	..	0.27	3.43	4.26	5.25	5.18	6.35	24.74	3.30 28.04		
1945	1.66	1.74	1.28	7.32	0.93	17.35	0.25 17.60		
1946	..	1.10	2.44	2.91	1.38	10.30	0.11	18.74	2.06 20.80		
1947	..	0.20	1.81	5.67	9.43	9.35	0.59	27.05	8.27 35.32		
1948	5.52	5.24	6.21	11.14	0.55	28.66	7.01 35.67		
1949	..	1.92	5.67	7.18	2.05	22.68	0.66	40.16	1.04 41.20		
1950	..	0.30	2.96	3.28	5.70	15.06	1.61	28.86	0.50 29.36		
1951	..	0.10	5.38	12.18	2.43	1.78	2.97	24.84	0.91 25.75		
1952	..	0.57	3.27	4.47	3.57	4.71	2.31	18.90	0.88 19.78		
1953	3.01	8.66	12.18	7.53	1.70	23.08	1.46 24.54		
1954	..	0.40	5.25	11.56	2.47	9.89	2.40	32.07	1.09 33.16		
1955	9.34	7.06	12.43	5.36	6.39	40.60	1.16 41.76		
1956	..	3.80	1.73	8.31	3.12	6.72	2.58	26.26	5.18 31.44		
1957	..	1.14	4.62	6.38	6.33	2.22	3.30	23.99	0.95 24.94		
Total ..									745.37		
Minimum	..	41.17									
Maximum	..	11.37									
Range	..	29.82									
For 1932 to 1952.											
As the data for 1931 is not available, it is omitted.											
Average = 27.90											

STATEMENT "B-I".

Monthwise Rainfall Data.

Taluka Patoda.

(Fig. in Inches).

Year.	May.	June.	July.	August.	September.	October.	Total.	November to April.	Total Annual.	
1	2	3	4	5	6	7	8	9	10.	
1931 to 1949 —Data not available.										
1950	..	0.56	1.32	2.27	6.81	10.25	2.93	24.14	0.66	24.20
1951	..	0.44	1.13	8.05	2.03	3.24	1.48	16.97	0.07	17.04
1952	..	2.11	3.24	5.90	1.41	8.65	1.60	22.91	1.07	23.98
1953	4.75	7.90	1.00	7.75	3.70	25.10	1.45	26.55
1954	..	0.40	5.85	10.90	1.95	12.85	1.00	32.95	2.95	35.90
1955	7.13	6.44	19.15	6.33	6.75	45.80	0.72	46.52
1956	..	7.40	1.61	9.29	5.17	10.16	2.45	36.08	4.74	40.82
1957	..	1.30	4.89	5.59	4.86	2.95	3.66	23.25	1.35	24.60
Total ..									239.61	

Average = 29.95

STATEMENT "B-I".

Monthwise Rainfall Data.

Taluka Georai.

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	November to April.	Total Annual.	
1	2	3	4	5	6	7	8	9	10	
1931 to 1944 —Data not available.										
1945	4.90	6.46	3.89	14.10	1.55	30.90	..	30.90
1946	..	0.15	4.55	4.15	2.45	11.00	..	22.30	5.18	27.48
1947	7.84	4.60	10.32	14.63	..	37.39	2.48	39.87
1948	4.90	6.92	6.38	7.44	1.50	27.14	10.94	38.08
1949	4.52	6.44	3.65	14.61	3.10	32.32	..	32.32
1950	..	2.75	1.68	3.73	4.19	15.35	8.04	30.79	..	30.79
1951	7.98	11.95	2.32	2.86	2.96	28.07	0.15	28.22
1952	..	2.25	2.58	4.07	4.95	4.32	3.86	20.03	0.30	20.33
1953	4.50	9.46	2.52	6.78	0.80	24.06	0.33	24.39
1954	..	1.06	6.08	10.06	3.82	7.33	..	28.35	0.41	28.76
1955	10.95	5.43	13.69	4.53	5.57	40.17	..	40.17
1956	..	2.61	6.23	12.29	3.20	10.15	0.91	35.39	4.91	40.30
1957	..	0.92	3.27	11.35	10.85	3.03	1.70	31.12	0.81	31.93
Total ..									413.54	

Average = 31.81

STATEMENT "B-I".

Monthwise Rainfall Data.

Taluka Manjlegaon.

(Fig. in Inches)

Year.	May.	June.	July.	Augut.	September.	October.	Total.	November to April.	Total Annual.	
1	2	3	4	5	6	7	8	9	10	
1931	6.45	6.09	3.48	8.77	6.78	31.57	1.98	33.55
1932	..	2.25	3.39	11.83	3.38	4.24	2.39	27.38	2.31	29.69
1933	..	0.25	7.37	4.66	5.53	9.71	1.41	28.93	1.31	30.24
1934	3.77	9.22	14.04	11.59	2.24	40.86	3.36	44.22
1935	..	1.10	9.89	10.06	5.77	7.98	3.49	38.27	1.88	40.15
1936	..	1.94	2.84	2.01	2.83	2.76	..	12.38	5.02	17.40
1937	..	0.53	2.75	9.04	0.86	4.15	1.85	19.18	2.00	21.18
1938	..	2.46	10.85	8.35	6.84	8.59	4.79	41.88	1.15	43.03
1939	7.52	5.34	5.82	4.27	1.49	24.44	..	24.44
1940	2.64	5.42	6.93	8.58	3.40	26.97	..	26.97
1941	..	0.37	0.20	2.08	3.26	6.00	0.91	12.82	1.72	14.54
1942	8.67	10.69	4.77	5.47	0.71	30.31	5.20	35.51
1943	3.97	3.89	3.73	6.55	14.16	32.30	1.62	33.92
1944	4.01	10.27	4.83	6.02	2.32	27.45	0.83	28.28
1945	3.83	7.47	6.56	3.50	1.39	22.75	1.70	24.45
1946	..	1.58	5.18	6.54	5.40	2.61	..	21.31	1.03	22.34
1947	3.66	3.54	9.32	11.94	..	28.36	..	28.36
1948	6.70	3.88	4.20	5.79	0.30	20.97	6.54	27.51
1949	..	1.95	4.33	1.85	12.12	2.14	..	21.89	..	21.89
1950	0.48	3.38	8.86	14.61	1.81	29.14	0.25	29.39
1951	..	0.24	11.07	14.83	2.25	3.26	2.95	34.60	1.67	36.27
1952	..	0.28	3.07	2.02	3.38	4.89	1.16	14.78	0.36	15.14
1953	7.47	5.38	3.54	12.80	2.86	31.85	..	31.85
1954	4.98	10.41	4.14	11.03	0.64	31.20	0.25	31.45
1955	6.80	4.05	12.57	7.25	4.07	34.74	0.90	35.64
1956	..	2.63	2.28	16.09	5.10	6.85	1.43	34.38	2.94	37.32
1957	..	1.37	3.34	15.85	14.31	5.11	1.69	41.67	3.20	44.87
Average	..	31.55								
Minimum	..	41.67		Minimum	14.78					
Range	..	26.89								

For 1931 to 1957.

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under irrigation by.				Total area under irrigation and its percentage to cropped area.
		Canals.	Tanks.	Wells.	Other sources.	
1	2	3	4	5	6	7
1	Bhir .. ..	.....	3,192	9,111	....	12,303 4.9
2	Patoda .. ..	.....	2,502	17,195	....	19,697 8.3
3	Ashti .. ..	.....	.....	10,271	....	10,271 3.7
4	Georai .. ..	.....	.....	6,304	....	6,304 1.9
5	Mominabad .. ..	.....	.....	2,324	....	2,324 0.8
6	Manjlegaon .. ..	.....	.....	4,857	....	4,857 1.4
7	Kaij .. ..	.....	.....	6,472	....	6,472 2.0
District Total .. ..		.....	5,694	56,444	....	62,138 3.0

STATEMENT "D"

Irrigation Data.

Serial No.	Taluka.	Rice.	Wheat.	Jowar under.		Bajri.	Total cereals.	Total pulses.	Total food crops and its percentage.		Oilseeds and its percentage.	Cotton and its percentage.		Total non-food crops.	
				Khari.	Rabi.										
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
1	Bhr	2,739	12,623	16,244	17,868	43,302	1,42,608	34,541	1,84,554	74.1	51,197	20.5	13,009	5.2	64,423
2	Patoda	1,387	8,806	1,304	56,884	66,284	1,41,414	13,698	1,76,207	75.2	49,508	21.0	9,078	3.8	58,642
3	Aashti	679	11,881	18	1,35,880	46,451	1,97,554	32,476	2,32,612	85.2	34,736	12.7	5,623	2.0	40,421
4	Georai	1,845	12,881	259	1,20,414	34,819	1,74,488	34,676	2,11,663	65.1	55,963	17.2	57,355	17.6	1,13,379
5	Mominabad	4,393	26,026	10,008	1,06,636	6,022	1,51,611	42,536	2,00,795	68.5	64,847	22.1	26,938	9.2	91,967
6	Manjalegaon	1,587	9,407	86,348	26,225	22,925	1,53,229	70,835	2,26,677	66.2	59,720	17.2	55,324	16.2	1,15,116
7	Kaj	3,827	23,568	78,132	23,756	34,613	1,67,113	54,372	2,31,369	70.7	66,605	20.3	2,384	0.9	95,545
District Total		16,437	1,04,192	1,92,313	4,87,163	2,54,416	11,28,017	2,83,134	14,63,877	71.1	3,82,576	18.7	1,70,211	8.3	5,79,493

CHAPTER XI.

OSMANABAD DISTRICT.

Part I—Background.

1. *Location.*—The area under the present Osmanabad District was formerly a part of Hyderabad State. It merged with present Bombay State in 1956. The three talukas of Udgir, Nilanga and Ahmedpur which belonged to Bidar District came to Osmanabad district at the time of the reorganisation of the States. The district is bounded on the north by Bhir and Parbhani districts; on the east by Nanded district and Andhra State; on the south by Sholapur district and Mysore and Andhra States and on the west by Sholapur district and Jamkhed taluka of Ahmednagar district. The district is divided into 11 talukas as shown below :—

Serial No.	Taluka.	No. of villages.	Area in sq. miles.	Population.	Density per sq. mile.
1	Osmanabad	107	445	1,15,654	2,260
2	Tuljapur	108	605	1,03,390	171
3	Paranda	112	406	71,529	176
4	Bhoom	80	339	59,619	176
5	Kallam	108	474	1,05,869	223
6	Latur	116	420	1,19,021	286
7	Awsa	119	468	98,087	209
8	Omerga	114	576	1,34,283	233
9	Udgir	175	623	1,35,908	215
10	Nilanga	193	536	1,32,835	247
11	Ahmedpur	197	609	1,33,846	219

Further detailed information about each taluka is given in Statements A to D attached. The total area of the district is 5,510 sq. miles and the total population is 12,10,041.

2. *Topography.*—A major portion of the district is laterite plateau with an average height of 2000' above sea level. From the north-west runs a range of hills dividing the district into two parts forming a plateau to the north-east and east and low lands to the west, south-west and south. The talukas of Awsa, Kallam and parts of Tuljapur, Osmanabad and Nilanga are situated on the plateau. The remaining talukas are situated in the lower region. The general slope of the plateau is from north-west to south-east. The land rises from Tuljapur and Osmanabad talukas. Thereafter it begins to descend gradually towards the north-east terminating in the valley of the river Manjra. The only important rivers in the district are the Manjra and the Tarana which flow from west to east.

3. *Rainfall.*—The average annual rainfall of the district is 31". The taluka-wise figures of the rainfall are given in statements B and E1.

4. *Land Utilisation.*—Of the 34,66,234 acres of gross area in the district, barren and uncultivated land is 29,300 acres, cultivable waste is 38,800 acres, permanent pastures and grazing land is 88,100 acres. The area under forest is 3,133 acres and under the net cropped area is 26,34,789 acres. There is a very large area under current fallow which accounts for 1,92,300 acres and under other fallow there is an area of 4,01,800 acres.

5. *Soils.*—The soils in Ahmedpur, Udgir and Nilanga, which is a kharif zone, are light and medium. They are retentive of moisture and are suitable for kharif crops. The main crops of this zone are kharif jowar, groundnut and cotton. The middle zone consisting of Osmanabad, Latur, Awsa and Kallam also grow kharif crops, but the western sides of the talukas grow rabi crops. These zones contain heavy deep black cotton soil to shallow light soils. The main rabi crops in this

zone are jowar, wheat and gram, and kharif crops are jowar, groundnut, tur, mung and cotton. The western side of the district comprising the talukas of Tuljapur, Omerga, Paranda and Bhoom which contain heavy soils, is capable of retaining moisture. This classification is a broad one, as in every taluka more than one type of soils are found.

6. *Cropping Pattern.*—The main crops of the district are as under:—

Crops.	Acre.
Kharif	4,73,906
Rabi Jowar	4,96,736
Wheat	1,34,255
Oil seeds	5,39,299
Cotton	1,73,281

A large area is under money crops like cotton and groundnut.

7. *Irrigation.*—The total area under irrigation is 82,028 acres, mostly under wells. The sub-soils water in the larger areas of the district is very deep and therefore, it is difficult to sink wells in this area. The following minor irrigation works are also included in the 2nd Five-Year Plan.

Name of the Scheme.	Taluka.	Area proposed to be irrigated.
Sonari	Paranda	500
Omerga	Omerga	300
Devnagarwadi	Ahmedpur	500

The following schemes were taken up under the Five-Year Plan:—

Khasapur Project.—The area likely to be irrigated by this project in Paranda is 8,850 acres. The scheme has been completed already.

Tirna Project.—It is likely to irrigate 4,000 acres in Osmanabad Taluka.

Chandani Project.—The project is located in Paranda taluka. It is not known what area and in which taluka it is going to benefit.

Bori and Harni.—These projects are expected to irrigate 10,300 acres.

Under the Khasapur project an area of 8,850 acres was expected to be irrigated. This scheme has been completed and irrigation has started. The other schemes are:—

Name of the Scheme.	Acre.
Tirna Project	4,000
Chandani Project	7,500
Bori and Harni Projects	10,300

The last two are still under investigation.

8. *Transport and Communications.*—There is one narrow gauge railway line from Barsi to Latur and the other one a branch-line from Parbhani to Hyderabad passing through the eastern part of the district serving the Ahmedpur and Udgir talukas.

The important roads of the district are (1) Bhir-Naldurg road passing through Bhoom, Osmanabad and Naldurg Talukas, (2) Sholapur-Hyderabad passing through Naldurg and Omerga talukas, (3) Barsi-Ahmedpur running parallel to the Barsi-Latur Railway line, (4) from Latur to joint Hyderabad road. Thus all the important places of the district are connected by pukka roads.

9. *Industries.*—There are no industries of importance in this district, except ginning and pressing factories and oil-crushing mills at Latur and Udgir. The handloom industry is the major cottage industry in this district. There are in all 1349 registered looms. Besides hand-loom industry, there are cottage industries in leather making, dyeing, bamboo work, etc. which in all employ about 1,100 persons.

10. *Livestock*.—The total number of cattle in the district is 7,97,053 out of which bullocks are 2,57,575, cows are 1,95,601 and the total buffaloes are 1,46,203. There is a cattle breeding farm at Udgir. The work of breeding of Deoni cattle and dairy farming is undertaken at this farm. The breeding bulls are supplied to the public from this farm.

11. *Minerals*.—There are no minerals so far found in any area of the district.

12. *Livelihood*.—Out of the total population of 12,10,041, the number of persons depending on agriculture is 9,81,759. Those engaged in production other than cultivation are 8,054, those employed in commerce are 47,651, in transport 5,763 and these in service and other miscellaneous occupations are 94,328.

Part II—Determination of Precarious and other Scarcity Areas.

The following areas in the district are shown to have been affected in the past :—

Taluka.	Circle.	Year.	No. of times
Omerga	Omerga	1936-37, 52-53, 56-57.	3
Paranda	Anala	1937-38, 42-43, 46-47, 53-54.	4
Ahmedpur	Sirut.	1930-31, 39-40, 50-51.	3
Bhoom	Wasi	1951-52, 52-53, 53-54, 54-55	4

Thus, out of 11 talukas only Paranda, Bhoom, Omerga and Ahmedpur are shown to have been affected about 3 to 4 times during the last 30 years. The remaining seven talukas were either not affected or rarely affected in the past years. A brief reference may be made to the incidence of scarcity in these talukas. During 1950-51 some villages in the talukas of Osmanabad, Latur, Tuljapur, Kallam and Latur were affected, but no data regarding suspension of land revenue or annavari for this year is available to enable determination of the extent of damage in these areas. Relief works are said to have been started in all these talukas.

In 1952-53, Osmanabad and Kallam talukas appear to have been partially affected but the number of villages was 11 and 25 only. In 1955-56, the scarcity was experienced because of excessive rains. Most of the villages in Udgir and Nilanga talukas and a few villages in Osmanabad, Latur, Awsa and Kallam talukas were affected on account of excessive rains. The rainfall figures of 1950-51, 1952-53 and 1955-56 in respect of the above talukas are given below. In 1955-56 the rainfall was much more than average and the failure of crops may, therefore, be attributed to this cause. For other years also, the rainfall was not very low, except in the case of Kallam in which it was 18.37" during 1952-53. On the whole, therefore, the talukas other than Paranda, Bhoom, Omerga and Ahmedpur may be considered as free from scarcity.

Name of taluka.	Average rainfall	Rainfall for the period.		
		1951-52	1952-53	1955-56
1.	2.	3.	4.	5.
Osmanabad	37.74	28.57	24.64	51.16
Tuljapur	37.32	27.83	....	53.14
Kallam	27.08	22.23	18.37	41.66
Latur	36.56	28.33	....	56.31
Awsa	34.00	29.19	....	43.92
Udgir	42.70	38.95	....	59.59
Nilanga	34.53	39.96	....	46.92
Ahmedpur	36.25	27.16	34.67	52.53

The conditions in the talukas of Paranda, Bhoom, Omerga and Ahmedpur are examined in detail in the following paragraphs.

Paranda.—There are 112 villages in the taluka divided into three revenue circles, viz. Paranda, Anala and Javla-Nizamuddin. Part of this taluka contain black cotton soil and the remaining part has medium light soil which is undulating and liable to erosion. The density of population in the taluka is 176 which is on the lower side and the land holdings are larger. The main crops are rabi and account for about 65 per cent. of the area under cultivation as shown below :—

The principal crops of the district are—

Crops.	Acres.
Rabi Jowar	1,23,927
Wheat	7,298
Bajri	3,320
Cotton	6,860
Oil seeds	35,235

The area irrigated is 11,082 acres i.e. 4.1 per cent. Out of this an area of 3,605 acres is under canals and the remaining under wells.

The average rainfall for the period 1931-57 is 25.83". The rainfall was inadequate during the following years :—

Year.	Total for monsoon period.	Annual Total.	September-October.	November-December.
1936	9.82	15.80	6.18	5.98
1937	13.08	14.37	5.18	1.29

The monthwise rainfall figures for the period 1944-50 are not available. The area being rabi, late rains are useful and the rainfall data would show that the late rains were quite good in almost all the years.

Out of three revenue circles, two circles, viz. Paranda and Anala circles were affected in 1937-38, 1942-43, 1946-47 and 1953-54. Out of 112 villages of Paranda taluka 31 villages were affected in 1936-37 and 2 villages in 1937-38. Scarcity was declared in these villages, and full suspension of land revenue was given. This taluka was again affected in 1950-51 along with other talukas on account of drought. In 1952-53 some of the villages of this taluka were affected and land revenue suspension was given. In all therefore, 1936-37, 1950-51 and 1952-53 were years of scarcity in this taluka. However, no annavari data is available. The annavari data based on remarks made by the Circle Inspector in the Pahanj Patrak for the period 1950-51 to 1957-58 has been supplied by the Mamlatdar from which it appears that 28 villages of Paranda and Anala circles were affected during the period 1950-51 to 1957-58 as shown below :—

No. of villages.	No. of times entitled to full suspension.
1	4½
2	4
1	3½
5	3
7	2
6	2½
4	1½
2	1

The annavari data is not complete and shows that some villages have been affected off and on particularly in the years 1936-37, 1937-38, 1950-51 and 1952-53. The soil is very poor. As most of these villages were in Paranda and Anala Circles of this taluka, these circles may be regarded as scarcity area of Class C.

Bhoom.—There are 80 villages in this taluka, divided into two revenue circles—Bhoom and Vasi. There are 43 villages in Bhoom circle and 37 in Vasi. According to the previous history, only Vasi circle has been affected in the past. Black cotton soil predominates in the taluka favouring the cultivation of rabi crops. There are, however, patches of reddish and sandy soils. Bhoom was ex-Jagir area and, therefore, reliable data regarding annavari and land revenue suspension is not available. The main crops of the taluka are—

Crop.	Acres.
Rabi Jowar	41,830
Wheat	9,143
Kharif Jowar	12,930
Oil seeds	32,922

The area irrigated is 10,496 acres (7.2 per cent.) which is mostly under wells.

The monthwise rainfall data is available for the period 1948-49 to 1958-59 only. The average rainfall of the taluka worked out on that basis is 30.56". This data shows that the minimum was during 1958 which was 21.82". During the remaining years, it was mostly about 25", the maximum being 40.47" during 1949. According to the data available, this taluka was affected in 1950-51 on account of drought, and some of the villages had scarcity conditions during 1952-53. In 1955-56, a few villages were also affected on account of excessive rains. According to the annavari data supplied now, only 11 villages in Vasi circle were affected in 1952-53, and they were given full suspension. In 1955-56, all the villages of Vasi circle were affected and given half suspension. In 1950-51, scarcity conditions are reported to have prevailed in this taluka but no land revenue suspension was given. The above data would show that Vasi circle has been affected three times. However, there is no complete and reliable data for period prior to 1948 as it was a Jagir area. It adjoins Paranda taluka, which adjoins Karmala taluka of Sholapur district, which is considered as a precarious area. Bhoom taluka may therefore be treated as other scarcity area of Class C.

Omerga.—This taluka has 113 villages divided into three circles, viz. Omerga, Murum and Lohara with 40, 39 and 34 villages respectively. Out of these three circles, only Omerga is reported to have been affected in the past according to the history of scarcity of this taluka. The soil is mostly black cotton but in certain parts it is medium and light type of soil. The percentage area under kharif crops is 60. The main crops are—

Crops.	Acres.
Kharif Jowar	34,201
Oil seeds	75,026
Bajri	16,107
Rabi Jowar	75,700
Wheat	17,508

The area irrigated is 12,974 acres (3.9 per cent.) which is mostly under wells. The average rainfall is 91". The monthwise rainfall data is available in respect of this taluka for the period 1950 to 1958. This data shows that the total rainfall was less during the years 1950 and 1951 with annual totals of 12.93" and 16.30". In the remaining years from 1951 to 1958 it was above 25". Figures of total annual rainfall for this taluka for the period 1944-45 to this date are available, from which it appears that in addition to 1950-51 rainfall which was 16.30" it was below 20" during 1944 when it was 18.57" and during 1949-50 when it was 13.73". This taluka was affected in 1950-51, but no annavari was done and no land revenue suspension was given. According to the data made available, this taluka was not affected like other talukas during 1952-53 and 1955-56. There is no data, therefore, to show that this taluka was affected any time except during 1950-51. During 1950-51 the total rainfall was 12.93" and the monthwise distribution was as under—

June.	July.	August.	September.	October.	November.
1.00	2.30	1.50	2.20	5.68	0.25

This taluka may not, therefore, be regarded as a scarcity area.

Ahmedpur.—It has 197 villages, divided into four revenue circles, viz. Ahmedpur, Sirut, Wadval and Kinggaon. According to the past history, only Sirut circle was affected in 1930-31, 1939-40 and 1950-51. The soil of this taluka is reported to be very poor and cannot bear heavy rainfall.

Crops.	Acres.
Kharif Jowar	78,693
Bajri	2,998
Wheat	6,200
Cotton	47,924

Thus, the main crops are kharif crops. The area irrigated is only 3,267 acres (1.1 per cent.). The average rainfall for 30 years is 36.14". Except in 1939-40 when the total monsoon rainfall was 18.84" and annual total was 19.34", the rainfall has been above 20". During the last 5 to 6 years rainfall has increased as in the case of the other talukas of this district. It appears that during 1954-55 and 1955-56 there was a wet scarcity in this and other talukas of this District. The rainfall was 41.80" and 52.53" in the years 1954-55 and 1955-56 respectively, even though the annavari is shown to be 4 annas or less. The failure of crops was thus due to excessive rain. During 1952-53, and 1953-54 also, the annavari was 4 annas but the rainfall was 23.75" and 29.82". The distribution was as under—

	June.	July.	August.	September.	October.
	ins.	ins.	ins.	ins.	ins.
1952	1.20	4.65	1.30	10.80	0.9
1953	13.37	7.38	4.62	0.75	3.5

In 1951-52 this taluka was shown to have been affected, though annavari is now reported to be 10 annas. On the whole, therefore, this taluka appears to have been affected by excess of rain rather than by its shortage. It would not, therefore, be regarded as a scarcity area.

To sum up therefore, Paranda and Anala circles of Paranda Taluka and the whole of Bhoom Taluka should be regarded as other scarcity area of Class 'C'.

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross area.		Population	Density per sq. mile.	Gross cropped area.	Net cropped area and its percentage to total area.	Area under forests.	
			In sq. miles.	In acres.						
1	2	3	4	5	6	7	8	9	10	
1	Osmanabad ..	107	445	2,95,163	1,15,654	260	2,30,800	2,28,312	77.3	..
2	Tuljapur ..	108	605	3,76,535	1,03,390	171	2,46,704	2,43,576	64.6	1612
3	Paranda ..	112	406	2,60,761	71,529	176	2,16,580	2,12,694	81.5	..
4	Bhoom ..	80	339	2,19,207	59,619	176	1,45,594	1,40,410	64.5	..
5	Kallam ..	108	474	3,03,317	1,05,859	223	2,31,105	2,23,207	73.6	1250
6	Latur ..	116	420	2,46,847	1,19,021	286	1,97,637	1,96,978	79.7	..
7	Awsa ..	119	468	2,97,448	98,087	200	2,46,622	2,46,522	82.8	..
8	Omerga ..	114	576	3,61,996	1,34,283	233	3,30,567	3,17,931	87.8	..
9	Udgir ..	175	632	3,73,766	1,35,908	215	2,57,504	2,51,747	67.3	247
10	Nilanga ..	193	536	3,38,207	1,32,835	247	2,96,960	2,90,591	85.8	..
11	Ahmedpur ..	197	609	3,92,987	1,33,846	219	2,82,821	2,82,821	71.9	24
District Total ..		1,429	5,610	34,66,234	12,10,041	219	26,32,894	26,34,789	76.0	3,133

STATEMENT 'B'

Rainfall Data.

(Fig. in inches.)

Name of Taluka.	1944-45	1945-46	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	Average for 27 years.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Osmanabad ..	22.48	26.78	27.36	32.57	48.59	47.28	28.57	30.21	24.64	46.34	53.66	51.16	58.62	37.56	30.32	37.74
2. Tuljapur ..	30.22	28.62	30.42	29.96	38.33	38.3	27.88	23.18	2.48	42.18	45.20	53.14	51.98	37.75	45.67	37.32
*3. Paranda ..	24.55	21.49	24.27	21.24	15.88	34.42	29.80	30.92	14.02	28.25	32.75	28.57	36.05	28.24	27.56	25.83
*4. Omerga ..	18.57	25.50	33.59	34.66	35.75	13.73	12.93	16.30	26.46	37.65	33.07	49.85	48.33	34.93	22.25	31.30
5. Latur ..	33.54	32.84	22.35	30.76	36.03	45.72	28.38	30.79	20.44	41.64	42.76	56.31	54.98	27.61	44.26	36.56
*6. Bhoom ..	..	..	..	..	22.82	40.47	33.15	28.65	22.67	26.07	29.56	35.51	37.09	29.18	21.82	30.56
7. Kallam ..	28.79	17.28	26.42	15.72	16.82	29.80	22.23	25.77	18.37	26.65	30.21	41.66	42.04	28.97	34.76	27.08
8. Awsa ..	..	..	..	..	..	..	29.19	25.39	20.02	34.57	37.15	43.82	46.08	26.39	34.33	34.09
9. Udgir ..	30.31	36.17	26.12	36.50	54.34	56.87	38.95	39.10	51.27	45.07	35.66	59.59	50.67	38.81	41.36	42.70
10. Ahmedpur ..	32.02	25.85	28.99	29.64	46.00	47.36	27.16	32.41	34.67	24.61	44.82	52.53	42.15	41.27	34.33	36.14
11. Nilanga ..	38.15	29.40	32.11	32.09	34.65	42.19	39.96	23.47	18.88	27.55	49.37	46.92	45.26	27.33	30.72	34.53

* Monthwise rainfall figures given in Statement B-1.

STATEMENT "B-I".

Monthwise Rainfall Data.

Taluka Omerga.

(Fig. in Inches.)

Serial No.	Year.	Rainfall.												Total.	Remarks.
		January.	February.	March.	April.	May.	June.	July.	August.	September	October.	November.	December.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1940	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2	1950	..	..	..	..	..	1.00	2.30	1.50	2.20	5.68	0.25	..	12.93	
3	1951	..	1.44	..	..	..	5.73	2.29	1.89	4.14	0.75	0.12	0.14	16.30	
4	1952	..	..	..	..	..	3.70	7.20	1.40	7.74	6.28	..	0.14	26.46	
5	1953	..	..	..	1.97	..	..	5.61	7.25	2.35	11.47	9.00	..	..	37.65
6	1954	..	..	..	..	..	..	7.25	9.83	4.46	6.30	5.50	..	..	33.07
7	1955	..	..	..	..	..	..	9.35	9.93	16.57	10.60	13.39	..	..	49.85
8	1956	..	..	..	..	..	..	11.43	16.18	11.78	3.39	5.50	..	..	48.33
9	1957	..	..	..	..	..	..	3.83	4.31	16.12	5.80	7.59	..	..	34.93
10	1958	..	..	..	..	..	..	0.70	4.53	12.52	7.78	2.20	2.33	..	22.25
															281.77
															Average = 31.30

STATEMENT "B-I"—contd.

Monthwise Rainfall Data.

✓ Taluka Bhoom.

(Fig. in Inches.)

Serial No.	Year.	Rainfall.												Total.	Remarks.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1949	..	..	..	..	..	13.60	12.65	7.92	4.49	2.37	..	..	40.47	
2	1950	..	..	..	..	..	6.65	11.78	5.77	2.22	4.73	..	..	33.15	
3	1951	..	..	..	..	2.44	4.66	8.67	3.63	6.97	2.28	..	..	28.65	
4	1952	..	..	..	..	..	2.54	4.86	1.64	7.23	6.40	..	..	22.07	
5	1953	..	..	..	..	..	2.54	5.86	1.64	9.63	6.40	..	..	26.70	
6	1954	..	..	..	..	..	8.97	7.38	6.64	8.78	0.79	..	..	29.56	
7	1955	..	..	..	..	..	10.84	7.30	10.37	5.43	2.44	..	..	35.51	
8	1956	..	..	..	..	3.82	2.68	11.39	3.55	5.83	5.37	4.95	..	37.90	
9	1957	..	..	..	2.84	1.49	2.49	5.89	7.97	5.33	3.12	..	..	29.18	
10	1958	..	..	..	..	..	1.23	5.80	11.50	0.92	1.98	0.39	..	21.82	
														365.61	

Average = 30.56

STATEMENT "B-I"—*contd.**Monthwise Rainfall Data.*

✓ T. L. ka Paranda,

(Fig. in Inches.)

Year	May	June	July	August	September	October	Total	November to April	Total Annual	
1	2	3	4	5	6	7	8	9	10	
1931	12.60	3.65	1.30	7.21	4.96	29.72	2.88	32.60
1932	..	0.60	9.38	5.80	7.28	2.36	6.43	31.73	4.18	35.91
1933	..	2.60	4.92	1.75	5.03	8.57	2.32	25.19	3.58	28.77
1934	5.50	6.55	3.25	7.17	1.84	24.31	4.15	28.46
1935	4.65	2.00	6.38	5.49	7.05	25.57	0.85	26.42
1936	..	1.99	0.45	0.39	0.81	6.18	..	9.82	5.98	15.80
1937	1.40	5.57	0.63	2.83	2.65	13.08	1.29	14.37
1938	..	1.30	4.47	6.38	5.09	11.01	0.86	32.11	2.54	34.65
1939	7.59	4.84	0.58	3.85	2.87	19.73	0.44	20.17
1940	..	0.30	5.27	1.50	2.83	4.22	3.06	17.18	1.30	18.48
1941	0.38	2.33	1.46	11.33	3.20	18.70	1.12	19.82
1942	..	0.82	12.15	1.42	4.41	1.17	0.82	20.79	0.70	21.49
1943	..	0.94	3.78	4.26	1.49	12.41	3.84	26.70	0.76	27.46
1944	24.55
1945	21.49
1946	24.27
1947	21.24
1948	15.88
1949	34.42
1950	..	0.46	1.07	2.95	2.22	18.79	4.01	29.50	0.53	30.03
1951	..	0.06	5.93	12.60	1.67	4.74	2.37	27.37	0.53	27.90
1952	..	1.81	2.41	2.16	0.75	5.57	2.78	15.48	1.70	17.18
1953	3.03	7.59	0.65	11.82	5.13	28.22	0.35	28.57
1954	7.35	8.14	5.09	6.51	2.14	29.83	2.26	32.09
1955	..	0.92	3.64	7.22	7.81	3.86	4.01	27.49	0.61	28.10
1956	..	2.68	4.03	8.02	4.18	8.07	6.02	32.60	4.64	37.24
1957	..	0.36	7.12	2.71	8.89	5.87	3.65	28.60	1.57	30.17
Total									..	697.53
Average									..	25.83

Average : 27.39

Maximum 32.60; Minimum 15.48

Range : 17.12

} .. for 1950 to 1957.

STATEMENT "B-I"—*concl'd.**Monthwise Rainfall Data.*

Taluka Ahmedpur

(Fig. in Inches.)

Year	May	June	July	August	September	October	Total	November	Total Annual		
1	2	3	4	5	6	7	8	9	10		
1931	9.73	4.28	6.27	12.07	1.77	34.12	1.83	35.95	
1932	..	1.06	9.43	10.97	4.48	3.52	0.81	30.27	8.63	38.90	
1933	11.36	8.67	5.03	9.21	1.18	35.45	4.06	40.41	
1934	8.31	11.98	6.11	7.50	3.76	37.66	7.51	45.17	
1935	..	0.12	12.68	7.45	8.06	12.98	2.12	43.41	4.03	47.44	
1936	8.43	6.29	2.85	4.14	..	20.71	6.10	26.81	
1937	7.64	9.12	1.77	8.47	0.17	27.17	1.97	29.14	
1938	..	1.75	17.22	9.52	8.30	8.73	0.15	45.73	2.80	48.53	
1939	6.84	1.44	2.06	6.67	1.83	18.84	0.47	19.31	
1940	..	0.37	7.56	6.78	11.51	2.65	2.97	31.84	1.10	32.94	
1941	2.30	4.87	4.66	8.19	29.15	49.17	0.92	50.99	
1942	9.21	7.77	12.29	2.23	..	31.57	0.12	31.69	
1943	..	1.19	5.08	6.56	4.72	3.84	..	21.39	2.51	23.90	
1944	6.87	6.00	3.97	5.15	..	21.99	..	21.99	
1945	6.87	6.00	3.97	5.15	..	21.99	..	21.99	
1946	4.15	6.87	6.00	3.97	5.15	26.14	3.00	29.14	
1947	4.12	13.20	9.73	0.35	..	27.40	0.65	28.05	
1948	..	0.35	4.54	7.27	8.08	16.96	2.05	39.25	6.86	46.11	
1949	9.55	16.55	4.20	19.51	5.85	55.66	..	55.66	
1950	3.30	7.34	7.86	14.93	1.31	34.74	..	34.74	
1951	7.45	10.76	2.74	7.53	1.84	30.32	..	30.32	
1952	1.20	4.15	5.80	10.80	0.49	22.44	1.31	23.75	
1953	..	0.65	13.37	7.38	4.62	0.65	3.05	29.72	..	29.72	
1954	9.31	8.99	9.90	13.50	0.20	41.90	..	41.90	
1955	8.70	12.45	17.93	10.32	3.93	53.33	..	53.33	
1956	..	1.06	3.14	18.60	6.44	5.43	3.50	38.17	3.88	42.05	
1957	..	2.45	3.61	17.12	13.15	5.12	1.92	43.27	3.35	46.72	
									Total	..	975.75
									Years	..	27
Average : 33.84									Average .. 36.14		
Maximum : 55.66, Minimum 18.84									.. For 1931 to 1957.		
Range 36.82											

STATEMENT " C ".

Irrigation Data.

Serial No.	Taluka	Area under irrigation				Total area under irrigation and its percentage to cropped area.	
		Canals	Tanks	Wells	Other sources.	7	8
1	2	3	4	5	6	7	8
1	Osmanabad	.. ..	148	9,933	..	10,087	4.3
2	Tuljapur	.. ..	394	13,576	..	13,970	5.6
3	Paranda	.. 3,605	..	7,977	..	11,082	4.1
4	Bhoom	.. ..	..	10,496	..	10,496	7.2
5	Kallam	.. ..	..	8,885	..	8,885	3.8
6	Latur	.. ..	..	2,656	..	2,656	1.3
7	Awas	.. ..	..	4,177	..	4,177	1.7
8	Omerga	.. ..	..	12,974	..	12,974	3.9
9	Udgir	.. ..	..	1,092	..	1,092	0.4
10	Nilanga	.. ..	84	3,264	..	3,348	1.1
11	Ahmedpur	.. ..	..	3,287	..	3,287	1.1
District Total		.. 3,605	628	77,797	..	82,028	3.0

STATEMENT 'D'.
Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total cereals.	Total pulses.	Total food crops and its percentage.	Oil seeds and its percentage.	Cotton and its percentage.		Total non-food crops.		
				Under Kharif.	Under Rabi.										
1	2	3	4	5	6	7	8	9	10	11	12	13			
1	Osmanabad ..	6,876	15,967	38,287	57,848	1,294	1,22,354	37,884	1,68,447	72.9	54,602	23.6	4,112	1.7	62,353
2	Tuljapur ..	14,356	6,755	4,884	98,893	12,727	1,42,089	44,186	1,91,378	77.5	43,752	17.7	171	N	55,326
3	Paranda ..	1,357	7,298	308	1,23,927	3,320	1,37,794	32,873	1,72,774	79.8	35,335	16.2	6,860	3.1	43,806
4	Bhoom ..	1,443	9,142	12,930	41,813	1,719	70,227	33,902	1,07,591	73.9	32,922	24.2	3,503	2.6	38,003
5	Kallam ..	2,844	22,466	56,135	29,681	1,467	1,16,109	41,863	1,67,690	72.5	49,148	21.2	13,209	5.7	63,515
6	Latur ..	4,244	10,937	48,000	20,806	1,662	95,791	41,060	1,42,319	72.0	37,083	18.9	14,597	7.4	55,318
7	Awsa ..	5,117	16,599	58,895	20,333	5,625	1,09,331	57,909	1,70,722	69.2	43,838	17.8	17,785	7.2	75,900
8	Omerga ..	8,740	17,508	34,201	75,700	16,107	1,56,079	76,504	2,44,654	74.0	75,026	22.7	1,973	0.6	85,913
9	Udgir ..	6,173	6,383	72,750	5,062	2,177	95,952	58,610	1,59,877	62.0	52,116	20.2	34,712	13.5	97,627
10	Nilanga ..	7,659	15,050	68,823	21,008	5,925	1,20,488	73,662	2,02,736	68.2	55,481	18.7	28,035	9.4	94,223
11	Ahmedpur ..	6,411	6,200	78,693	1,724	2,998	99,390	77,964	1,64,993	58.3	60,126	21.2	47,924	16.9	1,17,659
District Total ..		52,184	1,34,255	4,73,906	4,96,736	55,021	12,66,604	5,76,477	18,93,050	70.5	5,39,229	20.1	1,73,281	6.4	7,89,842

CHAPTER XII

EAST KHANDESH DISTRICT.

Part I—Background.

1. *Location.*—Formerly there was one District viz. Khandesh District with an area of 10,431.39 sq. miles and population of 10,28,642. Now there are two Districts viz., West Khandesh and East Khandesh. The present East Khandesh district is bounded on the north by Madhya Pradesh, on the west by the West Khandesh and Nasik districts, on the east by Berar and on the south by Aurangabad Districts.

2. *Administrative Set-up.*—The district is divided into the following 11 talukas and 2 mahals :—

Taluka.	No. of Villages.
1. Jalgaon	90
2. Bhusaval	122
3. Raver	109
4. Yawal	95
5. Amalner	162
6. Parola	110
7. Chopda	110
8. Erandol	154
✓ 9. Chalisgaon	124
10. Pachora	121
11. Jamner	148
12. Bhadgaon (Mahal)	60
13. Edlabad (Mahal)	78

Statistical data about each taluka is given in Statements A to D attached.

3. *Topography.*—An upland basin, draining into the Tapti with a gentle westerly slope, East Khandesh District includes most varied tracts of country, wild hills and forests, rich gardens, and groves, stretches of barren plain and low rolling rocky hills from east to west. Though the river flows west the talukas on its right slope towards the south and those of the left drain towards the north. Chalisgaon and Bhadgaon talukas, however, have an eastern tilt. Parallel to the Tapti river are there, well marked in the north, the high and wild Satpudas and in the south and south-west, bare ridges and rich well watered valleys flanked by the Ajanta or Satmala hill range.

The Tapti banks are high and bare, and the land on both sides is seamed by tributary rivers and streams, and in the south rise some low barren hill ranges. With these exceptions the long central plain from Burhanpur to the western border of the district is an unbroken stretch of deep alluvial soil yielding good crops. The towns and villages are large and prosperous, surrounded by mango groves and gardens and except when baked by the raging winds of the hot season, the fields are green with varied tillage. On both sides of the river cultivation is widespread. Southwards it stretches to the higher soils and barren hill sides and northwards to the deep forests that clothe the base of the Satpudas. In the west, the soil is quite rich except in some parts of Amalner, Parola and Chalisgaon, which are covered by small hills.

The district has three chief hill ranges. The Satpudas in the north, the Hutti hills in the south-east and the Ajanta or Satmala range in the south. The Satpudas, a broad belt of mountain land stretching in a wall-like line along the north of Tapti valley, rise from the first range of hills ridge behind ridge to the Central crest about 2000' high and then slope gently to the Narbada.

During its course through East Khandesh, the Tapti receives many tributaries from both sides, the important being Girna, Purna, Bori, Waghur and Panjara on the right and Aner on the left. Some of them are used for irrigation.

4. *Soils*.—East Khandesh contains soils of all grades from deep rich black of Tapti valley to the poor stony red and white of the low trap ranges. Raver, Yawal and Chopda talukas which form one zone contain black cotton soil. Leaving an area of 3 to 4 miles from the base of Satpuda and one mile to the north of Tapti, the remaining area is very rich in fertility. In the second zone comprising Edlabad, Bhusawal, Jalgaon, Erandol and Amalner talukas, the first two have uneven distribution of black soil and patches of black soil and poor murum soil can be found interlocked. In both the talukas hill ranges run across giving an undulating form of topography with consequent shallow soils. The tract in the vicinity of the Tapti river is however, richer in its soil texture. In case of Jalgaon taluka the central and southern parts of talukas are hilly. The physical features of Bhusawal and Jalgaon talukas and Edlabad mahal are found to be similar. Erandol and Amalner have many features in common. The villages adjoining Tapti on the north are a continuation of the tract of deep black soil, in both the talukas. The southern and some part in the centre of Erandol has poor soil. In Amalner taluka southern and central parts consist of broken hilly ground. The Tapti valley rail line running east-west and parallel to Tapti river in the talukas Amalner, Erandol and Jalgaon divides the rich soil zone from shallow soils.

Jamner, Pachora, Parola, Chalisgaon, and Bhadgaon Mahal which form the third zone are situated on the southern limits of the district. To the south of these talukas except in case of Parola and Bhadgaon there is a natural boundary of the mountain range known as Satmala. The soil is slightly undulating. For most part of this zone the area is plain. The soil here is reddish and loamy brown. Loamy rich black cotton soil which is a special feature of Raver, Yawal and Chopda talukas is not found in these talukas except in few patches scattered unevenly in a few villages.

5. *Rainfall*.—The average rainfall of the district is 30". The average of each taluka or mahal is given below :—

1. Jalgaon	36.3"	8. Erandol	28.06"
2. Bhusawal	31.10"	9. Chalisgaon	31.86"
3. Raver	31.33"	10. Pachora	36.22"
4. Yawal	33.12"	11. Jamner	34.19"
5. Amalner	26.42"	12. Bhadgaon	28.55"
6. Parola	26.63"	13. Edlabad	30"
7. Chopda	30.28"		

6. *Land Utilization*.—Of the total gross area of 28,76,254 acres the land not available for cultivation (barren or uncultivable) is 1,84,900 acres. The area under forest is 4,00,800 and cultivable waste is 17,700 acres. Land used permanently for grazing is 2,28,000 acres. Thus the net area sown is 20,96,308 acres. The area under forest is 14 per cent. of the gross area. On Satpuda side, Raver, Yawal and Edlabad talukas have got dense forest. In other talukas it is more or less scrub forest due to rocky nature of soil.

7. *Crops*.—The main crops grown in the district are—

Bajri	2,24,300 acres.
Jowar	3,64,300 "
Pulses	3,96,400 "
Wheat	72,600 "
Oil seed	2,65,500 "
Cotton	6,65,600 "

8. *Irrigation*.—As against the total cropped area of 20,96,308 acres, the area under irrigation is 65,634 acres only which works out to 3 per cent. of the cropped acreage. The major portion of the irrigated area is under wells; while that

irrigated by canals is about 5,000 acres. The sources of irrigation and the areas covered in each taluka are indicated in the following statement :—

Taluka.	No. of wells.	Area Irrigated by wells.	Area Irrigated by		Other Sources.
			Canals.	Tanks.	
1. Amalner	3,792	9,213	1,000	....	....
2. Bhadgaon	1,204	1,257	1,092	....	....
3. Bhusawal	2,799	3,720	207	....	....
4. Chalisgaon	4,002	3,806	1,288	....	....
5. Chopda	3,498	1,209	....	....	....
6. Edlabad	1,339	1,210	....	165	....
7. Erandol	3,041	5,561	....	....	....
8. Jalgaon	1,940	3,647	....	....	....
9. Jamner	2,707	3,372	....	....	....
10. Pachora	2,391	2,829	937	....	....
11. Parola	2,474	6,831	396	....	....
12. Raver	2,776	10,597	....	....	....
13. Yawal	2,726	7,248	49	....	....
District Total	34,639	60,500	4,969	165	....

After completion of the schemes included in the 1st and 2nd Plans, the areas expected to be irrigated are as indicated below :—

Taluka.	Area (Acres).	Taluka.	Area (Acres).
Pachora	5,360	Raver	902
Yawal	310	Amalner	7,300
Parola	350	Jamner	4,050
Chalisgaon	3,120	Bhusawal	600
Chopda	2,800	Edlabad	600

9. *Transport and Communications.*—The Central Railway from Bombay to Jabalpur and the Tapti Valley Railway pass through the district and serve a major part of it. There is one national highway from Dhulia to Nagpur passing through Parola, Erandol, Jalgaon, Bhusawal and Edlabad, besides the other major district roads.

10. *Industries and Fisheries.*—The total number of factories in the district is 212 out of which 188 are working. The average number of persons attending daily in these factories is 14,310. These factories include three spinning and weaving small units at Jalgaon, Amalner and Chalisgaon. Development of Fisheries has been undertaken in the Mhasda and Hartale tanks.

11. *Livestock.*—The cattle population of the district is 6,61,748. The number of goats and sheep are 2,34,686 and 29,513 respectively. The number of bullocks, cows and buffaloes are respectively 2,32,834, 2,05,000 and 1,21,164.

12. *Minerals.*—There are no mineral resources in the district.

13. *Livelihood.*—Of the total population 14,71,351 in the district, the persons depending on agriculture are 10,36,653. Those employed in production other than agriculture are 1,52,619, those employed in commerce, transport and services or miscellaneous occupations are 80,361, 33,898 and 1,67,820, respectively.

Part II—Determination of Precarious and Chronic Scarcity Areas.

The East Khandesh District can be divided into three zones, from the point of view of agricultural conditions. The talukas on the northern side of the district particularly to the north of Tapti, viz., Chopda, Yaval and Raver contain the best soils and the latter two talukas have good sub-soil water, with the result that there are large number of irrigation wells by means of which, bananas, wheat and other irrigated crops are grown. The large percentage of the cropped area in these talukas as also in the other talukas of this district is under money crops, like cotton, groundnut and coriander. The percentage of areas under main crops in these three talukas are as shown below :—

Crop.	Chopda.	Yaval.	Raver.
Wheat ...	4.9	5.5	8.4
Jowar ...	11.4	16.7	18.2
Jowar (Rabi) ...	9.1	...	...
Bajri ...	8.8	4.6	1.5
Pulses ...	18.4	20.7	19.4
Cotton ...	33.0	25.1	33.0
Groundnut and Oil seeds.	11.8	19.2	10.8

The annual rainfall in these three talukas varies from 31" to 33", which is adequate, looking to the nature of the crops grown in this area. The average rainfall for the period 1931-57 was as under :—

Chopda ...	30.28"
Yaval ...	33.12"
Raver ...	31.33"

The minimum recorded during the last 30 years in these talukas was during 1929 and 1952. It was 15.83", 19.63" and 15.12" in Raver, Yaval and Chopda respectively during 1929 and 13.36", 14.86" and 15.62" during 1952. Except during these two years, the seasons have been normal and the rainfall around the average in each taluka. It has never been less than 20" during any other time in Chopda. Month-wise rainfall data for Yaval and Raver is not available. However, for the month-wise rainfall data of Chopda, it appears that during the period of 1931-57, the distribution of rainfall was good during the monsoon period, and it had never failed during August-September months, which is an important period for Kharif crops. Out of these three talukas, Chopda grows in a small area rabi, jowar, while Yaval and Raver grow kharif crops. Other main crops like cotton and oil seeds are commonly grown in these talukas. The area of fruits and vegetables is more in Yaval and Raver than in Chopda because of the copious sub-soil water in the former two talukas. The sub-soil water is said to be brackish in a large area in Chopda and for these reasons the area under irrigation in this taluka is comparatively less, but so far as other main crops and their production is concerned, the three talukas are practically alike. There are no major, medium and minor irrigation works in existence, except one viz. Bhanak Bhandara in Yaval which can irrigate 760 acres. This scheme was completed after 1951. The area irrigated by wells in Yaval, Raver and Chopda is 7,248, 10,597 and 1,209 acres respectively.

Looking to the factors mentioned here, and the fact that these talukas were never affected during the last 30 years by scarcity conditions except once in 1952, and in 1951 when a small portion of Chopda was affected, this part of the district may be treated as scarcity-free area. The land revenue suspension data for the last 30 years, and annevani data also show that none of the villages in these talukas has more than two full suspensions in 30 years.

The second zone comprises talukas of Edlabad, Bhusaval, Jalgaon, Erandol and Amalner lying to the south of Tapi. The Tapi forms the northern boundary of the talukas of this zone. The soil to the south of Tapi river all along the northern boundary of these talukas, between the Tapi and the western railway which runs parallel to the Tapi is deep black. Edlabad and Bhusaval have patches of both black and poor murum soil. In both the talukas hill ranges run across them at certain places. The central and southern part of Jalgaon is hilly. The

physical features of Jalgaon and Bhusaval and Edlabad Mahal are found to be similar to those of Amalner and Erandol on the western side of the district. The villages of these two talukas situated along the river contain deep black soil. The central and southern parts, however, contain poor medium and murum soils. A few villages of both these adjoining talukas are, however, reported to contain very poor soil and have very limited resources and are said to suffer whenever there is a failure of monsoon.

The main crops of this zone are practically the same as those of Zone I. Wheat accounts for 3 to 7 per cent., Jowar 15 to 22 per cent., Bajri 2 to 8 per cent., pulses 16 to 25 per cent. and cotton and groundnut together about 42 to 52 per cent. The proportion of money crops like Cotton, Groundnut and other oilseeds, is thus on the high side in all these talukas. Wheat is mostly grown under well irrigation. Other crops are mostly kharif crops. The monsoon continues upto September. The percentage of rabi area to the total cropped area in these talukas is shown in the table below along with figures of the average rainfall in June-September for the period 1931-57. The average rainfall for the period 1931-57 in these talukas is as under :—

Taluka.	Average Rainfall.	P. C. of Rabi Area and its acreage.
Jalgaon ...	30.03	7.2
Bhusawal ...	31.10	3.7
Amalner ...	26.42	20.0
Erandol ...	28.06	10.0
Edlabad ...	30.00	3.3

It would thus appear that there is not much difference between the average rainfall and cropping pattern of the talukas comprising zones I and II. Similarly, there is not much difference between the rainfall of the talukas on the extreme west, like Amalner and that of Edlabad on the extreme east. The average rainfall is generally adequate for the crops grown in this tract, provided it is well distributed. The monthly rainfall for these talukas as given in Statement B1 for the period 1931-57 would show that the distribution has been generally satisfactory. The August-September rainfall is generally assured. The total minimum rainfall according to the rainfall data for the last 30 years, was as shown below :—

Year.	Jalgaon.	Bhusaval.	Erandol.	Amalner.	Edlabad.
1950	22.8	....	15.17	....	18.32
1951 .. ..	....	....	18.73	....	....
1952	18.0	18.04	14.28	14.35	12.68

These are the only years in which the rainfall was less. The average for the different periods such as June-July, August-September and September-October and the Co-efficients of Variation are shown below :—

Taluka.	June-July.		August-September.		September-October.	
	Average C. V.		Average C. V.		Average C. V.	
Jalgaon	Not available.					
Bhusaval	14.95	30.32	13.74	29.48	8.36	43.79
Amalner	12.78	24.51	11.38	41.14	7.30	45.93
Erandol	12.85	25.38	13.27	41.49	7.33	42.07
Edlabad	14.92	29.26	12.86	35.44	8.29	46.11

For Jalgaon the figures are not available. The detailed rainfall data would show that 1952 was a bad year in all the talukas, while during 1951 Erandol only had scanty rainfall. During 1950 the talukas which had rainfall much less than average were Jalgaon, Erandol and Edlabad. It is reported that an area comprising Shirala and Bharwas, circles of Amalner taluka and 34 villages of Erandol taluka bordering Parola taluka, has very poor soil and outturn of crops in these areas is reported to be low. The area under irrigation in Amalner taluka is 10,218 acres out of which 1,000 acres are under the command of canals. The rest of area is under wells. The area under irrigation by wells in Erandol is 5,561 acres which comes to 2.7 of the net cropped area. The percentage of area under irrigation in Edlabad, Jalgaon and Bhusaval is 1.4, 2.4 and 2.5 respectively. The minor irrigation schemes which exist in this zone are as under :

Toli bhandara on Bori river in Amalner	...	150 acres.
Phapora bhandara in Amalner	...	350 "
Hartala tank in Edlabad	...	150 "
Hathed nala-bhandara near Maniarkhede, Jalgaon.	...	200 "
Vabhali tank, Bhusaval taluka	...	1,457 "

The previous history of scarcity given in respect of these areas and the annavari and land revenue suspension data show that 1952 was scarcity year throughout the district. According to the annavari data, the number of villages affected during 1950-51, 1951-52 and 1952-53 are as shown in the following table :—

Statement showing the number of villages where half and full suspensions were granted during the year 1950-51, 1951-52 and 1952-53.

Serial No.	Name of Taluka.	1950-51 Suspensions.		1951-52 Suspensions.		1952-53 Suspensions.	
		Full.	Half.	Full.	Half.	Full.	Half.
1	Jalgaon	...	...	...	...	62	...
2	Bhusaval	18	8	...	...	110	2
3	Raver	...	...	...	...	109	...
4	Yawal	...	...	...	...	58	15
5	Amalner	...	...	75	10	157	...
6	Parola	6	4	3	1	110	...
7	Chopda	...	...	48	1	75	25
8	Erandol	...	...	11	13	111	40
9	Chalisgaon	...	...	...	3	67	48
10	Pachora	...	...	...	7	52	...
11	Jamner	...	...	...	44	44	31
12	Bhadgaon	...	...	...	...	50	10
13	Edlabad	33	7	12	...	78	...

The annavari data would show, however, that the same villages are not affected during different years, and therefore, the villages which had suffered two full suspensions were Edlabad — 5, Bhusaval — 5, Amalner — 58, and Erandol — 9. Thus no village in these talukas had suffered more than two full suspensions during 30 years. Therefore, either according to annavari data or according to Land Revenue Suspension data, none of the talukas in this zone can be considered as chronic scarcity areas.

Zone III comprises talukas of Jamner, Pachora, Parola, Chalisgaon and Bhadgaon mahal. All these talukas are on the southern boundary of the district except Parola and Bhadgaon which are to the north of Chalisgaon. To the south of all these talukas, except Parola and Bhadgaon, there is a natural boundary of Satmala range. In most part of this zone the area is plain. There are small spurs and ridges but they are not conspicuous. The physical conditions in these talukas are generally similar.

The soil is mostly reddish brown and poor, except that small scattered patches of deep soil are found in some villages here and there. The main crops and the percentage to the cropped area are given below :—

Main Crops.	Chalisgaon.	Jamner.	Pachora.	Parola.	Bhadgaon.
Wheat	1.5	0.05	1	3	3
Jowar	16	19	19	18	15
Bajri	13	4	13	14	15
Pulses	16	23	18	19	18
Cotton	12.6	37.4	28.9	16.4	30.7
Groundnut and oil seeds	21.1	14.6	17.6	24.0	9.1

The above figures show that the crop pattern is broadly similar to the talukas of this zone as also to the talukas of the other zones considered above. In the above talukas also cash crops, like cotton, groundnut, and other oil seeds are predominant. The area under irrigation by canals and wells in each taluka in this zone is as shown below :—

Taluka.	By canals.	By wells.
Bhadgaon	3,000	2,121
Chalisgaon	1,650	3,655
Jamner .. ..	.....	3,372
Pachora	3,000	4,431
Parola	5,000	7,229

There are no major and medium irrigation schemes existing at present. However, there are a number of minor irrigation schemes in existence, which are useful for kharif crops in case of emergency. The area under canals is however not very large.

The average rainfall for the last 30 years is as under :—

Jamner	34.19"
Pachora	36.22"
Parola	26.63"
Bhadgaon	28.55"
Chalisgaon	28.75"

The minimum rainfall recorded for different talukas during different years is as shown below :—

Year.	(Rainfall in inches).				
	Jamner.	Pachora.	Parola.	Chalisgaon.	Bhadgaon.
1932 .. ..	....	19.42	14.98	....	17.78
1942 .. ..	....	....	17.11	....	....
1945 .. ..	....	18.62	....	....	18.94
1950	19.03	....	12.60	18.23	17.74
1951 .. ..	....	....	....	....	....
1952	16.67	14.41	13.00	13.85	13.19

The average for June-July, August-September and September-October and the co-efficients of variations in these years are as shown below :—

Taluka.	June-July.		August-September.		September-October.	
	Average.	C. V.	Average.	C. V.	Average.	C. V.
Bhadgaon	12.79	25.58	12.75	36.54	8.82	50.11
Chalisingaon	11.86	22.23	13.93	36.03	10.49	43.60
Parola	12.92	31.98	11.46	40.68	7.10	43.65

For Jamner and Pachora, the figures are not available. The distribution of rainfall for the period June-September in the talukas of Parola, Bhadgaon and Chalisingaon, for which detailed monthly rainfall figures are available, was fair, except in the years in which the rainfall was much below the average.

The history of scarcity for the last 30 years shows that 1952-53 was the only year during which scarcity prevailed throughout the district. The number of villages affected in each taluka in that year is given in the following table :—

Statement showing the number of villages where scarcity was declared and also those where conditions akin to scarcity were recognised during the year 1952-53.

Serial No.	Taluka or Mahal.	No. of villages in Taluka.	No. of villages where scarcity was officially declared.	No. of villages where conditions akin to scarcity were recognised.
1	2	3	4	5
1	Jalgaon	90	65	4
2	Bhusaval	122	117	....
3	Raver	109	109	....
4	Yawal	95	58	....
5	Amalner	162	162	....
6	Parola	110	110	....
7	Chopda	110	75	25
8	Erandol	154	111	40
9	Chalisingaon	124	67	48
10	Pachora	121	36	16
11	Jamner	148	44	31
12	Bhadgaon	60	50	10
13	Edlabad	78	78	....
	Total	1,483	1,082	174

From the statement showing the number of suspensions granted to villages in different talukas given earlier, it will be seen that in the year 1950-51 and 1951-52 also, some villages were affected. According to the land revenue suspension data no village has suffered more than 2 to 3 full suspensions. Even in Parola which is considered to be a poor tract, the total full suspensions were 2 in only 5 villages. Therefore, none of these talukas can be treated as scarcity areas. There is scarcity of drinking water in Parola and the adjoining areas, which is specially felt in summer, but that is a problem by itself and is not due to inadequacy or uncertainty of rainfall. The data given above would show that even in Parola which is considered to be a poor tract, the cropping pattern is the same as in other talukas. The percentage of money crops comes to about 40. The percentage of irrigated area as compared to other adjoining talukas is not less.

Considering all the factors, no taluka of this zone could be treated as a scarcity area.

To sum up, the district of East Khandesh may be regarded as practically free from any chronic scarcity.

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross Area.		Population.	Density per sq. mile.	Gross cropped area.	Net cropped area and its percentage.		Area under forest.
			in sq. miles.	in acres.						
1	2	3	4	5	6	7	8	9	10	
1	Jalgaon	90	319.6	2,03,920	1,64,532	515	1,47,986	1,41,567	69.4	21,172
2	Bhusaval	122	328.4	2,05,149	1,49,055	454	1,53,975	1,50,792	73.5	23,100
3	Yawal	95	368.5	2,35,824	1,15,191	313	1,34,602	1,27,047	53.8	75,941
4	Raver	109	361.3	2,31,216	1,17,674	326	1,32,362	1,30,855	56.5	73,526
5	Amalner	162	324.5	2,08,605	1,44,672	445	1,96,596	1,71,135	82.0	3,625
6	Parola	110	291.3	1,95,514	68,077	234	1,38,189	1,31,154	67.1	27,648
7	Chopda	110	293.5	2,35,830	1,08,291	369	1,68,940	1,50,069	63.2	9,380
8	Erandol	154	368.5	2,40,818	1,27,262	345	2,05,382	1,89,273	78.6	12,666
9	Chalisgaon	124	460.4	3,00,888	1,46,444	318	2,19,166	2,10,944	70.1	46,119
10	Paohora	121	308.7	2,02,728	1,05,158	341	1,66,076	1,60,061	78.9	10,336
11	Jamner	148	522.1	3,36,124	1,22,999	235	2,46,849	2,42,653	72.2	41,830
12	Bhadgaon	60	196.5	1,19,978	56,230	286	93,704	89,647	74.7	10,994
13	Edlabad	78	249.5	1,59,660	45,766	183	92,481	90,706	56.8	43,949
District Total		1,483	4,392.8	28,76,254	14,71,351	329	20,96,308	19,85,903	69.0	4,00,366

STATEMENT "B".

Rainfall Data.

(Fig. in Inches.)

Taluka.	1949.	1950.	1951.	1952.	1953.	1954.	1955.	1956.	1957.	1958.	Average of 10 years.	Average of 27 years.
1	2	3	4	5	6	7	8	9	10	11	12	13
Jalgaon	44.5	22.8	20.9	18.0	23.8	33.0	34.2	35.0	23.7	24.3	29.2	30.03
Bhusaval	39.0	21.92	27.26	17.10	25.54	32.32	32.97	33.36	26.35	31.3	..	31.10
Yawal	41.7	27.5	26.8	14.9	21.7	42.7	30.5	27.2	27.0	41.5	30.1	33.12
Raver	43.6	17.8	19.6	13.7	23.3	33.8	34.8	35.4	23.0	34.5	28.3	31.23
Amalner	54.16	21.16	20.76	14.34	24.66	32.0	27.66	27.69	22.68	40.7	..	26.42
Parola	36.45	12.60	21.60	13.0	24.41	32.30	36.54	38.32	20.90	34.0	..	26.63
Chopda	35.85	20.34	23.49	14.63	30.28	35.44	34.85	28.85	29.02	45.3	..	30.28
Erandol	49.33	15.14	17.86	14.28	22.83	33.59	35.15	30.96	23.83	19.8	..	28.06
Chalisgaon	42.78	18.23	22.91	13.85	31.66	34.22	36.62	46.39	21.07	42.7	..	28.75
Paohora	43.5	18.0	29.1	29.7	30.0	45.5	33.1	50.6	30.0	47.0	35.7	36.22
Jamner	41.0	19.0	19.2	18.0	32.5	30.1	31.3	44.4	29.8	33.2	29.9	34.19
Bhadgaon	35.41	17.74	25.39	13.19	26.91	33.55	48.22	48.99	25.11	50.7	..	28.55
Edlabad	45.04	18.07	22.75	12.68	21.93	29.51	30.21	23.10	24.95	29.9	..	30.00

STATEMENT "B-I".
Monthwise Rainfall Data.
 Taluka Edlabad.

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September	October.	Total.	November to April.	Total Annual.	
1	2	3	4	5	6	7	8	9	10	
1931	..	0.25	2.00	11.80	8.79	5.71	10.71	39.25	0.10	39.35
1932	1.38	13.87	5.40	2.75	2.17	25.57	1.21	26.78
1933	..	2.29	8.64	15.48	5.66	9.91	0.90	42.78	0.27	43.15
1934	3.39	6.66	9.78	13.66	....	33.49	3.06	35.55
1935	5.83	16.50	3.17	6.15	0.92	32.57	0.31	32.88
1936	..	1.04	9.07	4.36	3.73	3.62	....	21.82	13.87	35.69
1937	3.62	17.00	1.21	11.40	6.16	39.47	0.69	40.16
1938	..	1.47	20.20	13.01	4.16	4.05	2.65	45.64	0.90	46.44
1939	3.53	6.09	9.37	1.51	0.08	20.58	1.33	21.91
1940	5.10	11.85	5.56	1.12	1.65	25.28	0.96	26.24
1941	0.95	15.73	2.94	2.93	0.19	22.74	2.00	24.74
1942	2.10	8.06	10.22	4.61	....	25.99	1.18	26.17
1943	..	0.65	6.22	11.29	2.42	8.34	5.92	34.83	0.45	35.28
1944	5.03	13.40	18.45	8.20	0.33	45.41	1.27	46.68
1945	..	0.05	4.66	8.43	9.05	10.48	0.06	33.54	0.49	34.03
1946	..	0.13	3.44	6.82	9.16	6.71	....	26.26	8.92	5.18
1947	..	0.04	1.20	7.48	14.33	4.70	6.23	33.98	....	33.98
1948	12.21	10.67	4.73	4.79	....	32.40	2.44	33.84
1949	..	0.78	4.45	11.47	2.71	23.69	1.94	45.04	0.15	45.19
1950	..	0.14	0.50	6.68	3.93	5.87	0.95	18.07	0.25	18.32
1951	2.20	10.05	3.12	4.31	3.07	22.75	....	22.75
1952	2.70	3.52	4.31	1.29	0.86	12.68	....	12.68
1953	7.37	4.05	4.47	3.87	2.17	21.93	0.01	21.94
1954	5.55	7.63	5.64	10.44	0.25	29.51	0.52	29.63
1955	..	0.27	7.61	5.20	9.22	5.89	0.02	30.21	0.58	31.97
1956	..	2.27	2.27	9.63	3.45	4.91	0.56	23.10	2.92	26.50
1957	..	0.68	9.16	4.43	7.44	3.09	0.15	24.95	....	24.95

Average=30.00

STATEMENT "B-I"—*contd.**Monthwise Rainfall Data.*

Taluka Chopda.

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	November to April.	Total Annual.	
1	2	3	4	5	6	7	8	9	10	
1931	3.87	12.62	20.00	9.27	5.78	51.54	0.11	51.65
1932	..	0.10	2.81	9.76	8.14	5.50	0.45	21.76	3.28	25.04
1933	..	2.73	11.00	3.93	9.27	14.84	1.01	43.68	0.17	43.85
1934	7.34	7.44	7.72	7.27	....	29.77	2.13	31.73
1935	3.23	10.77	3.37	3.07	2.20	22.64	....	22.64
1936	..	0.12	10.65	3.49	2.00	5.27	....	21.53	5.99	27.52
1937	4.80	12.47	1.81	9.85	1.21	30.04	0.01	30.05
1938	..	2.05	11.18	11.32	5.43	6.00	1.51	37.49	0.54	38.03
1939	2.51	9.83	9.24	1.63	0.02	23.23	0.28	23.51
1940	..	0.56	7.02	8.55	4.78	3.28	1.43	25.62	0.40	26.02
1941	0.84	17.24	3.15	4.47	0.01	25.71	1.13	26.84
1942	3.11	8.92	13.97	4.67	....	32.67	1.52	34.19
1943	..	1.59	8.22	8.28	1.58	4.55	6.02	30.24	0.34	30.58
1944	3.33	13.30	12.63	6.79	2.54	38.59	0.53	39.17
1945	1.40	6.20	16.31	8.75	0.13	32.61	0.12	32.73
1946	..	0.10	16.04	4.84	11.47	3.37	....	35.76	0.55	36.31
1947	0.88	8.28	10.41	5.82	0.23	25.62	2.20	27.82
1948	2.40	16.36	7.88	3.34	0.12	36.10	2.88	38.98
1949	3.44	13.92	4.40	13.67	0.52	35.85	....	35.85
1950	..	0.12	0.13	11.02	1.27	7.69	0.11	20.34	0.29	20.63
1951	2.53	13.65	4.95	1.25	1.11	23.49	0.06	23.55
1952	3.94	5.14	4.00	1.55	....	14.63	0.42	15.05
1953	4.91	9.54	11.49	2.27	1.07	30.28	0.71	30.99
1954	5.80	1.29	7.40	14.95	....	35.44	0.44	35.88
1955	4.76	5.23	11.90	8.50	4.46	34.85	0.06	34.91
1956	..	0.94	7.07	8.82	4.75	7.06	0.21	28.85	2.60	31.45
1957	..	0.20	8.60	7.77	7.90	4.46	0.09	29.02	0.16	29.19

Average=30.28

STATEMENT "B-I"—*contd.**Monthwise Rainfall Data.*

Taluka Erandol. ✓

(Fig. in inches).

Year.	May.	June.	July.	August.	September	October.	Total.	November to April.	Total Annual.	
1	2	3	4	5	6	7	8	9	10	
1931	2.06	10.36	10.53	9.02	10.72	43.61	0.43	44.04
1932	1.32	7.64	3.53	3.54	0.69	16.78	2.30	19.08
1933	..	2.62	7.12	3.82	10.79	6.69	..	31.04	..	31.04
1934	5.83	10.91	10.28	8.33	..	35.35	3.05	38.40
1935	2.33	10.45	2.97	4.89	0.06	20.80	0.06	20.86
1936	..	1.00	7.77	2.04	3.79	4.42	..	19.02	10.57	29.59
1937	3.62	9.55	0.68	5.17	0.90	19.92	..	19.92
1938	..	2.12	13.91	10.58	9.48	5.43	1.86	43.38	..	43.38
1939	0.49	11.00	8.60	2.83	..	22.92	1.23	24.14
1940	..	0.40	6.07	6.17	6.23	4.20	3.16	25.23	0.83	25.56
1941	0.45	11.55	2.89	6.13	..	19.99	2.00	21.99
1942	4.23	10.41	14.04	4.80	..	33.48	1.63	35.11
1943	..	0.43	4.95	4.64	2.71	5.29	6.90	24.92	1.04	25.95
1944	1.60	17.77	13.40	2.42	2.31	37.42	0.18	37.60
1945	2.80	7.56	10.03	7.03	..	27.42	0.18	27.60
1946	0.41	9.15	13.67	6.76	3.29	33.28	6.38	39.66
1947	1.55	9.14	13.66	6.25	1.55	31.75	1.75	33.51
1948	6.35	15.15	4.16	2.24	0.15	28.05	4.25	32.30
1949	..	0.40	3.75	10.63	14.78	17.48	2.29	39.33	..	49.33
1950	..	0.15	0.19	6.00	0.77	7.83	0.20	15.14	0.03	15.17
1951	..	0.18	1.62	5.59	5.11	1.20	4.16	17.86	0.77	18.73
1952	4.52	5.23	2.79	1.74	..	14.28	0.56	14.28
1953	4.36	8.55	5.92	2.90	1.10	22.83	0.20	23.03
1954	..	0.16	2.61	11.74	7.69	11.39	..	33.59	0.86	34.45
1955	6.21	3.80	15.81	6.68	2.59	35.15	..	35.15
1956	..	1.17	8.98	7.00	4.93	7.27	1.61	30.96	2.53	34.09
1957	4.53	11.17	4.92	3.13	0.07	23.83	N. A.	N. A.

Average=28.06

STATEMENT "B-I"—*contd.*
Monthwise Rainfall Data.
 Taluka Bhusaval.

(Fig. in inches).

Year.	May.	June.	July.	August.	September	October.	Total	November. to April.	Total. Annual.	
1	2	3	4	5	6	7	8	9	10	
1931	5.75	10.40	16.11	3.88	16.81	52.55	0.40	52.96
1932	1.80	12.80	3.89	7.46	0.54	25.99	..	25.99
1933	..	2.76	6.41	5.49	11.41	12.50	0.17	38.74	..	38.74
1934	5.72	9.01	10.18	10.86	..	35.77	2.14	37.91
1935	1.43	15.93	5.02	5.25	1.12	28.75	..	28.75
1936	3.72	2.33	3.60	5.10	..	14.75	9.69	24.44
1937	2.89	11.89	0.95	9.64	2.03	27.40	0.26	27.66
1938	..	0.81	13.45	16.73	4.69	6.46	1.42	42.55	0.45	43.00
1939	3.26	7.05	11.26	2.13	0.51	24.21	1.21	24.42
1940	..	0.25	10.16	10.13	5.69	4.69	3.63	34.55	1.44	35.99
1941	0.65	12.75	4.27	2.33	0.90	20.09	0.01	20.10
1942	..	0.25	3.97	9.07	14.46	4.26	..	32.01	2.15	34.16
1943	..	1.41	6.25	7.14	3.11	5.52	9.86	3.29	0.30	33.59
1944	3.70	16.66	20.00	4.25	0.50	45.11	0.72	45.83
1945	0.57	7.01	12.48	10.65	0.26	30.97	1.01	31.98
1946	..	0.78	9.32	8.39	6.56	3.43	0.48	28.96	6.59	35.55
1947	1.25	6.64	8.39	7.13	1.24	24.65	2.81	27.46
1948	9.00	19.68	10.35	3.93	0.46	43.42	3.46	46.88
1949	..	0.75	5.19	8.12	6.89	15.11	2.94	39.00	..	39.00
1950	..	0.13	0.32	8.29	2.57	7.80	2.81	21.92	0.11	22.03
1951	4.85	10.22	3.14	5.16	2.80	27.26	..	27.26
1952	5.15	6.00	4.05	1.83	0.07	17.10	0.94	18.04
1953	4.07	10.43	6.75	3.53	1.06	25.54	..	25.54
1954	3.15	11.47	6.15	11.55	..	32.32	0.19	32.51
1955	11.17	3.21	8.72	5.44	4.43	32.97	0.02	32.99
1956	..	3.50	8.00	11.92	4.72	4.46	0.69	33.36	2.51	35.87
1957	8.00	6.10	4.74	6.85	0.66	26.35	0.74	27.09

Average=31.10

STATEMENT "B-I"—*contd.*
Monthwise Rainfall Data.
 Taluka Parola. ✓

(Fig. in inches.)

Year	May.	June.	July.	August.	September.	October.	Total.	November to April.	Total Annual.
1	2	3	4	5	6	7	8	9	10
1931		2-03	13-44	6-57	8-06	10-07	41-97	0-71	42-68
1932		1-18	6-35	8-35	2-31	1-79	14-98	2-26	17-24
1933	3-65	7-22	3-25	11-30	6-62	0-83	32-92	1-21	34-13
1934	4-78	8-45	10-44	8-19	.....	.....	31-86	2-24	34-10
1935	0-06	8-21	3-65	3-95	1-25	.....	21-13	0-07	21-21
1936	0-08	7-80	2-39	1-80	6-24	.....	18-23	5-44	23-67
1937	2-15	11-76	0-96	3-26	1-50	.....	19-63	.....	19-63
1938	1-50	7-55	10-44	6-16	5-59	2-11	33-35	.....	33-35
1939	3-12	11-48	7-89	1-84	.....	.....	24-33	0-86	25-19
1940	6-68	6-43	7-68	2-46	3-11	.....	26-36	1-95	28-21
1941	0-14	12-83	1-34	2-41	0-39	.....	17-11	1-64	18-75
1942	5-11	9-27	16-20	6-34	.....	.....	36-92	3-51	40-43
1943	2-22	6-99	4-94	1-45	7-32	7-55	30-47	1-45	31-02
1944	4-10	11-75	9-92	1-86	1-95	.....	30-58	.....	30-58
1945	3-24	8-84	7-23	5-70	1-19	.....	26-20	0-45	26-65
1946	0-34	8-16	10-94	6-24	4-37	.....	30-04	0-04	35-08
1947	0-10	5-75	9-99	4-68	1-37	.....	21-89	3-92	25-81
1948	6-02	10-82	4-25	3-93	0-35	.....	25-37	4-53	29-90
1949	3-60	8-45	5-95	16-90	1-55	.....	36-45	.....	36-45
1950	.....	4-18	0-32	8-10	.....	.....	12-60	.....	12-60
1951	0-30	5-73	7-34	3-10	1-45	3-88	21-80	0-37	22-17
1952	3-32	5-78	2-61	1-29	.....	.....	13-00	.....	13-00
1953	5-12	8-97	7-07	1-29	1-96	.....	24-41	.....	24-41
1954	6-24	7-86	9-62	8-58	.....	.....	32-30	0-50	32-80
1955	5-00	8-65	12-91	5-97	4-01	.....	36-54	0-01	36-55
1956	2-18	9-33	8-63	3-97	9-71	4-50	38-32	2-41	40-36
1957	0-20	5-45	6-38	5-93	3-00	.....	20-90	0-74	21-64

Average = 26-63

STATEMENT "B-I"—*cont'd.**Monthly Rainfall Data.*

Taluka Amalner. ✓

(Fig. in inches)

Year.	May.	June.	July.	August.	September.	October.	Total.	November to April.	Total annual.	
1	2	3	4	5	6	7	8	9	10	
1931	5·07	10·01	7·95	7·77	7·64	38·44	0·59	39·03
1932	2·48	7·35	2·33	3·53	1·17	16·86	2·58	19·44
1933	..	2·06	6·64	2·51	11·66	6·34	0·74	29·95	0·81	29·76
1934	7·66	5·85	7·97	6·38	....	27·86	1·76	29·62
1935	5·78	5·13	5·54	4·44	1·83	22·72	....	22·72
1936	..	1·92	6·07	1·46	2·59	7·84	....	20·78	5·16	25·94
1937	6·28	8·44	0·46	6·08	1·26	22·52	1·02	23·54
1938	..	1·24	7·81	10·30	4·93	6·96	1·84	32·08	0·04	32·12
1939	1·56	9·28	7·01	1·51	0·06	19·42	0·58	20·00
1940	..	0·28	7·39	3·71	6·57	3·78	2·22	23·95	0·71	24·66
1941	1·67	9·34	1·32	2·20	0·16	14·60	1·25	15·94
1942	..	0·14	2·37	7·39	11·64	2·53	....	24·07	2·05	26·12
1943	..	1·63	4·79	9·29	1·35	2·32	6·93	26·31	....	26·31
1944	1·51	9·66	15·88	1·62	2·76	31·43	....	31·43
1945	2·18	7·04	8·64	8·44	2·99	29·29	....	29·29
1946	13·03	9·96	8·49	4·63	0·30	37·01	4·99	43·30
1947	0·49	5·31	6·94	5·20	0·59	18·53	0·73	20·09
1948	7·68	14·05	4·56	3·68	0·56	31·43	2·45	33·88
1949	8·30	10·10	9·54	22·25	4·76	54·96	....	54·96
1950	1·90	8·66	0·99	9·90	0·71	21·16	....	21·16
1951	..	0·05	4·68	9·32	4·44	0·03	2·24	20·76	....	20·76
1952	6·95	3·59	2·16	1·64	....	14·34	0·01	14·35
1953	4·17	10·50	5·69	0·87	3·48	24·66	0·27	24·93
1954	4·10	7·36	6·44	14·08	0·02	32·00	0·13	32·13
1955	2·48	6·46	9·66	3·35	5·56	27·60	0·05	27·65
1956	..	3·02	8·54	5·08	2·66	6·11	2·28	27·09	1·20	28·59
1957	..	0·32	8·16	6·99	2·91	4·30	....	22·68	0·41	23·09

Average = 26·42.

STATEMENT "B-I"—*contd.*
Monthly Rainfall Data.
 Taluka Bhadgaon. ✓

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	November to April.	Total. Annual.
1	2	3	4	5	6	7	8	9	10
1931		4.90	9.26	5.45	8.20	14.22	42.03	1.53	43.56
1932		2.11	6.05	5.77	2.92	9.93	17.78	0.58	18.46
1933	2.85	7.15	2.83	7.59	11.03	2.71	34.16	0.58	34.74
1934		3.30	8.01	10.81	10.98		33.10	3.47	36.57
1935	0.49	0.32	4.39	4.56	7.72	4.70	28.18	0.06	28.24
1936	0.19	0.32	5.73	3.77	3.99		20.00	11.33	31.33
1937		2.43	12.59	0.98	3.74	3.73	23.47		23.47
1938	2.19	11.52	7.25	4.61	7.03	1.85	34.85	0.27	35.12
1939		3.85	8.00	12.13	1.26	0.02	25.26	0.74	26.00
1940	0.31	3.96	3.78	9.90	4.05	1.25	23.25	1.05	24.30
1941		1.32	11.34	3.29	5.98	0.09	32.02	1.74	33.76
1942		2.80	7.47	10.98	6.23		27.48	0.81	28.29
1943	4.27	3.83	5.53	1.64	5.51	7.10	27.88	0.07	27.95
1944		2.23	8.22	5.91	4.57	0.50	21.42	0.19	21.61
1945		2.02	5.19	5.57	6.02	0.19	18.94	0.37	19.31
1946	2.72	9.98	9.98	4.08	3.75		30.51	8.73	39.24
1947		4.16	9.37	10.75	5.60	9.88	30.76	1.52	32.28
1948		9.06	12.62	5.88	2.70	0.36	30.42	4.93	35.35
1949	1.66	2.15	6.97	3.57	19.67	1.39	35.41		35.41
1950	0.40	0.68	4.75	0.23	11.68		17.74	0.04	17.78
1951	0.71	4.40	7.39	6.57	2.38	3.94	25.39	0.46	25.85
1952	0.04	4.31	4.89	3.26	0.69		13.19		13.19
1953		7.55	9.98	3.81	3.33	2.25	26.91	0.10	27.01
1954	0.21	7.58	8.33	6.17	11.66		33.55	0.45	34.00
1955		7.75	7.91	13.31	15.28	3.97	48.22		48.22
1956	4.28	0.92	13.54	5.78	8.63	9.84	48.99		48.99
1957	0.93	4.56	5.19	10.75	3.64	0.04	25.11	0.95	26.06

Average=28.55

STATEMENT "B-I"—*concl'd.**Monthly Rainfall Data.*

Taluká Chalisgaon. ✓

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	November	Total.
1	2	3	4	5	6	7	8	to April.	annual.
								9	10
1931.	.....	4.00	10.97	6.76	12.01	17.34	51.18	0.63	51.81
1932.	.....	3.95	4.91	5.96	4.25	3.56	22.63	2.48	25.11
1933.	1.64	5.09	4.96	5.90	15.06	0.92	33.57	1.82	35.39
1934.	.....	0.97	5.14	13.89	9.39	.....	29.39	2.14	31.53
1935.	.....	3.77	4.49	7.95	9.25	4.83	30.29	1.42	31.71
1936.	0.38	4.23	4.17	1.54	5.01	.....	15.31	13.11	28.42
1937.	.....	3.24	8.35	2.13	7.61	2.96	24.59	.....	24.59
1938.	1.37	6.32	10.54	3.89	10.97	4.90	37.99	0.68	38.57
1939.	.....	4.38	8.30	8.40	5.00	.....	26.08	1.84	27.92
1940.	0.31	7.58	2.45	6.95	5.54	0.77	23.60	0.88	24.48
1941.	.....	0.72	11.16	1.82	4.93	10.09	18.78	0.64	19.42
1942.	.....	4.93	5.45	7.99	5.88	.....	24.25	1.01	25.26
1943.	2.41	4.11	6.29	3.35	12.30	6.23	34.75	.....	34.75
1944.	.....	1.73	9.33	5.39	7.83	.....	24.28	0.62	24.90
1945.	.....	2.08	7.21	12.53	7.83	.....	29.65	0.71	30.36
1946.	0.39	4.24	9.45	2.90	6.93	.....	23.91	9.16	33.07
1947.	.....	5.56	6.20	8.31	8.48	0.78	29.33	3.88	33.21
1948.	.....	9.78	8.44	5.08	6.37	0.14	29.81	3.93	33.74
1949.	1.27	5.87	5.08	5.73	21.41	3.32	42.78	.....	42.78
1950.	0.54	1.75	6.01	2.75	7.18	.....	18.23	0.38	18.61
1951.	0.45	6.71	4.99	5.02	1.30	4.54	22.01	0.46	22.47
1952.	.....	1.98	8.54	2.07	1.26	.....	13.85	0.18	14.03
1953.	.....	7.14	11.20	4.00	5.24	4.08	31.66	.....	31.66
1954.	.....	13.13	4.15	3.20	13.74	.....	34.22	0.20	34.42
1955.	.....	6.60	6.25	10.20	9.20	4.27	36.52	0.25	36.77
1956.	7.74	5.46	9.63	6.37	12.43	4.65	46.39	7.98	54.37
1957.	.....	3.78	8.09	6.03	3.04	0.13	21.07	1.87	22.94

Average=28.75

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under Irrigation				Total area under irrigation and its percentage to cropped area.		
		Canals.	Tanks.	Wells.	Other sources.			
1	2	3	4	5	6	7		
1	Jalgaon	..	..	8,647	..	3,647	2.4
2	Bhusaval	..	207	3,720	..	3,927	2.5	
3	Yawal	..	49	7,248	..	7,297	5.4	
4	Raver	..	..	10,597	..	10,597	7.5
5	Amalner	..	1,000	9,213	..	10,213	5.2	
6	Parola	..	896	6,831	..	7,227	5.2	
7	Chopda	..	..	1,209	..	1,209	0.7
8	Erandol	..	..	5,561	..	5,561	2.7
9	Chalisgaon	..	1,288	3,806	..	5,094	2.3	
10	Pachora	..	..	2,829	..	2,829	1.7
11	Jamner	..	937	3,372	..	4,309	1.7	
12	Bhadgaon	..	1,092	1,257	..	2,349	2.5	
13	Edlabad	..	..	105	1,210	1,315	1.4
District Total		..	4,969	105	60,500	..	63,574	3.1

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total acreals.	Total pulses.	Total food crops and its percentage.	Oil seeds and its percentage.	Cotton and its percentage.	Total non-food crops.			
				Under Kharif.	Under Rabi.										
1	2	3	4	5	6	7	7	8	10	11	12	13			
1	Jalgaon	891	9,528	22,856	1,073	7,014	41,588	34,502	89,564	60.0	16,182	12.3	38,410	25.9	58,422
2	Bhusaval	884	5,064	28,770	2	6,339	41,213	32,476	76,950	49.9	21,807	14.1	54,816	35.6	77,025
3	Yawal	755	7,502	22,541	457	6,372	37,673	27,923	73,926	54.0	25,919	19.2	33,809	25.1	60,676
4	Raver	919	11,210	24,101	....	2,026	38,324	25,716	73,657	55.6	14,387	10.8	43,789	33.0	58,255
5	Amalner	697	11,449	18,179	23,684	21,223	75,435	31,257	1,16,341	59.2	37,609	19.1	42,179	21.4	80,255
6	Parola	645	4,207	20,505	4,480	20,635	50,691	25,422	80,682	58.3	34,543	24.0	22,681	16.4	57,507
7	Chopda	876	8,306	19,292	15,435	14,855	59,168	31,058	92,623	54.8	19,966	11.8	55,786	33.0	76,302
8	Brandol	928	5,685	34,186	12,298	17,457	70,180	41,238	1,17,265	57.1	38,731	18.8	48,664	23.7	88,117
9	Chalgaon	1,507	3,965	34,138	593	66,132	1,06,767	34,606	1,44,761	66.0	46,336	21.1	27,606	12.6	74,405
10	Pachora	1,943	4,207	27,577	2,484	21,197	55,372	29,013	88,091	58.0	29,309	17.6	48,049	28.9	78,045
11	Jamner	1,165	1,367	44,903	20	9,927	57,797	55,540	1,16,551	47.2	35,918	14.6	92,473	37.4	1,30,298
12	Bhadgaon	1,527	2,823	15,209	....	15,800	35,563	17,937	56,049	59.8	8,533	9.1	28,776	30.7	37,555
13	Edlabad	233	2,836	17,484	27	1,727	22,322	18,018	42,618	46.1	6,339	6.8	42,290	46.8	49,883
District Total ..		12,970	78,199	3,29,741	60,453	2,10,704	6,92,299	4,05,705	11,69,033	55.8	3,37,644	11.3	5,80,328	27.7	9,27,275

CHAPTER XIII.

PARBHANI DISTRICT.

Part I—Background.

1. *Location and Area.*—Parbhani is one of the five districts of Marathwada, having Buldana and Akola districts of Vidarbha on the north, Nanded district of Marathwada on the east, Bhir and Osmanabad districts on the south and Aurangabad to the west. For administrative purposes it is divided into eight talukas which gave a total population of 10,10,864 persons distributed over 1300 villages and having density of 208 persons per sq. mile. Detailed information is given in Statement "A".

2. *Topography.*—The northern part of the district comprising the talukas of Jintur, Hingoli, Kalamnuri and Partur is hilly. These hills are a continuation of the Belghats of Vidarbha Districts. The elevation of this area is 1500 ft. to 1800 ft. above sea level. The central and southern part of the district is a low-lying plain gradually sloping towards the south-east with an elevation descending from 1400 feet in Partur and Pathri talukas to 1200 feet at the south-eastern end of the district, where the river Godavari enters Nanded district. On the extreme south the Gangakhed taluka to the south of Godavari river is quite hilly. Some of the hills have an elevation of 1700 feet to 1800 feet above sea level.

3. *Soils.*—The district can be divided into two parts. The northern upghat areas having light and medium soils are subjected to heavy erosion. A narrow strip along the south of Aurangabad-Parbhani railway line and the southern half of Gangakhed taluka have lighter soils with undulating topography. The central parts of the district consisting of parts of Partur, Pathri, Jintur, Parbhani and Basmath have medium and heavy black soils. The best soils are to be seen in the valleys of the rivers Godavari, Dudhana and Purna, capable of growing good kharif and rabi crops.

4. *Crops.*—The major portion of the cropped area is under Kharif crops. However, there is an appreciable rabi area varying from 25 to 45 per cent. in Pathri, Parbhani, Gangakhed, Partur and Basmath talukas. The main crops of the district are as under :—

Crops.				Acreage.
Kharif Jowar	...	...	...	4,37,984
Cotton	...	...	...	5,30,334
Oilseeds	...	...	...	2,70,156
Rabi Jowar	...	...	...	4,80,885
Wheat	...	...	...	1,22,687

5. *Irrigation.*—The total area under irrigation in the district is 42,284 acres or 1.7 per cent. of the cropped area, mostly under wells. Basmath taluka is noted for its irrigated garden crops. The main source of irrigation is wells which have good underground percolation. The Purna river project which is in progress is expected to bring about one lakh acres under irrigation in this district. The total area under forests is 43,927 acres which is mostly located in high-lying areas on the north and east.

6. *Rainfall.*—The average rainfall worked out on the basis of figures recorded from 1949 to 1958 in respect of different talukas is shown below :—

Taluka.			(Rainfall in inches.)	Minimum.
	...	...	Average.	
Parbhani	...	...	35.90	27.30
Pathri	...	...	32.90	17.20
Partur	...	...	24.70	16.70
Gangakhed	...	...	36.70	20.64
Jintur	...	...	34.90	20.70
Basmath	...	...	34.60	24.10
Hingoli	...	...	40.00	22.50
Kalamnuri	...	...	38.10	15.60

The minimum rainfall shown above is only for a single year. The rainfall has generally been above 20" in all the talukas.

Part II.—Determination of Chronic Scarcity and Precarious Areas.

None of the talukas of this district has been reported to have suffered from scarcity in the past. Sometimes excessive rainfall causes difficulties. On the whole, the soil is good and capable of growing kharif as well as rabi crops and a money crop like cotton. This district may, therefore, be regarded as free from scarcity.

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of Villages.	Gross area		Population.	Density per sq. mile.	Gross cropped area.	Net cropped area.	Area under Forest.
			in sq. miles.	in acres					
1	2	3	4	5	6	7	8	9	10
1	Parbhani ..	165	546	3,57,152	1,50,023	275	3,39,538	3,08,985	..
2	Gangakhed ..	178	630	3,98,873	1,45,684	231	3,04,016	2,87,489	..
3	Pathri ..	159	618	3,95,424	1,42,272	230	3,29,637	3,24,074	..
4	Partur ..	180	588	3,81,170	1,07,387	182	3,23,508	3,12,618	1,047
5	Jintur ..	218	669	4,13,938	1,08,497	162	2,96,380	2,89,328	8,994
6	Hingoli ..	214	730	4,60,580	1,27,279	176	3,01,225	2,97,872	19,288
7	Kalamnuri ..	194	583	3,56,758	1,08,839	187	2,45,509	2,45,509	3,802
8	Basmath ..	192	482	3,28,588	1,20,883	208	2,76,004	2,71,878	10,818
District Total ..		1,500	4,846	30,92,263	10,10,864	208	24,15,212	23,32,458	48,927

STATEMENT "B".

Rainfall Data.

(Fig. in inches.)

Taluka.	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	Average
1	2	3	4	5	6	7	8	9	10	11	12
Parbhani ..	28.6	42.3	28.8	30.6	27.3	36.0	32.4	53.1	41.2	33.3	35.9
Pathri ..	33.0	36.0	32.0	25.1	35.6	17.2	33.7	51.3	32.7	29.5	32.9
Partur ..	N.A.	N.A.	26.6	28.8	16.7	24.3	34.5	47.0	36.9	21.8	24.7
Gangakhed ..	N.A.	N.A.	N.A.	20.6	24.8	40.4	41.4	48.0	43.4	38.5	36.7
Jintur ..	36.5	38.9	25.0	30.0	20.7	35.6	34.3	53.3	41.2	33.0	34.9
Basmath ..	37.4	40.0	24.1	33.3	25.6	38.8	33.9	50.0	38.2	50.0	34.8
Hingoli ..	51.7	41.4	31.1	31.4	22.5	43.8	44.7	57.4	42.9	30.5	40.0
Kalamnuri ..	35.9	52.4	17.9	31.4	15.6	46.0	41.5	54.1	45.5	40.4	38.1

STATEMENT "C".

Irrigation Data

Serial No.	Taluka	Area under irrigation				Total area under irrigation and its percentage to cropped area		
		Canals	Tanks	Wells	Other sources	Acres	%	
1	2	3	4	5	6	7		
1	Parbhani	..	....	....	5,534	....	5,534	1.6
2	Gangakhed	..	....	....	1,440	....	1,440	0.5
3	Pathri	..	....	....	8,394	....	8,394	2.5
4	Partur	..	....	....	3,405	....	3,405	1.0
5	Jintur	..	....	....	3,142	....	3,142	1.0
6	Hingoli	..	....	....	1,115	....	1,115	0.3
7	Kalamnuri	..	....	....	9,007	....	9,007	3.7
8	Basmath	..	....	....	10,247	....	10,247	3.7
	Total	..	....	....	42,284	....	42,284	1.7

STATEMENT "D"

Distribution of crops

Serial No.	Taluka	Rice	Wheat	Jawar		Bajri	Total cereals	Total pulses	Total foodcrops	Oil-seeds	Cotton	Total non-foodcrops
				under Kharif 5	under Rabi 6							
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Parbhani	2,063	16,288	27,484	1,00,624	1,056	1,48,357	82,329	2,34,283	41,608	60,080	1,05,255
2	Gangakhed	3,597	14,377	50,231	72,435	1,086	1,42,995	56,935	2,35,915	49,394	47,378	68,101
3	Pathri	878	11,634	6,559	1,25,935	1,685	1,47,133	50,359	2,02,689	67,313	58,198	1,26,348
4	Partur	1,665	12,596	37,927	79,569	2,996	1,35,080	61,871	2,00,660	40,327	77,604	1,22,843
5	Jintur	2,991	10,816	55,977	55,794	1,514	1,27,630	64,819	1,94,867	23,162	68,853	1,01,513
6	Hingoli	6,081	29,331	97,760	421	205	1,82,175	63,790	1,97,557	15,757	85,362	1,03,668
7	Kalamnuri	4,457	19,300	89,646	356	319	1,15,341	44,649	1,63,192	7,799	72,715	82,317
8	Basmath	4,424	11,345	72,400	47,851	185	1,35,086	48,019	1,90,913	19,796	60,194	85,091
Total ..		25,556	1,22,687	4,37,984	4,80,885	9,046	11,33,797	4,72,771	16,20,076	2,70,166	5,30,334	7,95,136

CHAPTER XIV.

NANDED DISTRICT.

Part I—Background.

1. *Location and Area.*—Nanded is one of the five districts of Marathwada and is situated on the south-east border of the State adjoining Andhra Pradesh. It has Yeotmal District to the north and Parbhani to the west. On its south-west is the Osmanabad District. The district is divided in the following talukas : Nanded, Biloli, Mukhed, Kandhar, Hadgaon, Bhokar, Degloor and Kinwat. Detailed information regarding the talukas is given in the Statement A.

2. *Topography and Soils.*—The soils in this district are deep and medium black except in the talukas of Hadgaon, Bhokar, Mukhed and parts of Kandhar, where the soils are very shallow due to the hilly nature of the land. The river Godavari, which flows through the centre of the district, has benefitted the tract on both sides of its banks in the talukas of Nanded, Kandhar and Biloli. The Manad and the Lendi, flowing in the talukas of Biloli and Deglur respectively have improved the fertility of soils in these talukas. The river Painganga, flowing along the northern boundary of this district has also benefitted to some extent the areas in its valley in the talukas of Hadgaon and Kinwat.

3. *Rainfall.*—Figures of average rainfall of last ten years for different talukas and minimum during this period are as under :—

Taluka.	Average.	Minimum.
Nanded	39.45	29.39
Biloli	39.41	24.46
Degloor	54.00	21.85
Mukhed	32.84	25.34
Kandhar	35.97	19.52
Hadgaon	41.50	16.83
Bhokar	33.18	18.43
Kinwat	52.42	29.83

The minimum rainfall reported above occurs rarely. In most years the rainfall has been much above the minimum.

4. *Crop Pattern.*—The study of the rainfall data shows that the kharif rains received in the months of June to September are fairly assured and the farmers, therefore, prefer to grow more kharif crops like jowar, cotton, groundnut and pulses, specially Tur and Mung. The acreage under kharif crops is about 80 per cent. except in the talukas of Deglur, Biloli and Nanded, where the farmers do grow rabi crops like jowar, wheat and gram as well. Here on account of the heavier and retentive nature of soils about 30 to 40 per cent. of the area is under rabi and only about 60 to 70 per cent. under kharif.

The areas under different crops in the district are as under :—

Crop.	Acres.
1. Kharif jowar	5,48,594
2. Cotton	4,83,433
3. Oil seeds	1,80,027
4. Rabi Jowar	1,18,554
5. Wheat	67,313
6. Rice	41,697

The district can be divided into 3 zones, the northern-most area comprises the talukas of Kinwat and Hadgaon, getting sufficiently heavy rainfall. There are very good forests in Kinwat Taluka with scattered patches of cultivated land in between. The middle portion comprising the talukas of Nanded, Bhokar, Biloli, Deglur and northern half of Kandhar has flat and medium black soils giving better crops of cotton and kharif jowar as well as rabi crops. The acreage under well-irrigation in Nanded and Kandhar Talukas of this zone has been appreciable and there is a tendency amongst the farmers to increase acreage under sugarcane, as it is an assured money crop. The third zone comprises the talukas of Mukhed and southern part of Kandhar Taluka. This tract is very hilly and undulating with the result that the soils are very shallow, capable of growing yellow jowar and

groundnut in poorer soils and cotton in better soils under optimum rainfall conditions. When there are long breaks in the rain the yields of jowar and cotton in this area suffer to a great extent. The farmers have, however, taken subsidiary occupation of rearing cattle, a breed known as "Red Kandhar" in this area. This area has also a reserved teakwood forest of 1,200 acres at Rasengaon in the western part of Kandhar Taluka.

5. *Irrigation*.—The total area under irrigation is 16,394 acres which is only 0.9 per cent. of the cropped area.

Part II.—Determination of Chronic Scarcity and Precarious Areas.

The district has not been affected by scarcity in the past except for some villages of Hadgaon, Kandhar and Mukhed Talukas which were affected once or twice during the last ten years. These villages do not constitute any compact or sizable area. These villages appear to have suffered due to excess of rainfall rather than its deficiency. Out of 122 villages of Mukhed Taluka, 57 villages were reported to have been affected once or twice during the period 1950-51 to 1956-57. The rainfall data of this taluka given below would show that there was no deficiency of rainfall, though the distribution might have been unfavourable in some areas—

Year.				Kharif.	Rabi.	Total.
1950	..	..	..	21.86	3.48	25.34
1951	..	..	..	26.72	3.14	29.86
1952	..	..	..	28.42	2.64	29.06
1953	..	..	..	23.56	2.21	25.77
1954	..	..	..	34.03	3.71	37.74
1955	..	..	..	35.24	0.25	35.49
1956	..	..	..	35.68	3.71	39.39
1957	..	..	..	29.75	6.37	36.12
1958	..	..	..	29.62	7.36	36.98
Average	..	..	..	28.19	3.65	32.84

Though there is some uncertainty of rain, there is no area in the district which can be marked out as having suffered continuously due to deficient rains. On the whole, therefore, this district may be regarded as free from chronic scarcity,

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross area.		Popula- tion.	Density per sq. mile.	Gross cropped area.	Net cropped area.	Area under Forest.
			In square miles.	In acres.					
1	2	3	4	5	6	7	8	9	10
1	Nanded	180	395	2,46,623	1,63,198	413	2,08,864	2,06,872	..
2	Degloor	106	262	1,67,650	72,247	275	1,36,274	1,36,274	..
3	Biloli	237	563	3,69,211	1,51,289	268	3,15,317	3,15,317	1,022
4	Kandhar	197	629	4,05,919	1,45,078	230	2,86,496	2,83,980	8,545
5	Hadgaon	181	601	3,77,280	1,08,643	180	2,56,491	2,56,182	29,399
6	Kinwat	204	801	4,90,396	88,210	110	2,35,884	2,33,503	1,24,831
7	Bhokar	131	399	2,68,460	72,780	182	1,74,524	1,74,524	27,711
8	Mukhed	122	338	2,34,434	82,086	243	1,70,743	1,66,095	1,963
District Total		1,358	3,983	25,59,973	8,83,531	221	17,84,593	17,72,747	1,93,471

STATEMENT "B".

Rainfall Data.

(Fig. in inches)

Taluka.	1949.	1950.	1951.	1952.	1953.	1954.	1955.	1956.	1957.	1958.	Average
Nanded	47.19	29.39	37.20	29.91	45.92	39.37	47.83	36.17	33.72	47.84	39.45
Biloli	36.40	33.73	39.15	24.46	44.85	30.27	34.89	52.21	55.18	43.30	39.41
Degloor	49.27	53.22	37.71	29.81	21.85	51.65	35.13	59.43	54.37	52.57	54.00
Mukhed	25.34	29.86	29.60	25.77	25.77	37.74	35.49	39.39	36.12	36.88	32.84
Kandhar	46.40	24.88	30.31	19.52	35.26	37.92	42.51	36.51	49.14	37.45	35.97
Hadgaon	..	16.83	37.83	26.42	42.10	36.10	47.95	48.18	36.20	53.70	41.50
Bhokar	..	21.62	23.79	18.43	26.43	36.75	50.10	41.16	42.26	49.29	33.18
Kinwat	47.10	34.65	31.36	29.83	52.35	47.95	87.00	82.50	64.54	60.00	52.42

STATEMENT "C",

Irrigation Data,

Serial No.	Taluka.	Area under irrigation.				Total area under irrigation and its percentage to cropped area.	
		Canals.	Tanks.	Wells.	Other sources.		
1	2	3	4	5	6	7	
1	Nanded ..	..	25	5,698	....	5,723	2.7
2	Degloor ..	..	....	764	....	764	0.5
3	Biloli ..	..	802	2,120	....	2,622	0.8
4	Kandhar ..	..	603	3,741	....	4,344	1.5
5	Hadgaon ..	..	....	972	....	972	0.8
6	Kinwat ..	..	....	463	....	463	0.2
7	Bhokar ..	..	....	976	....	976	0.5
8	Mukhed ..	..	98	442	....	540	0.3
District Total		..	1,228	15,166	....	16,394	0.9

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Total cereals.	Total pulses.	Total food crops.	Oil seeds.	Cotton.	Total non-food crops.	
				Under Kharif.	Under Rabi.							
				5	6							
1	2	3	4	5	6	7	8	9	10	11	12	
1	Nanded ..	..	3,653	7,740	66,091	29,341	1,08,349	35,604	1,50,417	9,463	40,257	58,447
2	Degloor ..	..	2,142	7,469	19,142	28,121	58,191	30,151	97,374	85,698	20,969	26,894
3	Biloli ..	..	5,078	10,952	64,850	41,034	1,23,144	71,244	2,25,785	35,048	52,297	89,532
4	Kandhar ..	..	6,128	3,978	93,908	5,919	1,12,565	52,089	1,79,526	27,551	80,770	1,15,970
5	Hadgaon ..	..	6,308	27,004	97,140	77	1,37,770	33,886	1,68,353	5,411	81,004	88,138
6	Kinwat ..	..	9,449	4,829	85,284	..	1,01,823	27,287	1,30,843	4,010	99,008	1,05,041
7	Bhokar ..	..	6,221	2,271	69,207	420	78,441	27,316	1,11,590	4,294	57,392	62,934
8	Mukhed ..	..	2,118	2,980	52,372	13,642	72,824	38,399	1,13,825	8,562	45,736	56,918
District Total ..		..	41,697	67,313	5,48,594	1,18,554	7,87,107	3,15,976	11,68,713	1,80,027	4,83,433	6,15,8

POONA DIVISION

(b.c.f.) No B H 643-16a

CHAPTER XV.

KOLHAPUR DISTRICT.

Part I—Background.

Kolhapur District forms part of the Deccan plateau along the crest of the Sahyadri mountains. On the west, for about 100 miles, it is bounded by Ratnagiri District, on the south where it has a width of about 70 miles it is bounded by South Satara District, on the east by the Mysore State and on the south where the district narrows down to a width of only about 30 to 40 miles it is bounded by Mysore State and Ratnagiri District.

2. *Physical Features.*—Except for a few rugged villages at the foot of Bavda pass about 24 miles south-west of Kolhapur, most of the area is of level table lands covered with green trees. The main Kolhapur plateau to the east of the Sahyadri crest varies from 30 to 50 miles in breadth and is 2000 to 1800 ft. above sea-level. The Poona-Belgaum road passing through the district from north to south divides the district into two unequal parts. The western part is known as Hill-top Konkan, a wet and cool region but a rugged tract of hills and valleys. The eastern part stretching about 30 miles is known as Desh or plain and passes into the hot and dry region of the central Deccan. The western hilly belt consists of the Sahyadri range and a series of six valleys separated by lines of hills which run north-east. The hills once covered with timber trees are at present covered with brush-wood. This area is inhabited mostly by backward class people. Between the hills are the six main valleys of the Varna, the Panchganga, the Dudhganga, the Vedganaga, the Hiranyakeshi and the Ghatprabha inhabited by skilful farmers growing sugarcane garden crops near the village sites along the streams from which water is lifted. Beyond the garden lands stretch green fields, many of which yield excellent crops. Towards the end of the valleys there is poor soil which grows only coarse grain. The hill sides are bare but in many places are built terraces of kyarif land growing rice. On the whole western belt, the rainfall varies from 250" to 50" along the crest and decreases towards the east.

The eastern plain or Desh includes the mouth of the valleys of Varna, the Panchganga, the Dudhganga and the Vedganaga and beyond the mouths of the valleys part of the broad Deccan plain broken by low ridges of hills, contain patches of watered garden lands and fields, yielding rich crops of millets and wheat with garden lands growing sugarcane and tobacco crops. In the eastern block of Kolhapur, the rainfall suddenly dwindles and becomes less certain. The villages on this side are, however, more prosperous, growing rich crops of sugarcane, turmeric and other garden crops in places having good sub-soil water.

The drainage of the Kolhapur district is generally east-ward into the Krishna, which forms the north-easterly boundary of Kolhapur for about 25 miles in which the Varna, the Panchganga and the other rivers flow, one after the other, as the Krishna flows from north to south.

3. *Administrative Set-up.*—For administrative purposes the district is divided into the following talukas :—

Serial No.	Name of the Taluka.	Area in sq. miles.	No. of villages.	Total population.	Density per sq. mile.
1	Ajara	205	70	59,025	288
2	Bavda	261	76	52,922	203
3	Bhudatgadh	253	96	65,929	260
4	Gadhinglaj	192	87	1,11,397	580
5	Hathkanangle	235	46	1,69,700	722
6	Kagal	212	77	1,10,734	522
7	Katvir	262	104	2,66,299	1,017
8	Panhala	218	101	96,379	442
9	Radhanagati	344	108	87,205	253
10	Shahuwadi	408	130	86,755	212
11	Shitrol	204	44	1,21,197	594
12	Chandgadh	394	130	80,513	203

4. *Forests.*—The total forest area in the district is 638 sq. miles mainly on the eastern side of the Sahyadris.

5. *Rainfall.*—There is great variation between the rainfall of the western side on high mountains and the eastern plain area. The average of Radhanagari is 158" while the average of Shirol for the same period is 29.1".

The talukawise figures of average and minimum rainfall of last 10 years are given below :—

Serial No.	Name of the Taluka.	Average rainfall of last 10 years.	Minimum rainfall during the last 10 years.
1	Hatkanang'o	29.2	18.0 (1949)
2	Shirol	29.1	19.0 (1951)
3	Bhudargadh	71.0	52.6 (1949)
4	Radhanagari	158.0	115.0 (1951)
5	Kagal	29.6	20.4 (1949)
6	Gadhinglaj	39.2	26.4 (1951)
7	Ajra	74.8	50.2 (1949)
8	Panhala	66.2	50.4 (1951)
9	Shahuwadi	75.0	51.1 (1951)
10	Karvir	34.2	25.9 (1951)
11	Bavda	250.3	205.4 (1952)
12	Chandgadn	115.7	81.1 (1949)

The rainfall in Hatkanangle, Shirol and Kagal is lowest being 29.2, 29.1 and 29.6. The area under irrigation in these three talukas is, however, considerable. Sugarcane, tobacco and other valuable crops are being grown in these talukas by irrigation. Rice is the principal crop in the heavy rainfall areas.

6. *Cropping Pattern.*—The area under different crops in the district is given below :—

	Acres.
Rice	215335
Jowar (Krarif)	130069
Sugarcane	58203
Tobacco	31224
Groundnut	113675
Chillies	15492
Cotton	10140

The district has got large number of irrigation wells over which pumping sets are working. Government has installed 44 electric pumps for irrigation over the Panchganga river and cultivators have installed over rivers, wells and tanks, 4220 pumping sets in the district. This is an unusual feature of the district which serves as a protective measure against failure of rain.

7. *Irrigation.*—The area under irrigation in each Taluka is as given below :—

Serial No.	Name of Taluka.	Area under irrigation.
1.	Ajra	235
2.	Bavda	78
3.	Bhudargadh	347
4.	Chandgadn	1184
5.	Gadhinglaj	2189
6.	Hatkanangale	2950
7.	Kagal	2025
8.	Karvir	3551
9.	Panhala	1727
10.	Radhanagari	3727
11.	Shahuwadi	171
12.	Shirol	6386.

Part II—Determination of Precarious and Chronic Scarcity Area.

No part of the District was affected by scarcity during the last 30 years. The only parts of this district which used to be affected in the past were Raibag and Katkol-Talukas which are now in Mysore State. The present district of Kolhapur would be considered as a scarcity free district.

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of Villages.	Gross Area		Population.	Density per sq. mile.	Gross cropped area.	Net cropped area.	Area under Forest.
			in sq. miles.	in acres.					
1	2	3	4	5	6	7	8	9	10
1	Ajra	79	205	1,32,252	59,025	288	73,724	73,466	36,267
2	Bavda	76	261	1,55,180	52,922	203	29,035	28,933	31,138
3	Bhudargadh	96	253	1,59,246	65,929	260	61,499	61,269	59,676
4	Gadhinglaj	87	192	1,22,258	1,11,397	580	1,04,078	1,01,998	4,328
5	Hatkanangale	46	235	1,50,575	1,69,700	722	1,19,328	1,16,758	2,340
6	Kagal	77	212	1,35,289	1,10,734	522	1,06,815	1,06,101	3,651
7	Karvir	134	262	1,65,835	2,96,209	1,017	1,11,261	1,09,463	10,772
8	Panbala	101	218	1,40,527	96,379	442	72,010	69,569	29,153
9	Radhanagari	108	344	2,20,485	87,205	253	70,403	67,472	70,846
10	Shahuwadi	130	408	2,57,065	86,765	212	78,723	74,128	60,799
11	Shirol	44	204	1,25,466	1,21,192	594	1,06,570	1,06,013	2,228
12	Chandgadhd	130	394	2,38,037	80,513	205	85,884	82,919	67,762
	District Total	1,108	3,188	20,02,215	13,08,000	410	10,19,350	9,98,089	3,78,960

STATEMENT "B".

Rainfall Data.

(Fig. in inches.)

Talukas.	Years.											Average.
	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958		
Ajra	50.2	87.8	57.5	70.7	83.7	78.0	71.1	101.5	66.1	32.1	74.8	
Bavda	271.1	277.4	243.8	205.4	229.8	263.8	284.5	260.3	206.5	260.2	250.3	
Bhudargadh	52.6	86.6	60.9	73.2	95.5	67.3	67.3	80.7	61.4	77.4	71.9	
Gadhinglaj	29.2	42.6	26.4	32.6	51.0	36.6	35.1	44.0	42.4	53.9	39.2	
Hatkanangale	18.0	25.0	18.2	24.5	35.3	31.3	41.2	38.8	27.7	31.8	29.2	
Kagal	20.4	30.0	20.8	28.7	40.0	27.9	31.1	32.4	30.5	34.7	29.6	
Karvir	27.3	35.2	25.9	27.4	56.6	40.6	43.8	30.2	26.5	28.4	34.2	
Panbala	60.8	60.8	50.4	50.5	83.6	78.3	68.8	69.7	58.6	80.8	66.2	
Radhanagari	115.9	204.8	115.0	158.0	162.2	146.3	183.7	202.3	142.2	115.5	158.0	
Shahuwadi	61.9	73.7	51.1	86.1	92.9	71.3	82.9	84.7	76.5	78.0	75.9	
Shirol	24.8	35.9	19.0	23.3	32.3	22.0	33.4	43.5	31.4	25.3	29.1	
Chandgadhd	81.1	120.0	89.8	106.0	145.4	111.4	98.0	123.0	132.3	153.8	115.7	

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under irrigation by			Other Sources.	Total irrigated Area and its percentage to cropped area.	
		Canals.	Tanks.	Wells.		6	7
1	2	3	4	5	6	7	
1	Ajra ..	....	45	190	....	235	0.3
2	Bavda ..	....	....	78	....	78	0.2
3	Bhudargadh ..	....	....	347	....	347	0.5
4	Gadhinglaj ..	....	21	2,168	....	2,189	2.1
5	Hatkanangle ..	825	295	2,030	....	2,950	2.5
6	Kagal ..	....	371	1,654	....	2,025	1.8
7	Karvir ..	....	490	3,061	....	3,551	3.2
8	Panhala ..	....	....	1,794	....	1,794	2.6
9	Radhanagri ..	3,319	....	403	....	3,727	5.6
10	Shahuwadi ..	....	....	171	....	171	0.2
11	Shirol ..	....	....	6,386	....	6,386	6.0
12	Chandgad ..	47	59	978	....	1,184	1.4
District Total ..		4,091	1,281	19,265	....	24,637	2.4

STATEMENT " D "

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total Cereals.	Total pulses.	Total food crops.	Groundnut and its percentage.	Fodder crops.	Total non-food crops.
				Under Kharif.	Under Rabi.							
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Ajra	18,976	50	3,540	....	398	42,019	2,767	46,195	5,040	22,234	27,529
2	Bavda	11,034	6	....	....	....	22,316	133	23,490	560	4,978	5,545
3	Bhudargadh	22,093	54	2,237	....	3	41,871	1,294	47,600	4,643	9,179	13,899
4	Gadhinglaj	17,834	348	15,387	563	1,204	50,326	5,830	63,592	15,509	15,944	40,486
5	Hatkanangle	5,100	1,380	35,384	985	4,553	49,137	8,458	60,323	25,598	11,619	49,500
6	Kagal	19,825	256	15,543	531	487	40,668	4,700	62,024	17,207	19,455	44,791
7	Karvir	29,212	483	11,880	2,229	465	54,788	5,011	75,923	9,414	24,617	35,358
8	Panhala	21,386	750	7,546	1,125	174	38,706	2,817	48,556	6,893	16,353	23,454
9	Radhanagri	23,337	229	785	....	5	4,004	1,143	47,939	4,367	18,092	22,464
10	Shahuwadi	21,593	1,113	2,423	985	24	42,847	2,321	47,510	5,028	16,088	31,213
11	Shirol	1,220	1,262	33,293	1,320	3,184	41,600	16,076	62,176	17,663	4,689	44,397
12	Chandgadhd	23,659	1,615	2,042	....	....	52,335	4,675	62,913	753	22,141	22,971
District Total		2,15,335	7,546	1,30,069	7,738	10,499	5,25,417	54,181	6,57,743	1,13,675	1,85,389	3,61,607

CHAPTER XVI.

NORTH SATARA DISTRICT.

Part I—Background.

1. *Location and area.*—North Satara District lies to the west of the Deccan table land between 16°50' and 18°10' north latitude and 73°45' and 75°0' east longitude. It has an area of 4,022 square miles and a total population of 11,75,309 persons according to the census of 1951.

It is bounded on the north by Poona District, on the east by Sholapur, on the south by the districts of South Satara and Kolhapur and on the west by the Sahyadris and beyond the Sahyadris by the Konkan districts of Kolaba and Ratnagiri. The extreme length of the districts from north to south is 72 miles and breadth from east to west is 88 miles.

2. *Administrative Set-Up.*—The district is divided for administrative purposes into nine talukas and two Mahals as shown in the following table:—

Taluka Mahals.	Area of taluka in sq. miles.	No. of towns and villages.	Population.
Karad	405.8	114 (3)	2,07,913
Patan	513.5	203	1,46,691
Satara	353.4	153 (1)	1,62,529
Jaoli	344.7	196	71,086
Koregaon	364.6	76 (3)	1,15,089
Phaltan	455.8	79 (1)	99,781
Man	556.0	71 (1)	83,478
Khatav	509.1	86 (2)	1,31,360
Khandala (Mahal)	203.3	45	48,095
Mahabaleshwar (Mahal)	87.3	55 (2)	20,448
Wai	229.1	89 (1)	88,239

Figures in brackets indicate the number of towns in the talukas.

3. *Topography.*—The district can be broadly divided into three zones. The western zone known as the Maval comprises the talukas of Patan, Jaoli, Mahabaleshwar and parts of Satara, Wai and Khandala Mahal. The terrain here is hilly except in the river valleys. The central zone or the transitional belt comprises the talukas of Koregaon, Karad and parts of Satara and Wai. This region is flat and contains the richer agricultural parts of the district. The third zone in the east is the scarcity zone consisting of the talukas of Phaltan, Khatav and Man and a part of Khandala Mahal which does not fall in the western zone.

The district contains two main systems of hills: the Sahyadri range and its off-shoots and the Mahadev range and its off-shoots. The Sahyadri system includes the main range of the Sahyadris which, through its entire length of sixty miles from north to south, forms the western boundary of the district. The Mahadev range starts about ten miles north of Mahabaleshwar and stretches east and south-east across the whole breadth of the district. From the main range of the Mahadev hills three spurs stretch to the south in the district. The tops of both the Sahyadris and of the Mahadev hills especially in the north-west of Wai, Jaoli and Patan look like a succession of fortresses raised on a series of plateaus piled one over the other, the whole surrounded by a wall of rock. Except near Mahabaleshwar and the Koyna valley, the hills are very low, barren and rugged. These hills form valleys through which flow several streams which make up the head waters of the river Krishna.

Rivers.—The Krishna is the principal river in the district. The drainage system of the Krishna includes the drainage of five feeders from the right side, namely the Kudali, Venna, Urmodi, Tarli and Koyna and two feeders on the left, the Vasna and Yerala. Apart from the Krishna there is the Nira river which separates this district from the Poona district. There is also the Man river which rises in the hills of the north-west of Man taluka and joins the Bhima in Sholapur district.

The Krishna rises on the eastern brow of the Mahabaleshwar plateau, in the extreme west of Wai. The source of the river is about 4,500 feet above the sea level. Out of its 800 miles flow about 100 miles lie within the limits of the district.

The Koyna is the largest of the North Satara feeders of the Krishna. It rises on the west side of the Mahabaleshwar plateau. Of its course of 80 miles within North Satara limits, during the first forty it runs nearly south and during next forty it runs nearly east. At Helwak in Patan (site of the Koyna project) after a course of 40 miles the river suddenly turns east and after a further course of forty miles it falls into the Krishna at Karad. During its course it receives the Kera from the north. In the first forty miles the Koyna, is seldom more than 100 feet broad; but in the last forty miles the bed is 300 to 500 feet. In the hot months the stream often ceases but the water stands in deep pools. During the rains it fills from bank to bank.

Of the Bhima system of rivers the two chief Satara representatives are the Nira in the north and the Man in the north-west. The Nira rises on the Sahyadri range within the Bhor taluka of Poona district. From its source in Bhor the river runs east to the north of the Wai taluka and Phaltan taluka. After leaving Phaltan it runs north of Malsiras in Sholapur and falls into the Bhima. The Man river or the Manganga runs a length of about 40 miles in Satara limits. Beyond Satara limits it runs through Atpadi in South Satara district and Sangola, Pandharpur in Sholapur district and falls into the Bhima.

During the rainy season these rivers are full. But in the hot months they go dry.

4. *Soil.*—The soils of this district are derived from Deccan trap but present three distinct types depending upon their location. The Maval zone i.e. the western hilly areas of Patan, Jaoli and Mahabaleshwar, consists of laterite or iron clay in the hills and very thin murum along the slopes. The transitional zone of the district consists of the Krishna valley, having medium black soils. The eastern zone comprising the talukas of Man, Khatav, Phaltan and Khandala, has lighter and undulating shallow soils due to the existence of the hill ranges traversing the tract. In this tract large patches of almost barren silicious soil are met with, which is an index of the arid zone.

5. *Rainfall.*—The year may be divided into five seasons, the rainy season from about the tenth of June to the end of September, a close sultry time from about the end of September to the middle of November, a cold time from the middle of November to the end of January, a dry hot time in which easterly winds prevail from the beginning of February to the end of March and the hot weather from the beginning of April to about the tenth of June.

On the whole the Satara seasons show considerable uniformity. They are not subject to abrupt change or to extremes of heat or cold. Its elevation, the comparative absence of water and the bare surroundings of the country give the district a fair and exciting weather.

The south-west monsoon gives the bulk of rainfall to the district. The rains under the influence of south-west monsoon begin about the middle of June and last till the end of September. The intensity of the rainfall is greatest in the month of July. Though the monsoon rains cease by September end, light drizzling continues at intervals till December.

Rainfall is not uniform in all the parts of the district. It is heaviest in the regions of the Sahyadris. The rainfall in this region varies from 45" in Wai to 240" at Mahabaleshwar. The central or the transitional zone has rainfall varying from 25" to 40". In the eastern belt the rainfall is the lightest.

In the western zone of the district the major portion of the rainfall is in the south-west monsoon period.

6. *Land Utilisation.*—The utilisation of land in the district is shown in the statement below :—

				Acres.
Barren uncultivable land	...	...	..	2,35,700
Forest	...	...	...	3,66,500
Cultivable waste	...	...	...	14,000
Permanent pasture and grazing land	...	...	...	65,300
Other fallow	...	...	...	1,69,700
Current fallow	...	...	...	16,300
Land under cultivation	...	...	...	16,85,500
Gross area of the district	...	...	...	25,91,700

There is a substantial area viz. about 23 to 29 per cent. of the gross area under the head 'other fallow' mainly distinct from 'rotational fallow' in the talukas of Jaoli and Patan which is a special feature.

The Talukas of Jaoli, Patan, Wai and Mahabaleshwar Mahal, show some common traits. The proportion of land cultivated in these areas are low, compared to the other areas in the district. The reasons for this are not far to seek. Jaoli, Mahabaleshwar and Patan are in the regions of the Sahyadris, Wai is surrounded and crossed in a number of directions by the off-shoots of the Sahyadris and Mahadev range. The terrain here is, therefore, hilly. Besides, a substantial portion of the land in these parts is under forest.

7. *Cropping pattern.*—The gross cropped area of the district is 18,03,814 acres. The main crops and their acreages are as shown below :—

Crop.				Acres.
Rice	...	...	...	58,518
Jowar (Kharif)	...	...	...	1,51,667
Bajri	...	...	...	4,06,734
Ragi	...	...	...	35,185
Pulses	...	...	...	1,88,709
Rabi (Jowar)	...	...	...	1,33,767
Wheat	...	...	...	33,738
Sugarcane	...	...	...	15,334
Fruits and vegetables	...	...	...	22,268
Condiments and spices	...	...	...	13,886
Oilseeds	...	...	...	1,69,194
Cotton	...	...	...	6,448
Tobacco	...	...	...	2,510

The Koyna Hydro Electric Project which has its site in Patan taluka is likely to increase the areas under irrigation in the district though it is mainly designed to generate 2,40,000 K.W. of Power in its first stage of development for supply to industrial cities of Bombay, Poona, Sholapur and the rural areas of Satara and other adjoining districts.

8. *Forests.*—The forests in the district have an area of 573½ square miles or 14.23 per cent. of the total area of the district. The forests lands are scattered over the whole district and are interspersed by private and cultivated land. In the west the belts of evergreen forest along the line of the Sahyadris are fairly compact. The eastern forest ranges are bare hills with scrub here and there.

The Satara forests belong to three groups : (1) The evergreen Sahyadri forests lands; (2) The slopes of the off-shoots of Sahyadri hills that run east; and (3) Bush sprinkled hills, to the east of the Krishna. The evergreen forests of the Sahyadri range form a belt along the west of the district six to fourteen miles broad. These forests extend through the whole length of the district. They stretch almost without a break and are not broken by tillage. They contain many trees valuable both for timber and firewood. The chief of these are jambul, unjan, umbar, mirds, phanas and bamboe. Of the second group of forest lands, a considerable portion is covered with teak mixed with brush wood. These

forests are much broken by patches of cultivated land. The third group of forest lands, to the east of the Krishna are only sprinkled with bush and are very much scattered.

9. *Irrigation.*—The gross area under irrigation in the District is 2,14,637 acres of which 52,240 acres are under second crops. The sources of irrigation are as under :—

Source.	Acres.
Government canals	53,324
Private canals	32,687
Wells	73,894

The percentage of irrigated area to gross cropped area is 11.9.

For the district as a whole wells irrigate about 45 per cent. of the total irrigated area and are therefore the most important source of irrigation. Next in importance are Government canals which irrigate about 33.23 per cent. and private canals which irrigate 20.05 per cent. of the total irrigated area. The area irrigated from other sources is negligible. Within the district, however, there are some variations from the features above given for the district as a whole. At Jaoli, Mahabaleshwar, Patan, Wai and Satara, the primary source of irrigation is not wells as in the district but private canals. Secondly in these talukas/mahals there is no irrigation from Government canals except for Satara which has negligible percentage of area fed by this source. The rest of the area irrigated is by wells in these places and these two make up the sources of irrigation. Wells are the main source of irrigation at Koregaon, Khandala, Khatav and Man. The second largest source of irrigation in these talukas/mahals except Khatav are private canals. Government canals irrigate small areas at Koregaon and Khandala. The pre-eminent position as a source of irrigation in Phaltan is occupied by Government canals. They irrigate about 72 per cent. of the area. Government canals are an important source at Karad and Khatav also. At Phaltan and Karad, wells are the other important source from which water is utilised for irrigation.

10. *Transport and Communications.*—The only Railway line in the district is the Southern Railway which serves Phaltan, Koregaon and Karad.

The total mileage under roads is 1200. About 50 per cent. of these roads are metalled or pucca.

11. *Industries and employment.*—There are in all 127 factories in the district. The important units among these industries are :—

Name of the company.	Location.	Taluka.
1. The Cooper Engineering Co.	Satara Road.	Koregaon.
2. The Ogale Glass Works	Ogalewadi.	Karad.
3. The Phaltan Sugar Works	Sakharwadi.	Phaltan.
4. Shri Ram Sakhar Karkhana	Phaltan.	Phaltan.
5. Sangvi Oil Mills	Vaduth.	Satara.
6. Karad Industries Pvt. Ltd	Karad.	Karad.
7. Badiani Oil Mills	Karad.	Karad.
8. Hindustan Soap Factory	Satara City.	Satara.

There are 47 bidi manufacturers and 35 snuff manufacturers in the district. The tobacco made use of is mainly local variety known as Satara Pendhi. The average number of persons employed in these factories numbered 4062 persons. The factory employment accounted for only 0.34 per cent. of the total population.

12. *Live Stock*.—The bovine population in the district according to the cattle census of 1956 was as follows :—

Bovine population in the district — 1956 —

Taluka/Mahal.	Cattle.	Buffaloes.	Total.	Number of acres per pair of bullocks.
Jaoli	26,510	13,368	39,878	34
M'war	5,414	3,063	8,477	13
Patan	55,849	24,762	80,611	15
Wai	25,977	11,438	37,415	16.50
Karad	50,810	32,478	83,228	10
Koregaon	35,327	15,610	50,937	28
Satara	40,267	24,509	64,776	23
Khandala	19,452	3,041	22,493	20
Khatav	48,052	14,683	62,735	19
Man	37,320	5,742	43,062	38
Phaltan	42,938	6,343	49,281	27
District Total	3,87,916	1,55,037	5,42,953	21.50

The total population of the cattle in the district according to the census of 1956 was 3,87,916. Out of these, buffaloes numbered 1,55,037. The talukas of Patan, Karad, Satara, Khatav and Koregaon had larger bovine population than the other talukas in the district.

13. *Mineral Resources*.—From its nearness to the Sahyadris and the rocky nature of its soil, the district is well supplied with stones for building and for road metal. The prevailing stone is trap in plains and laterite on the hills. The trap is dark in colour and weights 180 to 185 pounds per cubic foot. Sand of good quality is found in the beds of all large streams in the plains. Good clay for bricks and tiles is found all over the district. Traces of iron are reported in the district; it is stated in the district gazetteer that in the past iron was manufactured in some parts of the district on a small scale.

14. *Livelihood*.—According to the census of 1951 the population of the district is 11,75,309 or 291 persons to the square mile. The density of population in the district is less than in the adjoining districts, except South Satara as can be seen from the following figures :—

District	Density per sq. mile.
North Satara	291
South Satara	291
Poona	324
Ratnagiri	341
Kolhapur	445

While the density for the district as a whole is 291 persons per sq. mile, there is great variation from taluka to taluka within the district. The density in the hilly tracts of the west and the talukas of the dry east is comparatively low, as may be noticed from the statement below :—

Taluka.	Density per sq. mile.
Jaoli	206
Patan	286
Mahabaleshwar	234
Wai	386
Karad	512
Satara	460
Koregaon	317
Phaltan	219
Khandala	237
Khatav	258
Man	150

The highest concentrations are found in talukas of Karad, Satara, Koregaon and the plains of Wai. This part has better lines of communication, a more equable climate and richer agricultural tracts.

Agriculture is the predominant source of livelihood. This is borne out by the following statement which shows the occupational distribution of the district's population—

Occupation.	Persons.	Percentage to total population.
(a) Agriculture	907165	78
(b) Production other than agriculture.	104422	9
(c) Commerce	42923	4
(d) Transport	7277	21
(e) Other services and miscellaneous sources.	113522	9
Total	1175309	100

78 per cent. of the population are dependent on agriculture for their livelihood. This is in line with the predominantly rural character of the district. Only 13.6 per cent. of the population lives in urban areas.

Part II—Determination of Chronic Scarcity and Precarious Areas.

History of famine and scarcity.—This district has been affected by scarcity from early times. The following areas suffered from scarcity during the period 1925 to 1954. The number of villages are mentioned against each circle and taluka :—

Circle.	No. of times.	1925-26	1929-30	1931-32	1932-33	1935-36	1937-38	1939-40	1941-42	1945-46	1950-51	1951-52	1952-53
<i>Taluka Man—</i>													
Dahiwadi	2	11	..	..	..	..	..	..	..	23	..	..	..
Gondawala	4	15	..	..	..	..	..	..	10	17	..	..	11
Mhasvad	6	16	26	14	23	..	..	..	..	23	..	..	23
Total	..	42	26	14	23	..	..	..	10	63	..	..	34
<i>Taluka Khataw—</i>													
Puesavli.	3	29	..	..	..	..	..	..	..	29	..	..	29
Vaduj	..	2	..	..	..	..	..	..	..	26	..	..	26
Total	..	29	..	..	..	..	..	..	..	55	..	..	55
<i>Taluka Koregaon—</i>													
Deur	1	..	..	..	..	..	..	..	..	..	..	13	..
<i>Taluka Phaltan—</i>													
Phaltan	2	..	..	..	..	..	..	..	..	..	23	..	5
Mol	..	2	..	..	..	..	..	..	..	..	5	..	5
Hingangaon	..	2	..	..	..	..	..	..	..	..	25	..	25
Total	..	..	..	..	..	..	..	..	..	..	53	..	55
<i>Taluka Khandala (Mahal)—</i>													
Lonand	5	..	12	..	..	12	12	12	..	..	..	..	16
Total	..	..	12	..	..	12	12	12	..	..	..	..	16
Grand Total	..	71	38	14	23	12	12	12	10	118	53	13	160

In order to determine the areas which are precarious or which suffer from chronic scarcity, it will be useful to examine the above information along with the number of times, suspensions of Land Revenue were given in the past, the annavari data and rainfall of each taluka. It would appear from the foregoing table that the areas which have suffered in the past were parts of Khandala mahal, Man, Khatav, Koregaon and Phaltan talukas. As Koregaon was affected only once in the last 30 years, it cannot be treated as a chronic scarcity area. The data for each of the other tracts is examined.

1. *Khandala Mahal*.—Khandala mahal consists of 46 villages and is at present divided into two circles viz. Khandala and Lonand. The former consists of 25 villages and the latter of 21 villages. The main crop of this tract is Bajri, the soil is medium and light or of inferior type. The total irrigated area of this circle is 4,295 acres of which 3,433 acres are under wells. The annual average rainfall in the Mahal for the last 20 years is 18·18". The rainfall however decreases rapidly towards the east. It is, therefore, necessary to distinguish between the Khandala circle in the west and the Lonand circle in the east. The Khandala circle occupying the western part of the mahal, receives more rainfall.

The Lonand circle has suffered from chronic scarcity. According to the previous history of declaration of scarcity the circle was affected 12 times in the last 30 years. More than half the number of villages were, however, affected 5 times i.e. in 1929-30, 1935-36, 1937-38, 1939-40 and 1952-53 during the period 1925-26 to 1953-54, and 12 villages had about 9½ full suspensions according to annavari data.

The total number of full and half suspensions according to Land Revenue suspension data in these villages during the 30 years period does not exceed 6 in any of the villages of Lonand circle. In some villages it was less. It would therefore appear that the circle was not affected more than 5 to 6 times and some of the villages of the circle were affected only about 3 times though some of the villages had as many as 9½ full suspensions during a period of 30 years. The Lonand circle of Khandala taluka may therefore be classified as scarcity area of Grade B.

2. *Man Taluka*.—Man taluka is divided into three circles all of which are reported to have suffered from scarcity. This taluka occupies the extreme eastern portion of the district and adjoins Phaltan on the north and Khatav on the west. The total number of villages in this taluka is 71. The annual average rainfall in this taluka for the last 27 years was 16·68". The rainfall tends to decrease towards the east. The area under irrigation in Mhasvad circle is 15,038 acres and that in Gondavale circle is 7,447 acres. The total area under irrigation in the whole taluka is to the extent of 10 per cent. of the cropped area. The previous history of the declaration of scarcity shows that 11 villages out of 26 villages of Dahiwadi were affected in 1925-26 and 23 in 1945-46 and 7 in 1952-53. 15 villages out of 19 of Gondavale circle were affected in 1925-26, 10 in 1941-42, 17 in 1945-46 and 11 in 1952-53. Mhasvad circle was affected in 1925-26, 1929-30, 1931-32, 1932-33, 1945-46 and 1952-53. Thus Dahiwadi circle was affected thrice, Gondavale 4 times and Mhasvad 6 times during 30 years. The years 1925-26, 1945-46 and 1952-53 are common to all circles. During 1929-30, 1931-32 and 1932-33 only Mhasvad circle was affected while during 1941-42 only 10 villages of Gondavale were affected. The number of times different villages were affected during the period of 30 years according to annavari data and Land Revenue suspension figures generally support the above data. In addition, it appears, that the majority of the villages in most of the bad years were under half suspension. If frequency is calculated after taking the years of half suspensions also into consideration, the number of times each village was affected would come to 5 to 6 times during the last 30 years in case of Mhasvad circle and 2½ to 4 times in case of Dahiwadi and Gondavale circles. The study of the rainfall data has shown that the crops must have suffered very badly during nine years and partially during five years during the period of last 27 years. The figures of monthwise rainfall, for the nine years of precarious precipitation are given below :—

Year	June	July	August	September	October	Total
1933	1·47	1·19	2·97	4·58	5·53	15·74
1936	1·51	0·08	0·39	4·88	0·79	7·65
1937	1·64	1·05	0·60	5·05	3·09	16·43
1941	1·01	0·87	0·53	2·18	1·73	6·32
1942	3·68	1·96	0·95	0·23	1·10	7·82
1945	1·43	1·24	1·18	0·63	2·24	6·80
1946	0·63	2·05	1·16	6·14	0·56	10·54
1952	2·51	1·41	0·77	0·44	3·24	8·47
1954	1·75	3·35	1·06	0·84	0·54	7·54

The above figures of rainfall were recorded at Dahiwadi taluka headquarters. The rainfall from the middle of June to the middle of September, apart from its quantum, is usually uniform all over the taluka. This taluka is mainly kharif. It may be presumed that the crops must have failed during the above nine years though the annewari and suspension data does not bring out this completely. Taking all the factors together, the whole of Man taluka may be treated as B Class scarcity area.

Phaltan taluka.—The average rainfall in the taluka for the last 26 years is 22.09". The crop pattern in this taluka is almost the same as in the other talukas in the district and particularly of Man except that the area under rabi is more, being about 50 per cent. of the cropped area. The variation in total rainfall is not abnormal and it stands in a better position than Khandala and Man. The total rain fall was much below the average only during 1936 and 1945. Moreover the rabi rainfall has generally been favourable except in one or two years.

The position regarding irrigation facilities is most favourable in Phaltan as compared to not only other areas of this district but other districts also. The area under irrigation is reported to be 90,291 acres against the total cropped area of 2,29,000 acres i.e., about 40 per cent. The major portion of the irrigated area is under the command of the right bank Nira Canal and has therefore an assured supply of water. No other area having deficient rains has such a high percentage of irrigated area. The taluka consists of 79 villages. 35 villages of this taluka are under the command of the Nira right bank canal and Ban Ganga tank and are therefore protected. The remaining villages are liable to scarcity when the rainfall is deficient. As Phaltan was formerly a state, the detailed revenue record prior to 1948 is not available. After 1948 near scarcity conditions are reported to have prevailed during the years 1950-51, 1951-52 and 1952-53 in the villages not under the command of the Nira canal. During 1950-51 the annewari was 4 annas as in almost all the affected villages. In 1951-52 it was 5 annas and in 1952-53 less than 4 annas. The affected villages had therefore full suspensions varying from 2 to 2½ times during the last 10 years. The nearest to irrigated areas in the taluka is however a great relieving feature for the local population. On the basis of annewari data of the last ten years and considering, however, the low and variable rainfall and the lack of irrigation facilities in the southern portion of the taluka, this portion may be classified as scarcity area of Grade C.

Khatav taluka.—It is divided in three circles viz. (1) Khatav (2) Pussesavali and (3) Vaduj, with 28 and 34 and 28 villages respectively. It is to the south-west of Man taluka and east of Koregaon. The average rainfall of this taluka is 18".

The previous history of scarcity and famine of this taluka shows that scarcity conditions prevailed in parts of this taluka during 1925-26, 1945-46 and 1952-53.

In Pussesavali circle, out of 34 villages, 22 villages were affected in 1925-26, 23 in 1945-46 and 19 in 1952-53. In Vaduj out of 28 villages, only 8 were affected in 1952-53, 26 in 1945-46 and 19 in 1952-53, while in Khatav circle out of 28 villages only one was affected in 1925-26 and 14 in 1945-46 and only 4 in 1952-53. Thus Khatav circle had scarcity condition in more than 1/3 number of villages only once viz. in 1945-46. The number of Land Revenue Suspensions given during the last 30 years, in case of each village does not agree with the other data regarding scarcity but it is clear that large number of villages in all the circles had about 3 to 4 suspensions. It agrees with the previous history viz. that part of the taluka was affected in 1925-26, 1945-46 and 1952-53. The monthwise rainfall data for the following six years is given as the record in these years was very unfavourable :—

Year.	June.	July.	August.	September.	October.	Total.
1936	2.34	0.16	1.06	4.50	....	8.06
1941	1.33	2.33	0.47	5.44	1.33	10.90
1945	1.67	2.91	1.89	0.45	0.60	7.52
1948	2.67	2.15	1.39	4.13	3.31	13.65
1951	4.79	1.64	1.10	2.20	4.45	14.18
1954	1.09	4.14	0.93	1.35	0.52	8.03

One cannot expect even a four-anna crop with the above rainfall, especially in a tract like Khatav taluka having poor soils and mainly growing Kharif crops. The rainfall figures represent the centre at Vaduj. The rainfall in the western part of the taluka is slightly higher and the soils better. Looking to the rainfall and the annewari data, the villages under Pussesavali and Vaduj circles may be considered as scarcity area of 'C' category. While those in Khatav circle may be considered free from scarcity.

To sum up, Lonand circle of Khandala Mahal and Man Taluka may be regarded as scarcity areas of Class B while Southern part of Phaltan and Pussesavali and Vaduj circles of Khatav taluka may be treated as class C scarcity areas.

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross Area.		Population.	Density per sq. mile.	Gross cropped area.	Net cropped area and its percentage to total area.		Area under forest.
			in sq. miles.	in acres.				9	10	
1	2	3	4	5	6	7	8	9	10	10
1	Jacoli ..	196	344.7	2,14,791	71,086	207	86,460	78,697	36.06	61,560
2	Karad ..	114	405.8	2,64,915	2,07,913	512	1,96,089	1,88,566	73.48	32,704
3	Khandala (Mahal)	45	203.3	1,26,779	47,095	237	81,081	67,948	54.23	13,752
4	Khatav ..	86	509.1	3,36,766	1,31,360	258	2,93,863	2,76,268	81.70	17,796
5	Koregon ..	76	364.6	2,28,047	1,15,689	315	1,89,125	1,74,748	76.67	21,102
6	Man ..	71	556.0	3,62,164	83,478	150	2,70,830	2,68,129	69.07	32,400
7	Mahabaleshwar (Mahal).	55	87.3	46,400	20,448	235	10,874	9,987	22.46	32,814
8	Patan ..	203	513.5	3,46,216	1,46,691	280	1,69,333	1,45,339	42.82	73,751
9	Phalten ..	79	455.8	2,86,781	99,781	219	2,29,105	2,16,924	76.52	21,741
10	Satara ..	163	353.4	2,23,455	1,62,529	460	1,89,033	1,77,056	80.13	21,392
11	Wai ..	89	229.1	1,52,706	88,239	386	88,016	76,046	48.87	32,042
District Total ..		1,167	4,022.6	25,79,020	11,75,309	291	18,03,814	16,79,768	64.88	3,67,046

STATEMENT "B".

Rainfall Data.

(Fig. in Inches)

Serial No.	Taluka.	1949.	1950.	1951.	1952.	1953.	1954.	1955.	1956.	1957.	1958.	Average last 10 years.	Average last 27 years.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Kanad	19.1	44.4	23.0	24.9	35.0	32.0	36.2	34.2	35.0	38.0	32.1	....
2	Patan	59.7	95.7	48.0	62.6	62.7	61.0	59.0	89.6	72.9	87.4	69.5	....
3	Satera	30.3	49.0	24.0	40.6	40.4	36.1	37.5	41.7	39.4	37.8	37.6	....
4	Javli	48.3	64.0	44.0	70.0	71.0	63.0	65.1	68.3	48.9	65.2	60.7	....
5	Mahabaleshwar	190.2	210.5	183.7	202.3	232.5	178.4	244.3	294.9	221.6	267.7	232.6	....
6	Khandala	15.67	13.93	10.85	16.35	23.07	15.98	24.45	22.75	18.06	....	....	18.18
7	Wai*	21.49	33.31	18.34	22.46	22.78	30.31	30.68	62.37	54.34	....	....	28.57
8	Khatav*	20.21	26.15	14.73	16.40	21.97	9.42	21.76	19.48	14.87	....	....	18.16
9	Phalten*	21.16	19.20	13.11	15.55	16.25	14.31	20.35	21.80	68.94	....	....	22.09
10	Man*	20.76	26.62	14.85	9.47	19.95	7.96	20.45	22.53	18.85	....	....	16.68
11	Koregaon*	26.53	31.63	19.76	22.32	29.97	22.37	31.33	33.51	31.07	....	....	26.61

* Monthwise rainfall figures given in Statement "B-1".

STATEMENT B-1.

Monthwise Rainfall Data.

Taluka Man

(Fig. in Inches).

Year.	May.	June.	July.	August.	September.	October.	Total.
1931	1.46	3.59	2.39	0.44	6.63	3.14	17.65
1932	1.51	1.78	3.87	8.69	2.75	7.83	26.43
1933	0.82	1.47	1.19	2.97	4.58	5.53	16.56
1934	0.74	1.99	4.75	1.65	5.79	2.02	16.94
1935	....	5.15	0.47	12.61	2.77	4.99	25.99
1936	1.38	1.51	0.08	0.39	4.88	0.79	9.03
1937	0.56	1.64	1.05	0.60	5.05	8.09	16.99
1938	2.09	1.26	4.55	2.83	5.20	2.04	17.97
1939	0.85	5.49	4.80	0.60	2.68	1.59	15.61
1940	0.61	5.42	1.15	0.98	4.90	2.52	15.58
1941	....	1.01	0.87	0.53	2.18	1.73	6.32
1942	0.58	3.56	1.06	0.95	0.23	1.10	8.48
1943	1.95	2.94	2.12	0.24	3.71	4.17	16.22
1944	3.77	2.32	3.99	0.35	7.20	5.22	22.85
1945	0.68	1.43	1.24	1.16	0.63	2.34	7.43
1946	0.95	0.63	2.05	1.16	6.14	0.58	11.49
1947	0.70	4.73	0.83	5.32	6.21	1.72	19.26
1948	....	2.61	4.15	0.37	7.13	4.88	19.14
1949	2.85	4.34	0.78	3.28	7.07	2.44	20.76
1950	3.67	1.13	2.85	2.68	11.03	5.46	26.82
1951	0.65	2.92	4.69	0.52	2.53	3.54	14.85
1952	1.00	3.51	1.41	0.77	0.44	3.34	9.47
1953	....	1.84	2.23	0.52	5.89	9.42	19.95
1954	0.42	1.75	3.35	1.06	0.84	0.54	7.96
1955	0.10	3.79	1.22	1.47	3.22	5.65	20.45
1956	5.10	2.41	1.79	3.62	3.84	5.77	29.53
1957	2.45	3.49	1.42	1.94	4.57	4.98	18.85
Average (1931-57)=16.68							

S. V. K. S. P. S.

STATEMENT B-1.
Monthly Rainfall Data.
 Talnka Wai.

(Fig. in Inches)

Year.	May.	June.	July.	August.	September.	October	Total.
1931	0.02	4.19	7.70	4.02	4.17	2.08	22.18
1932	1.58	0.84	9.21	10.96	11.58	5.66	39.83
1933	3.26	5.98	10.54	7.83	6.32	5.51	39.54
1934	0.85	4.25	6.02	5.96	4.68	3.96	24.67
1935	.....	4.67	6.22	4.04	3.37	6.62	24.92
1936	0.41	6.41	1.04	1.45	8.49	0.05	17.85
1937	0.31	5.13	9.71	0.70	8.01	2.84	26.20
1938	0.90	4.02	7.13	3.08	7.33	8.63	30.54
1939	.....	2.37	8.83	2.28	0.72	2.68	16.88
1940	0.28	9.66	6.10	5.65	7.46	5.86	34.51
1941	.....	2.20	9.70	1.09	2.39	3.13	18.51
1942	0.13	7.45	15.0	3.73	0.25	0.01	26.57
1943	2.86	6.16	13.07	1.23	20.1	8.51	33.84
1944	2.13	6.08	12.24	3.27	4.98	4.95	33.65
1945	0.06	5.28	8.74	6.08	0.57	1.27	22.00
1946	0.75	1.43	13.58	6.59	1.99	1.80	26.14
1947	0.56	0.54	7.63	5.82	2.18	0.11	16.84
1948	0.02	2.59	3.32	3.72	4.29	6.74	20.49
1949	3.64	1.51	4.26	5.15	5.18	1.75	21.49
1950	3.23	2.16	17.04	1.98	4.30	4.60	33.31
1951	0.79	3.64	4.68	3.48	1.02	4.73	18.34
1952	.....	4.76	8.39	4.35	0.47	4.99	22.46
1953	.....	6.01	4.38	7.79	1.68	2.92	22.79
1954	0.97	6.92	12.88	5.03	3.63	0.88	30.31
1955	1.61	3.29	3.34	4.39	9.82	8.43	30.69
1956	3.73	2.33	24.35	13.66	3.85	14.45	62.37
1957	3.34	12.24	10.09	11.70	5.41	11.56	54.34

Average (1931-57, = 28.57.

STATEMENT B-1.

Monthly Rainfall Data.

Taluka Koregaon

(Fig. in Inches).

Year.	May.	June.	July.	August.	September.	October.	Total.
1931	0.75	2.20	9.25	3.11	0.17	3.83	22.81
1932	4.21	2.28	12.08	12.72	6.38	6.39	44.66
1933	2.61	4.61	6.74	8.82	11.32	2.75	36.85
1934	....	3.06	8.77	7.40	2.90	4.71	26.84
1935	....	3.38	3.39	4.20	3.25	7.00	21.22
1936	1.26	5.29	1.94	2.85	7.30	0.38	19.02
1937	0.31	3.31	9.18	1.18	8.45	10.3	29.74
1938	1.52	2.49	9.46	2.33	5.71	5.42	26.93
1939	1.46	5.54	9.09	1.83	2.39	1.65	21.96
1940	1.77	5.11	5.31	3.59	4.70	1.90	22.38
1941	....	3.43	10.04	1.50	1.45	0.89	17.31
1942	....	9.93	10.93	12.52	....	0.78	24.16
1943	1.27	1.83	7.72	0.98	2.54	5.47	19.83
1944	0.74	2.18	13.29	1.95	11.40	4.06	36.62
1945	3.70	3.76	6.87	8.37	0.15	1.45	22.30
1946	2.32	3.15	15.96	6.74	5.45	1.90	35.52
1947	2.74	0.17	5.16	9.05	3.82	0.13	21.07
1948	0.02	2.59	3.32	3.72	4.29	6.74	20.68
1949	3.48	3.63	4.61	7.63	6.43	0.85	26.53
1950	3.90	0.73	14.16	2.27	7.45	3.12	31.63
1951	1.25	4.37	5.40	1.64	1.74	5.38	19.76
1952	....	7.20	4.87	3.66	0.94	5.65	22.32
1953	....	5.68	5.28	6.42	5.63	6.96	29.97
1954	0.90	4.83	9.15	5.05	1.80	1.14	22.87
1955	0.89	4.75	4.75	1.94	7.25	11.75	31.33
1956	3.09	3.23	7.52	6.21	5.60	7.86	33.51
1957	1.90	9.83	6.57	2.10	4.52	6.15	31.07

Average (1931-57) = 26.61

STATEMENT "B-1."

Monthwise Rainfall Data.

Tatuka Phaltan

(Fig. in Inches)

Year.	May.	June.	July.	August.	September.	October.	Total.
1931	0.12	4.15	3.58	0.94	4.70	2.06	15.05
1932	1.28	2.32	3.60	6.11	7.29	9.12	29.72
1933	1.42	4.06	1.42	3.48	8.44	3.38	21.20
1934	1.18	2.97	1.77	0.93	4.77	3.93	15.55
1935	1.69	4.09	0.23	3.62	2.65	4.66	21.94
1936	0.70	1.40	....	0.75	3.06	0.90	7.71
1937	....	2.64	1.00	0.44	6.13	4.42	14.63
1938	1.04	1.74	1.70	2.48	7.90	4.16	19.02
1939	....	4.60	3.16	0.61	4.81	1.39	14.57
1940	....	....	....	....	....	....	....
1941	....	0.76	0.88	0.34	7.71	3.72	12.91
1942	....	6.09	3.58	1.20	3.52	3.80	18.19
1943	1.58	3.53	1.35	0.26	4.80	4.59	16.11
1944	0.88	3.76	5.49	0.58	2.59	4.31	17.61
1945	0.38	3.66	1.47	2.30	0.56	2.23	10.90
1946	2.66	2.41	3.23	1.15	5.85	1.06	16.56
1947	2.79	4.16	1.75	8.87	4.40	0.25	22.22
1948	0.42	5.41	2.14	1.14	5.28	2.42	16.81
1949	2.78	3.73	0.51	2.09	9.82	2.23	21.16
1950	2.43	1.31	1.41	2.63	9.52	1.90	19.20
1951	0.16	1.29	3.94	1.41	3.03	3.28	13.11
1952	0.44	4.68	2.96	0.52	3.48	3.47	15.55
1953	....	1.71	2.94	0.35	3.47	7.73	16.25
1954	0.31	4.05	5.37	1.28	1.85	1.45	14.31
1955	....	1.70	1.46	2.23	7.90	7.06	20.35
1956	2.79	0.40	2.96	4.00	6.84	4.81	21.80
1957	1.62	13.24	24.41	16.28	6.64	6.75	68.9

Average (1931-57) = 22.09

STATEMENT "B-1."

Monthwise Rainfall Data

✓ Mahal Khandala

(Fig. in Inches)

Year.	May.	June.	July.	August.	September.	October.	Total.	
1931		
to		(Not available.)	Available only from 1938.					
1937		
1938	..	1.04	5.25	2.12	7.72	2.58	18.71	
1939	..	2.25	4.27	1.12	1.00	2.22	11.06	
1940	..	0.57	4.41	2.04	2.75	1.93	15.29	
1941	..	2.11	2.90	0.21	2.25	2.58	10.15	
1942	..	4.81	6.23	0.75	0.07	2.68	14.54	
1943	..	2.28	5.50	6.45	.....	2.39	23.04	
1944	..	0.46	8.84	12.25	2.46	9.05	11.06	39.25
1945	2.61	2.28	5.04	0.22	0.65	13.00
1946	..	1.07	1.55	7.26	2.50	4.22	.....	15.63
1947	..	1.42	0.49	2.12	5.17	2.28	.....	13.09
1948	..	0.70	5.87	1.25	2.12	4.22	6.02	21.24
1949	..	2.25	0.23	1.95	2.21	5.09	2.44	15.57
1950	..	0.22	0.75	2.21	0.71	6.14	2.20	13.98
1951	..	0.20	1.79	2.21	0.29	2.22	1.23	10.25
1952	..	0.07	2.44	2.94	0.54	1.25	4.52	16.26
1953	2.09	4.56	2.20	7.20	5.22	23.07
1954	..	0.20	2.46	7.22	2.22	1.02	2.09	15.99
1955	..	0.26	1.56	1.00	1.79	12.78	6.96	24.45
1956	..	2.02	0.47	4.99	4.26	2.92	7.29	22.75
1957	..	4.51	1.41	0.52	2.62	0.22	2.01	13.06

Average (1931-57) = 13.13

STATEMENT "B-1."

Monthly Rainfall Data

Taluka Khatav

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.
1931	0.42	5.72	2.97	0.72	6.48	6.85	22.18
1932	2.41	1.00	4.61	8.26	2.79	6.98	25.35
1933	2.08	1.87	1.87	5.51	3.31	4.18	18.33
1934	1.78	2.11	3.81	1.75	5.17	2.32	18.94
1935	....	5.57	0.73	4.56	1.65	4.89	16.90
1936	0.40	2.34	0.16	1.06	4.50	....	8.46
1937	....	6.18	1.95	0.41	7.98	6.60	28.02
1938	1.32	0.77	4.79	4.27	9.61	2.64	28.70
1939	0.80	3.75	4.40	0.88	4.76	1.69	15.29
1940	0.87	4.76	1.27	1.10	3.59	4.62	16.09
1941	0.64	1.33	2.33	0.47	5.44	1.33	11.54
1942	0.98	10.02	3.76	1.26	0.04	2.01	18.07
1943	1.93	2.23	3.29	0.43	5.74	10.02	28.64
1944	2.87	1.81	5.62	0.59	5.94	3.49	20.32
1945	....	1.67	2.91	1.89	0.45	0.60	7.52
1946	2.84	1.85	7.00	2.33	5.66	1.44	21.17
1947	1.09	7.07	1.46	7.53	4.66	1.45	28.27
1948	....	2.67	2.15	1.99	4.15	3.31	15.35
1949	3.26	3.05	1.07	2.99	6.03	3.76	20.21
1950	2.50	1.05	3.32	4.42	10.06	4.31	26.16
1951	0.55	4.79	1.64	1.10	2.30	4.45	14.73
1952	1.17	4.93	1.23	0.30	2.37	5.35	16.40
1953	0.65	2.29	3.72	1.89	7.63	5.79	21.97
1954	1.39	1.09	4.14	0.93	1.35	0.62	9.42
1955	0.67	5.11	1.14	1.62	9.04	4.13	21.76
1956	1.95	0.76	2.50	3.30	4.52	6.45	19.48
1957	2.17	2.99	1.68	0.86	3.30	3.37	14.37
Average (1931-57)				18.16			

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka	Area under irrigation by				Total irrigated area and its percentage to cropped area
		Canals	Tanks	Wells	Other Sources	
1	2	3	4	5	6	7
1	Jacoli	4,039	....	712	....	4,751 9.08
2	Karad	4,470	....	10,017	1,233	15,720 9.80
3	Khandola (Mahal)	2,005	....	5,509	....	7,514 13.70
4	Khatav	6,842	....	13,323	....	20,165 9.80
5	Koregaon	3,433	....	5,418	....	8,851 7.57
6	Man	2,663	....	13,592	....	16,255 9.00
7	Mahabaleshwar (Mahal)	1,271	....	160	....	1,431 15.90
8	Ratan	6,224	....	1,103	259	7,579 7.12
9	Phaltan	43,809	....	15,802	....	59,611 29.40
10	Satara	6,199	....	4,188	....	10,387 7.78
11	Wai	5,056	....	4,070	....	9,126 15.06
District Total		86,011	....	73,394	1,492	1,61,397 11.80

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Area under main/different crops.					Total Cereals.	Total Pulses.	Total food crops and its percentage to gross.	Oilseeds and its percentage.	Cotton and its percentage.	Total non-food crops.
		Rice.	Wheat.	Jowar.		Bajri.						
				under Kharif	under Rabi.							
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Jaoli	12,026	3,345	6,199	15,713	1,342	49,437	7,720	58,396 67.55	7,073 8.2	13 N	28,064
2	Karad	6,080	3,437	43,064	28,434	8,602	94,521	14,388	1,20,582 61.48	40,098 20.4	595 0.3	75,507
	Khandala (Mahal).	1,483	1,200	382	28,780	31,673	63,617	11,115	77,188 95.21	3,660 4.5	69 N	3,893
4	Khatav	846	6,236	19,153	22,306	1,29,026	1,78,637	44,411	2,32,221 79.00	13,595 4.6	144 N	61,647
5	Koregaon	632	2,914	25,770	36,393	39,196	1,05,213	23,560	1,35,132 71.44	25,033 13.2	25 N	53,903
6	Man	721	3,396	3,009	20,737	1,23,212	1,51,842	32,901	1,86,998 69.03	2,156 0.8	714 0.2	83,832
7	Mahabaleshwar (Mahal)	1,782	694	91	295	....	5,524	312	6,236 57.37	83 N	...	4,638
8	Patana	22,241	4,018	13,678	21,230	385	95,486	11,776	1,09,604 64.73	28,190 16.6	49 N	59,769
9	Phaltan	2,253	2,372	230	1,02,844	46,635	1,54,399	13,508	1,78,837 78.05	7,276 3.2	4,797 2.1	50,268
10	Satara	5,807	3,358	33,397	28,717	11,869	87,078	15,974	1,07,748 57.01	32,699 17.3	20 N	81,285
11	Wai	4,662	2,768	6,694	28,318	14,774	61,152	13,049	78,604 89.80	9,325 10.6	22 N	9,412
	District Total	58,518	33,738	1,51,667	3,33,767	4,06,734	10,46,906	1,88,709	12,91,506	1,69,194 9.3	6,448 0.85	5,17,308

CHAPTER XVII.

SOUTH SATARA DISTRICT.

Part I—Background.

1. *Location.*—The South Satara District was formed in 1948 comprising the talukas of Walva, Khanapur and Tasgaon and Shirala Mahal of the former Satara District and the merged state areas of Sangli, Miraj and Jath.

The total area of this district is 3,324 sq. miles. To the east, it extends to Bijapur District, to the west to Ratnagiri District and to the south to Kolhapur and Belgaum districts and to the North Satara District in the north.

2. *Administrative set-up.*—For administrative purposes the district is divided into the following talukas :—

Name of Taluka.	Population	No. of Villages.	Total Area (sq. miles).
Miraj	2,85,616	94	611.4
Jath	1,08,270	97	873.7
Tasgaon	1,69,325	74	446.2
Khanapur	1,13,441	131	846.5
Walva	1,74,073	57	300.4
Shirala	79,416	81	246.0
Total	10,00,141	534	3,324.2

The total population of the District is 10,00,141. The density of population is 308 persons per sq. mile. The statistical data about each taluka is given in Statements A to D attached.

3. *Topography.*—The South Satara District is a part of the Deccan plateau, the Sahyadri mountains forming the western boundary. The main part of the district is 1,500 to 2,000 feet above sea level. Walva taluka on the west of the district contains the valley of the Krishna river with the general slope to the south and south-east. The river Krishna flows to the south and then to the east passing across the whole District through Walva, Tasgaon and Miraj talukas. From the central plain of the Krishna, several valleys branch off to the hills on both sides. The Warna, one of the main tributaries of the Krishna runs from west to east along the southern boundary of Shirala and Walva talukas until it joins the Krishna and forms the southern boundary of the district. The Yerla which is another important tributary runs from north to south through Khanapur and Tasgaon talukas joining the Krishna a little upstream from Digraj. The extreme west comprising Shirala Mahal is rugged but well-watered in contrast to the eastern part which is flatter and barren. The Krishna valley, with the mouths of some of the side valleys, forms one of the richest tracts in the Bombay Deccan. The portion to the east of the Yerla comprising parts of Khanapur, Tasgaon and Jath is, however, barren with two hill ranges running across the southern parts of Khanapur and Tasgaon talukas.

4. *Soils.*—The soils of varied texture and structure are met with in this district. They vary from deep black in the river valleys of the Krishna, Varna and Yerla to shallow murmad red or grey in the hilly areas of Shirala and parts of Khanapur, Tasgaon and Jath talukas. In Walva, Tasgaon and Miraj talukas, heavy deep black soils are formed due to the plain river valleys which are capable of yielding bumper Kharif crops. In Khanapur taluka, along the Nandi and Yerla rivers are fair stretches of good black soil but the ground rises rapidly from the banks and the soil deteriorates to a poor light stuff. The villages lying between the Nandi and Yerla rivers have the poorest soils in the taluka. Along Vita-Khanapur road, there are excellent stretches of soils growing unirrigated wheat amidst the hills. On the plateau there is some good black soil growing Rabi Jowar on the tops of the hills as well as in the valleys. The middle slopes, however, have poor and eroded soils.

In Tasgaon taluka the soil between the Krishna river and the taluka headquarters is rich alluvial but further east it is stony and unproductive "mal". These stretches of barely productive soil, grow more and more extensive as one leaves the Krishna valley. The soil in general in Shirala Mahal is red laterite mixed with hard murum due to the hill ranges of the mighty Sahyadri mountains. The soil of Khanapur as a whole is predominantly light murum with patches of medium black.

5. *Rainfall.*—The rainfall is assured in the case of the areas adjoining the western ghats, viz., Shirala Mahal and Walva taluka, but it goes on decreasing rapidly towards the east. The average rainfall of Shirala and Walva is 36" and 26" respectively, while that in Jath it is 18".

6. *Land Utilisation.*—The classification of lands used for different purposes in the district is as given below :—

	Acres.
Area under cultivation ..	16,28,700
Barren uncultivable ...	85,200
Cultivable waste ..	11,700
Permanent Pasture and other grazing land.	88,000
Gross area of the District ...	16,24,127

The area under forest is 1,15,647 acres which is mainly distributed in the talukas of Tasgaon, Khanapur, Walva, Jath and Shirala Mahal.

7. *Cropping pattern.*—Excepting a small portion of Khanapur in the Atpadi area and Jath taluka which grow Rabi crops, the remaining part of the district is a Kharif tract. Shirala Mahal where the rainfall is heavy is mainly a paddy growing tract. In the remaining areas, Kharif crops like Jowar, Bajri, Pulses, Tobacco, Groundnut and irrigated crops like chillies, turmeric and other Bagayat crops are grown. The net cropped area measures about 15,80,960 acres which is 74 per cent. of the total area of the district. The distribution of this area under different crops is given below :—

Crops.	Acres.
Kharif Jowar	3,59,381
Rabi Jowar	2,47,637
Bajri	3,57,222
Wheat	32,685
Gram	45,476
Paddy	26,882
Groundnut and Oilseeds	2,03,730
Sugarcane	9,993
Tobacco	19,068
Chillies	5,969
Turmeric	7,599
Cotton	28,155
Vegetables	4,369

Although the crops grown are mainly Kharif in this area, if the Kharif rainfall is unfavourable, cultivators take Rabi crop in the talukas of Walva, Tasgaon and Miraj where the soils are heavy.

8. *Irrigation.*—The total area under irrigation in the district is 1,00,943 acres which works at 6.2 per cent. of the net cropped area. The area under canals is 4,584 which exists only in parts of Miraj, Tasgaon, Khanapur and Walva talukas, while the major part of the irrigated crops is under wells. Two medium irrigation projects, viz. Extension of Krishna Canal and Varna Project have been taken up. The extension of Krishna canals scheme is likely to bring under command an additional area of 14,089 acres in Karad taluka in North Satara and Walva and Tasgaon talukas of South Satara. The Varna Project is likely to irrigate an area of

7,500 acres including 2,500 acres on sugarcane in Shirala Mahal and Hatkanangle Taluka and Panhala Mahal of Kolhapur District. The following minor irrigation works were included in the First and Second Plans :—

	Area likely to be irrigated (in acres).
1. Bandhara at Pundi, Taluka Tasgaon	197
2. Bandhara at Visapur, Taluka Tasgaon	100
3. Bandhara at Shivani, Peta Shirala	100
4. Bandhara at Chiknali, Peta Shirala	100
5. Bandhara at Vita, Taluka Khanapur	211
6. Improvements to Bandhara at Yellapur, Taluka Walva	58
7. Bandhara at Kundal, Taluka Tasgaon	250
8. Bandhara at Mandoor, Peta Shirala	220
9. Bandhara at Rahapur (Balagavada), Taluka Tasgaon	4800
10. Percolation tank at Kille-Rampur, Taluka Jath	143
11. Taking 4 bores (8 in numbers) for the dam site on Warna River at Chandoli, Peta Shirala.	(under revision).
12. Taking 4 bores (8 in numbers) for the dam site on Warna River at Kadoli, Peta Panhala.	(under revision)
13. Providing and maintaining rain gauge station at Kadoli on Warna River, Peta Panhala.	

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The following additional works have been provided for in the Second Plan:—

1. Bandhara at Karanje, Taluka Khanapur	95
2. Bandhara at Lengre, Taluka Miraj	101
3. Bandhara at Alkud, Taluka Miraj	100
4. Bandhara at Itkare, Taluka Walva	925
5. Bandhara at Manjarde, Taluka Tasgaon	157
6. Bandhara at Mangrul, Peta Shirala	127
7. Bandhara at Wangi Nalla, Taluka Khanapur	450
8. Vajrachounde Bandhara, Taluka Tasgaon	3295
9. Tank at Rathre Dharan, Taluka Walva	400
10. Tank at Kuchi, Taluka Miraj	828

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On account of the low rainfall in the eastern part of the district, soil conservation measures have been undertaken under which an area of 60,491 acres has been contour-bunded, till the end of March 1959. An area of 62,267 acres is programmed to be bunded with the remaining period of two years of the Second Plan.

9. *Transport and Communications.*—There are three branches of the Southern Railway passing through the district, viz. (1) Poona-Sangli-Bangalore, (2) Sangli-Pandharpur, and (3) Sangli-Miraj. Nos. 1 and 2 are meter gauge, while the other one is narrow gauge. These Railway lines serve Tasgaon, Jath and Miraj Talukas. All the taluka places are connected by pucca roads.

10. *Industries and Fisheries.*—There are no large industries in the district. The only important industry is handloom industry; of the 1674 warping looms, 1462 have come under the co-operative fold. Other important Cottage Industries in the district are Bee-keeping and Soap Industry.

11. *Live-stock.*—The Cattle wealth in the district consists of 2,83,132 heads of cattle and 3,21,364 sheep and goats. Main breeds in the district are Krishna Valley and Khilary.

There are professional grazers who keep large flocks of sheep and goats in Jath and Atpadi. Steps have been taken to improve the quantity and quality of wool.

12. *Minerals.*—There are no important minerals in the district.

13. *Livelihood.*—Of the total population of 10 lacs, persons depending on agriculture are about 7,88,828, persons employed in production other than agricultural are 70,843, on Commerce 36,628. Transport 9,900, Service and other mixed occupations 93,942.

Part II—Determination of Precarious and other Scarcity Areas.

According to history of scarcity, the number of times different areas in this district were affected are shown in the following statement. For Jath and Miraj talukas which are ex-State areas, the data regarding scarcity and famine is available only for the last 10 years beginning from 1948-49 :—

Name of Taluka.	Circle.	Year in which a particular circle was affected by famine, scarcity or conditions akin to scarcity or the annexure of more than 1/3rd number of villages was 4 As. or less during the period beginning from 1925-28 and ending with 1958-59.										Number of times affected by scarcity.
		1925-28 to 1941-42	1942-43	1945-46	1950-51	1951-52	1952-53	1953-54	1957-58	1958-59		
1	2	3								4		
Tasgaon	1. Bhillwadi	.. ..	1	1	..	..	..	..	..	..	2
	2. Visapur	.. ..	1	1	..	..	..	..	..	1	3
	3. Avalaj	.. ..	1	..	..	..	..	..	..	1	3
	4. Tasgaon	.. ..	1	1	..	..	..	..	..	1	3
Jath	1. Jath	..	The information prior to merger period i. e. from 1925-26 to 1948-49 is not available.			..	..	..	1	1	2
	2. Sankh	..	Do.	1	1	1	..	1	1	5		
	3. Utgai	..	Do.	1	1	1	..	1	1	5		
	4. Shegaon	..	Do.	..	1	1	..	1	1	4		
Miraj	1. Miraj	.. ..	..	..	..	..	1	..	..	1	2
	2. Kuchi	.. ..	..	..	..	..	1	..	..	1	2
	3. Kavthe Mahankal	.. ..	..	..	..	..	1	..	..	1	2
Khanapur	1. Atpadi comprising 16 villages.	.. ..	..	..	..	1	1	..	..	3	
Walva	1. Ashta	..	Information is not available from 1925-26 to 1939-40.			..	..	..	1	1	
	2. Takari	..	Do.	..	..	..	..	1	1		
	3. Islampur	..	Do.	..	..	..	..	1	1		

Shirala and Walva Talukas.—The foregoing history of scarcity would show that Shirala Mahal was not affected any time during the last 30 years. It is an area of assured rainfall. The rainfall data prior to 1948 is not available, but the figures of last 10 years show that rainfall was never less than 29". The distance from east to west of the mahal is about 60 miles. In the portions near the 'ghats' rainfall is over 100". Towards the east, the rainfall decreases but the soil is rich and irrigated crops like sugarcane, tobacco and turmeric are grown. This mahal is thus entirely free from scarcity.

Walva Taluka includes the rich alluvial Krishna Valley. The position in this area is not very different from that of Shirala Mahal. Though the rainfall is less, the annual average is 26". The lands of Walva are richer being a part of the Krishna Valley basin. The main crop grown is Kharif jowar, but irrigated crops like turmeric, tobacco and sugarcane are also grown. The area under irrigation in this taluka is 11,255 acres, out of which 1,280 acres is under canals and the rest under wells. This taluka is also not shown to have been affected by scarcity in the past upto 1957-58 and may, therefore, be regarded as free from scarcity.

Jath Taluka.—The eastern part of this taluka is fairly flat and has medium black soils, while the western part is a barren hilly tract and adjoins the Sangola Taluka of Sholapur District.

Out of 97 villages, 52 are reported to be kharif and 45 rabi villages. The main crops of the taluka area :—

Crop	Acres.
Rabi Jowar	... 1,64,836
Kharif Jowar	... 5,481
Bajri	... 1,29,365
Groundnut and Oilseeds	... 42,130
Wheat.	... 6,220

The total irrigated area under private wells and bandharas is 20,500 acres which comes to 5 per cent. There are, however, no major or medium irrigation schemes which benefit the taluka.

Jath being ex-State area, data regarding incidence of scarcity for the period prior to 1948 is not available. It appears however from the annewari data of the last 8 years that almost the whole taluka was affected during the years 1951-52, 1952-53, 1957-58 and 1958-59. During these years most of the villages had less than 4 annas crop. During 1952-53, scarcity was declared in all the villages. During 1949-50 and 1950-51 also, some villages were affected. There were 44 villages out of 97 villages according to annewari data, which had three or more than three full suspensions during the period 1948-49 to 1958-59. These villages are not in a compact block but are scattered over the whole taluka. Other villages had between 1 and 2½ full suspensions. The land revenue suspension data also supports this.

The average rainfall of the taluka worked out on the basis of the 1931-58 period is 20". The rainfall data shows that it was less than 15" during the following years :—

1942	... 13.31
1945	... 9.09
1947	... 11.32
1951	... 13.49

During the years in which the annewari was less than 6 As. in the majority of the villages viz. in 1950-51, 1951-52, 1952-53 and 1957-58, the rainfall was as under :—

1950	... 25.97
1951	... 13.49
1952	... 16.52
1957	... 25.43

During 1950 and 1957 it was above the average, i.e. 25.97" and 25.43" but the distribution was defective. The rainfall in the months of June and July was extremely low, for ensuring the proper establishment of kharif crops. The total rainfall during the years, 1951 and 1952 was inadequate and during August was only 0.37" and 0.98" respectively. The average of last 27 years of September-October rainfall which is very important for rabi crop is 8.78" and the C.V. are 41.86. The C.V. for June-July, August-September, are 44.92 and 35.73 respectively. During the affected years, however, the rabi rainfall was not very inadequate,

Looking however to the annewari and the suspension data and the fact that large number of villages had over 2 full suspensions during last 10 years and the fact the distribution of total rainfall of the season was defective, this taluka may be treated as scarcity affected area of class 'B'.

Khanapur.—The Khanapur taluka consists of 131 villages. 16 villages of Atpadi circle and 17 villages of Kharsundi circle, in all 33 villages, of this taluka formerly belonged to Aundh State. It is this area in the north-east corner of the taluka which is reported to be affected by scarcity conditions very often on account of its poor soil and precarious rainfall, which are distinct from those of the rest of the taluka.

This taluka has a soil of a variable character. Along the Nandi and Yerla rivers there are fair stretches of good black soil but the ground rises rapidly from their banks and the soil deteriorates to poor stuff away from these rivers. Villages between the Nandi and Yerla rivers contain poor soil. The villages around Vita contain a good deal of black soil which extends right upto the foot of the hills which separate the plateau of Atpadi from the low-lying Yerla villages. Along the Vita-Khanapur road there are excellent stretches of soil growing unirrigated wheat. On the plateau there is some good black soil growing rabi jowar, wheat and gram on the top of the hill and in the valleys but the middle slopes are poor and stony. The soil of this plateau viz. existing Kharsundi and Atpadi circles however is poor.

The taluka relies mainly on the kharif crops, but if kharif rains fails, there is a chance of rabi crops if rabi rains are adequate. The area under Kharif crops is about 87 per cent. Atpadi area has however larger acreage under rabi crops.

The average rainfall worked out on the basis of the 1931-57 period figures, is 20.29". The average for June-July, August-September and September-October period is 7.33", 7.72" and 8.27", and C.V. for these periods are 27.35, 39.57 and 49.90 respectively. The kharif and the rabi rainfall is almost 50:50 per cent. of the total. The rainfall was less than 15" during the following years during last 30 years:—

Year.	Total.	September/October.	November.
1939.	11.54	2.49	1.66
1940	14.42	6.85	1.27
1941	14.72	6.72	4.02
1942	13.98.	0.70	1.96
1945	10.47	1.85	N.A.
1952	14.38	5.87	0.72

During the above years of low rainfall, the rabi rainfall was good except during 1942 and 1945. The rainfall in the north-east corner of the taluka, i.e. in Atpadi area, is however reported to be irregular and scanty.

The whole tract comprising Kharsundi and Atpadi circles of this taluka is reported to contain poor soils and has irregular rains as compared to other parts of the taluka. Only 4 villages in this area get the benefit of irrigation from Mhasvad tank. This part of the taluka adjoins Sangola taluka of Sholapur district, which is considered as a precarious scarcity area class A. In Kharsundi circle no village had annewari less than 6 annas during last 10 years. Data prior to 1948 is not available.

According to the previous history, Atpadi circle situated in the north-east was affected 4 times during the last 10 years. This is inclusive of the year 1958-59 which year is not considered in respect of other districts as only the period ending 1957-58 was taken for the collection of data on a uniform basis.

The land revenue suspension data for the last 30 years is available for 78 villages out of 131 of this taluka. For the remaining villages, data for the last 5 years only is available. Out of 78 villages, 3 villages had 3 and 3½ full suspensions. All the rest had less than 3 full suspensions during last 30 years. Out of 33 villages for which data is available for 5 years only. 17 villages had one full suspension while 16 had ½ suspension. The annewari and land revenue suspension data does not agree in respect of the tract if the ex-Aundh state as this data is imperfect. The data for the period prior to 1948 is not available. In the area comprising Kharisundi and Atpadi circles as many as 16 villages of Atpadi were affected. 8 had 4 full suspensions in 10 years and the remaining had 1 and 1½ full suspensions. In view of this data, Atpadi revenue circle may be treated as scarcity area of class B.

Tasgaon Taluka.—This taluka has 74 villages. It is further east of the Walva taluka and is drained by the Krishna and its tributary, the Yerla. The area to the east of the Krishna upto the taluka town—Tasgaon, forms a part of rich plain alluvial near the river and cut up further east by large stretches of stony and barely productive ground, known in the locality as 'Mal'. The alluvial land formed by the flooding of the Krishna contributes to a large extent to the prosperity of the adjacent villages, but the banks of the Yerla are high and exercise only an indirect influence upon the character of the cultivation and the fertility of the villages on the border. The main crops are kharif, the percentage being 87. The area under main crops is as under :—

Crops.	Acres.
Kharif Jowar	... 1,00,056
Bajri	... 13,792
Groundnut and oil seeds	... 44,903
Wheat	... 4,316

The total area under irrigation is 12,149 acres which comes to 5.6 per cent. of the net cropped area. The area under canals is 1,101 acres which is irrigated by the Krishna canal. Under the first and second F. Y. Plans, minor irrigation schemes have been taken up in this taluka, which are likely to bring an additional area of 8,000 acres under irrigation. The average annual rainfall as worked out on the basis of the annual rainfall for 1931-57 period is 22.00". During the following years the rainfall was less than 15" during 1931-57 period.

1942	13.68"
1945	13.61"

The average rainfall for June-July, August-September and September-October worked out on the basis of 1931-57 period is 7.75", 7.74" and 8.93" respectively and the C. V. are 30.67, 37.63 and 42.44 respectively. The rabi rainfall for the period September-October during the period 1931-57 was found adequate, except during the year 1942. Even the rainfall after October during most of the years was fairly good which helped the rabi crops.

According to the annewari data for the last 30 years, this taluka was affected in 1942-43, 1945-46 and 1958-59. In 1958-59, only 23 villages were affected and the annewari was between 4 and 6 annas. Regarding the years 1942-43 and 1945-46, details were not available. According to the land revenue suspension data for 30 years, 16 villages had more than 4 full suspensions, 15 villages had 3 and 3½ full suspensions, while the rest had ½ and 2½ full suspensions. Thus though some villages in this taluka have been affected occasionally, the taluka may not be treated as a chronic scarcity area.

Miraj Taluka.—It consists of 94 villages. It was formerly a State area and was merged with Bombay State in 1948. - Miraj is a well developed area of the district. The western part forms part of the Krishna valley alluvial tract. The main crops in this taluka are kharif, the area under these crops being 82 per cent. of the total cropped area. The area under each crop is as under :

Crops.	Acres.
Kharif Jowar	... 90,514
Bajri	... 69,243
Groundnut and oil seeds	... 48,811
Pulses	... 38,341
Rabi Jowar	... 31,552
Wheat	... 5,612

The area under irrigation is 21,182 acres which works out at 6.5 per cent. of the total area. The area under canals is 805 acres. The average rainfall worked out on the basis of 1931-57 figures has been 22.12". It was less than 15" during the following years only.

1941

14-86"

1949

12-59"

The data regarding land revenue suspensions, annevani, etc. is not available for the period prior to 1948. During the last 10 years period conditions akin to scarcity prevailed in 40 villages in this taluka in the year 1952-53. The villages affected belong to Kuchi and Kavathe-Mahankal revenue circles. These revenue circles are also shown to have been affected during the year 1958-59, when conditions akin to scarcity prevailed in 9 villages. In view of the above facts, no sizeable tract in this taluka can be considered as scarcity area.

To sum up, Jath Taluka and Atpadi Circle of Khanapur Taluka, i.e. the north-eastern part, should be treated as scarcity area of Class B and the rest of the district should be treated as free from scarcity.

STATEMENT "A".

Basic Data.

Serial No.	Taluka	No. of Villages	Gross area		Population	Density per Sq. mile	Gross cropped area.	Net cropped area and its percentage to total area.	Area under Forest.	
			In Sq. miles	In acres.						
1	2	3	4	5	6	7	8	9	10	
1	Mitraj	84	611.4	4,08,348	2,85,616	467	3,26,207	3,20,324	79.4	3,756
2	Jath	97	873.7	5,55,215	1,08,270	124	4,09,985	4,03,792	73.2	28,253
3	Taagaon	74	446.2	2,74,659	1,69,325	379	2,15,341	2,11,007	76.8	12,833
4	Khanapur	131	846.5	5,44,043	1,13,441	134	3,91,044	3,73,388	68.6	30,922
5	Waiva	57	300.4	1,94,473	1,74,073	579	1,64,469	1,62,178	83.4	7,381
6	Shirala	81	246.0	1,56,924	79,416	323	1,17,081	1,10,271	70.3	32,601
District Total		534	3824.3	21,28,662	10,00,141	308	16,24,127	15,80,960	74.2	1,15,647

STATEMENT " B ".

Rainfall Data.

(Fig. in inches.)

Taluka.	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	Average of 10 years.	Average of 27 years.
1	2	3	4	5	6	7	8	9	10	11	12	13
*Miraj	12.59	29.68	17.30	13.95	26.97	20.24	34.52	26.14	22.40	19.0	..	22.12
*Jath	23.46	25.51	12.31	15.87	15.37	16.30	18.14	24.61	19.59	23.4	..	20.72
*Tasgaon	21.41	32.26	22.78	16.29	24.09	21.44	27.17	22.85	23.76	20.4	..	22.00
*Khanapur	18.10	33.07	22.88	14.33	18.16	17.67	24.11	19.73	18.78	9.0	..	20.29
Walva	20.2	26.1	16.1	16.2	38.67	28.0	34.2	30.1	27.0	25.6	26.06	....
h a	35.5	47.1	20.2	29.8	32.8	35.9	33.6	30.3	39.3	37.0	36.0	....

*Month-wise rainfall figures given in Statement " B-1 ".

STATEMENT " B-1 "

Monthly Rainfall Data.

Taluka—Miraj

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total annual.	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	1.22	4.25	4.74	2.80	3.95	1.95	18.91	24.62	5.61	
1932	1.17	0.88	6.58	12.95	2.85	10.09	34.52	37.52	3.00	
1933	3.53	2.83	3.04	8.27	1.64	10.02	29.33	36.54	7.21	
1934	3.36	1.70	5.91	3.34	3.96	8.02	28.29	27.46	1.17	
1935	20.8	2.40	8.20	0.81	4.30	17.79	18.98	1.19
1936	1.93	5.02	0.06	2.34	6.57	2.31	18.13	20.90	2.77	
1937	0.50	20.	3.89	0.98	5.84	2.42	13.57	23.54	9.97	
1938	5.51	1.46	30.7	5.44	10.76	1.72	27.96	33.07	5.11	
1939	0.29	2.94	6.94	3.01	3.13	2.85	12.16	21.71	2.55	
1940	1.43	3.92	3.54	1.45	1.54	3.03	14.90	16.29	1.39	
1941	0.93	3.11	2.96	1.01	1.98	1.40	12.39	14.86	2.47	
1942	1.74	4.15	5.08	2.61	0.93	2.44	25.25	27.35	2.10	
1943	3.04	3.79	5.41	1.70	2.77	6.90	23.61	26.64	3.03	
1944	5.47	4.59	6.96	0.82	8.40	7.06	33.30	36.82	3.51	
1945	0.09	4.27	4.71	4.07	2.53	1.01	18.68	16.87	0.19	
1946	4.44	1.22	5.86	4.26	8.51	0.46	24.75	30.12	5.35	
1947	2.57	0.56	3.29	11.22	1.47	0.25	19.36	20.87	1.81	
1948	2.41	2.21	1.90	3.62	4.93	3.71	18.78	23.68	4.90	
1949	2.57	2.09	2.17	5.76	..	..	12.59	12.59	..
1950	3.01	2.46	6.29	4.90	5.68	7.34	29.68	30.26	0.58	
1951	..	..	..	..	..	..	17.80	..	..
1952	1.55	1.66	3.64	1.95	0.64	4.52	13.95	15.98	2.03	
1953	0.86	2.34	7.92	2.45	4.87	6.52	26.97	28.24	1.27	
1954	3.92	1.32	8.32	3.31	0.88	2.49	20.24	21.01	0.77	
1955	5.34	4.03	2.34	4.83	9.32	8.66	34.52	40.37	5.85	
1956	..	1.14	6.26	4.90	3.75	10.09	26.14	32.11	5.97	
1957	2.02	2.29	3.13	2.29	4.90	7.77	22.40	23.87	1.47	

Average (1931—57) = 22.12

STATEMENT " B-1 "

STATEMENT "B-1".

Monthwise Rainfall Data.

Taluka Khanapur

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	November to April.	
1	2	3	4	5	6	7	8	9	
1931	6.35	2.47	1.74	8.03	1.63	20.22	5.84
1932	..	1.65	0.44	7.15	7.04	3.70	6.48	27.46	2.10
1933	..	3.32	3.65	2.69	4.70	7.79	5.90	27.95	3.20
1934	..	0.79	1.90	6.73	4.00	6.72	2.83	20.97	2.65
1935	4.07	1.44	5.72	2.18	9.63	23.04	2.39
1936	..	2.04	4.29	0.62	1.50	5.93	1.33	15.71	3.83
1937	..	0.45	3.91	4.48	1.06	5.33	3.04	17.26	0.07
1938	..	2.02	1.98	2.65	6.86	9.79	3.69	26.99	1.53
1939	..	0.62	2.58	4.62	1.13	2.14	0.35	11.44	1.66
1940	..	1.20	3.10	2.73	1.54	3.57	2.38	14.42	1.27
1941	..	0.50	2.49	3.68	1.31	3.94	2.80	14.72	4.02
1942	..	1.33	4.61	4.68	2.66	..	0.70	13.98	1.96
1943	..	2.70	2.83	6.13	2.43	2.58	6.82	23.49	0.84
1944	..	3.01	4.27	8.66	0.65	11.42	6.62	34.63	3.31
1945	..	0.19	1.76	3.71	2.96	0.49	1.36	10.47	0.23
1946	..	2.35	0.82	7.75	3.81	5.22	0.90	20.86	5.76
1947	..	1.75	1.93	2.17	7.28	3.90	2.67	19.70	1.58
1948	..	0.92	3.66	1.55	1.97	6.71	3.29	18.10	5.83
1949	..	2.91	3.07	1.40	3.18	5.68	1.86	18.10	3.05
1950	..	1.81	3.74	6.15	5.80	7.48	8.07	33.07	0.05
1951	..	2.92	3.25	7.45	0.50	5.72	8.01	22.88	1.45
1952	..	2.40	1.44	3.35	1.32	1.94	3.93	14.38	0.72
1953	..	1.32	2.96	5.64	1.55	3.40	3.87	18.14	3.19
1954	..	0.92	4.74	4.74	4.46	0.95	1.86	17.67	0.49
1955	..	1.67	3.81	2.91	1.90	5.50	3.25	24.11	3.36
1956	..	2.93	1.04	4.81	4.94	3.58	2.43	19.73	8.84
1957	..	2.27	6.94	2.92	0.68	4.05	1.92	18.78	2.44

Average (1931-57) = 20.29.

Maximum=34.63 Minimum=10.47 Range=24.16.

STATEMENT "B-1".
 Monthwise Rainfall Data.

Taluka, Tasgaon

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	November to April.
1	2	3	4	5	6	7	8	9
1931	0.30	3.54	5.02	1.65	4.58	3.74	18.83	3.97
1932	1.19	0.60	6.21	11.41	3.04	9.40	31.85	2.09
1933	6.64	3.33	4.00	7.10	3.48	5.48	30.03	2.57
1934	0.31	2.36	7.70	3.83	3.80	2.97	20.97	1.67
1935	..	4.34	2.13	8.50	0.97	7.53	23.47	1.32
1936	3.58	5.64	0.52	2.38	5.46	2.74	20.32	2.41
1937	..	4.57	4.44	1.23	4.62	2.53	17.39	0.11
1938	2.12	1.25	4.12	5.72	9.22	4.39	26.82	0.72
1939	0.30	4.63	6.64	1.61	2.74	1.42	17.34	2.87
1940	1.23	7.36	2.39	0.51	1.10	2.69	15.27	0.84
1941	1.57	2.31	4.47	1.78	3.39	2.66	16.18	2.68
1942	0.09	6.38	4.42	1.54	6.30	1.01	19.68	5.27
1943	3.69	3.28	5.15	2.79	5.11	9.36	29.38	2.51
1944	2.04	2.81	6.02	1.14	8.58	6.39	26.98	2.68
1945	0.78	21.54	2.68	31.87	1.39	1.35	12.61	0.28
1946	5.18	0.84	7.10	3.88	7.08	0.80	24.88	4.36
1947	3.33	1.19	3.72	5.20	2.17	0.88	16.49	5.05
1948	0.53	3.47	2.23	2.92	5.15	5.26	19.49	6.79
1949	2.43	1.62	1.35	3.60	10.52	1.99	21.41	1.90
1950	1.57	5.73	7.48	1.87	5.69	9.92	32.26	1.12
1951	1.68	2.90	8.06	1.80	3.39	4.85	22.78	0.61
1952	0.94	3.30	1.76	1.35	1.97	6.97	16.29	1.68
1953	..	4.80	4.83	2.35	3.91	8.20	24.09	2.70
1954	2.62	3.01	5.85	4.45	1.35	4.16	21.44	1.46
1955	0.95	2.22	2.26	3.83	9.56	8.35	27.17	1.35
1956	5.16	1.41	5.28	4.30	2.21	4.43	22.85	7.17
1957	3.57	3.96	4.02	2.09	5.49	4.63	23.76	4.15
Average (For 1931 to 1957) = 22.00								
Maximum 32.26								
Minimum 12.61								
Range 19.65								

STATEMENT "B-1"
 Monthwise Rainfall Data.
 Toluka—Jath.

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.
1	2	3	4	5	6	7	8	9	10
1931		6.29	1.40	0.64	5.05	2.67	16.05	22.55	5.60
1932	10.91	1.65	3.42	6.13	2.39	4.36	18.86	22.68	3.82
1933	6.06	3.10	4.27	3.41	4.79	4.01	25.64	33.81	8.17
1934	0.19	0.91	7.65	3.05	8.30	1.59	22.19	24.67	2.48
1935		4.09	1.18	7.96	1.03	4.19	18.45	18.96	0.61
1936	2.25	7.81	0.16	1.11	7.07	0.04	12.04	16.47	4.43
1937	0.09	0.52	2.03	0.25	5.82	2.80	11.61	17.73	6.12
1938	1.54	0.89	3.41	5.73	16.13	2.12	29.82	13.46	1.64
1939	0.09	3.48	2.27	3.83	4.93	5.42	20.02	20.67	0.65
1940	1.03	3.09	1.22	1.10	4.28	3.28	14.00	16.22	2.22
1941	9.35	0.98	1.24	3.52	9.08	2.71	17.88	20.55	2.67
1942	0.97	3.39	1.90	2.54	0.28	2.48	11.46	13.31	1.95
1943	4.31	2.77	2.51	2.25	4.32	3.86	25.02	26.26	1.24
1944	1.30	1.45	4.17	0.02	5.07	4.14	16.15	17.37	1.22
1945		1.50	1.56	1.06	0.32	1.51	8.95	9.09	0.14
1946	0.94	5.72	4.94	1.52	3.27	0.64	17.04	23.27	6.23
1947	0.94		1.31	4.08	2.68	0.60	9.61	11.32	1.77
1948		0.66	0.91	2.31	5.31	4.11	13.30	19.46	6.16
1949	3.05	2.94	0.67	3.10	11.94	1.76	23.46	23.56	0.10
1950	2.31	1.20	2.62	5.61	6.81	6.66	25.51	25.97	0.46
1951	0.91	1.74	3.76	0.37	3.09	2.44	12.31	13.49	1.18
1952	2.16	3	1.40	0.98	1.44	6.77	15.87	16.52	0.70
1953		3.10	2.62	0.90	1.44	6.77	15.87	16.52	0.70
1954	2.06	2.13	4.56	5.39	1.50	1.16	16.80	18.31	1.51
1955	3.28	1.52	2.59	1.80	5.07	3.88	18.14	19.74	1.60
1956	3.18	2.67	4.78	1.88	6.87	5.23	24.61	30.10	5.49
1957	2.09	3.65	2.23	2.19	4.29	5.09	19.59	25.43	5.84

Average (1931-57) = 20.72

STATEMENT "C".

Irrigation Data.

Serial No.	Taluke.	Area under irrigation by.				Total area under irrigation and its Percentage to cropped area.
		Canals.	Tanks.	Wells.	Other sources.	
1	2	3	4	5	6	7
1	Miraj	905	.....	17702	....	21182 6.5
2	Jath .. ..	.....	.....	20524	....	25578 6.4
3	Taggaon	1101	.....	8331	....	2149 5.6
4	Khanapur	1898	.....	16421	....	27024 6.9
5	Walva	1280	.....	8601	....	11255 6.3
6	Shirala .. ..	.....	.....	1259	.....	3755 3.2
District Total ..		4584	.....	72838	....	100943 6.2

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total cereals.	Total pulses.	Total food crops and its percentage.	Oil seeds and its percentage.	Cotton and its percentage.	Total non-food crops.
				under Kharif	under Rabi.							
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Miraj	1,147	5,512	90,514	31,532	69,243	1,99,225	38,341	2,46,223 75.4	48,811 14.9	4,977 1.5	79,984
2	Jath	2,117	6,220	5,481	1,64,836	1,29,365	3,08,136	32,220	3,46,212 84.4	42,130 10.2	18,670 4.5	63,773
3	Tasgaon	613	4,316	1,00,056	1,179	13,792	1,21,709	35,881	1,64,452 76.3	44,903 20.8	1,572 0.7	50,889
4	Khanapur	1,700	10,427	81,688	44,287	1,42,647	2,85,595	66,655	3,60,081 92.1	29,434 7.5	781 N	30,963
5	Walva	2,404	5,321	71,489	1,362	2,147	84,654	19,545	1,14,002 69.3	29,462 17.9	2,120 1.3	50,487
6	Shitala	18,901	389	10,153	4,441	228	42,791	4,390	49,304 42.1	8,980 7.7	35 N	67,777
District Total ..		26,882	32,685	359,381	2,47,637	3,57,222	10,43,110	1,97,032	12,80,274 78.8	2,03,730 12.5	28,155 1.7	3,43,853

CHAPTER XVIII.

SHOLAPUR DISTRICT.

Part I—Background.

1. *Location.*—The district is bounded on the north by Ahmednagar and Osmanabad districts, on the east by Osmanabad and Andhra Pradesh, on the south by South Satara district and the State of Mysore and on the west by North Satara and Poona districts. The district has an area of 59,043 sq. miles.

2. *Administrative set-up.*—For administrative purposes the district is divided into 11 talukas as under :—

1. Sangola, 2. Pandharpur, 3. Karmala, 4. Madha, 5. Barsi, 6. South Sholapur, 7. North Sholapur, 8. Malsiras, 9. Mohol, 10. Akkalkot, 11. Mangalwedha. Statistical data in respect of these talukas is given in statements A to D attached.

3. *Area and Population.*—The total population of the district is 25,05,316 and the density per sq. mile is 255. The district has a length of about 100 miles from the north of Karmala to the south of Sangola and a breadth of 100 miles from the west of Malsiras to the east of Sholapur.

4. *Topography.*—The district lies in the basins of the Nira, Bhima, Man and Sina rivers. Most of the Malsiras taluka is drained north by the river Nira, which joins the Bhima in the west of the district. The drainage area of the Bhima which flows south-east through the centre of the district includes on the left bank, western half of Karmala, Madha, Pandharpur and South Sholapur talukas and on the right bank the southern part of Pandharpur and Mangalwedha talukas. The river Man on entering Sangola taluka from the western border flows eastwards, draining the talukas of Sangola and parts of Pandharpur and Mangalwedha. The Sina, which flows from north to south-east parallel to the Bhima, drains the talukas of Barsi and north Sholapur on the left and part of Karmala and Madha and south Sholapur on the right. The rivers Nira, Man and Sina are the main tributaries of the Bhima in this district. Around Sholapur, the country is about 1500 to 1700 feet above sea level. The whole district is an undulating plain with the exception of a few scattered hills in Malsiras, Karmala and the northern border of Barsi. Most of the area consists of low uplands separated by valleys. The uplands contain shallow soils which are suitable for pasture while the deep soil low lands under careful tillage yield the richest crops. A low table land running from northwest to south-east in the talukas of Karmala, Madha, Mohol and south Sholapur acts as a water shed between the rivers of Bhima and the Sina. Except this, the Sholapur uplands are gently rounded swelling of trap over-grown with yellow stunted spear-grass. The country is mostly without trees. Barsi has large mango groves while Madha has a fairly good cover of trees. Near river and stream banks the soils are deep black and rich and on rising grounds they are gravelly and reddish, yielding little but stunted yellow spear grass. In Sangola, the soil is light to medium black and stony. The villages, as a rule, are small and generally lie along stream on river banks.

The chief rivers are the Bhima, with its right bank feeders, the Nira and the Man, and its left bank feeder, the Sina, which receives the Bhogavati from the north. The Bhima and the Sina run south-east, the Nira and the Man nearly east, and the Bhogavati south-east. During the dry season all the rivers are fordable. Even in the Bhima, except for occasional pools, the stream dries up or runs only ankle-deep.

The rainfall is scanty and uncertain and most part of Sholapur district suffers from want of drinking water. Even in ordinary seasons during hot weather, the smaller streams and most of the wells dry up and the water in the reservoirs becomes scanty and unwholesome. In recent years much has been done to improve the drinking water supply of the district.

5. *Rainfall.*—The rainfall all over the district is scanty. The average rainfall for the last 27 years ending 1957 is as given below. Detailed figures of monthly rainfall for each taluka for the period are given in the statements B and B1.

Taluka.	Average for period (1931 to 1957).
1. Sangola	19.59
2. Pandharpur	21.33
3. Karmala	22.96
4. Madha	21.23
5. Barsi	24.91
6. South Sholapur	25.77
7. North Sholapur	
8. Malsiras	18.01
9. Mohol	25.93*
10. Akkalkot	27.07
11. Mangalwedha	15.25*

*Average of 8 years from 1950-1957.

The rainfall starts by the middle of June and continues till the end of October. The precipitation during June to August is rather precarious. The showers in September and October, though fair, are heavy and more assured.

6. *Land Utilisation.*—The total area of the district is 36,03,136 acres of which 80.3 per cent., i.e. 28,95,213 acres is under crops. The remaining area is occupied as shown below :—

(1) Barren and unfit for cultivation	...	1,62,584 acres.
(2) Cultivable waste	...	68,273 acres.
(3) Fallow areas	...	3,28,552 acres.
(4) Pastures	...	1,30,961 acres.
(5) Forests	...	1,00,898 acres.

The area under crops is proportionately high in this district. This is due to the absence of major hill ranges and a very small area under forests.

7. *Soils.*—The soils are basically derived from volcanic trap and are formed in Situ, i.e., they are mostly sedentary except along the rivers where transported soils have been deposited. The soils of the district can be divided into three groups :—

- (i) Coarse gray or brown, known as Murmad or Barad.
- (ii) Reddish black and red soils.
- (iii) Black or medium black soils.

Murmad soils are shallow, coarse and contain partially decomposed rock pieces. These are to be seen along the hill slopes, where the upper soil is subjected to continuous erosion. Along the lower slopes of hills, the depth is slightly more. These soils may also contain pieces of stones. This type of soils supports inferior millets only.

The reddish black soils are found on hill tops, along the ridges. These soils are not common in this district. The medium black soils are more clayey in texture. The lime nodules are seen mixed in these medium soils. They also crack heavily depending upon the depth and clay content. These soils are quite fertile and produce excellent garden crops as well. In case of restricted subsoil drainage, they do not lend themselves to irrigation.

Barring few strips of deep soil all the soils have been badly damaged by constant erosion.

The soils of Mangalwedha and part of South Sholapur have deep black soils while the rest of the district has light and medium soils. The medium deep soils are located in the river valleys of Bhima, Sina, Nira and Man.

8. *Cropping Pattern.*—Due to the peculiar pattern of rainfall prevailing in the district, the farmers depend partly on kharif rains and partly on rabi rains. The rainfall in the months of June to August is received in drizzles but is many times insufficient for crop growth, even in lighter soils. The rainfall in September-October is more assured but is not well distributed. The farmers resort to kharif crops in lighter soils, but so far as the heavier soils are concerned, they try to conserve the moisture in the soil during the early months and take to rabi crops, taking advantage of the heavier showers received from the returning monsoon in the month of September. Thus the crops of bajri, groundnut, and a few pulses form the bulk of their kharif crops, i.e. 42 per cent., while rabi jowar, safflower and occasionally linseed are the main rabi crops. There are a few years when farmers lose both the harvests.

The crops grown are mainly :—

Crop.	Area in acres.	Percent. to total.
1. Rabi Jowar	.. 17,60,000	61 per cent.
2. Groundnut and safflower, etc.	.. 3,64,138	12.3 per cent.
3. Pulses	.. 2,80,759	10 per cent.
4. Bajri	... 2,47,913	8.5 per cent.
5. Cotton	.. 49,466	1.6 per cent.

The area under sugarcane is about 28,000 acres, most of which is located in Malsiras and Mangalwedha talukas.

9. *Irrigation.*—The area under irrigation is about 2,42,425 acres, which is 8.3 per cent. of the cropped area. The area under wells is 1,79,832 acres, while that under canals is 60,071 acres and under tanks 2,522 acres. The Nira Right Bank Canal benefits Malsiras and part of Pandharpur, while the tanks like Mhaswad, Ekruk and Budhehal benefit the talukas of Pandharpur, Sholapur, Sangola and Karmala to a certain extent.

10. *Forests.*—The dry shallow uplands of Sholapur are ill-suited for trees. The forest area is much scattered. It may be roughly divided into two tracts, hills between Barsi and Osmanabad on the extreme north-east and hills to the south of Malsiras and Sangola to the extreme south-west. The total area under forest is 1,00,898 acres. All these forests are scrub forests, growing thorny bushes. They however help in conserving soil and water and give good grazing.

11. *Transport and Communications.*—The main broad gauge Southern Railway line passes through this district, serving the talukas of Karmala, Madha, Mohol and Sholapur. Another narrow gauge rail line crosses the main line at Kurduwadi. This line serves the talukas of Sangola, Pandharpur, Mohol, Madha and Barsi. So far as the roads are concerned, the district is well served by a net work of roads. The postal and telegraphic facilities are also fairly adequate.

12. *Industries.*—There are 327 factories in the district of which about 317 are in working order, which give employment to over 35,800 persons. The textile factories are located in Sholapur and Barsi towns. Besides the textile industry, cotton ginning, oil pressing, wool weaving and fibre extraction are some of the industries which provide employment to the people.

13. *Live-stock.*—The total bovine cattle population is about 6,05,000; in addition to sheep and goats, which are about 2,23,000 and 3,02,000 respectively. The importance of livestock in this district is very great as the rearing of cattle, sheep and goats, supplement the meagre income from agriculture. Poultry is also a very important subsidiary occupation all over the district and especially so in Sangola, Pandharpur, Madha, etc. The khilar breed of cows and Pandharpur buffalos from this district are noted for their good qualities.

14. *Minerals.*—There are no minerals in this district worth the name.

15. *Livelihood Pattern.*—The total population of the district is about 15,05,000 of which 62.7 per cent. is engaged in agriculture and the rest in non-agricultural activities. This population is roughly distributed as below :—

I. *Agriculture.*—

(i) Cultivation of land wholly owned	.. 40.5 per cent.
(ii) Cultivation of land wholly unowned	.. 4.6 per cent.
(iii) Cultivating labourers	.. 14.7 per cent.
(iv) Non-cultivating owners	.. 2.9 per cent.
	<hr/>
	62.7 per cent.

II. *Non-Agriculturists.*—

(i) Production other than cultivation	.. 17.1 per cent.
(ii) Commerce	.. 6.3 per cent.
(iii) Transport	.. 1.9 per cent.
(iv) Other sources	.. 12.0 per cent.
	<hr/>
	37.3 per cent.

It will be seen that Agriculture is by far the most important industry and a large number of landless persons depend on agriculture for their maintenance. The proportion of non-agriculturists, though much less than those depending on agriculture, is fairly high as compared to other Deccan districts. This is because of large business towns, railway lines and transport facilities existing in the district.

Part II—Determination of Chronic and other Scarcity Areas.

A scanty and uncertain rainfall makes Sholapur peculiarly liable to scarcity and famine. The earliest record of famine is the great Durgadevi famine which began about 1396 and is reported to have lasted for 12 years. The subsequent years of famine on record are 1460, 1520, 1791, 1802, 1818, 1824, 1832, 1845, 1854, 1862, 1876 and 1877.

The history of scarcity for the last 30 years ending 1956-1957 in respect of different talukas is shown below :—

Karmala was affected during the years 1936, 1941, 1945, 1950, 1951, 1952 and 1953.

Madha was affected during the years 1936, 1941, 1945, 1946, 1950, 1951, 1952.

Malsiras was affected during the years 1941, 1942, 1943, 1945, 1952 and 1953.

Sangola was affected during 1936, 1941, 1942, 1943, 1945, 1950, 1951, 1952, 1954 and 1955.

Pandharpur was affected during 1936, 1941, 1943, 1950, 1951, 1952 and 1953.

Mangalwedha was affected during 1950, 1951, 1952 and 1953.

Mohol was affected during 1936, 1940, 1951 and 1952.

Sholapur, North was affected during 1936, 1941, 1942, 1943, 1950, 1951 and 1952.

South Sholapur was affected during 1936, 1941, 1942, 1943, 1950, 1951 and 1952.

Barsi was affected during 1938, 1939, 1941, 1950, 1951 and 1952.

Akkalkot was affected during 1950, 1951, 1952, 1953 and 1956.

It would appear from this statement that the whole of Karmala, Sangola and parts of Pandharpur, Madha and North Sholapur were more frequently affected than the rest of the district. The figures of rainfall for each talukas are given in the statement "B" and 'BI'. Though the average rainfall would have been generally sufficient for the crops grown in this area, many a time the rainfall was not timely and was ill-distributed which resulted in the failure of crops. As the larger area was under rabi crops, September-October rains were more significant. The distribution of rainfall in each taluka, particularly for the period when the rainfall was below the minimum requirement, has been examined along with other factors like annewari data, land revenue suspension data, nature of the soil, irrigation facilities etc., in the following paragraphs.

Karmala.—This taluka has 95 villages. The population is 1,00,089. The gross cropped area is 3,07,486 acres. This is a rabi area. Scarcity was declared in the taluka during 1936-37, 1941-42, 1945-46, 1950-51 (62 villages), 1951-52 (90 villages), 1952-53 and 1953-54 (6 villages). Thus the whole taluka was affected 4 times and a major portion again twice i.e. in all 6 times during the last 30 years.

The annevari data for this taluka which is available only for 10 years shows that during 1950-51, 1951-52, and 1952-53 the annevari was 4 annas in all villages except in 30 villages in which it was mostly 5 annas during 1950-51. According to annevari data, the large majority of villages in the taluka had 3 suspensions during the period of 10 years. The land revenue suspension data is available for 30 years. According to this data, the number of villages having ten full suspensions were 65 and between 7 and 10 are 25. This taluka is situated on the western side of the district which gets less rain than the eastern part. The average rainfall for the years 1931 to 1957 is 22.96". The average for the last 10 years is 25". The rainfall was less than 75 per cent. of the average 6 times. During other years it was about 75 per cent or more. The total rainfall of monsoon period was less than 15" only 3 times during the last 27 years period viz. in 1936 when it was 5.95", in 1945 when it was 10.83", and in 1952 it was 11.37". The failure of crops in other years would therefore, be attributed to defective distribution rather than to inadequacy of rains. The co-efficients of variation for different monsoon months were studied and were found to be not very high. The major portion of the taluka has light and shallow soils, except on the banks of the Bhima and Sina which are said to have fertile soils. Besides rabi jowar, the other important crops are bajri, groundnut, cotton and pulses. The area under irrigation in this taluka is only 4.2 per cent. of the net cropped area, the main source being wells.

Considering all these factors and the fact that the majority of villages in the taluka had about 10 full suspensions in 30 years, this taluka may be treated as precarious area of Grade "A".

Madha.—Immediately to the south of Karmala is the Madha taluka. The number of villages in this taluka is 95. The population is 1,22,174. The gross cropped area is 3,17,840 acres. It is also mainly a rabi area. The main crops are rabi jowar, groundnut, bajri, cotton, and pulses. The area under irrigation is 19,922 acres which comes to 6.2 per cent. of the net cropped area. Like Karmala, this taluka also has light shallow soils in the centre. The medium black soils are found along the banks of the Bhima and Sina rivers along the western and eastern boundaries. The land along Bhima is more fertile. Along the Sina river, roughly north-east, one-third part of the taluka is more fertile than the rest of the taluka. The average rainfall for the period 1931-1957 was 22.10". June-July, August-September and September-October average for that period was 7.16", 10.08" and 9.46" and C. V. for these periods was 45.90, 39.41 and 41.31 respectively. The C. Vs. appear to be on the lower side. The rainfall was less than 15" during 1936(6.46"), 1939(12.87"), 1942(13.86"), 1946(12.91"), and 1952(14.41"). According to the past history of scarcity and annevari data, this taluka was affected during 1936-37, 1937-38, 1939-40, 1941-42, 1945-46, 1946-47, 1950-51, 1951-52, 1952-53 and 1953-54. Scarcity was actually declared during 1936-37, 1941-42, 1945-46 (part), 1951-52 (20 villages) and 1952-53 (whole taluka). Thus this entire taluka was affected during three years and about 5 per cent. of villages were affected during three more years. Looking to the taluka map, it appears that the villages more frequently affected were not in a compact area but were scattered over the whole taluka. Therefore, the whole taluka has been taken as a unit for the purpose of determination of the nature of the scarcity area. The annevari data is available for some villages for the last 30 years and for a few other villages for 10 years only. Looking to this annevari data, it appears that 54 villages had over 6 times full suspensions and 41 villages between 3-6 full suspensions. According to the land revenue suspensions data, the majority of the villages had between 2 and 5½ full suspensions. On the basis of this data, this taluka may, therefore, be considered as affected by scarcity and treated as Grade "B" area.

Sangola.—The total number of villages in the taluka is 68. The population is 1,03,990. The gross cropped area is 2,63,301 acres, and the average rainfall for the period 1931-57 is 19.59". Bajri and groundnut are the main kharif crops. In the rabi season, dry rabi jowar is the major crop grown to the extent of 60 per cent. The river Man runs through the centre of the taluka. The topography of the land is undulating and hilly in the western portion as also in the south. Most of the area has light shallow soils. The better soils are found along the banks of the Man river.

Scarcity was declared in the whole taluka 7 times, and in a few villages (8 to 20) 3 times more. The frequency has been reported to be the highest in the district in this taluka. The years during which whole or part of the taluka was affected were 1936-37, 1941-42, 1942-43, 1943-44, 1945-46, 1951-52, and 1952-53. A few villages were also affected during 1950-51, 1952-53, 1953-54, 1954-55 and 1955-56. The annewari data was available for 30 years. There are some discrepancies between the data regarding previous history of scarcity and the information available in the Statistical Atlas which is supported by the annewari data. According to the latter, the whole taluka was affected only 4 times, viz. in 1941-42, 1945-46, 1951-52, and 1952-53. The land revenue suspension data shows that there were 4 to 7 full suspensions in the majority of the villages, as only 13 villages had over seven full suspensions. The annewari data shows that only 7 villages had ten or more full suspensions—42 villages had between 6-10 full suspensions. The remaining villages had less than 6, but in no case less than 4 suspensions. The more frequently affected villages, that is, those affected more than 6 times are not in a compact block.

The rainfall was less than 15" seven times during the period 1931-57. It was in the following years:—

1936	...	10-10"
1946	...	10-37"

The average for June-July, July-August and September-October and the co-efficients of variation for these periods are:—

	Average.	Co-efficient of variation.
June-July	6.48	47.41
July-August	8.90	40.55
September-October	10.51	42.66

Though the different data regarding this taluka would appear to be somewhat inconclusive, on the whole, the taluka may be treated as scarcity area of the same class as Karmala, i.e., as chronic scarcity area of Class A.

Pandharpur.—There are 82 villages in this taluka which has a gross area of 3,15,371 acres. The density of population is 258. The gross cropped area is 2,44,396 acres. The area under forest is 3,610 acres. Except for the small area of 16,517 acres, i.e. 6.7 per cent., the major portion is under cereal crops—mostly rabi jowar. The area under irrigation in this taluka is 23,129 acres which comes to 9.4 per cent. Out of this, the area under canals is 9,236 acres and under wells 13,893 acres. The average rainfall for the period 1931-57 is 21.33". This taluka is also situated in the western half of the district having less rainfall than the eastern. This taluka has the Bhima river running in the north-east corner and the Man river on the south. The soil fertility increases from the south-west to north-east. The western portion is hilly and rocky with shallow soils. About 75 per cent of the soil can be classed as medium black soil. Groundnut is taken as a dry and semi-irrigated crop in the kharif season. However, the main crops is rabi jowar. The other crops are bajri, wheat and cotton.

The whole of this taluka was affected 5 times in the last 30 years, viz. in 1936-37, 1941-42, 1943-44, 1951-52 and 1952-53. Some of the villages were also affected during 1950-51. Although 1936-37 has been shown to be a scarcity year, according to the annewari data, 46 villages had a crop of 6 as and over, while the rest had between 4 and 5 annas crop. The annewari during 1941-42 in most of the villages was 5 annas while in 1943-44 it was 6 annas, in almost all the villages. The annewari data has not supported the statement that the year 1943-44 was a scarcity year. If these years are excluded, the total number of scarcity years will come to 3, i.e. 1936-37, 1951-52 and 1952-53 and half for 1941-42 (in all 3½). As for 1951-52 and 1952-53 annewari data show that it was 4 annas in almost all the villages, but during 1950-51 the large majority of the villages show 8 annas crop. Only 4 villages had 4 annas crop. Thus 1950-51 does not appear to be a scarcity year as reported. Therefore, there were only 3 complete and one partial scarcity years, as per annewari data. The suspension data for this taluka shows that about 14 villages only had 7 to 9½ full suspensions and 49 villages had 3-5½ full suspensions. Taking the total number of suspensions, according to the annewari data, the large majority of the villages had more than 5 but not exceeding 7½ full suspensions.

The average June-July rainfall is 7.30", co-efficients of variation are 32.43, August-September average rainfall is 10.34", C. V. are 42.51, September-October average is 9.89", C. V. are 36.05. The rainfall co-efficients of variation are on the lower side. The scrutiny of the monthwise rainfall figures over a period of last 30 years has shown that the crops must have fared badly during the years 1936, 1940, 1941, 1946, 1951 and 1952, while failure of either kharif or rabi must have been experienced during the years 1931, 1933, 1934, 1942, 1944, 1950 and 1956. The annewari data however has not brought out the gravity of scarcity conditions, to the same extent.

Looking to all the factors, this area may be classified as scarcity area of category "B".

Malsiras.—There are 72 villages in the taluka. The total population is 1,22,830. The total area is 3,97,160 acres. The gross cropped area is 2,32,825 acres. The area under forest is 21,832 acres. The total area under irrigation is 27.7 per cent. of the cropped area. The taluka is on the western side of the district which has less rains. The average rainfall of this taluka for the last 27 years is 18.01" only, which is the minimum in the whole district. Soils in the major portion of the taluka are light brown. There are hill ranges in the south-west portion of the taluka. The land becomes more and more plain and levelled as one proceeds from south-west to the north-east. Due to perennial irrigation from the Nira right bank canal, about 58 villages of the taluka have been protected where the crop pattern is completely changed. Sugarcane is the major crop of the taluka. Chillies, groundnut and maize are taken under irrigation in the kharif season, while in rabi season, jowar, wheat and gram are taken mainly under irrigation. The average rainfall for June-July, August-September and September-October is 5.70", 7.79" and 8.79" with the co-efficients of variation as 45.10, 39.48 and 30.48 respectively. These appear to be on the lower side. The total rainfall for June-October period was less than 75 per cent of the average rainfall during the years 1936 (11.58"), 1937 (12.75"), 1940 (11.71"), 1941 (11.75") and 1942 (12.58"). According to annewari data of last 30 years, 1941-42, 1942-43, 1943-44, 1945-46, 1952-53, and 1953-54 were scarcity years in some villages. According to annewari, 1936 was a normal year though rainfall was low. 1937-38 was a scarcity year. 1940-41 was also a normal year. 1941-42 was a scarcity year. 1942-43 was a lean year in respect of some villages. The outturn was normal in some villages while it was 5 annas in respect of others. Thus, out of 5 years in which the rainfall was below normal, the outturn of crops was normal in two years. In the third year there was a partial failure. During two years there was scarcity. During these five years the September-October rainfall was very favourable, except in 1942-43 in which September fall was 0.25" and October was 0.65" only. 1945-46 is shown to be a year of scarcity. The annewari in the majority of the villages was 4 to 5 annas. The villages which are reported to be under the command of Nira canal in this taluka, are 58. In spite of this fact during 1945-46, a large majority of villages are shown to have been affected. During 1950-51 only 10 villages were affected. During 1952-53, 43 villages were affected and during 1953-54, 26 villages were affected. The rainfall during 1952-53 and 1953-54, was 14.08" and 15.04". During September-October the rainfall in 1952 was almost 5" and during 1953 it was about 8½". Thus, the late rains were adequate but the rainfall during August was 0.84" in 1952 and 0.12" in 1953. It is likely that the crops might have suffered on account of the long break during August. The villages which are not protected by the Nira canal are 14. These villages which are not protected on the southern boundary of the taluka are adjoining Pandharpur taluka. This tract which is not protected by Nira canal i.e. narrow strip on the southern boundary may, as in the case of the adjoining area in Pandharpur taluka, be regarded as scarcity area of Class "B".

Mohol.—There are 87 villages in the taluka. The population is 1,02,114. The density of population is 186 per square mile. The gross cropped area is 2,60,208 acres. The total food crops area is 83.1 per cent. of the cropped area and groundnut and oilseeds area is 13.4%. The area under irrigation is 21,221 acres, i.e. 8.10%. The area under forest is 9,633 acres. The soil of this taluka is light shallow with a reddish tinge. The medium black soils are found on the banks of the Sina river. The depth and fertility of the soils increase from west to east. Bajri, tur and groundnut are taken as dry crops and chillies under irrigation in kharif season. The only source of irrigation is wells. In the rabi season dry jowar is the main crop which is grown on 90 per cent. of the area. The average rainfall is 25.93". This taluka is situated between Madha and South Sholapur and to the east of Pandharpur.

According to the past history of scarcity, this taluka was affected in 1950-51; 23 villages in 1951-52 and 81 villages in 1952-53. Thus, the whole taluka is shown to have been affected twice, viz. in 1936-37 and 1952-53, while during 1950-51 and 1951-52, only a part of the taluka was affected. According to annavari data, which is available for 10 years, the scarcity years were 1950-51 and 1951-52 only when a part of the taluka was affected. According to annewari data, which is available for 10 years, the scarcity years were 1950-51, 1951-52 and 1952-53. The villages affected were not in a compact block but were scattered over the taluka. The average rainfall of Mohol is more than that of the adjoining talukas of Madha, Pandharpur and North Sholapur. The detailed month-wise rainfall data for this taluka is available for only 10 years. The total for 1950, 1951 and 1952 was 28.53", 26.58" and 15.12" respectively. The scrutiny of rainfall data shows that it was ill-distributed during 1952, when August and September were practically dry. The crops must have failed though the total rainfall of the year was 15.12". Similarly, the kharif crops must have failed during the year 1950-51. The annavari data shows that a majority of the villages had less than three full suspensions and the land revenue suspension data also shows that the majority of the villages had two and less than two full suspensions. In view of these conditions, this taluka may be considered as scarcity area of Grade "C".

Mangalvedha.—There are 70 villages in the taluka which has a population of 70,008. The density of population is 159 per sq. mile. The gross cropped area is 2,42,786 acres. The area under forests is 3,311 acres. The area under irrigation is 19,094 acres which means 7.8 per cent. of the cropped area. It is the southernmost taluka of the district situated to the east of Sangola and to the north of the old Bijapur district, now forming part of Mysore State. This is the only taluka having plain levelled deep black soil with uniform fertility. There are no irrigation resources like canals, but the area under wells is 19,000 acres. The sub-soil water is deep. However, due to the depth and composition of soil, 56 per cent. of the area is reported to be under rabi crops mainly jowar. Wheat and gram are usually taken as irrigated crops in rabi season on a very small scale under wells. The average rainfall for the last 10 years was 19.1". The annavari data is available for the last 10 years only. According to the previous history of scarcity, this taluka was affected in 1950-51, 1951-52, 1952-53 and only 5 villages were affected during 1953-54. The whole taluka was affected only during 1952-53, while in 1950-51 only 15 villages were affected and in 1951-52, 37 villages were affected. During a period of 10 years—

- 4 villages had 3½ full suspensions,
- 7 villages had 3 full suspensions,
- 22 villages had 2½ full suspensions,
- 29 villages had 2 full suspensions,
- 3 villages had 1½ full suspensions.

According to the past history, this taluka is not reported to have been affected before 1950-51. It was a part of the princely State and the standard of scarcity was probably different. The rainfall data for the last 10 years shows that the rainfall was much below the normal during 1952 and 1954. During 1952 it was 6.59" and during 1954 it was 9.24".

Taking all factors into consideration, this taluka may be regarded as scarcity area of Class "C".

Akkalkot.—This taluka was formerly a princely state merged in Sholapur district in 1948-49. The number of villages in this taluka is 115. The population is 1,49,647. The density of population is 277 per square mile. The gross cropped area is 3,06,910 acres. The area under groundnut and oilseeds is 21.8 per cent., of the cropped area and that of cotton is 2 per cent. The area under irrigation is 12,350 acres, i.e. 4 per cent. The area under forests is 3,656 acres. Groundnut, both early and late, and bajri are the main dry crops. Under irrigation chilly crop is taken and it is the major crop of this taluka. Sugarcane is taken on a large area under well irrigation. 58 per cent. of the cropped area is put under rabi crops, mainly jowar. There are good orchards of mangoes and other fruit trees. No data is available about the previous occurrences of scarcity prior to 1950. Annavari and land revenue suspension data is available for the last 10 years only. From the land revenue suspension data, the majority of the villages had 2½ to 3 full suspensions, within a period of 10 years, while according to the annewari data, the majority of the villages had over 3 full suspensions. The average rainfall of this

taluka is 33.9". The average of June-July and August-September and September-October is 10.24", 12.48" and 10.18", while co-efficients of variation are 29.27, 37.57 and 39.38, which are on lower side. During the last 30 years the rainfall was less than 15" during 1957 only. During the years 1949, 1950, 1951, 1952 and 1955, this taluka is shown to have been affected according to the annavari data. The total rainfall for the monsoon period during these years was 31.75", 32.97", 21.57", 27.02", and 35.76". During all these years the rainfall in September-October was very good except during 1955 when in October it was 0.84", but during September it was 9.61". From the point of view of rainfall, this taluka compares favourably with the other talukas of the district. The soil of this area is also more fertile as compared to the adjoining areas. The annavari data however shows that this area has been affected off and on. This area may therefore be classed as scarcity area grade "C".

Sholapur North and South.—North Sholapur and South Sholapur talukas are taken together as formerly they formed one taluka. North Sholapur consists of 80 villages and South Sholapur of 42 villages. Sholapur city is in North Sholapur, and, therefore, the density of population in North Sholapur is 1,145, and in South Sholapur is 203 per square mile. The gross cropped area in South Sholapur is 2,67,379 acres and that of North Sholapur 1,37,565 acres. The percentage of groundnut and oil seeds in the case of South Sholapur is 16.4, while in the case of North Sholapur it is 15.0. The percentage of irrigated area in South Sholapur is 4.0, while in the case of North Sholapur it is 7.5. The area under canals in North Sholapur is 4,139 acres, while there is no area under canals in South Sholapur.

The major portion of the soil in North Sholapur is light shallow. About 25 per cent. of the soil along the banks of Sina river is medium black soil. The western strip of about a mile in breadth has got better soil. Groundnut and mung are the major kharif dry crops. Wherever irrigation is possible, irrigated groundnut, vegetables, cotton and chillies, are taken in the kharif season, and rabi jowar, wheat and gram are taken in the rabi season. South Sholapur is divided into two equal parts by the Sina river. Bhima river flows along the western boundary of the taluka. 50 per cent. of the area in the western part along the eastern bank of Bhima and both banks of Sina have got medium deep black soils. There being no irrigation facility, only dry crops are cultivated, except for a small area under wells in the kharif season. During rabi season almost 90 per cent. of the area is grown under dry jowar. The average rainfall for the years 1931-57 is 25.97". The average for June-July, August-September, September-October is 9.35", 12.18", and 10.50" and co-efficient and of variation for these periods are 26.85, 40.73, 47.59.

According to the previous history of scarcity, North and South Sholapur area was affected during 1936-37, 1941-42, 1942-43, 1943-44 and a few villages in 1950-51, 1951-52 and 1952-53. The annavari data, however, has shown that neither of these areas was affected during 1936-37. During 1941-42, according to the annavari data, only about 10 to 12 villages were affected in both the talukas. During 1942-43, however, about 26 villages had annavari 4 annas and less. During 1943-44 only 8 villages had 4 annas crop. Therefore, the annavari data has not shown that large number of villages were affected during 1941-42, 1942-43 and 1943-44. According to this annavari data, only 9 villages had full suspensions for more than six times but not exceeding 7½, while the number of villages having full suspensions between 3 to 6 were 53. These villages were not in a compact block but were scattered. The land revenue suspension data has shown that large majority of villages had less than 6 full suspensions and mostly below 3.

Looking to the annavari and suspension data, the whole of this area comprising North and South Sholapur may be classified as scarcity areas of Grade "C".

Barst.—There are 128 villages. The population is 1,86,777. The gross cropped area is 3,72,322 acres. The density of population is 289 per square mile. The soil is undulating in nature and light shallow based on murum and soft ground. Better deep soils are found along the river banks. In the kharif season, because of better kharif rainfall, groundnut, bajri and tur are grown. Nearly 60 per cent. of the kharif area is put under groundnut. Chillies and cotton are also grown as irrigated crops in kharif season. In rabi season, rabi jowar is the only dry crop, but the area under rabi crops is more than under kharif crops. The area under groundnut is about 15 per cent. of the cropped area. The area under irrigation in this taluka is 18,766 acres, mainly under wells, and this comes to about 5 per cent. of the cropped area. The average rainfall for 1931 to 1957 period is 24.91". The average for June-July, August-September and September-October is 9.52", 11.42" and 9.89" and co-efficients of variation for the same periods are 37.97, 35.36 and 37.32 which are on the low side. The rainfall was never less than 15" during this

period of 1931-57, and the distribution was also good during all these years. The rainfall during the month of October was less than 1" only during 1945, 1946 and 1947. However, September rainfall during this period was 2.12", 6.15" and 6.18". The taluka is reported to have been affected during 1939-40, 1941-42, half of the taluka during 1948-49, 31 villages during 1950-51, 22 villages during 1951-52 and 81 villages during 1952-53. The rainfall during 1939 was 19.45". The total during September-October was more than 6". In August it was 0.79", but July, September and October rains were good. During 1941 the total was 17.92", and it was well distributed during the monsoon period. During 1950 the total was 26.41" and the distribution appears to have been fair, but only during September it was excessive, being 16.97". During 1951 the rainfall was 24.43", and it was well distributed. During 1952 it was 18.13" and it was well distributed, except that in August when it was only 0.54". However, during July it was 5.17" and during September it was 4.09". Thus so far as the rainfall is concerned, this taluka is in a better position than other talukas. According to the annavari data only 18 villages had full suspensions from 3 to 3½ during 30 years. According to the land revenue suspension data also the same number of villages had 3 to 4 full suspensions during a period of 30 years. Therefore, only a few villages out of 128 have suffered three full suspensions. The annavari and suspension data and also the rainfall data shows that the taluka is generally free of scarcity except 18 villages lying in the north-west corner, which may be treated as scarcity area of Class "C".

To sum up, Karmala and Sangola talukas would be regarded as precarious areas of Class "A". Madha, Pandharpur and a small southern portion of Malsiras should be regarded as Class "B", while Mohol, Mangalvedha, Akkalkot, North Sholapur, South Sholapur and 18 villages situated in the north-east corner of Barsi should be treated as scarcity area of Class "C".

STATEMENT " A ".

Basic data.

Serial No.	Taluka	No. of villages.	Gross area in		Population	Density per sq. mile	Gross cropped area	Net cropped area and its percentage	Area under forest
			square miles	acres					
1	2	3	4	5	6	7	8	9	10
1	Sangola	68	609.8	3,93,620	1,03,990	148	2,63,301	2,55,401 64.8	21,887
2	Pandharpur	82	497.6	3,15,371	1,23,552	258	2,44,390	2,40,493 75.9	3,610
3	Karmala	95	621.5	3,94,302	1,00,089	161	3,07,486	3,04,834 77.3	16,020
4	Madha	95	596.5	3,77,112	1,22,174	204	3,17,840	3,09,725 82.1	5,329
5	Barsi	128	627.8	4,08,910	1,86,777	289	3,72,322	3,64,622 89.1	7,058
6	South Sholapur	80	461.5	2,95,200	93,503	203	2,67,379	2,66,417 90.2	4,884
7	North Sholapur	42	284.3	1,67,556	3,25,632	1,145	1,37,565	1,35,091 80.6	3,658
8	Malairas	72	537.7	3,97,160	1,22,830	209	2,32,835	2,24,295 58.9	21,832
9	Mohol	87	549.5	3,29,247	1,02,114	186	2,80,208	2,55,999 77.7	9,653
10	Akkalkot	115	536.8	3,42,561	1,49,647	277	3,06,910	2,98,214 87.0	3,656
11	Mangalvedha	70	440.5	2,82,097	70,008	159	2,42,786	2,40,140 85.1	3,311
Total		934	5,903.5	36,03,136	15,05,316	255	29,53,022	28,95,231 80.3	1,00,898

STATEMENT " B ".

Rainfall data.

(Fig. in Inches)

Taluka.	1949	1950	1951	1952	1953	1954	1955	1956	1957	Average for 10 years	Average for 27 years
1	2	3	4	5	6	7	8	9	10	11	12
Sangola*	30.47	19.53	18.12	12.37	29.23	13.82	25.37	24.76	18.21	....	19.59
Pandharpur*	31.43	24.70	14.53	15.65	25.57	22.73	24.18	18.07	22.68	....	21.33
Karmala*	28.59	21.23	32.50	11.37	31.16	25.20	21.59	28.19	17.37	....	22.96
Madha*	25.35	26.61	26.09	14.41	21.97	25.28	23.03	30.65	19.80	....	21.23
Barsi*	27.86	26.41	24.43	18.13	26.29	29.61	28.86	28.76	30.81	....	24.91
North Sholapur	33.32	23.01	25.96	18.44	34.11	29.29	32.68	43.78	....	....	25.77
South Sholapur											
Malairas*	24.55	17.98	21.12	14.08	15.04	18.70	20.37	16.48	14.90	....	18.01
Mohol*	....	28.53	26.88	15.12	34.66	19.86	27.17	32.84	22.44	25.93	....
Akkalkot*	31.75	32.07	21.57	27.02	38.40	25.27	35.76	51.13	47.17	....	27.07
Mangalvedha*	....	18.45	17.72	6.59	14.72	9.24	16.26	16.55	22.50	15.26	....

*Detailed monthwise figures given in Statement " B-1."

STATEMENT "B-I".
 Month-wise rainfall data.
 Taluka Mohol.

(Fig. in inches.)

Year.	May	June	July	August	September	October	Total	Total annual	November to April	
1931	..									
1932	..									
1933	..									
1934	..									
1935	..									
1936	..									
1937	..									
1938	..									
1939	..									
1940	..				Not available.					
1941	..									
1942	..									
1943	..									
1944	..									
1945	..									
1946	..									
1947	..									
1948	..									
1949	..									
1950	2.52	2.29	3.63	10.34	9.76	28.63	28.68	.15
1951	..	0.40	4.35	7.92	2.37	4.57	7.27	26.88	27.23	0.35
1952	2.81	5.24	0.61	1.43	5.03	15.12	15.12
1953	..	0.20	5.44	9.73	0.91	10.20	8.09	34.65	35.63	0.97
1954	..	0.77	1.95	8.42	6.30	2.42	19.85	19.85
1955	..	1.33	3.32	6.57	8.71	3.37	3.37	27.17	28.70	1.53
1956	..	6.06	1.35	9.38	3.88	7.59	4.58	32.84	35.41	2.57
1957	..	1.23	2.72	2.94	4.43	6.74	4.38	22.44	24.63	2.19

Average (1931 to 1957) = 25.93

STATEMENT "B-I".

Monthwise rainfall data.

Taluka Pandharpur.

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	November to April.
1931	.. ....	6.25	5.83	0.85	3.64	3.78	20.38	4.12
1932	.. 1.85	8.11	4.64	7.12	3.52	8.09	30.93	4.19
1933	.. 2.78	3.47	1.60	3.81	4.17	8.98	24.81	3.17
1934	.. 0.89	1.07	4.17	2.65	8.75	1.53	19.07	8.43
1935	.. ....	3.56	1.79	20.93	5.02	5.38	36.60	0.70
1936	.. 1.24	1.81	1.54	1.14	9.08	0.81	15.62	4.23
1937	.. 0.08	5.28	5.09	1.19	3.73	3.81	19.18	6.76
1938	.. 0.23	3.76	5.36	4.74	11.92	2.09	28.10	2.41
1939	.. ....	5.33	4.49	1.32	3.91	2.56	17.61	1.09
1940	.. 0.26	8.27	0.63	0.73	2.99	2.52	15.40	2.03
1941	.. 0.50	0.41	1.87	2.66	10.67	1.84	17.95	1.44
1942	.. 0.06	10.21	1.44	4.80	1.20	1.33	19.06	0.57
1943	.. 1.72	1.17	4.54	2.52	5.76	4.43	20.14	0.76
1944	.. 0.60	2.92	2.94	0.46	7.68	5.81	20.41	1.44
1945	.. 0.23	4.72	2.87	5.91	3.41	1.82	18.96	0.28
1946	.. 0.15	3.78	1.78	2.90	5.50	0.79	14.90	2.40
1947	.. 0.03	4.82	1.83	11.23	8.01	1.74	27.76	2.51
1948	.. ....	3.10	1.90	4.47	8.96	2.38	20.81	5.73
1949	.. 2.05	5.04	2.61	5.49	14.15	2.13	31.43	0.52
1950	.. 1.21	1.82	2.63	4.63	10.61	3.80	34.70	....
1951	.. 1.73	1.42	5.41	0.74	3.40	1.85	14.53	0.86
1952	.. 1.82	3.48	1.18	0.45	2.16	6.56	15.65	....
1953	.. ....	3.58	4.01	0.28	10.66	7.04	25.57	0.63
1954	.. 0.63	8.99	5.01	1.47	4.81	1.82	22.73	2.32
1955	.. 1.48	2.22	4.99	6.39	7.40	1.70	24.18	0.36
1956	.. 0.66	1.77	4.20	2.08	5.53	4.35	18.07	2.35
1957	.. 0.88	1.77	2.84	6.40	5.26	5.53	22.68	2.37

Average (1931 to 1957)=21.33

STATEMENT "B-I".

Monthwise Rainfall Data.

Taluka Mangalvedha.

(Fig. in inches.)

Year.	May.	June.	July.	August.	September	October.	Total.	Total annual.	November to April.	
1931	..									
1932	..									
1933	..									
1934	..									
1935	..									
1936	..									
1937	..									
1938	..									
1939	..									
1940	..									
1941	..			Not available.						
1942	..									
1943	..									
1944	..									
1945	..									
1946	..									
1947	..									
1948	..									
1949	..									
1950	..	0.63	0.90	2.48	7.67	6.87	18.45	....	....
1951	..	1.69	4.36	0.39	6.39	4.89	17.72	18.43	0.71	
1952	..	1.19	2.27	....	1.20	1.93	6.59	....	....
1953	..	2.80	6.03	0.15	3.09	2.65	14.72	15.09	0.37	
1954	..	3.42	3.22	2.60	....	....	9.24	9.39	0.15
1955	..	0.75	2.97	3.71	3.24	3.86	16.26	16.56	0.30	
1956	..	1.88	1.61	4.45	2.13	3.09	3.39	16.55	18.67	2.12
1957	..	0.63	2.46	2.78	4.76	4.51	6.35	22.50	23.32	0.82

Average = 15.25

STATEMENT "B-I".

Monthwise Rainfall Data.

Taluka Akkalkot

(Fig. in inches.)

Year.	May.	June.	July.	August.	September	October.	Total	Total Annual.	November to April.
1931	.. 0.07	5.29	3.45	1.69	8.03	2.27	20.80	23.40	3.40
1932	.. 2.15	5.65	8.13	8.02	7.25	5.45	37.55	40.38	3.43
1933	.. 4.05	5.22	5.07	5.32	3.46	4.15	27.27	34.66	7.39
1934	.. ....	1.23	10.75	5.00	9.96	1.11	28.10	30.62	2.52
1935	.. 0.10	4.81	3.11	8.01	2.62	6.39	25.04	27.67	2.63
1936	.. 0.93	2.77	5.34	2.79	2.65	0.85	15.33	26.83	11.50
1937	.. ....	1.60	3.99	1.25	4.25	1.57	12.66	16.17	3.51
1938	.. 3.88	8.79	10.49	6.77	7.77	0.74	38.44	40.42	1.98
1939	.. ....	5.25	3.10	2.53	6.59	2.31	19.78	21.85	2.07
1940	.. 1.39	3.55	1.87	7.18	5.11	3.23	22.43	23.17	0.74
1941	.. 0.29	1.70	2.89	2.86	8.43	0.55	16.72	19.01	2.29
1942	.. 0.15	4.25	1.39	6.43	1.40	1.40	15.02	15.70	0.68
1943	.. 1.30	4.37	3.37	5.16	7.12	6.95	28.27	29.69	1.42
1944	.. 0.93	4.53	3.70	0.72	3.20	4.43	17.56	20.17	2.61
1945	.. ....	2.65	5.73	2.09	1.29	4.04	16.79	17.11	0.32
1946	.. 0.28	10.23	2.50	1.60	11.58	0.82	27.01	29.02	2.01
1947	.. 0.27	6.15	4.50	6.66	3.77	0.03	21.38	42.37	20.99
1948	.. ....	1.83	5.31	11.55	10.90	0.19	29.78	33.86	4.08
1949	.. 1.77	5.02	4.87	6.66	12.31	1.12	32.75	31.87	0.12
1950	.. 0.70	5.43	2.30	6.49	13.39	3.76	32.07	33.09	1.02
1951	.. 1.25	4.15	7.06	2.44	5.28	1.39	21.57	21.74	0.17
1952	.. 5.87	4.60	4.00	1.26	5.82	5.47	27.02	27.32	0.30
1953	.. ....	7.63	8.15	2.12	10.78	9.72	38.40	40.24	1.84
1954	.. 0.60	6.65	5.48	4.81	5.81	0.92	25.27	28.72	3.45
1955	.. 1.12	4.82	5.34	14.03	9.61	0.84	35.76	36.37	0.61
1956	.. 2.08	5.13	15.71	7.94	12.59	8.68	51.13	54.52	2.89
1957	.. 0.83	9.48	6.13	16.22	6.27	8.24	47.17	48.46	1.39

Average (1931-57) = 27.07

STATEMENT " B-I. "
Monthwise Rainfall Data.
 Taluka Barsi.

(Fig. in inches).

Year.	May.	June.	July.	August.	September	October.	Total.	November to April.
1931	0.10	9.67	4.55	4.27	6.70	3.53	28.82	3.06
1932	0.84	1.83	7.28	7.66	3.34	8.85	29.80	2.54
1933	1.57	1.60	3.55	4.58	7.88	3.54	22.82	3.70
1934	0.17	2.22	6.00	7.52	7.98	1.95	25.84	6.37
1935	....	3.78	1.14	10.99	6.50	3.71	26.12	0.53
1936	2.47	0.99	0.94	1.11	11.55	....	17.06	13.85
1937	....	1.50	6.52	1.56	4.64	1.90	16.12	3.43
1938	1.74	10.24	9.25	4.91	7.28	1.33	34.75	1.29
1939	....	4.79	7.48	0.79	3.87	2.52	19.45	1.10
1940	....	2.94	3.34	6.25	2.38	5.27	20.18	1.50
1941	....	1.65	1.71	2.32	11.34	0.90	17.92	0.75
1942	0.91	13.12	2.19	6.92	1.18	0.67	24.99	1.24
1943	1.35	5.73	2.25	2.32	9.32	8.43	29.40	0.05
1944	0.27	3.14	6.16	0.97	4.37	7.45	22.36	2.48
1945	0.10	2.49	3.24	6.98	2.12	0.72	15.65	1.65
1946	2.70	3.61	2.45	2.70	6.80	0.61	18.87	2.66
1947	0.21	5.58	4.06	11.25	6.18	0.20	27.48	3.90
1948	0.18	6.52	7.06	1.86	14.15	3.85	33.62	7.65
1949	1.76	4.88	4.31	3.02	13.25	0.64	27.86	0.20
1950	....	1.87	2.48	1.61	16.57	3.59	26.41	....
1951	1.20	6.09	9.75	1.99	3.06	2.34	24.43	0.24
1952	2.94	2.52	5.17	0.54	4.09	2.87	18.13	0.66
1953	0.05	2.96	7.38	2.11	8.80	4.99	26.29	0.09
1954	0.70	9.90	7.66	1.50	8.66	1.19	29.61	1.80
1955	0.96	5.60	5.08	10.16	4.19	2.87	28.86	1.48
1956	3.13	2.20	9.25	4.56	5.72	3.90	28.76	5.05
1957	2.35	5.62	3.80	9.52	6.37	3.15	30.81	2.62

Average (1931-57) = 24.91"

STATEMENT " B-I. "
 Monthwise Rainfall Data.
 Taluka Malsiras.

(Fig. in inches).

Year.	May.	June.	July.	August.	September	October.	Total.	November to April.	
1931	3.14	3.07	0.40	8.07	6.00	20.68	7.32
1932	..	1.09	3.44	4.90	7.48	2.55	5.68	25.14	2.82
1933	..	1.91	3.69	0.97	3.64	5.54	6.15	21.90	2.01
1934	..	1.35	2.12	4.03	1.96	5.47	3.23	18.16	5.84
1935	7.57	0.28	10.32	6.66	5.40	30.23	1.28
1936	..	1.13	1.04	0.42	0.64	7.25	1.10	11.58	3.45
1937	0.79	1.61	0.06	5.69	4.40	12.55	2.99
1938	..	0.84	1.86	5.74	3.43	6.21	1.36	19.42	3.09
1939	3.97	4.95	0.36	2.60	2.59	14.47	5.86
1940	..	0.05	3.18	0.26	0.42	5.23	2.57	11.71	6.37
1941	0.17	0.58	0.85	6.58	3.58	11.75	5.74
1942	..	0.43	7.76	1.50	1.99	0.25	0.65	12.58	3.24
1943	..	2.72	3.26	2.45	0.93	5.42	9.91	24.69	0.55
1944	..	0.98	3.91	2.98	0.25	4.69	4.88	17.69	1.59
1945	..	0.05	1.73	2.42	3.19	2.38	4.83	14.60	2.30
1946	..	0.70	2.48	1.59	3.37	7.35	1.39	15.88	5.57
1947	..	0.77	3.56	0.99	10.57	5.62	1.19	32.90	5.90
1948	..	0.33	3.97	2.10	2.74	5.07	2.99	17.20	9.57
1949	..	1.43	2.01	0.95	4.00	12.35	3.81	24.55	9.56
1950	..	0.44	4.14	1.51	3.37	6.57	1.95	17.98	..
1951	..	3.20	2.34	8.51	0.76	3.15	3.15	21.12	9.46
1952	..	2.28	4.42	1.69	0.84	3.16	1.69	14.08	0.10
1953	1.86	4.68	0.12	3.25	5.13	15.04	0.36
1954	..	0.26	5.46	5.96	1.10	3.88	1.04	18.70	2.42
1955	..	0.75	2.03	1.57	4.17	7.31	4.64	20.37	0.98
1956	..	3.86	0.74	3.42	1.75	3.36	3.35	16.48	1.45
1957	..	0.25	2.11	1.12	2.29	4.75	4.38	14.90	4.03

Average (1931-57)= 18.01.

STATEMENT " B-I. "
Monthwise Rainfall Data.
 Tehkã Karmala.

(Fig. in inches)

Year.	May.	June.	July.	August.	September	October.	Total.	November to April.
1931		7.48	2.76	2.16	12.07	5.18	29.65	1.16
1932	0.54	3.69	6.33	9.59	2.72	6.98	29.85	3.69
1933	1.92	2.58	2.41	4.50	8.48	2.18	23.07	3.18
1934		2.60	4.63	4.15	6.94	1.65	19.97	3.87
1935		5.44	1.74	10.24	7.93	7.36	32.71	..
1936	0.71	0.50	0.68	0.52	3.54	..	5.95	4.14
1937		1.46	5.10	0.68	3.48	6.66	17.38	5.42
1938	1.35	4.92	8.86	5.17	1.09	2.05	34.44	2.66
1939		4.45	4.34	0.44	2.98	3.25	15.46	0.59
1940	0.15	3.00	0.45	2.96	1.93	2.34	10.83	0.04
1941		0.57	1.94	1.73	10.15	2.94	17.38	3.11
1942	0.55	18.90	2.09	3.80	0.58	0.61	26.53	1.36
1943	1.64	3.26	2.36	0.24	9.46	5.22	22.18	0.70
1944	0.19	1.75	4.89	0.14	9.46	3.96	20.39	0.41
1945		6.87	0.72	4.16	2.14	1.51	15.40	..
1946	0.42	2.64	2.83	3.70	5.72	..	15.31	3.59
1947	0.42	8.11	2.55	10.11	7.74	0.50	29.43	4.53
1948	0.17	7.96	4.39	2.69	19.02	3.65	37.88	7.19
1949	1.05	6.69	3.28	2.31	14.05	1.21	28.59	..
1950	0.57	1.43	2.10	3.48	10.75	2.90	21.23	1.06
1951	9.29	2.63	7.14	1.01	5.97	6.46	32.50	1.53
1952	0.95	1.03	2.20	0.38	5.13	1.68	11.37	0.06
1953		5.60	9.09	1.21	8.71	6.55	31.16	0.81
1954	0.90	5.23	7.20	2.91	7.85	1.11	25.20	2.44
1955	0.29	4.91	2.40	5.20	4.65	4.08	21.59	1.06
1956	4.76	2.68	6.33	3.34	4.72	6.36	28.19	2.98
1957	1.78	0.55	2.90	4.07	3.84	4.23	17.37	3.27

Average (1931-57) = 22.96.

STATEMENT " B.I. "
Monthwise Rainfall Data.
 Taluka Sangola.

(Fig. in inches).

Year.	May.	June.	July.	August.	September.	October.	Total.	November To April.
1931	0.54	6.41	1.85	0.78	2.49	1.42	13.49	5.34
1932	0.88	4.01	2.81	3.62	1.60	6.22	19.14	4.62
1933	1.34	0.48	2.25	4.52	2.86	6.18	17.60	4.92
1934	0.56	1.19	5.61	3.48	7.00	2.10	19.94	5.90
1935	..	6.76	0.24	16.80	3.35	5.32	32.47	2.03
1936	2.51	2.58	0.22	0.58	4.01	0.20	10.10	7.57
1937	..	1.34	1.17	0.54	7.17	2.57	12.79	3.60
1938	1.81	2.98	2.47	7.31	9.14	1.66	25.37	2.23
1939	..	3.96	2.82	1.09	5.97	1.93	15.76	1.30
1940	0.55	7.56	0.49	0.66	2.28	2.54	14.49	1.58
1941	0.06	1.94	0.89	1.25	8.89	3.78	16.60	1.73
1942	0.52	9.02	0.85	3.13	0.29	0.53	14.34	1.80
1943	2.22	3.75	3.25	4.39	6.60	5.55	25.73	0.92
1944	1.08	5.32	7.67	0.05	9.57	5.33	29.02	0.87
1945	..	4.18	4.05	5.52	3.28	2.75	19.77	..
1946	1.35	1.94	2.14	1.79	2.12	0.43	10.37	7.72
1947	1.28	4.24	2.44	7.14	5.20	0.98	21.28	4.75
1948	0.06	2.42	2.15	8.59	6.85	1.84	18.91	4.22
1949	1.59	3.35	1.65	6.18	14.63	3.07	30.47	0.10
1950	1.59	2.02	0.92	2.41	8.18	4.41	19.53	0.03
1951	0.48	1.40	6.20	0.71	6.43	2.90	18.12	0.50
1952	2.36	1.79	1.70	0.20	3.51	2.81	12.37	0.23
1953	0.18	4.22	8.74	0.28	9.72	6.09	29.23	1.24
1954	0.65	3.61	3.33	2.84	2.19	1.20	13.82	1.79
1955	2.63	5.51	3.09	1.90	9.72	2.53	25.37	0.83
1956	5.55	3.18	4.18	2.80	5.23	3.82	24.76	3.83
1957	0.96	2.94	3.59	2.95	2.90	4.87	18.21	11.41

Average (1931-57), =19.59. *

STATEMENT "B.I."
 Monthwise Rainfall Data.
 Taluka Madha.

(Fig. in Inches).

Year.	May.	June.	July.	August.	September.	October.	Total.	Total annual.	November to April.
1931	0.04	5.08	5.69	2.13	4.62	1.74	19.30	22.86	3.56
1932	2.08	2.46	6.50	12.72	2.20	5.57	31.53	34.47	2.94
1933	1.30	3.06	1.97	3.21	3.59	6.77	20.30	23.88	3.58
1934	0.05	1.24	4.73	4.75	4.84	1.87	17.48	25.82	8.34
1935	0.01	1.99	5.65	11.77	3.39	5.90	24.81	25.24	0.53
1936	1.90	0.67	0.45	0.75	2.58	0.11	6.46	14.09	7.63
1937	0.25	0.51	5.52	1.55	5.14	4.61	17.58	22.35	4.77
1938	3.74	5.18	10.01	4.96	6.38	1.18	31.45	32.01	0.56
1939	.....	3.73	4.46	1.52	1.43	1.73	12.87	13.70	0.83
1940	0.25	4.94	2.23	4.38	2.63	4.07	17.90	19.63	1.73
1941	.....	.....	1.40	3.63	12.31	0.99	17.22	18.08	0.86
1942	0.08	6.15	2.33	3.65	1.09	0.56	13.66	15.25	1.59
1943	1.85	2.69	2.79	3.29	6.44	8.20	25.26	25.61	0.35
1944	0.74	2.32	7.61	0.42	5.75	6.15	22.97	24.86	1.89
1945	.....	2.23	2.86	6.73	4.32	1.66	15.74	18.33	2.59
1946	0.65	3.04	1.54	1.11	5.81	0.76	12.91	14.01	1.10
1947	0.06	3.88	2.43	11.66	5.36	0.41	23.80	27.92	4.12
1948	.....	8.08	3.60	3.37	11.75	0.95	27.74	33.13	5.39
1949	0.49	0.66	1.73	2.41	14.41	5.75	25.35	31.35	6.00
1950	.....	0.52	0.88	2.76	17.05	5.30	26.51	26.59	0.08
1951	0.05	5.02	6.77	1.19	10.23	3.73	26.09	26.09	.....
1952	2.76	2.84	2.89	0.53	3.32	1.97	14.41	14.41	.....
1953	.....	1.90	6.72	9.63	7.73	5.09	21.97	22.59	0.62
1954	9.78	8.30	5.29	1.89	7.40	1.62	25.28	27.24	1.96
1955	0.69	2.67	6.09	7.87	3.67	2.09	23.08	23.76	0.68
1956	3.82	1.99	3.01	2.16	8.88	5.79	30.65	34.61	3.96
1957	0.72	4.61	2.09	3.41	6.39	2.58	19.80	19.80	.....

Average (1931-57) = 21.23

STATEMENT "B-I."

Monthly Rainfall Data.

Taluka Sholapur.

(Fig. in inches).

Year.	May.	June.	July.	August.	September.	October.	Total.	Total. Annual.	November to April.
1931	0.09	4.59	3.10	1.71	8.61	3.11	21.31	27.01	5.70
1932	0.39	2.23	5.32	5.05	5.25	7.23	25.78	31.32	5.54
1933	1.52	3.22	6.07	5.74	2.59	1.88	21.02	27.88	6.86
1934	0.40	0.61	7.48	5.64	9.66	1.47	25.26	30.01	4.75
1935	0.26	5.52	2.44	9.14	4.41	6.66	28.43	29.43	1.00
1936	0.59	3.05	1.68	1.77	6.58	0.89	13.66	22.20	8.64
1937	....	1.33	5.14	1.25	6.73	6.91	21.36	26.78	5.42
1938	0.96	8.96	11.87	6.39	10.85	1.85	41.18	43.56	2.38
1939	....	3.32	3.54	1.77	5.19	0.95	12.77	13.50	0.73
1940	0.64	2.81	2.55	13.44	5.10	3.13	27.57	30.28	2.71
1941	....	2.49	1.86	5.58	11.71	1.16	22.80	24.13	1.33
1942	0.34	6.74	3.76	3.52	1.10	0.12	15.58	17.34	1.76
1943	0.74	5.01	3.61	4.17	8.25	7.66	29.44	32.14	2.70
1944	0.31	3.14	4.85	0.58	3.86	0.09	12.83	22.46	9.63
1945	0.27	3.37	3.63	3.60	1.85	1.73	14.95	15.65	0.71
1946	2.30	6.68	6.12	3.83	6.16	1.95	26.04	38.02	1.97
1947	2.02	5.48	3.73	11.50	5.40	0.48	28.71	30.65	1.94
1948	....	1.82	4.47	12.56	13.93	3.73	36.51	40.44	3.93
1949	1.70	6.78	4.68	2.15	16.35	1.66	33.32	33.32	....
1950	0.16	3.47	2.29	2.71	12.31	2.97	23.91	23.91	....
1951	0.54	5.25	6.56	4.22	3.87	5.49	25.96	25.96	....
1952	2.99	4.51	4.21	0.46	5.11	1.16	18.44	18.44	....
1953	0.25	3.26	10.75	1.22	11.92	6.71	34.11	34.68	0.77
1954	1.14	8.56	7.34	3.63	7.34	1.23	29.29	30.82	1.53
1955	3.19	2.73	6.39	10.51	6.45	3.41	32.68	32.82	0.14
1956	3.20	3.80	12.05	6.42	10.97	7.34	43.78	35.83	2.05
1957	1.33	3.77	5.14	5.72	5.91	7.55	29.42	31.11	1.69

Average (1931-57) = 25.77.

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under irrigation by.				Total irrigated area and its percentage to cropped area.
		Canals.	Tanks.	Wells.	Other sources.	
1	2	3	4	5	6	7
1	Sangola	2,698	400	25,836	....	28,934 10.9
2	Pandharpur	9,236	....	13,893	....	23,129 9.4
3	Karmala	1,397	....	11,761	....	13,158 4.2
4	Madha	....	....	19,922	....	19,922 6.2
5	Barai	84	1,274	17,408	....	18,766 5.0
6	South Sholapur	....	672	10,190	....	10,862 4.0
7	North Sholapur	4,139	....	6,284	....	10,423 7.5
8	Malsiras	42,385	....	22,181	....	64,566 27.7
9	Mohol	132	....	21,089	....	21,221 8.1
10	Akkalkot	....	176	12,174	....	12,350 4.0
11	Mangalvedha	....	....	19,094	....	19,094 7.8
Total ..		60,071	2,522	1,79,832	....	2,42,425 8.3

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total cereals.	Total pulses.	Total food crops and its percentage.		Oil seeds and its percentage.		Cotton and its percentage.		Total non-food crops.	
				Kharif.	Rabi.				10	11	12	13				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	Sangola ..	..	324	4,188	1,425	1,31,984	77,992	2,17,607	23,681	2,43,611	92.4	12,378	4.7	3,245	1.2	19,790
2	Pandharpur ..	..	548	2,870	....	1,79,083	23,950	2,06,571	12,824	2,21,504	90.6	16,517	6.7	1,619	0.6	22,886
3	Karmala ..	..	673	5,312	....	1,91,784	24,252	2,23,559	37,333	2,62,591	85.4	32,535	10.0	10,679	3.4	44,895
4	Madha ..	..	1,180	5,994	....	2,08,530	11,822	2,30,307	32,193	2,66,387	83.8	40,563	12.7	9,081	2.9	51,453
5	Barsi ..	..	4,859	6,687	3,255	1,94,670	3,437	2,15,914	49,353	2,65,373	71.2	58,884	15.8	2,218	0.6	1,06,949
6	South Sholapur ..	..	2,416	5,473	....	1,63,602	4,608	1,76,531	28,563	2,07,849	77.7	44,121	16.4	3,319	1.2	59,530
7	North Sholapur ..	..	1,441	2,631	....	80,006	3,820	83,661	15,662	1,05,900	76.9	20,731	15.0	1,270	0.9	31,665
8	Malsiras ..	..	1,187	3,145	....	1,46,885	31,782	1,83,690	14,989	2,14,483	92.1	12,494	5.3	3,751	1.6	18,352
9	Mohol ..	..	1,576	5,267	....	1,72,049	9,425	1,90,254	22,386	2,16,388	83.1	34,859	13.4	4,786	1.8	43,820
10	Akkalkot ..	..	4,814	9,223	....	1,05,204	11,985	1,91,252	27,326	2,16,235	73.7	67,153	21.8	6,182	2.0	80,675
11	Mangalvedha ..	..	1,238	4,550	....	1,26,812	44,840	1,78,579	19,449	1,99,530	82.1	23,903	9.8	3,316	1.3	43,256
Total ..		20,256	55,320	4,680	17,60,409	2,47,913	21,02,926	2,80,759	24,29,751	82.3	3,04,138	12.3	49,466	1.6	5,23,271	

CHAPTER XIX.

AHMEDNAGAR DISTRICT.

Part I—Background.

1. *Location.*—The district of Ahmednagar covers an area of 6,602 sq. miles and is bounded by Nasik District on the north, Marathwada on the east, Sholapur District on the south, Poona District on south-west and Thana District on the west.

2. *Administrative Set-up.*—The district is divided into 12 talukas and one mahal as shown below :—

Taluka.	No. of towns.	No. of villages.	Population as per 1961 census.
1. Nagar	2	108	2,06,163
2. Parner .. .. .	....	114	1,06,078
3. Shrigonda	1	87	95,007
4. Karjat	1	80	74,653
5. Jambhed	2	53	59,387
6. Shevgaon	1	124	88,096
7. Pathardi	1	91	97,575
8. Newasa .. .. .	....	120	92,037
9. Rahuri	2	83	88,360
10. Sangamner	1	134	1,29,331
11. Akola .. .. .	....	153	96,074
12. Kopergaon	1	100	1,42,858
13. Shirampur	1	76	1,35,454
Total	13	1,319	14,11,073

Detailed information about each taluka is given in Statements A to D attached.

3. *Area and Population.*—The district has 13 towns and 1,319 villages, with 85 per cent. of population residing in the villages. The total area of the district is 42,01,508 acres divided into different talukas. The density of population per sq. mile is 218, the highest being 424 in Shirampur and the lowest, viz. 133 per sq. mile in Karjat. The net cropped area is about 75 per cent. of the total area.

4. *Topography.*—The whole district is a part of the Deccan plateau having a tilt from west to east and south with an elevation of 2,500' in the west and 1,500' at the extreme eastern end. Unlike the adjoining districts of Nasik and Poona, this district has only one taluka of Akola in the west, touching the Sahyadri range, with the result that only about a hundred villages are situated in the heavy rainfall zone, growing paddy and hill-millet; while the rest of the district is situated in the precarious rainfall belt. Three mighty hill-forts of Kulang, Ratangad and Harishchandragad, mark the points of divergence from the main range of the Sahyadris, of three great spurs of Kalsubai, Baleswar and Harishchandragad, which stretch far across the district, gradually decreasing in height as they extend eastwards. There are a number of peaks and hill-forts situated on the western border of Ahmednagar District, but the highest one is that of Kalsubai which is 5,427' high. This spur stretches out in the easterly direction along the northern border of the district, ending abruptly at Dudheswar hill in Sangamner taluka. It serves as a water-shed between the Darna and the Pravara rivers, both tributaries of the Godavari. The second spur extending about sixty miles in the district, is known as Harishchandra range, branching off from Ratangad, and functioning as a water-shed between the Pravara and the Mula rivers. The third spur known as the Balaghat range is the longest, forming the boundary line between Poona and Ahmednagar districts to the north of Junnar taluka. On entering Parner taluka it forms

a plateau known as Kanhur pathar with an elevation of 2,800' above the sea level. Two spurs actually branch off from this table land, one going east from north of Ahmednagar town. This spur extends through Ahmednagar taluka and enters Marathwada districts touching Pathardi taluka along the southern boundary. This range forms a water-shed between the Godawari and the Bhima valleys. The land on the south of the above ridge passing through Parner and Ahmednagar talukas slopes towards the south, while that on the north in the talukas of Parner, Ahmednagar, Pathardi, Shevgaon etc. drains towards the east. Another spur leaves Kanhur pathar, and turns southwards, crosses the north-east corner of Shrigonda taluka and enters Karjat taluka gradually disappearing as it approaches the Bhima river.

The two big rivers, the Godawari and the Bhima, drain the district. Godavari drains the talukas of Akola, Sangamner, Kopargaon, Shrirampur, Rahuri, Newasa, Shevgaon, Pathardi, and parts of Ahmednagar and Parner, while the Bhima river drains the whole of the southern area comprising the talukas of Shrigonda, Karjat, Jamkhed and major parts of Parner and Ahmednagar. The rivers Pravara, Adhula, Mahalungi, Mula and Dhora feed the Godavari, while the rivers Ghod, Kukadi and Sina feed the Bhima. The tributaries of the Godavari and the Bhima take their birth in the Sahyadris, which is a heavy rainfall zone. There is, therefore, considerable scope for constructing water reservoirs and for generating hydro power in the district.

5. *Rainfall*.—Though abundant in the eastern part of Akola taluka, rainfall is deficient and uncertain in the rest of the district. The early rains in the months of June to August are scanty, while the late rains in September and October are uncertain. The average of the rainfall recorded at the taluka headquarters during the last 27 years is given below. A detailed statement of rainfall figures over a period of 1931 to 1957 talukawise is also attached *vide* Statement B :—

Name of Taluka.	Average of the rainfall recorded during 27 years period (in inches).	
1. Akola	25-00 (figures for 10 years are taken for average).
2. Sangamner	19-39
3. Kopargaon	18-72
4. Shrirampur	26-70 (figures for 10 years only are taken).
5. Rahuri	20-58
6. Newasa	24-28
7. Shevgaon	26-02
8. Pathardi	24-87
9. Parner	20-30
10. Ahmednagar	23-70
11. Shrigonda	19-27
12. Karjat	22-69
13. Jamkhed	24-55

6. *Land Utilization*.—The total geographical area of the district is 42,01,508 acres, of which 74 per cent. i.e. 31,02,818 acres are under crops. The rest of the area is distributed as follows :—

Item.	Area.	Percentage.
(1) Barren and unfit for cultivation	.. 3,61,567	.. 8-6
(2) Cultivable waste	.. 39,622	.. 0-9
(3) Fallows	.. 1,31,040	.. 3-1
(4) Pastures	.. 64,980	.. 1-5
(5) Forests	.. 4,84,209	.. 11-5
(6) Others	.. 16,272	.. 0-4

7. *Soils*.—The soils of the district are derived from the trap-rock of volcanic origin. These soils show considerable variation depending upon their location. They can be grouped into three categories :—

(i) Shallow soils with heavy erosion along the hill slopes, specially in the talukas of Akola, Sangamner, Parner, Shrigonda, Ahmednagar, Karjat and Jamkhed. These are light to dark brown in colour. They have a low range of PH. They also contain a high percentage of organic matter and nitrogen. They are fertile and also have good sub-soil drainage.

(ii) Soils of medium depth along the lower hill slopes adjacent to shallow soils. These are darker in colour, have higher clay proportion and exchangeable calcium content. They have good soil drainage and are quite fertile. They can support rabi crops and also garden crops if irrigation is available.

(iii) Deep black soils in the Godavari river valley in the talukas of Kopargaon, Shirampur, Newasa and Shevgaon. These soils are mainly formed by transported silt from the upper catchments and are more than 3 to 4 feet deep. They show a high PH (8.5 to 8.9) but a moderate salt content of 0.2 to 0.5 per cent. with no accumulation in lower horizon. The high exchangeable calcium and low exchangeable sodium indicate good drainage. These soils are quite fertile and retentive of moisture. There are some stray patches with defective drainage which will not lend themselves to irrigation unless suitable sub-soil drainage is provided.

8. *Crop Pattern*.—Of the total area of 42,01,825 acres in the district, an area of 32,91,986 acres, i.e. 76 per cent, is under cultivation. The principal crops are jowar, bajri, wheat, gram, sugarcane, cotton and paddy. Garden crops like kagadi limbu, mosambi, bananas, grapes and guavas are also grown under irrigation. The area occupied by different important crops talukawise during the year 1957-58 are given in the attached Statement D. The district acreages under important crops are :—

Crop.	Area in acres (1955-58).
Jowar	14,66,645
Bajri	6,71,976
Wheat	1,59,225
Cotton	1,49,131
Gram	78,374
Sugarcane	55,452
Rice	20,307
Fruits	9,071

The talukas of Kopargaon, Rahuri, Shrigonda, Ahmednagar, Karjat, Newasa, Shevgaon and Jamkhed have larger areas under rabi, while the talukas of Akola, Sangamner, Shirampur, Parner, Pathardi and Shevgaon have more acreage under kharif. The details are shown below :—

Taluka.	Percentage under kharif to total cropped acreage.	Percentage under rabi to total cropped acreage.
Akola	89	9
Sangamner	82	16
Kopargaon	36	50
Shrirampur	42	33
Rahuri	40	55
Newasa	45	54
Shevgaon	54	45
Pathardi	63	29
Parner	54	44
Ahmednagar	35	63
Shrigonda	34	66
Karjat	37	62
Jamkhed	43	55

Note.—Acreage under irrigation is exclusive of the above kharif and rabi calculations.

The rainfall during June to August is most important in the talukas growing more of kharif crops, while those growing rabi crops must depend on September and October showers.

9. *Irrigation.*—The acreage under irrigation by wells is 1,70,000 acres, while that under minor, medium and major irrigations, is about 1,05,000 acres. Canal irrigation is mainly concentrated in the talukas of Kopargaon, Shrirampur, Rahuri, Newasa, Sangamner, and Shrigonda, while the other areas have only well irrigation. The area irrigated from different sources talukawise is given in Statement C. The total area under irrigation is roughly 2,75,000 acres which works out at about 8 per cent. of the total cropped area.

10. *Forests.*—An area of 4,95,356 acres representing 8.5 per cent. of the total area of the district is covered by forests. Most of the forests are greatly degenerated due to the indiscriminate felling of trees, and overgrazing by cattle. Other reasons for degeneration of forests are drier climate and poor shallow soils.

11. *Transport and Communications.*—There is only one single railway line—Dhond-Manmad line—running from south to north, with 16 stations and a length of about 120 miles. The railway line serves the local business transport needs, especially of the sugarcane zone. It passes through five talukas.

The district has a fairly good net-work of all weather roads. All the taluka towns are connected by metal road. A large number of villages, however, remain to be served by fair weather roads. Want of bridges on certain big rivers is a handicap.

12. *Industries.*—There are ten sugar factories in the district; a few more are proposed to be established in the canal zones of this district. These factories have not only benefitted the farmers economically, but have also given employment to a large number of landless persons in this and adjoining districts.

13. *Livestock.*—The cattle population of the district, which is more than could be maintained adequately, is as follows :—

(i) Cows and buffalows	...	2,34,771
(ii) Sheep and goats	...	83,704
		3,18,475

As a result, shortage of fodder is generally felt. During years of scarcity, there is acute shortage of fodder.

14. *Minerals.*—Except for building stone, there are no minerals in the district.

Part II—Determination of Precarious and Chronic Scarcity Area.

The history of scarcity during the last 30 years shows that large parts of this district were frequently affected by famine or scarcity conditions. Conditions were bad throughout the district in the years 1936-37, 1945-46 and 1952-53. Besides these three famines, some parts of the district were also affected during the years 1929-30, 1941-42, 1950-51 and 1953-54.

The average annual rainfall for 27 years and the area under irrigation in each of the talukas in this district are indicated below :—

Taluka.	Average rainfall in inches.	Percentage of area under irrigation.
Akola	... 24.70*	0.5
Sangamner	... 19.39	4.8
Parner	... 20.30	4.7
Shrigonda	... 19.27	7.7
Karjat	... 22.70	5.9
Ahmednagar	... 23.70	9.8
Kopargaon	... 18.72	20.4
Shrirampur	... 26.10*	28.5
Rahuri	... 20.58	21.2
Jamkhed	... 24.55	6.0
Pathardi	... 24.87	4.1
Newasa	... 24.28	3.5
Shevgaon	... 26.02	2.7

* For 10 years only.

In order to get a broad picture of the district, it may be divided into suitable zones according to the nature of the soils, the total rainfall and the extent of irrigation. The Akola taluka stands in a class by itself. The western part of it is hilly and gets heavy rainfall, on account of its location amidst the Sahyadri hills. The rainfall diminishes rapidly in the eastern part of the taluka where soils are flat and medium black. The talukas of Sangamner, Parner, Shrigonda, Karjat and Ahmednagar constitute the second zone. These talukas have lighter soils being located on the hilly plateau. The rainfall in this zone is scanty, and is generally not well distributed. The talukas of Kopergaon, Shrirampur and Rahuri have low rainfall, but better soils and adequate protective irrigation. The Godavari and Pravara canals have greatly benefitted these talukas, which may be considered as constituting a third zone. The eastern talukas of Jamkhed, Pathardi, Newasa and Shevgaon form the fourth zone. The soils of Jamkhed and Pathardi are shallow and light due to hilly topography. While those of Newasa and Shevgaon are medium black and quite fertile. The rain-fall in this area is higher and more assured, than in the second and third zones.

In order to determine the extent of chronic scarcity area in this district, the various factors affecting each taluka are considered in the following paragraphs :—

1. **Akola.**—This taluka forms the Maval zone of the district. The eastern half of the taluka is fairly flat, growing crops of bajri, wheat, gram and rabi jowar. The soils in the western half are reddish, while those in the eastern half are deeper and darker in colour. The soils along the banks of the Pravara are rich, whereas those along the hill slopes are poor and shallow, but capable of supporting good natural vegetation. The taluka has 153 villages. It is predominantly kharif, the rabi area being 9 per cent. only. The most important crops are bajri, paddy, gram, oilseeds, wheat and jowar. Irrigation is practically absent. The rainfall varies from 200" to 20" decreasing rapidly from west to east.

During the last 28 years for which information is available, crops had suffered in different parts of this taluka during the years 1936, 1937, 1942, 1957 and 1958. The analysis of the annewari data of last 10 years shows that 38 villages suffered one full suspension and 5 villages suffered half full suspension, while the rest of the villages were free.

The rainfall figures of the last 10 years show that in the eastern part where the average is 24.7", the total rainfall was never less than 19" in any year. This taluka may, therefore, be regarded as free from scarcity.

2. **Kopergaon.**—The taluka is situated to the extreme north of the district, the major portion of which is served by canal irrigation. There are 100 villages and a population of 1,42,858 with a net cultivated area of 2,28,571 acres. The main crops grown are sugarcane, jowar, bajri, wheat, gram, oil seeds and cotton. The area under sugarcane is 22,869 acres and that under irrigation 48,041 acres, i.e. 20.4 per cent. of the area. Barring the area under irrigation, the acreage grown under kharif crops is 36 per cent. and that under rabi is 50 per cent., indicating that the taluka is mainly a rabi area. The soils of this taluka are quite deep and fertile. The area touching Sangamner taluka has, however, inferior shallow soils. This is the portion which is not commanded by the Godavari right bank canal or by the Pravara left bank canal.

The average of the rainfall recorded during the years 1931-57 is 18.72. The taluka seems to have suffered from the deficiency of rainfall in the years of 1936, 1945, 1946, 1952 and 1957. The rainfall recorded during these years is shown below :—

Year.	June.	July.	August.	September.	October.	Total
1936	3.35	1.05	0.41	2.01	0.15	7.02
1945	1.46	2.14	2.59	3.02	0.23	9.74
1946	1.94	2.64	2.69	4.58	0.10	11.95
1952	2.60	1.19	1.30	1.00	0.10	6.19
1957	5.59	1.54	2.52	2.54	0.16	12.83

The villagewise annewari data available for the last 10 years shows that 32 villages had suffered once or more during the years 1952, 1953 and 1954. This is summarised below in terms of full suspensions :—

20 villages had 2½ full suspensions.
 3 villages had 2 full suspensions.
 1 village had 1½ full suspensions.
 8 villages had 1 full suspension.

Though rainfall in this taluka is uncertain and some villages are likely to be affected, looking to the fairly large acreage under irrigation and the existence of five sugar factories in this taluka, which offer employment opportunities even to people outside the irrigable command, the taluka may be regarded as adequately protected and, therefore, free from scarcity.

3. *Shrirampur*.—This taluka consists of 76 villages with a population of 1,35,254. The total area of the taluka is 2,01,877 acres of which 1,65,791 acres is actually under cultivation. The main crops grown are sugarcane, jowar, bajri, wheat, gram, cotton and oil seeds. As regards irrigation facilities, this taluka is most favourably situated as the major canals benefit an area of 34,270 acres, while wells feed about 15,509 acres. The total gross irrigated area, however, exceeds one lakh acres. The actual net area irrigated is 28.5 per cent of the total net cultivated acreage. The area which is left unprotected by irrigation is about 25 villages in two groups—about 10 villages touching Sangamner area and about 20 villages to the north of Shrirampur and Newasa road.

The soils of the taluka are fairly deep and fertile, excepting a very few villages touching Sangamner taluka in the western corner.

The average of the rainfall recorded during the last 10 years 1949-58 is 26.1". The rainfall figures for this taluka are available only for a period of 10 years, as prior to 1945-46, this taluka had no separate existence. The available rainfall data of the taluka shows that the average rainfall was 26.1 per cent. The rainfall was deficient during the years 1953-54 and 1955-56. The villagewise annewari data of the last 19 years period 1948-49 to 1957-58 has shown that 45 villages had suffered once or twice during the years 1952-53 and 1953-54. This is summarised below in terms of full suspensions.

12 villages had 2 full suspensions.
 33 villages had 1 full suspension.

The taluka is now very well protected by extensive canal irrigation and farmers are able to raise double crops or perennial crops like sugarcane. This taluka has also four big sugar factories, which give seasonal employment to people in the adjoining dry areas. In view of the above facts, this taluka may be considered as free from scarcity.

4. *Rahuri*.—This taluka has 83 villages and 2 towns with a population of 88,360 persons, divided into four circles, viz. Rahuri, Wambori, Deolali and Kolhar. The net area under cultivation is 1,68,787 acres, supporting a variety of crops, such as jowar, bajri, wheat, gram, cotton, oil seeds and sugarcane. The net area irrigated by canals is 25,201 acres and by wells is 12,678 acres, which works to 22 per cent of the net cropped area. The area under sugarcane is 6,139 acres.

The average of the rainfall recorded during the last 27 years 1931-1957 is 20.59". The rainfall was deficient during the years 1936, 1941, 1945, 1946 and 1952 as shown below :—

Year.	June.	July.	August.	September.	October.	Total
1936	0.97	<i>Nil.</i>	0.60	4.39	<i>Nil.</i>	6.27
1941	0.11	3.19	1.15	5.62	0.49	10.46
1945	2.79	1.97	5.02	2.74	2.37	14.89
1946	1.60	2.80	1.60	5.30	0.80	13.42
1950	0.74	4.53	1.57	12.79	0.07	19.70
1952	3.55	1.40	1.60	1.29	0.66	8.50

The annewari and suspension of land revenue data is tabulated below :—

Year.	Villages having annewari.	
	Below 4 annas.	Below 6 annas but more than 4 annas.
1936-37	37	12
1941-42	43	7
1945-46	24	10
1949-50	—	23
1950-51	2	5
1952-53	85	—
1953-54	—	15

From these details it is seen that the portions of the taluka had suffered off and on. The village-wise annewari data of the last 10 years 1948-49 to 1957-58 has shown that 78 villages out of 83 in the taluka suffered during the year 1951 and 7 villages suffered in 1950 in addition. This data, summarised in terms of full suspensions, shows that 71 villages had 1 full suspension while 7 villages had 2 full suspensions.

In view of the fact that a large area in this taluka is already served by Pravara Canals and more area will be brought under irrigation by Mula Project which is under construction providing sufficient protection by irrigation and money crops, the taluka may be regarded as free from scarcity.

5. *Sangamner*.—This taluka has 134 villages with a net cropped area of 2,68,106 acres. The main cropping is kharif, the proportion under rabi being 16 per cent. of the total cultivated area. The crops grown are mainly bajri, jowar, wheat, gram and oil seeds. The area under irrigation is 13,548, acres, i.e. roughly 5 per cent. of the cultivated acreage. The average rainfall of the taluka over a period of 27 years is 19.39". The soils of this taluka in general are lighter, barring the narrow strips on either side of the Pravara river. The table land formed by the Harishchandragad range to the south of the Pravara river has extremely poor soils and inadequate underground water currents. The eastern part of the taluka has comparatively better soils. Nearly half of the taluka has rocky and poor soils. The whole taluka is drained by the Pravara and Mula rivers flowing in the easterly direction, excepting the northern strip separated by Kalsubai range which drains to the north.

The history of scarcity during the last 30 years shows that hardships were experienced during the years 1945-46, 1951-52, 1952-53 and 1955-56. Suspensions were granted in 41 villages in 1945-46, in 58 villages during 1951-52, in 21 villages during 1952-53 and in 93 villages during 1955-56. The scrutiny of the rainfall data over a period of 27 years, from 1931-1957 shows that the rainfall was very deficient and ill-distributed in the years 1936, 1945, 1949, 1951, 1952 and 1955, as shown below :—

Year.	June.	July.	August.	September.	Total
1936	1.44	1.13	0.93	5.78	9.28
1945	0.94	1.31	2.39	1.80	6.44
1949	1.97	0.87	1.63	12.58	17.05
1951	1.21	4.48	1.17	0.54	7.40
1952	3.96	4.47	1.11	1.23	10.77
1955	1.70	1.16	1.59	6.36	10.81

Detailed annewari data obtained for a period of the ten years 1948-49 to 1957-58 shows that scarcity prevailed during the years 1951-52, 1953 and 1955 in different scattered villages. These annewari figures converted into full suspensions show that :—

- 5 villages had $2\frac{1}{2}$ full suspensions.
- 11 villages had 2 full suspensions.
- 25 villages had $1\frac{1}{2}$ full suspensions.
- 34 villages had 1 full suspension.
- 28 villages had $\frac{1}{2}$ full suspension.

Considering the above facts, this taluka may be regarded as scarcity area of Class 'C'
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7. *Newasa*.—This taluka consists of 120 villages with a population of 92,037. Net area sown under crops is 20,80,476 acres. The main crops grown are—

	Aeres.		Aeres.
Jowar ..	1,23,505	Bajri ..	54,863
Oilseeds ..	29,711	Wheat ..	19,698
Cotton ..	32,115	Sugarcane ..	935

The net area under irrigation is 10,180 acres, which works to 3·6 per cent, of the net cropped area. The left bank Pravara canal benefits about 12 villages only, feeding an area of 1407 acres, whereas the rest of the acreage is under well irrigation, scattered all over the taluka. The acreage under rabi crops is 53 per cent., while that under kharif is 44 per cent. approximately. The irrigation project on Mula river which is under construction, is likely to bring an area of 92,000 acres in about 98 villages of this taluka. The soils of this taluka are generally good and under favourable rainfall conditions, yield bumper rabi jowar and wheat crops.

The annual average of the rainfall recorded during the years 1931-57 is 24·28". This data shows that it was deficient during the years 1936, 1945, 1946, 1950 and 1952. The recorded rainfall from June to October at taluka headquarters is shown below :—

Year.	June.	July.	August.	September.	October.	Total.
	(in inches).					
1936	2·66	2·17	1·12	5·55	0·12	11·62
1945	3·59	0·72	2·20	3·14	1·17	10·82
1946	2·57	3·89	1·72	3·87	0·12	12·17
1950	0·77	3·86	1·48	16·44	1·50	24·05
1952	6·66	1·70	1·61	3·74	2·12	15·83

The above data is supported by the annewari data. The figures of annewari are also shown below :—

Years.	Villages having annewari	
	Below 4 annas.	Below 6 annas.
1936	26	8
1945	111	—
1950	—	22
1952	76	—

The village-wise annewari data for the last 10 years 1948-49 to 1957-58 shows that 76 villages out of 120 had one full suspension.

In view of the above data and the facts that a large part of the taluka will be irrigated by the Mula project which is under construction, the taluka may be regarded as scarcity-free area.

7. *Shevgaon*.—This taluka includes 124 villages and one town, with a total population of 88,096 persons. The net area cultivated under crops is 2,32,464 acres of which 6,804 acres are irrigated mainly by wells, which is less than 3 per cent. This taluka is more kharif than rabi. Kharif is 53 per cent., while rabi is 44 per cent. of the total cropped area. The main crops grown are jowar, bajri, cotton, oil seeds, wheat, and gram. Though the irrigated area in the taluka is small, at present the Mula project which is under construction is expected to command some villages of this taluka.

The annual average rainfall of the taluka is 26·02". Rainfall in both the seasons is important because of the absence of irrigation facilities and because of the almost equal proportion of kharif and rabi crops. The study of the rainfall data shows that the distribution of rainfall was defective in the following years either in one or the other season, as shown below :—

Year.	June.	July.	August.	September.	October.	Total.
1936	1·55	1·72	0·42	3·22	....	7·08
1941	3·99	2·44	2·55	12·03	0·71	21·72
1945	3·62	2·39	4·99	4·19	0·55	15·74
1952	1·27	5·12	2·57	6·63	1·48	18·17

According to the annewari data, the years shown below were bad.

Year.	Number of villages in which annewari was less than	
	4 annas.	6 annas.
1936-37	22	19
1941-42	12	36
1945-46	...	71
1952-53	44	...

These figures show that while the whole taluka was not affected in any one year, parts of it were affected in these 4 years. The villagewise annewari data available for the last 10 years 1948-49 to 1957-58 shows that 117 villages out of 124 had one full suspension.

In view of the fact that the rainfall is fairly high, soils good and partial failures of crop not frequent, this taluka may be considered as practically free from scarcity.

8. *Parner*.—This is a high-lying plateau formed by the Balaghat and Baleshwar ranges. It consists of 114 villages with a total population of 1,06,078 persons. The taluka grows both kharif and rabi crops, their percentage being 54 and 44 respectively. The area grown under the main crops is jowar—1,40,848 acres, bajri—1,19,371 acres, pulses—40,880 acres, and oil seeds—18,701 acres. A large number of wells irrigate 15,231 acres, while the acreage under canals and tanks is as low as 1,121 acres.

The whole taluka is hilly with a table land in the centre, known as Kanhur pathar. The whole taluka has a radial drainage because of the high plateau in the centre and hence none of the bigger rivers flow across. The river Kukadi flows along the southern border, while the river Mula flows along the northern boundary of the taluka. The basins of both the rivers are deep and hence they cannot be harnessed for irrigation of this taluka. The soils of the taluka are undulating and shallow, mixed with murum and stones. The soils of Kanhur pathar are however medium, black friable, and retentive of moisture.

An excellent crop of dry wheat is grown on this table land. The hill slopes are heavily eroded and people there can grow only millets.

The average rainfall of this taluka is 20-30" with considerable variations from year to year. The distribution of rainfall is defective, which on poor shallow soils hastens the damage to crops. The study of the rainfall figures shows that it was deficient in about 10 years out of the last 30 years period, as tabulated below :—

Year.	June.	July.	August.	September.	October.	Total.
1929	4.98	1.19	0.39	4.50	3.91	14.98
1935	4.54	2.16	4.11	1.58	2.34	14.91
1936	1.04	0.67	2.06	3.34	1.20	8.31
1939	2.27	5.23	2.28	1.25	0.94	11.95
1941	0.04	3.73	1.13	7.08	1.41	14.29
1942	9.16	3.70	2.10	0.92	0.62	16.49
1945	3.22	1.00	4.10	2.91	1.41	12.54
1946	1.32	2.37	3.05	9.20	0.25	16.19
1950	1.98	4.19	1.18	18.22	3.86	29.43
1952	4.76	2.78	1.59	2.27	1.33	12.75
1953	3.33	2.34	2.66	4.96	4.43	17.72
1957	2.91	3.05	4.62	3.29	3.29	16.31

Reference to annewari data shows that most of the villages had suffered at intervals during the period of 30 years. The suspensions figures are given below :—

Year.	Villages with full suspensions.	Villages with half suspensions.
1929	3	38
1936	58	49
1941	7	24
1945	99	...
1949	...	80
1950	81	...
1952	97	...
1953	50	...
1958	10	...

The villagewise annewari data is available for last 10 years 1948-49 to 1957-58, which, when summarised on the basis of full suspensions, shows that—

- 69 villages had 2½ full suspensions,
- 3 villages had 1½ full suspensions,
- 7 villages had 1 full suspension,
- 12 villages had ½ full suspension.

Looking to the annewari data and the rainfall recorded during the period of last 30 years, this taluka may be regarded as scarcity area of Class 'B'.

9. *Ahmednagar*.—This is centrally situated taluka with 108 villages and 2 towns having a total population of 2,96,153, half of which is located in Ahmednagar town. The taluka is almost hilly with a river valley running from north to south. The river Sina takes its birth at the northern border of the taluka and rains the whole taluka. The soils are most undulating and shallow, interspersed with medium black soil patches. The soils in the river valley are, however, better and retentive of moisture.

The total area of the taluka is 3,71,319 acres of which 2,68,323 acres constitute the net cultivated area. The area under irrigation is 28,640 acres, mostly under wells, as the land benefitted by canals and tanks is only 3,000 acres. The main crops grown are jowar—1,66,141 acres, bajri—36,444 acres, wheat—11,229 acres, oil seeds—27,116 acres and pulses—34,478 acres. The taluka is predominantly rabi, growing 63 per cent. of the cultivated acreage under rabi crops.

The average rainfall of this taluka is 23·70" with considerable variation from year to year and lacking in proper distribution during the kharif and rabi seasons. The scrutiny of the rainfall data shows that rainfall was deficient and ill-distributed during the years 1936, 1939, 1941, 1942, 1945, 1946, 1949, 1950, 1952 and 1953 as shown below :—

Year.	June.	July.	August.	September.	October.	November.	Total.
1	2	3	4	5	6	7	8
1936	1·71	1·13	0·44	3·87	....	3·13	7·15
1939	4·49	3·10	2·91	1·63	0·58	2·34	12·71
1941	....	2·51	1·69	11·24	0·38	2·36	15·82
1942	12·84	2·83	3·58	1·39	0·72	3·91	21·50
1945	1·88	1·46	7·44	3·27	1·53	....	15·58
1946	5·72	1·57	0·61	11·09	0·80	11·35	19·30
1949	3·06	1·21	2·68	12·08	1·42	....	20·55
1950	2·01	5·07	1·30	12·20	1·15	....	21·73
1952	6·24	1·38	0·72	1·65	0·61	....	12·30
1953	4·06	5·59	1·05	4·96	3·09	....	18·55

The suspension data of last 30 years is shown below :—

Year.	Number of villages affected.	
	Below 4 annas.	4 to 6 annas.
1945	105	...
1949	...	105
1950	105	...
1952	105	...
1953	32	...

The villagewise annewari figures are available for 10 years 1948-49 to 1957-58. This data, summarised on the basis of full suspensions, shows that 102 out of 108 villages had suffered two full suspensions. The suspension data of the last 30 years has similar trend. The rainfall distribution is also not satisfactory,

In view of the above facts, this taluka may be considered as scarcity area of class B.

10. *Pathardi*.—This taluka has 91 villages and one town with a total population of 97,575 persons. Prior to 1945-46 the taluka consisted of 61 villages only. The total area of the taluka is 478 sq. miles or 2,96,371 acres, of which net area of 2,29,196 acres is under cultivation. The main crops grown are Bajri—96,936 acres, Jowar—62,444 acres, Cotton—18,720 acres, and Oil seeds—10,287 acres. The taluka is therefore more kharif than rabi. This is not so because of the comparative security of kharif rains, but due to inferior soils in the major portion of the taluka. There is no canal or tank irrigation, the only source being wells, which benefit an area of 9,960 acres or about 4.3 per cent. of the cultivated area.

The average rainfall of the taluka is 24.87", with considerable variation from year to year. The scrutiny of the rainfall data shows that rainfall was deficient during the years 1936, 1939, 1941, 1945, 1946 and 1952. The rainfall recorded in these lean years is given below :—

Year.	June.	July.	August.	September.	October.	Total.
1936	0.85	1.17	0.39	5.66	....	8.07
1939	5.41	4.73	4.54	1.95	0.87	17.50
1941	0.95	1.53	1.48	9.69	0.09	13.74
1945	3.48	1.62	7.39	3.34	1.09	16.92
1946	3.97	1.96	1.97	3.72	0.07	16.69
1952	2.42	4.07	1.57	6.93	2.78	17.77

Since the acreage under kharif crops in this taluka is about 69 per cent., the rainfall during the months of June, July and August practically decides the failure or success of the season. The figures of annewari and villages affected during the last 30 years are given below :—

Year.	Total No. of villages in the taluka.	Villages in which annewari was less than.		Year.	Total No. of villages in the taluka.	Villages in which annewari was less than.	
		4 annas.	6 annas.			4 annas.	6 annas.
1931-32	61	2	26	1945-46	99	44	15
1936-37	61	29	7	1946-47	95	5	9
1937-38	61	12	20	1949-50	92	..	21
1938-39	61	1	3	1950-51	92	16	17
1941-42	61	17	21	1952-53	92	65	..
1942-43	61	5	1				

During 1931-32, the rainfall was quite normal. The reason for lower annewari may be the frost which had occurred during that year. In the years of 1938-39, 1942-43, 1946-47 and 1949-50, the number of villages affected was small. According to annewari data, this taluka had suffered as below :—

1936	36 villages out of 61
1937	32 villages out of 61
1941	38 villages out of 61
1945	59 villages out of 99
1950	33 villages out of 92
1952	65 villages out of 92.

Thus about $\frac{1}{2}$ to $\frac{3}{4}$ rds the number of villages had suffered in each of these years. The villagewise annewari data of the last 10 years is available. It is summarised below in terms of full suspensions :—

38 villages had 2 to $2\frac{1}{2}$ full suspensions.

9 villages had $1\frac{1}{2}$ full suspensions.

27 villages had 1 full suspension.

9 villages had $\frac{1}{2}$ full suspension.

Half the number of villages had 2 or more full suspensions.

This taluka may, therefore, be considered as scarcity area of class 'C'.

11. *Jamkhed*.—This taluka consists of 53 villages and 2 towns, with a total population of 59,397 persons. The total spread of the taluka is 336·8 sq. miles, or 2,16,789 acres out of which a net area of 1,77,590 acres is put under crops. The main crops grown in the taluka are rabi jowar 98·715 acres, bajri 9,340 acres, pulses 32,477 acres and oil seeds 24,400 acres. The area under irrigation is 11,265 acres only, exclusively under wells. There are no tanks or canals.

The soils of the taluka are generally light and shallow, with medium black patches in the low-lying areas. The whole tract is undulating, with the exception of a table land of Balaghat, which is also stony but less eroded.

The average rainfall of this taluka for the last 27 years is 24·55". The scrutiny of the rainfall data for the last 30 years shows that it was deficient or badly distributed in 9 years. The rainfall recorded in these years is reproduced below :—

Year.	June.	July.	August.	September.	October.	Total.
1929	5·17	1·66	0·41	10·45	8·02	27·71
1936	1·63	0·75	0·96	5·03	....	8·37
1937	1·14	4·34	1·39	6·93	5·39	19·17
1939	4·79	4·20	1·79	5·04	0·55	16·56
1941	0·93	2·23	1·39	11·37	1·49	17·41
1942	9·11	3·86	6·10	0·91	0·07	20·05
1943	1·94	3·63	0·36	8·29	10·00	24·32
1945	7·72	1·96	4·60	2·10	0·87	17·25
1946	4·67	2·28	0·98	86·4	0·12	16·69
1952	5·93	2·19	0·53	3·27	....	11·92

The annewari data of the last 30 years is tabulated below :—

Year.	Villages in the taluka.	Villages with annewari		Year.	Villages in the taluka.	Villages with annewari	
		Less than 4 annas.	Less than 6 annas.			Less than 4 annas.	Less than 6 annas.
1931-37	.. 63	..	9	1941-42	.. 63	..	9
1937-38	.. 63	..	13	1945-46	.. 63	52	..
1939-40	.. 63	..	12	1950-51	.. 55	..	55
1940-41	.. 63	..	3	1952-53	.. 55	47	..

The villagewise annewari data is available for the last 10 years. It is summarised as shown below on the basis of full suspensions :—

8 villages had $1\frac{1}{2}$ full suspensions.
32 villages had 2 full suspensions.

In view of the above facts, this taluka may be regarded as scarcity area of class 'C'.

12. *Shrigonda*.—This taluka has 93 villages and one town having a population of 95,007 persons. The total area of the taluka is 3,96,542 acres, of which the net cultivated area is 2,99,910 acres. A fairly large area is hilly and barren along the western, northern and eastern sides. One branch of Balghat range crosses the north-eastern part of the taluka and enters Karjat. The central and southern part is less undulating and has medium black soils. The soils on the bank of the Bhima, are however deep and retentive. The soils along the hill slopes are poor in fertility, being highly eroded. The taluka drains towards the south.

The main crops of the taluka are rabi jowar 2,00,979 acres, bajri 32,269 acres, pulses 37,282 acres, oil seeds 26,153 acres, sugarcane 2,046 and cotton 2,579 acres. This taluka is predominantly rabi, growing 67 per cent. of the cultivable area under rabi crops. This taluka has a fairly large acreage under well irrigation, measuring 21,871 acres, whereas, the area under canals is only 2,471 acres. The percentage of area irrigated works to 8 per cent. of the total cultivated area. The Ghod project which is under construction will bring a fairly large area of this taluka under irrigation, but it will benefit parts of Shrigonda and Chimble circles.

The average annual rainfall of this taluka over a period of last 27 years is 19.27" with great fluctuations from year to year and month to month. The scrutiny of the rainfall data over a period of 30 years shows, it was deficient in 15 years. The rainfall was low either in the aggregate or in distribution in the years shown below :—

Year.	June.	July.	August.	September.	October.	Total.
1	2	3	4	5	6	7
1929	4.90	0.21	....	5.83	4.79	15.73
1930	3.55	1.36	....	11.36	3.36	19.02
1931	2.86	2.29	1.19	4.51	9.10	19.65
1934	2.06	2.04	1.95	5.49	1.07	13.20
1936	0.52	0.06	0.31	4.91	0.02	5.82
1937	1.50	2.78	0.25	6.57	5.61	16.71
1940	7.06	1.11	1.11	3.50	5.73	18.51
1941	0.09	3.63	0.24	7.55	1.58	13.09
1942	10.90	1.00	1.60	0.60	1.58	15.68
1943	1.90	0.78	0.06	6.71	11.73	20.78
1944	6.47	5.56	0.23	0.04	1.87	15.04
1945	0.55	0.80	0.29	9.28	0.97	11.89
1952	3.40	2.69	0.40	1.44	1.63	9.56
1953	2.34	2.61	0.25	4.66	5.38	15.24
1955	1.27	0.70	3.29	8.89	5.95	20.10

The annewari and suspension data is as follows:—

Year.	No. of villages.	Villages having annewari less than		Year.	No. of villages.	Villages having annewari less than	
		4 annas.	6 annas.			4 annas.	6 annas.
1936-37	.. 87	29	29	1949-50	.. 87	..	85
1937-38	.. 87	2	3	1950-51	.. 87	85	..
1938-39	.. 87	..	3	1952-53	.. 87	85	..
1939-40	.. 87	31	37	1953-54	.. 87	85	..
1941-42	.. 87	87	..	1954-55	.. 87	9	..
1942-43	.. 87	17	..	1955-56	.. 87	85	..
1945-46	.. 87	85	..				

From these figures, it can be seen that complete suspension was granted for the whole taluka 5 times and for half the taluka 3 times. In addition, half suspension was granted for the whole taluka once in 1949-50 and for part of the taluka twice in 1936-37 and 1939-40. The study of the circlewise suspensions shows that Chimbale circle was affected 10 times, Mandavgan circle seven times and the remaining two circles of Shrigonda and Belwandi 6 times during the last 30 years. The villagewise annewari data which is obtained for 10 years 1948-49 to 1957-58 has shown that the villages had suffered during the years 1949, 1950, 1952, 1953, 1954, 1955. This data is summarised and shown below in terms of full suspensions:—

51 villages had 3 or more full suspensions.

31 villages had 2 or 2½ full suspensions.

3 villages had less than two full suspensions.

In view of the precarious rainfall and inferior type of soils, it is appropriate to consider the whole taluka as precarious and chronic. This taluka is surrounded by Sirur and Dhond talukas of Poona district which are equally bad.

This taluka may, therefore, be considered as scarcity area of category 'A'.

13. *Karjat*.—This taluka includes 80 villages and 1 town, having a total population of 74,653 persons. The taluka extends over 560 sq. miles with a net area of 2,54,392 acres under cultivation. The crops grown are chiefly rabi jowar—1,71,587 acres, bajri—17,682 acres, cotton—19,951 acres and pulses—52,400 acres. Area under irrigation is only 17,157 acres, most of which is served by wells. There is no canal irrigation in this area excepting the newly constructed tanks of Guraopimpri, Bahirobawadi and Durgaon, which benefit hardly 216 acres. It is likely, the proposed irrigation projects of Ghod and Kukadi, may benefit this taluka to a certain extent in the future.

This taluka is intercepted from north-west to south-east by the Balaghat range, which has turned this taluka into a rugged, undulating rocky area, with very shallow soils all over excepting in the south towards the Bhima valley. The soils are so poor that they suffer tremendously under inadequate rainfall conditions, but yield good harvests when rainfall is good. Most of the taluka has shallow soils, suitable for millets but would give very good garden crops under irrigation. The tract on the borders of Karjat and Shrigonda is most barren, only suitable for sheep grazing.

It has slightly better rainfall than the adjoining taluka of Shrigonda, because of the returning monsoon showers in the months of September and October. The average annual rainfall over a period of last 27 years is 22.79 inches, with fluctuations

in the rainfall from year to year, besides the ill-distribution and uncertainty of it. The rainfall recorded in some of the years when the total rainfall or its distribution was unsatisfactory is as below :—

Year.	June.	July.	August.	September.	October.	Total.	Remarks.
1929	4.08	0.31	0.53	7.18	6.66	18.76	Failure of kharif.
1930	4.72	0.99	1.27	8.92	5.57	25.47	Do.
1931	5.64	1.91	1.74	9.74	2.70	21.32	Do.
1936	1.66	0.15	0.69	6.28	0.42	14.06	Total failure.
1941	0.29	2.30	0.61	10.65	1.20	15.15	Do.
1942	8.06	2.05	4.03	1.70	0.18	16.02	Failure of rabi.
1945	2.73	0.92	5.89	1.73	1.46	12.78	Total failure.
1946	0.67	1.50	0.54	9.41	1.21	13.33	Failure of kharif.
1949	2.68	2.14	1.41	19.04	2.33	27.60	Do.
1950	1.22	1.55	3.00	9.92	3.19	18.88	Do.
1952	4.28	1.18	0.68	4.62	1.66	11.32	Total failure.
1953	3.23	1.99	0.33	8.79	6.77	21.11	Failure of kharif.

The annewari data is presented below :—

Year.	No. of villages in the taluka.	Villages in which annewari was less than		Year.	No. of villages in the taluka.	Villages in which annewari was less than	
		4 annas.	6 annas.			4 annas.	6 annas.
1	2	3	4	1	2	3	4
1929-30	82	..	6	1945-46	82	82	..
1931-32	82	..	82	1949-50	81	..	61
1939-40	82	4	44	1950-51	81	81	..
1940-41	82	..	44	1952-53	81	80	1
1941-42	82	16	67				

On the basis of this annewari data, there were 3 complete suspensions and 5 half suspensions. The villagewise data of annewari figures is available for 10 years 1948-49 to 1957-58. This data is summarised below on the basis of full suspensions :—

36 villages had 2½ full suspensions.

16 villages had 2 full suspensions.

Out of 81 villages, 52 villages had more than two full suspensions. The circlewise data has shown that Rashin circle was affected much more and more number of times than the other circles. This taluka lies between the Shrigonda, Dhond and Karmala Talukas, all of which are chronic scarcity areas.

Taking all the factors into consideration, i.e. the precarious rainfall and lighter type of soils, this taluka may be regarded as scarcity area of Class 'B', with the exception of Rashin circle which is classed as 'A'.

To sum up, Shrigonda Taluka and Rashin Circle of Karjat Taluka should be regarded as precarious scarcity area of Class 'A'. Parner, Ahmednagar, Karjat part excluding Rashin circle should be considered as Class 'B' scarcity area and Sangamner, Pathardi and Jamkhed should be regarded as scarcity area of Class 'C'. The talukas viz, Akola, Kopergaon, Shrirampur, Newasa, Rahuri and Shevgaon should be considered as scarcity-free areas.

STATEMENT " A " .

Basic Data.

Serial No.	Name of Taluka.	No. of villages.	Gross area in.		Popula- tion.	Density per sq. mile.	Gross cropped area.	Net cropped area and its percentage.	Area under forest
			Sq. miles.	Acres.					
1	2	3	4	5	6	7	8	9	10
1	Parner ..	114	690.2	4,61,562	1,06,078	153	3,43,313	3,24,482	62,727
2	Shrigonda ..	87	617.6	3,96,542	95,007	154	2,15,021	2,99,910	30,185
3	Jamkhed ..	53	338.6	2,16,789	59,397	176	1,87,716	1,77,590	17,877
4	Karjat ..	80	560.1	3,58,464	73,658	133	2,89,556	2,54,392	46,875
5	Kopergaon ..	100	403.4	2,65,016	1,42,858	354	2,35,424	2,28,571	7,419
6	Shrirampur ..	76	319.1	2,01,877	1,35,254	424	1,75,011	1,65,791	3,040
7	Akola ..	153	574.6	3,71,653	96,074	167	2,25,269	2,07,730	1,09,219
8	Sangamner ..	134	624.5	4,16,027	1,29,381	207	2,80,003	2,68,106	78,864
9	Pathardi ..	91	425.4	2,96,371	97,575	229	2,40,786	2,29,196	29,162
10	Newasa ..	120	480.2	3,19,259	92,037	191	2,95,922	2,90,476	11,576
11	Shevgaon ..	124	436.2	2,68,725	88,096	202	2,49,257	2,32,464	11,250
12	Ahmednagar ..	108	585.2	3,71,319	2,06,153	352	2,90,610	2,68,323	32,826
13	Rahuri ..	83	418.6	2,67,904	88,360	211	1,78,721	1,58,787	43,189
District Total ..		1,319	6,471.9	42,01,508	14,10,923	218	32,96,609	31,02,818	4,84,209

STATEMENT " B " .

Rainfall Data.

(Fig. in Inches.)

Taluka.	1949.	1950.	1951.	1952.	1953.	1954.	1955.	1956.	1957.	1958.	Average of 27 Years (1931 to 1957).
1	2	3	4	5	6	7	8	9	10	11	12
Parner ..	25.47	30.62	26.96	12.76	17.72	18.45	18.90	30.10	16.72	26.2	20.20
Shrigonda ..	26.33	21.59	30.71	10.44	15.24	23.66	32.70	24.88	25.04	31.02	19.27
Jamkhed ..	32.64	26.84	19.16	12.27	25.67	32.64	24.03	32.29	26.11	28.00	24.55
Karjat ..	28.43	19.16	22.01	13.87	21.11	19.91	25.16	28.25	24.43	21.1	22.69
Kopergaon ..	22.27	14.97	18.44	6.19	15.43	18.74	18.91	33.80	12.83	20.8	18.72
Shrirampur ..	35.7	23.0	56.5	25.6	16.1	18.6	15.8	27.4	19.1	27.5	26.1
Akola ..	21.6	25.2	26.7	24.0	21.4	22.4	21.0	45.3	19.0	20.4	24.7
Sangamner ..	27.43	27.94	20.15	11.70	17.42	17.51	17.62	26.85	18.87	20.4	19.39
Pathardi ..	31.58	25.24	21.33	17.77	22.65	25.35	36.24	29.38	28.92	19.0	24.47
Newasa ..	29.15	24.45	32.53	16.91	23.62	26.36	31.79	31.03	21.07	28.8	24.28
Shevgaon ..	22.80	21.78	26.73	18.17	29.69	24.61	33.57	27.03	24.61	29.2	26.02
Ahmednagar ..	21.07	22.17	20.53	12.30	18.55	23.70	28.88	39.69	28.87	23.1	23.70
Rahuri ..	22.26	19.70	23.51	8.50	18.23	17.99	27.37	28.30	14.67	18.1	20.58

STATEMENT B-1.
Monthly Rainfall Data.
 Taluka Rahuri.

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.
1931	..	6.95	2.23	0.19	4.46	6.40	20.23	25.26	5.33
1932	.. 0.21	3.66	5.65	2.61	4.66	5.27	22.06	22.50	0.44
1933	.. 2.09	3.35	0.96	4.83	13.61	1.61	26.45	47.28	0.83
1934	..	3.49	6.32	5.79	3.30	0.40	19.30	22.09	2.79
1935	..	8.59	2.29	2.65	1.24	6.31	21.08	21.23	0.15
1936	.. 0.31	0.97	..	0.60	4.39	..	6.27	13.29	0.12
1937	..	1.73	5.40	0.09	6.85	5.09	21.96	22.86	0.90
1938	.. 2.78	5.10	8.62	2.04	6.62	7.54	32.70	34.32	1.62
1939	..	2.42	5.85	2.69	1.51	0.75	13.22	15.37	2.15
1940	.. 0.22	6.09	1.06	2.69	3.44	1.27	14.77	16.25	1.48
1941	..	0.11	3.19	1.15	5.52	0.49	10.46	10.61	0.15
1942	.. 0.19	10.05	3.10	2.06	1.82	..	17.22	19.96	3.74
1943	.. 0.79	4.40	3.14	0.33	15.62	13.65	37.96	37.96	..
1944	.. 0.02	3.84	7.49	1.16	5.43	1.39	19.46	19.87	0.41
1945	..	2.79	1.97	5.02	2.74	2.37	14.89	15.59	0.70
1946	.. 1.32	1.60	2.80	1.60	5.30	0.80	13.42	25.38	11.96
1947	.. 0.31	1.95	3.10	10.51	7.69	1.13	24.69	26.55	1.86
1948	.. 2.38	4.55	7.15	4.96	7.32	2.84	29.20	29.02	9.82
1949	.. 1.91	2.00	0.64	4.79	9.81	3.11	22.26	22.26	..
1950	..	0.74	4.53	1.57	12.79	0.07	19.70	19.70	..
1951	.. 0.75	1.67	10.69	1.22	3.06	6.12	23.51	24.35	0.84
1952	..	3.55	1.40	1.60	1.29	0.66	8.50	8.50	..
1953	..	3.05	4.21	1.60	4.15	5.22	18.23	18.25	0.02
1954	..	5.62	5.04	0.62	6.71	..	17.99	19.77	1.78
1955	.. 0.45	7.57	3.43	3.70	9.49	7.72	27.37	27.47	0.10
1956	.. 2.66	2.46	3.08	6.30	9.22	4.48	28.20	30.77	2.57
1957	.. 0.78	5.60	0.34	2.77	3.33	1.55	14.67	15.68	1.01

Average (1931-57)=20.58

STATEMENT B-1.
Monthly Rainfall Data.
 Taluka Kopargaon

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.
1931	.. ..	3.74	5.77	2.10	4.93	6.02	22.56	24.46	1.90
1932	.. 0.90	2.20	6.76	4.66	4.46	3.77	28.79	23.88	1.09
1933	.. 2.42	4.36	1.90	6.35	10.63	2.91	28.57	29.85	1.28
1934	.. ..	3.22	5.84	8.66	2.56	6.17	19.45	22.06	2.61
1935	.. ..	4.21	3.39	3.95	2.74	5.20	19.49	19.49	..
1936	.. 0.05	3.35	1.05	0.41	2.01	0.15	7.02	16.32	9.50
1937	.. ..	1.97	5.45	0.11	7.97	4.25	19.75	20.45	0.70
1938	.. 3.79	3.00	4.41	1.59	6.56	5.56	23.89	25.08	1.19
1939	.. ..	1.62	8.54	4.49	1.41	0.32	16.38	19.04	2.66
1940	.. 0.51	6.69	1.40	3.60	2.24	3.66	18.10	20.27	2.17
1941	.. ..	0.35	6.20	1.73	5.61	2.23	16.12	16.48	0.36
1942	.. 0.02	7.70	4.82	1.74	1.25	..	15.58	13.32	2.74
1943	.. 2.88	8.79	3.05	0.87	4.61	11.06	31.26	11.28	0.02
1944	.. 0.14	5.73	10.35	1.90	4.10	2.08	24.30	24.63	0.33
1945	.. ...	1.46	2.14	2.89	3.02	0.23	9.74	11.92	2.18
1946	.. ..	1.94	2.64	2.69	4.58	0.10	11.95	21.39	9.44
1947	.. ...	3.39	3.54	4.78	8.88	1.33	21.92	25.40	3.48
1948	.. ..	8.14	2.46	2.95	1.05	0.46	15.06	22.82	7.76
1949	.. 0.90	3.98	1.79	2.72	10.11	2.77	22.27	22.44	0.17
1950	.. 0.06	0.24	5.27	1.97	6.48	0.95	14.97	14.97	..
1951	.. 0.13	2.62	7.85	1.65	1.55	5.24	18.44	19.49	1.05
1952	.. ..	2.60	1.19	1.30	1.00	0.10	6.19	6.19	..
1953	.. ..	3.39	3.07	2.89	2.21	8.87	15.43	15.63	0.20
1954	.. 0.55	4.10	3.71	2.33	7.65	0.40	18.74	19.96	1.22
1955	.. 0.50	3.96	1.97	4.04	2.20	6.24	18.91	19.98	1.07
1956	.. 0.53	3.46	3.23	8.73	7.29	7.54	33.80	39.35	5.55
1957	.. 0.43	5.59	1.54	2.52	1.54	0.16	12.83	16.37	3.54

Average (1931-57)=18.72

STATEMENT B1.
Monthwise Rainfall Data.
 Taluka Karjat..

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.	
1931	5.69	1.91	1.74	9.74	2.70	21.73	23.34	3.61
1932	..	0.90	3.29	5.74	12.47	4.92	8.10	35.42	37.62	2.20
1933	--	1.67	5.69	1.41	1.51	6.48	3.85	20.61	23.66	1.95
1934	..	.60	2.66	4.96	3.79	4.59	.91	17.51	22.29	4.76
1935	9.35	1.08	8.45	2.63	11.12	32.64	33.21	0.57
1936	..	2.20	1.66	.15	.69	6.28	.42	11.40	16.26	4.86
1937	..	0.50	4.92	2.68	.44	10.13	5.82	24.04	27.52	3.48
1938	..	1.12	8.61	9.10	11.39	10.00	2.51	42.73	45.09	2.36
1939	6.37	4.71	.68	5.82	1.36	18.88	20.29	1.41
1940	--	.42	4.15	.68	2.96	5.81	5.59	19.61	23.70	4.09
1941	--	--	.39	2.30	.61	10.65	1.20	15.15	16.97	1.82
1942	--	0.10	8.06	2.05	4.03	1.70	.18	16.03	18.31	2.28
1943	--	1.81	3.06	2.98	.49	6.91	7.71	23.96	23.96	....
1944	--	.61	3.40	5.57	.33	8.33	4.52	22.76	28.79	0.03
1945	--	2.73	.92	5.89	1.78	1.46	12.78	12.83	0.05
1946	--	1.25	.67	1.50	.54	9.41	1.21	14.58	18.76	4.18
1947	--	.59	4.26	1.56	7.03	9.63	.57	23.64	27.25	3.61
1948	--	8.83	6.06	2.91	16.22	2.78	36.80	44.88	8.08
1949	--	.83	2.68	2.14	1.41	19.04	2.33	28.43	28.43	....
1950	--	.28	1.22	1.55	3.00	9.92	3.19	19.16	19.40	0.24
1951	..	.39	7.00	7.16	.53	2.48	4.45	22.01	22.60	0.59
1952	..	2.55	3.28	1.18	.68	4.62	1.56	13.81	14.30	0.43
1953	3.23	1.99	0.33	8.79	6.77	21.11	22.11	1.00
1954	--	0.67	7.90	4.40	1.61	3.95	1.38	19.91	22.01	2.10
1955	--	1.16	4.78	1.91	6.28	5.52	5.51	25.16	26.30	1.14
1956	..	4.54	.13	5.61	3.37	5.46	6.14	28.25	31.52	3.27
1957	..	1.96	6.30	2.86	3.64	4.32	5.35	24.43	25.94	1.51

Average (1931-57)=22.79

STATEMENT " B-I. "
Monthwise Rainfall Data.
 Taluka Ahmednagar

(Fig. in Inches)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual	November to April.	
1931	11.94	5.25	0.97	4.54	5.52	28.22	34.45	6.23
1932	..	0.54	7.26	4.69	3.27	4.72	6.37	26.85	27.95	1.10
1933	..	6.52	6.17	0.98	4.09	17.58	2.49	37.83	38.97	1.14
1934	..	0.52	7.34	5.63	7.95	8.35	0.42	30.21	33.44	3.23
1935	4.77	3.73	7.60	2.94	5.34	24.38	24.43	0.05
1936	..	2.20	1.71	1.13	0.44	3.87	....	9.35	12.48	3.13
1937	2.04	5.48	0.25	9.71	4.92	22.40	23.73	3.33
1938	..	3.29	4.55	12.82	5.51	8.04	5.27	39.48	44.00	4.52
1939	4.49	3.10	2.91	1.63	0.58	12.71	15.05	2.34
1940	..	0.51	10.72	1.03	2.83	3.39	2.16	20.47	23.05	2.58
1941	2.51	1.69	11.24	0.38	15.82	18.18	2.36
1942	..	0.14	12.84	2.83	3.58	1.39	0.72	21.50	25.41	3.91
1943	..	1.17	6.61	4.23	1.93	9.70	10.33	33.97	34.19	0.22
1944	..	0.19	4.15	6.40	1.54	5.50	3.98	21.76	28.23	0.47
1945	..	0.01	1.88	1.46	7.44	3.27	1.53	15.59	16.05	0.46
1946	..	1.07	5.82	1.57	0.61	11.00	0.30	20.37	31.72	11.33
1947	..	0.25	3.33	5.28	7.34	13.05	0.87	20.12	32.82	3.70
1948	..	0.18	4.24	6.30	4.04	8.41	0.90	24.17	33.48	9.31
1949	..	0.52	3.06	1.21	2.68	12.08	1.42	21.07	21.07	....
1950	..	0.44	2.01	5.07	1.30	12.20	1.15	22.17	22.48	0.31
1951	..	0.17	5.22	7.03	0.96	2.83	4.32	20.53	20.71	0.18
1952	..	1.10	6.84	1.38	0.72	1.65	0.61	12.30	12.30	....
1953	4.06	5.39	1.05	4.96	3.09	18.55	19.06	0.51
1954	..	0.51	8.86	5.09	3.20	6.01	0.03	23.70	35.40	1.70
1955	..	0.15	2.96	2.34	6.70	8.47	8.23	38.88	29.29	0.41
1956	..	6.08	4.98	5.90	6.74	9.42	6.57	39.69	43.08	3.39
1957	..	0.81	4.2	3.06	9.45	5.43	5.70	28.87	30.19	1.32
Average (1931-57)=23.70										

STATEMENT B-1.
 Monthwise Rainfall Data.
 Taluka Sangamner.

(Fig. in inches)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.	
1931	3.24	5.45	.58	3.01	5.04	17.32	20.17	2.85
1932	..	.35	1.32	6.71	4.32	11.31	4.11	28.12	28.62	0.50
1933	..	2.40	10.50	.43	5.00	13.05	3.25	34.63	35.58	0.95
1934	3.70	3.40	3.87	2.71	.51	14.19	18.90	4.71
1935	3.78	1.70	3.02	2.83	3.76	15.09	15.34	0.25
1936	..	.11	1.44	1.13	.93	5.78	.13	9.52	17.89	8.37
1937	..	.23	2.68	3.85	.86	9.50	4.52	21.64	21.96	0.32
1938	..	.65	1.85	4.26	3.03	7.38	7.44	24.61	25.61	1.00
1939	4.22	5.24	2.49	.43	.49	12.87	18.93	1.06
1940	..	.51	5.23	2.64	2.84	5.21	2.33	18.76	20.97	2.21
194120	9.03	1.43	4.21	.48	15.40	15.62	0.22
1942	..	.45	5.89	5.08	1.64	3.77	..	16.53	17.84	1.31
1943	..	2.35	3.42	3.25	.16	8.35	9.99	27.52	27.64	0.12
1944	5.07	10.21	3.15	3.99	3.03	25.45	25.70	0.25
194594	1.31	2.39	1.80	1.51	7.95	12.23	4.28
1946	..	1.29	1.94	4.17	3.81	3.01	.67	16.45	27.09	10.64
1947	..	.30	.15	3.96	7.73	8.40	.56	21.30	22.53	1.23
1948	..	1.82	5.32	3.31	1.66	6.84	1.63	20.58	33.11	12.53
1949	..	2.39	1.97	.87	1.63	12.68	7.99	27.43	27.43	..
1950	..	.11	3.84	5.90	3.87	9.30	4.92	27.94	28.03	0.09
1951	..	1.10	1.21	4.48	1.17	.54	11.65	20.15	24.69	4.54
1952	3.96	4.47	1.11	1.23	.93	11.70	11.90	0.20
1953	..	.86	2.51	1.87	3.03	5.10	3.95	17.42	17.60	.18
1954	4.27	4.38	.84	8.01	..	17.51	18.66	1.15
1955	1.70	1.16	1.59	6.36	6.81	17.62	17.85	0.23
1956	..	2.07	2.78	5.46	7.77	2.74	6.03	26.85	32.17	5.32
1957	..	.25	10.03	2.03	3.01	3.22	0.33	18.87	20.23	1.26

Average (1931-57) = 19.39

STATEMENT B-1.
Monthwise Rainfall Data.
 Taluka Shrigonda

(Fig. in inches)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.	
1931	..	2.86	2.89	1.19	4.51	9.10	19.95	24.62	4.67	
1932	..	1.03	1.42	3.44	5.70	2.35	7.80	21.84	25.51	3.67
1933	..	4.15	4.03	2.60	2.95	13.93	3.42	31.08	31.27	0.19
1934	..	0.40	2.66	2.04	1.94	5.49	1.07	13.60	16.47	2.87
1935	..	0.40	8.49	1.48	5.64	2.14	6.33	24.48	24.48	..
1936	..	0.84	0.52	0.06	0.31	4.91	0.02	6.66	11.51	4.85
1937	1.50	2.78	0.25	6.57	5.61	16.71	19.53	2.82
1938	..	0.90	2.74	5.4	4.71	9.01	3.51	26.30	27.78	1.48
1939	6.13	4.52	0.60	4.59	2.21	18.25	19.77	1.52
1940	..	0.19	7.06	1.11	1.11	3.50	5.73	18.70	21.76	3.06
1941	0.09	3.63	0.24	7.56	1.53	13.09	15.74	2.65
1942	10.90	1.00	1.60	0.60	1.58	15.68	17.75	2.07
1943	..	1.15	1.90	0.78	0.08	6.71	11.33	21.93	21.99	0.06
1944	..	0.87	6.47	5.56	0.23	0.04	1.87	15.04	24.15	9.11
1945	2.04	0.61	3.38	2.37	1.30	9.70	9.77	0.07
1946	..	0.71	0.55	0.80	0.29	9.28	0.97	12.60	17.18	4.48
1947	..	0.10	1.75	1.33	10.92	7.36	2.49	23.95	28.03	4.08
1948	10.36	1.62	2.66	10.04	4.81	29.49	36.97	7.48
1949	..	1.33	4.07	1.01	3.10	11.01	5.81	26.33	26.65	0.32
1950	..	1.02	4.22	2.55	3.00	6.97	3.83	21.59	22.06	0.47
1951	..	0.84	4.20	7.46	.57	3.75	3.89	20.71	21.16	0.45
1952	..	.88	3.40	2.69	.40	1.44	1.63	10.44	11.44	1.00
1953	2.34	2.61	0.25	4.66	5.38	15.24	15.24	..
1954	..	1.16	10.60	2.53	2.20	8.49	0.68	23.66	25.40	1.74
1955	..	2.60	1.27	0.70	3.29	8.89	5.95	22.70	23.68	0.98
1956	..	2.35	0.98	7.23	4.40	3.38	5.64	24.88	28.44	3.96
1957	..	0.91	4.51	1.32	5.16	4.09	9.05	25.04	28.37	3.33

Average (1931-57) = 19.27

STATEMENT B-1.
Monthwise Rainfall Data.
 Taluka Jamkhed.

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.
1931	.. 20	7.03	6.76	2.72	6.04	5.38	28.13	32.82	4.69
1932	.. 38	6.67	7.61	8.57	3.41	7.37	34.01	37.81	3.80
1933	.. 3.62	6.77	1.65	5.31	14.35	2.56	34.26	36.30	2.04
1934	.. ..	2.09	8.23	4.99	5.63	.15	21.09	23.58	0.11
1935	.. ..	8.34	3.71	8.04	7.19	5.31	32.59	32.70	5.26
1936	.. 1.15	1.63	.75	.96	5.03	..	9.52	14.78	2.84
1937	.. ..	1.14	4.34	1.37	6.93	5.39	19.17	22.01	1.84
1938	.. 1.29	7.46	9.81	7.05	7.20	3.14	35.95	37.79	2.04
1939	.. ..	4.79	4.39	1.79	5.04	.55	16.56	18.60	1.37
1940	.. .75	8.89	3.09	4.62	3.59	1.64	22.58	23.95	1.40
1941	.. ..	.93	2.23	1.39	11.37	1.49	17.41	18.81	2.10
1942	.. .82	9.11	3.86	6.10	.91	.07	20.97	23.07	0.95
1943	.. 2.01	1.04	3.63	.36	8.29	10.10	26.33	27.28	1.47
1944	.. .26	2.36	8.58	1.68	4.97	3.14	20.99	22.46	0.15
1945	.. .02	7.72	1.96	4.60	2.10	.87	17.27	17.42	1.94
1946	.. 1.15	4.67	2.28	.98	8.64	.12	17.84	19.78	6.75
1947	.. .25	4.75	5.34	5.14	8.50	.89	24.87	31.62	7.93
1948	.. ..	6.83	10.98	2.96	8.72	2.12	31.61	39.54	0.13
1949	.. .27	12.87	4.47	2.28	10.68	2.07	32.64	32.77	0.36
1950	.. .07	2.16	5.76	2.10	12.34	4.41	26.84	27.20	0.31
1951	.. ..	2.00	7.63	1.41	2.53	5.77	19.16	19.47	1.21
1952	.. .35	5.93	2.19	.53	3.27	..	12.27	13.48	0.76
1953	.. ..	3.44	7.13	1.28	11.50	2.32	25.67	26.43	2.49
1954	.. 1.21	9.21	8.49	0.87	12.32	0.54	32.64	35.13	2.49
1955	.. ..	5.05	4.09	6.99	4.31	3.59	24.03	24.42	0.39
1956	.. 6.08	3.33	9.57	3.33	6.49	3.47	32.29	35.35	3.06
1957	.. 1.25	3.87	4.42	8.15	5.17	3.25	26.11	29.68	3.57

Average (1931-57) = 24.55

STATEMENT B-1.
 Monthwise Rainfall Data.
 Taluka Parner.

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.	
1931	..	7.26	3.40	1.83	7.76	5.21	25.46	35.92	10.46	
1932	..	1.80	1.97	7.41	3.60	4.26	5.22	22.66	25.51	2.85
1933	..	1.49	4.87	1.01	4.16	10.24	3.38	25.15	25.73	0.58
1934	..	0.04	3.38	4.87	3.11	4.23	0.41	16.04	19.91	3.87
1935	4.54	2.16	4.11	1.58	2.34	14.73	14.91	0.18
1936	..	1.71	1.04	0.67	2.06	3.34	1.20	10.02	13.64	3.62
1937	4.62	5.00	0.43	11.37	5.15	16.57	30.79	4.22
1938	..	3.30	3.44	8.83	4.87	3.97	4.44	28.85	30.75	1.90
1939	2.27	5.23	2.26	1.25	0.94	11.95	13.28	1.33
1940	..	0.09	8.71	1.97	2.24	6.11	2.19	21.31	23.22	1.91
1941	..	0.32	0.94	3.73	1.13	7.08	1.41	14.61	15.97	1.36
1942	9.16	3.70	2.10	0.92	0.52	16.49	18.31	1.82
1943	..	2.01	5.93	2.30	1.01	6.19	8.78	29.22	29.22	..
1944	..	1.18	4.64	5.22	1.73	3.73	2.97	19.47	19.47	..
1945	3.22	1.00	4.10	2.91	1.41	12.64	18.03	0.39
1946	..	0.32	1.32	2.37	3.05	9.20	0.25	16.51	25.52	9.01
1947	2.35	4.13	12.04	5.06	0.26	23.84	27.00	3.16
1948	..	0.08	3.22	2.89	2.40	6.32	1.07	16.06	22.95	6.89
1949	..	1.87	6.44	0.66	6.29	7.02	3.20	25.48	25.50	0.02
1950	..	1.19	1.98	4.19	1.18	18.22	3.86	30.62	31.39	0.77
1951	..	3.38	7.05	4.75	1.31	3.88	6.59	25.96	25.44	1.48
1952	..	0.01	4.78	2.78	1.59	2.27	1.33	12.76	13.02	0.26
1953	3.33	2.34	2.66	4.96	4.43	17.72	18.34	0.62
1954	..	0.65	5.98	4.41	1.80	5.61	..	18.45	20.78	2.33
1955	..	0.85	2.28	0.98	3.02	5.49	6.28	18.90	19.92	0.73
1956	..	3.40	1.83	4.81	6.23	8.31	5.52	30.10	33.99	3.59
1957	..	0.41	2.91	3.05	4.62	1.44	3.29	16.72	17.13	0.41

Average (1931-57) = 20.30

STATEMENT B-1.
Monthwise Rainfall Data.
 Taluka Nevasa.

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.	
1931		3.24	6.47	1.15	5.00	6.91	22.77	23.66	0.89	
1932		6.38	7.83	2.92	8.88	3.44	29.45	32.71	3.26	
1933	2.66	3.56	3.09	3.22	16.93	2.55	33.01	33.46	0.45	
1934		4.08	8.41	8.92	4.80	0.8	26.24	29.00	2.76	
1935		3.43	2.73	5.96	6.92	8.42	27.46	27.64	0.18	
1936		2.66	2.17	1.12	5.55	1.12	11.62	18.09	6.47	
1937		2.24	8.28	0.35	9.31	12.21	33.39	33.87	1.48	
1938	4.59	4.80	8.69	4.26	3.41	8.29	34.04	36.29	2.25	
1939		8.22	6.25	3.33	2.80	1.26	20.36	24.05	3.69	
1940	0.7	6.20	1.64	6.89	4.16	1.56	20.52	24.47	3.95	
1941		1.12	3.63	2.02	7.39	1.12	18.28	14.12	0.84	
1942		7.26	6.04	3.47	5.40		22.17	25.61	3.74	
1943	1.93	3.70	2.23	1.63	18.96	8.43	30.88	30.88		
1944		3.96	8.38	2.08	6.95	1.79	23.11	24.48	1.37	
1945		3.59	1.72	2.20	3.14	1.17	10.82	11.33	0.51	
1946	1.22	2.57	3.89	1.72	3.87	1.12	13.39	21.78	9.33	
1947	1.22	2.11	3.96	8.90	10.42	1.13	26.74	23.30	1.56	
1948		4.92	3.93	3.97	7.21	1.04	20.97	22.02	11.06	
1949	2.10	3.66	2.64	4.09	12.84	3.82	29.15	29.17	0.02	
1950		1.40	1.77	3.86	1.48	16.44	1.50	24.45	24.57	0.12
1951	1.17	4.72	14.09	3.05	1.88	9.62	32.53	33.20	0.67	
1952	1.08	6.66	1.70	1.61	3.74	2.12	15.91	15.91		
1953		3.86	6.21	2.20	5.64	5.71	23.62	23.32	0.30	
1954		3.58	4.09	2.66	11.10	0.03	26.36	29.80	3.44	
1955	0.25	4.29	6.26	9.90	7.25	3.84	31.79	32.41	0.62	
1956	5.26	4.34	4.42	2.51	11.62	3.83	31.03	35.03	4.00	
1957	0.74	7.34	4.11	4.93	3.04	0.91	21.07	22.24	1.17	

Average (1931-57) = 24.23

STATEMENT B-1.
Monthly Rainfall Data.
 Taluka Shevgaon.

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November. to April.		
1931	..	6.65	5.84	1.66	13.12	4.50	31.77	35.96	4.19		
1932	..	3.85	5.56	5.57	4.47	2.71	28.66	24.91	2.25		
1933	..	3.47	6.87	2.13	7.18	16.37	37.80	40.42	2.62		
1934	7.78	10.83	8.28	14.11	..	41.09	46.80	5.80	
1935	5.18	4.51	7.09	5.88	2.76	25.32	25.32	..	
1936	..	1.17	1.55	1.72	..	3.22	..	7.08	12.90	3.82	
1937	..	1.08	1.24	1.79	..	11.66	4.76	25.78	28.73	2.95	
1938	..	3.08	6.66	11.83	3.82	8.63	6.83	41.45	43.07	1.62	
1939	3.11	6.45	4.71	..	3.35	15.14	15.06	0.82	
1940	6.47	1.54	8.10	1.67	1.02	18.80	21.66	2.86	
1941	3.99	2.44	2.55	12.03	..	21.72	23.69	1.37	
1942	9.75	3.80	7.23	2.79	..	23.70	27.69	3.39	
1943	..	1.57	5.22	7.45	1.23	12.85	10.94	39.26	39.45	0.19	
1944	..	0.16	3.70	10.44	2.67	9.08	5.24	31.29	32.41	1.12	
1945	3.62	2.39	4.98	4.19	..	15.74	16.83	0.59	
1946	..	1.93	3.59	3.84	..	8.31	..	17.96	25.93	7.97	
1947	4.41	5.13	8.77	14.03	..	33.45	34.91	1.46	
1948	6.14	3.46	4.30	6.20	3.43	23.81	30.65	6.74	
1949	..	1.04	4.61	8.06	3.05	9.14	1.90	22.80	23.00	0.20	
1950	6.31	2.84	..	11.56	..	21.78	21.78	..	
1951	..	0.04	3.96	10.83	4.38	3.76	3.82	26.73	27.79	1.06	
1952	4.18	1.27	3.12	2.57	6.63	1.46	18.17	18.92	0.75
1953	11.78	7.02	1.80	6.29	2.79	29.69	29.96	0.27	
1954	..	0.96	6.79	5.21	2.89	9.48	0.15	24.61	25.54	0.93	
1955	..	0.82	3.36	6.12	11.56	7.71	5.98	33.57	34.44	0.87	
1956	..	1.89	2.65	5.53	4.03	8.70	1.23	27.03	30.03	3.00	
1957	..	1.54	2.63	8.33	9.09	1.69	1.36	24.61	25.63	1.0	

Average (1931-57) = 26.02

STATEMENT B-1.
 Monthwise Rainfall Data.
 Taluka Pathardi.

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.	
1931	..	6.03	6.83	1.19	11.49	5.55	31.07	34.24	3.17.	
1932	..	0.05	2.97	3.90	4.58	4.67	3.01	19.18	19.56	0.85
1933	..	1.23	6.53	1.44	3.74	8.69	7.71	22.34	23.18	0.84
1934	5.46	4.69	8.92	9.81	0.02	28.90	33.27	4.22
1935	7.61	4.70	5.21	4.30	3.32	25.22	25.22	.....
1936	..	5.52	8.85	1.17	3.39	5.66	.....	8.59	12.63	4.04
1937	..	06	3.76	5.75	3.30	7.68	6.09	23.64	27.05	0.07
1938	..	4.69	5.34	13.85	5.49	11.11	5.12	45.60	50.20	4.60
1939	5.41	4.73	4.54	1.95	8.87	17.50	18.79	1.22
1940	..	01	9.67	1.17	5.43	4.21	1.63	22.12	23.87	1.58
1941	9.95	1.53	1.48	9.69	0.09	13.74	16.96	3.22
1942	..	28	9.64	2.94	4.58	4.15	1.17	21.72	24.81	3.08
1943	..	2.89	8.72	6.67	0.05	11.41	9.32	39.06	39.13	0.07
1944	1.60	6.95	1.30	6.50	3.94	20.29	22.33	2.04
1945	3.48	1.62	7.39	3.34	1.09	15.92	17.25	1.33
1946	..	1.87	3.97	1.96	1.97	8.82	0.07	18.59	27.27	8.71
1947	..	10	4.14	4.17	9.82	9.68	2.26	28.17	31.04	2.87
1948	..	10	7.04	6.53	4.66	10.26	1.08	29.67	33.17	3.50
1949	..	68	5.22	6.69	3.60	13.24	2.28	31.58	34.18	0.60
1950	4.91	2.91	1.72	14.20	1.50	25.24	25.24	.....
1951	5.74	5.81	1.77	8.83	3.18	21.33	26.15	1.15
1952	2.42	4.07	1.57	6.93	2.73	17.77	17.77	.....
1953	6.30	4.25	1.10	6.07	4.83	22.65	32.99	0.34
1954	5.48	8.81	2.50	7.90	0.66	25.35	26.90	1.55
1955	..	1.59	4.79	2.51	1.33	9.19	6.83	36.24	36.30	0.06
1956	..	4.99	2.11	5.80	3.14	9.03	4.31	29.38	31.59	2.21
1957	..	1.51	5.06	9.04	8.01	2.74	2.56	28.92	31.00	2.08

Average (1931-57)=24.87

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under irrigation by—				Total area under irrigation and its percentage to cropped area.
		Canals.	Tanks.	Wells.	Other sources.	
1	2	3	4	5	6	7
1	Parner	1,121	....	15,231	....	16,352 4.7
2	Shrigonda	2,471	....	21,871	....	24,342 7.7
3	Jambhed .. ..	....	....	11,265	....	11,265 6.0
4	Karjat	216	216	16,725	....	17,157 5.9
5	Kopergaon	32,169	....	15,872	....	48,041 20.4
6	Shrirampur	34,270	....	15,509	....	49,779 28.5
7	Akola	982	....	309	....	1,291 0.5
8	Bangamner	3,921	....	9,627	....	13,548 4.8
9	Pathardi .. ..	....	....	9,960	....	9,960 4.1
10	Newasa	1,407	....	3,773	....	10,180 3.5
11	Shevgaon	25	....	6,779	....	6,804 2.7
12	Ahmednagar	3,063	....	25,577	....	28,640 9.8
13	Bahuri	25,201	12,678	37,879 21.2
District Total ..		1,04,846	216	1,70,176	27,523 8.3

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STATEMENT "D".
Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar under		Bajri.	Total Cereals.	Total Pulses.	Total food crops & its percentage.	Oil seeds and its percentage.	Cotton & its percentage.	Total Non-food crops.
				Kharif area.	Rabi area.							
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Parner	206	7,384	....	1,40,848	1,19,571	2,68,378	40,880	3,13,584 91.5	18,710 5.4	306 N	29,729
2	Shrigonda	301	5,445	....	2,00,979	32,269	2,39,324	45,942	2,80,304 88.9	26,163 8.3	2,579 0.8	34,617
3	Jamkhed	867	4,304	....	95,715	9,340	1,19,992	32,477	1,44,909 77.2	24,400 12.9	5,354 2.8	42,807
4	Karjat	788	4,231	....	1,71,587	17,682	1,94,651	52,400	2,49,011 85.9	19,951 6.9	N.A.	40,545
5	Kopargaon	641	35,798	....	71,210	55,744	1,63,661	10,711	1,52,550 88.1	14,863 6.3	3,689 1.5	28,017
6	Shrirampur	353	11,955	....	58,929	38,183	1,09,611	10,794	1,52,550 88.1	10,699 6.1	5,979 3.4	22,461
7	Akola	17,056	5,867	326	4,781	64,516	1,20,541	23,445	1,46,444 65.8	16,134 7.1	184 N	78,825
8	Sangamner	711	6,739	....	32,051	1,73,919	2,14,015	23,037	2,42,158 86.4	27,426 9.8	633 N	37,845
9	Pathardi	326	4,945	....	62,644	96,936	1,86,206	18,531	1,07,015 85.9	10,287 4.2	18,720 7.7	33,771
10	Newasa	95	19,698	....	1,23,505	54,863	2,00,466	25,180	2,27,633 79.6	20,711 7.2	32,115 11.2	58,089
11	Shevgaon	236	16,359	....	92,185	52,838	1,63,209	22,981	1,87,737 75.3	16,682 6.7	39,099 15.6	61,520
12	Ahmednagar	272	11,229	5	1,66,136	36,444	2,14,352	34,478	2,51,961 86.7	27,116 9.3	3,543 1.2	38,649
13	Rahuri	458	18,391	....	72,555	37,941	1,23,066	13,780	1,45,632 81.5	18,469 10.3	10,728 6.00	33,089
District Total ..		22,310	1,51,254	831	12,93,124	7,93,246	23,08,472	3,54,636	27,56,545 83.6	2,33,592 7.1	1,22,929 3.7	5,40,064

CHAPTER XX.

POONA DISTRICT.

Part I—Background.

1. *Location.*—Poona district is bounded on the north by Akola, Sangamner and Parner talukas of Ahmednagar district, on the east by Parner, Shrigonda and Karjat talukas of Ahmednagar district and Karmala of Sholapur district, on the south by Malsiras taluka of Sholapur and Phaltan and Wai talukas of North Satara district, and on the west by Roha, Pen and Karjat talukas of Kolaba district and Murbad taluka of Thana district.

2. *Administrative set-up.*—The total area of the district is 6,023 sq. miles and has a population of 19,50,976 distributed in 1483 villages and 14 towns. For administrative purposes it is divided into the following talukas :—

Taluka.	No. of villages.
1. Junnar	131
2. Ambegaon	101
3. Khed	155
4. Mawal	168
5. Mulshi	132
6. Velhe Mahaj	124
7. Bhor	191
8. Purandhar	82
9. Haveli	117
10. Poona City	3
11. Dhond	65
12. Shirur	79
13. Baramati	60
14. Indapur	85

3. *Topography.*—The district is triangular in shape with the base in the Sahyadris in the west, where it has a breadth of about 80 miles. From the western border it stretches about 130 miles south-east narrowing down at a point where it meets Malsiras, and Madha talukas of Sholapur district. Its breadth here is only 20 miles. From the Sahyadris it slopes gradually towards the east from an altitude of 2000 to 1000 ft. above sea level. The district can be divided into three zones, viz., Western, Central and Eastern. The western zone is mainly a hilly area stretching 10 to 20 miles along the eastern flank of the Sahyadris with heavy and assured rainfall. It is locally known as Mawal. The central zone is a strip of 10 to 20 miles lying along both sides of the Nasik-Poona-Bangalore Road. This is a transition tract and merges gradually into Mawal zone along the west and into arid zone along the east. It is a tract with moderate rainfall having medium black soils and fair supply of underground currents in the wells and river beds. Near Poona, the country has been enriched by the Mutha Canal along which the Mutha valley is green with crops upto about 20 miles east of Poona City. The district gradually narrows from about 50 to 20 miles and stretches nearly 90 miles east changing from valleys and broken uplands to a bare open plain. During these 90 miles the land falls steadily about 800'. The hills sink slowly to the plain. The table lands become lower and more broken. Though it is very gradual, the change from the west to the east is most complete. Wooded hills and deep valleys give place to a flat bare plain. The rainfall decreases as one goes from west to east. The district is crossed by many rivers and streams which take their rise in and near the Sahyadris and flow east and south across the district. The chief river is the Bhima, which originates from Bhimashankar hills in the Sahyadris, flows eastwards through the district for more than 100 miles and forms its eastern boundary. The main tributaries of the Bhima are the Vel and Ghod on the left and the Bhima,

Indrayani, Mula, Mutha and Nira on the right. Besides the Bhima and its tributaries, there are several rivers and big streams which feed the tributaries. The more important of such feeders are Kukadi, Puspavati, Meena, Andhra, Pawana, Karka, Shivganga and Yelwandi.

4. *Soils.*—The soils of the district are derived from trap and fall into the following three broad groups—

(i) *Light brown shallow soils.*—These occur in the western zone known as 'Maval' with rainfall varying from 50" to 150" and grow rice and hill millets. The colour usually varies from reddish brown to grayish brown. Soils at Vadgaon are shallow, light to dark brown in colour, granular in structure, with more or less uniform profile. The texture in mature soils is clayey (40-60 per cent.). Soil reaction is normal (ph. 7.0 to 7.4). Lime contents are moderate 4 per cent. Soils at Bhor are similar with shades of reddish brown on the surface. There are, however, strips of medium black soils in this zone, which support a rabi crop either after the harvest of an early kharif crop or as purely rabi crops of wheat and jowar.

(ii) *Medium deep soils.*—The colour varies from light brown, brown to greyish brown. These soils occur in the transition tract receiving 25" to 50" annual rainfall. Typical profiles examined, showed greyish brown colour, loose and friable granular structure, loamy texture. Soil reaction is alkaline, (ph. 8.0 to 8.6) with total soluble salts about 0.25 per cent. Lime contents are high (7-8 per cent.) and increase down the profile. The soils are suited for kharif crops, tuber crops and also for garden crops. Soils near Saswad are deeper, darker in colour and more clayey and are suitable for kharif as well as for rabi crops.

(iii) *Deep soils.*—These are dark brown or greyish black. They are found in the dry eastern zone with rainfall between 18"—25". Soils at Sirur are brown to dark brown with crumb structure and with pebbles. Texture is clayey or clay-loam and with slight compaction in lower layers. Soils reaction is alkaline (ph. 8.5) and lime content rather high. At Dhond, the soils are deeper with 'greyish' black colour with lime accumulation in lower horizons. The soils in eastern portion of Sirur and along the river banks in Baramati are likewise. Main crops grown are bajri, rabi, jowar, wheat and safflower. The soils along the slopes are shallow and light.

5. *Rainfall.*—The average rainfall varies from 17" to 18" in the eastern talukas of the district, while the transition tract records an average of 24" to 25" and the maval zone an average of about 60". The precipitation from the south-west monsoon is more important. The eastern talukas get the benefit of the returning monsoon showers, but neither the regular nor returning monsoon showers are assured. The eastern talukas are actually the shadow areas of south-west monsoons, while the showers from the returning monsoons are few and erratic. The central or transition region has moderate but fairly assured rainfall. Talukawise rainfall data is given in statement B attached to this report.

6. *Land Utilisation.*—The classification of land under different heads is as under :—

	Acres.
1. Barren or uncultivable	3,61,400
2. Cultivable waste	78,500
3. Area under forests	4,51,200
4. Land used for grazing	76,200
5. Net area under cultivation	24,36,200
6. Gross area of the district	26,01,900

The average land holding in the district works out at 11 acres. In talukas of Junnar, Purandhar, Khed, Ambegaon and Haveli, the holdings below 5 acres are reported to be larger in number than in other talukas.

7. *Cropping pattern.*—The talukas of Sirur, Dhond, Baramati and Indapur are predominantly rabi, Purandar, and eastern parts of Haveli, Junnar and Ambegaon are both kharif and rabi, while the rest of the western half of the district is predominantly kharif growing.

The Maval zone with heavy monsoon precipitation is known for its paddy crops and hill-millet. Gram and wheat are taken as a second crop in low-lying paddy fields, the rice crops is removed. The transition zone is noted for bajri and pulses, with a considerable area under garden crops. Potato, peas, and other vegetables are grown in plenty to feed the Poona market. A fairly large acreage is grown with Nilway fodder to meet the city demand. The eastern arid or semi-arid zone can be called a Sorghum zone, on account of a huge acreage under rabi jowar. The land is kept fallow in kharif and early sowings of rabi from the middle of August to the middle of September are resorted to, depending upon soils and occurrence of late rains. Barring the irrigated crops under the Nira left bank canal, the acreage under irrigation is negligible.

The main crops and their acreages in the district are as under—

Crops.	Acreage.
1. Rabi Jowar	9,30,240
2. Bajri	5,45,657
3. Pulses	2,18,837
4. Oil seeds	1,53,462
5. Paddy	1,18,658

8. *Irrigation.*—The total area under irrigation is 1,89,778 acres, i.e., 7.1 per cent. of the cropped area. Of this, the area under canals is 1,03,154 acres. Under tanks it is 2,902 acres and under wells it is 83,722 acres. Talukawise figures of acreage under different crops and under irrigation are given in Statement B,

9. *Forests.*—The area under forest in the district is 4,48,188 acres. It is spread over the whole district, but is found more particularly in the western part.

10. *Transport and Communications.*—The main railway line from Bombay enters Poona District at Khandala near the crest of the Sahyadris and runs through the district for 178 miles, cutting across the talukas of Mawal, Haveli, Dhond, Indapur and Purandhar. There are 25 stations on the broad gauge line, 11 stations on the meter gauge line of the Southern Railway and 4 stations on the narrow gauge, Dhond-Baramati line of the Central Railway in the district. The total Railway mileage in Poona District stands at 206 miles. The following taluka towns are connected by railway lines: Vadgaon (Mawal), Poona (Haveli), Dhond and Baramati.

The total road mileage in the district is 2,903 out of which 963 are metalled roads.

11. *Industries and Fisheries.*—The number of factories in the district is 701 in which 52,819 persons are employed. The important industries are food industries, textiles, printing metal products etc.

12. *Live-stock.*—The Live-stock population according to 1956 census is 20,59,332 which includes 7,48,035 under poultry. The cattle population is 6,51,022 goats 2,82,196, sheep 2,29,152 and buffaloes 1,32,637.

Dairy development activity has received encouragement on account of Government Milk Supply Scheme working in the Poona City. 7,000 lbs. of milk produced in adjoining rural areas is distributed daily on no profit no loss basis.

13. *Minerals.*—There are no mineral resources in the district.

14. *Livelihood.*—Of the total population of 19,50,096, the number of persons employed in agriculture is 10,21,036, in production other than agriculture 2,67,264, in commerce 1,48,273, in transport 52,928 and in services and other miscellaneous occupations 4,61,475.

Part II—Determination of Precarious and Chronic Scarcity Areas.

The previous history of scarcity of this district and the years in which the different areas in each taluka were affected during the last 30 years, is tabulated below :—

Taluka.	Circle.	Years in which affected.	No. of times affected.
1	2	3	4
Dhond	Dhond-Khedgaon	1925-26, 26-27, 36-37, 39-40, 41-42, 42-43, 45-46, 50-51, 51-52, 52-53, 53-54, 54-55, 55-56.	13
Baramati	Supa	1933-34, 39-40, 41-42, 42-43, 47-48, 50-51, 51-52, 52-53, 53-54, 54-55, 55-56.	11
	Baramati	1933-34, 41-42, 42-43, 50-51, 51-52, 52-53, 53-54, 55-56.	8
	Wadgaon-Nimbalkar	1950-51, 53-54, 54-55	3
Sirur	Sirur	1929-30, 36-37, 41-42, 45-46, 49-50, 52-53, 53-54, 55-56.	8
	Nhavara	1929-30, 36-37, 38-39, 39-40, 41-42, 50-51, 51-52, 52-53, 53-54, 54-55, 55-56.	11
	Talegaon	1929-30, 36-37, 41-42, 49-50, 52-53, 53-54, 55-56	7
Haveli	Urlikanohan	1925-26, 27-28, 36-37, 40-41, 41-42, 42-43, 45-46, 50-51, 52-53, 53-54, 55-56.	11
	Wagholi	1925-26, 36-37, 41-42, 45-46, 50-51, 52-53, 53-54	7
Purandhar	Rajewadi	1925-26, 42-43, 45-46, 50-51, 52-53, 53-54, 54-55	7
Indapur	Indapur	1936-37, 40-41, 42-43, 45-46, 50-51, 51-52, 52-53	7
	Dalaj	1945-46, 50-51, 51-52, 52-53	4
	Bavda	1950-51, 51-52, 52-53	3
Ambegaon	Awasari Bk.	1953-54, 55-56	2
Junnar	Narayangaon	1953-54, 55-56	2

The talukas lying on the western part of the district, namely, Junnar, Ambegaon, Khed, Mawal, Mulshi, Velhi and Bhor are assured rainfall areas. The rainfall in Mulshi, Velhe and Mawal is heavy. The average rainfall of these is as follows :—

Junnar	30.3" (10 years).
Ambegaon	31.33" (27 years).
Khed	23.0" (10 years).
Mawal	48.52" (27 years).
Mulshi	60.2" (10 years).
Velhe	96.4" (10 years).
Bhor	34.6" (10 years).

In the case of Mulshi Taluka the rainfall data for the last 10 years shows that it was never less than 40". In the case of Bhor, the minimum was 24.8" during the last 10 years. In Ambegaon, it was not less than 23" during this period. The minimum of Junnar during the last 10 years was 25.5", while that of Mawal was 30.9". The minimum of Khed Taluka has been affected by scarcity in the past except parts of Ambegaon and Junnar which were affected in 1953-54 and 1955-56. The Awasari circle of the Ambegaon Taluka is shown to have been affected in 1953-54 and 1955-56, while Narayangaon circle of Junnar is reported to have been affected

in 1953-54 only. According to annavari data of last 30 years, 12 villages of Manchar Circle of which Awasi Bk. now forms part were affected sometimes during last 30 years, but only 7 of them had 2 to 2½ full suspensions during this period, while the rest had only ½ to 1½ full suspensions. Regarding Narayangam Circle of Junnar Taluka, out of 21 villages affected in the past, one village had 4 full suspensions, one had 3½, one had 2½ and the rest had 1 to 1½ suspensions during 30 years. Thus, not only was the area affected small, but the incidence of scarcity was also low. For these reasons, none of these talukas would be regarded as chronic scarcity areas. The talukas which have been frequently and extensively affected in the past are—

- (1) Sirur, (2) Dhond, (3) Indapur, (4) Baramati (part), (5) Purandhar (part) and (6) Haveli (part).

Information such as soil, annavari, land revenue suspension etc. in respect of each of these talukas is given in detail in the following paragraphs.

Sirur.—There are 79 villages in this taluka. The characteristic physical features of the taluka are low hills and stony uplands, having an elevation of 2,000' and above in the central parts of the taluka and the fertile plains along the rivers of Kukadi, Ghod and Bhima. The river valleys have an elevation ranging from 1,800' to 1,700' above sea-level. The Vel valley holds good soils and there is much deep black soil along the Bhima river, especially at its junctions with the Vel and Ghod rivers. The soils of the high-lying plateau in the central part of the taluka are light to medium black and have been seriously damaged by erosion. The prevalent soil in the west, however, is light, friable and grey, which requires regular and frequent rainfall to make it yield. The acreage under kharif and rabi is almost 50:50, the western half grows more of kharif, while the eastern half of the taluka favours rabi jowar. The main crops are as under :—

Crops				Acreage
Rabi Jowar	..	..	..	1,44,078
Bajri	..	..	..	1,21,199
Pulses	..	..	..	25,468
Oil-seeds	..	..	..	27,402

The area irrigated is 15,159 acres or about 4 per cent. cropped area. The area irrigated by bandharas is 1,023 acres, by medium irrigation 2,010 acres, and under wells 13,839 acres.

—The average rainfall of the taluka for the period 1931-57 was 18.98" only. The average for June-July for this period was 7.13", the co-efficient of variation being 42.04. The average rainfall for August-September period was 7.90", the co-efficient of variation being 40.13; the average for September-October was 8.97", the co-efficient of variation being 39.78. The rainfall was deficient in the following years during the last 30 years :—

Year	Monsoon Total	(in inches) Annual Total	Rabi rains
1935	12.84	13.01	5.55
1936	7.00	10.31	6.97
1941	13.18	14.67	9.00
1952	12.43	12.43	5.46

According to the annavari data of the last 30 years, out of 79 villages, 2 had 3 to 3½ full suspensions, 9 had 4 to 5 full suspensions, and the rest had 6 to 13 full suspensions. According to land revenue suspensions data, 13 villages of this taluka had over 6 to 9 full suspensions, and the rest had 2 to 4 full suspensions.

A further scrutiny of annavari data has shown that the villages in the eastern half of the taluka in Nhavara and Sirur circles had suffered the most, as compared to western part of the taluka in Talegaon-Dhamdhre circle. The proportion of well irrigation is also higher in this area and rainfall condition slightly better. Looking, however, to the soil conditions and the rainfall, the whole taluka may be regarded as chronic scarcity area of Class "A".

Indapur.—There are 85 villages in the taluka. The soils in the river valleys are deep black to medium brown. The central part of the taluka is a high-lying plateau having an elevation of 1,800 to 2,000 feet above sea-level, sloping radially towards the river basins, which have an elevation of 1,700 feet to 1,600 feet. The soils on the high-lying plateau are rocky and poor, and grow poor crops of jowar and pulses. This taluka is a predominantly rabi tract, with the exception of the villages favoured by Nira Left Bank canals on the southern side of the taluka. The areas under main crops are—

Crops	Acres
Rabi Jowar	1,72,066
Bajri	20,797
Pulses	28,224
Oil-seeds	21,174

The area under irrigation is 59,822 acres, which works out at 22.5 per cent. of the cropped area. The area under major irrigation is 36,842 acres and under medium irrigation 9,077 acres. The rest is under wells. It appears that the northern part of the taluka, which is not protected by irrigation canals, has suffered frequently.

The average rainfall of the taluka for the last 28 years works out at 17.02". It was deficient during the following years :—

Year.	Monsoon total	Annual total	Deficient rainfall in			
			July	August	September	October
(Rainfall in inches)						
1936	4.37	7.75	....	....	....	....
1940	11.64	14.61	0.88	....	....	....
1942	14.55	15.83	....	....	0.72	0.63
1945	3.72	4.28	....	....	....	....
1946	4.77	6.95	....	....	....	....
1947	9.87	11.71	....	0.48	....	....
1952	11.41	11.87	....	0.45	....	....

The monthly precipitations over a period of last 27 years are shown in Statement "B-1".

According to the annavari data for the last 30 years, the following number of villages were affected during different years :—

1936-37	..	27
1940-41	..	14
1942-43	..	15
1944-45	..	50
1950-51	..	62
1951-52	..	50
1952-53	..	17
1953-54	..	9

According to this data, 37 villages had 1 to 2½ full suspensions, 19 villages had 3 to 5½ full suspensions, 4 villages had 6 to 6½ full suspensions. 25 villages were not at all affected being under irrigation. According to the land revenue suspension data, 9 villages had 9½ full suspensions, 46 villages had 6½ to 9 full suspensions, 13 villages had 2½ to 6 full suspensions, 11 villages had ½ to 2 full suspensions, while the remaining nine had no suspension. Looking to the incidence of scarcity, the northern part of the taluka, which is not protected by irrigation works, would be regarded as scarcity area of Class "B", while the southern part served by the Nira Canal is free from scarcity.

Dhond.—There are 65 villages in the taluka. It is a rabi tract, 72 per cent. of the cropped area being under rabi crops. Except the small area in the Bhima river valley, the major part of the area has medium and shallow soil. The taluka depends entirely on the late rains. The main crops grown are—

Crops.				Acres.
Rabi Jowar	..	..	..	1,65,291
Bajri	..	..	..	26,142
Oil seeds	..	..	..	15,670
Pulses	..	..	..	16,384

The total area irrigated in the taluka is 15,082 acres, under canals it is 1629 acres, under tanks 2,803 acres, under wells 10,650 acres. The percentage of irrigated area works out to 6.4 per cent. of the cropped area. The average rainfall for the last 28 years is 18.32". The average for June-July, August-September and September-October for this period is 5.64", 7.92", and 9.96", and the co-efficients of variation for these periods are 44.87, 39.36, 47.38 respectively. The rainfall was deficient during the following years—

Year.	Monsoon Total.		Annual Total.		(in inches). Rabi rainfall.
1934	..	8.21	..	10.22	.. 4.34
1936	..	6.36	..	12.02	.. over 10
1942	..	12.84	..	15.35	.. 4.22
1945	..	11.61	..	11.63	.. 4.05
1952	..	12.72	..	12.77	.. 5.75
1954	..	10.73	..	10.91	.. 3.97

The taluka was affected by scarcity conditions during the following years—
1942-43, 45-46, 50-51, 51-52, 52-53, 53-54, 54-55, 55-56 and 56-57.

From 1950 onwards, it is shown to have been affected almost every year. The total rainfall figures for the years 1942-43, 1945-46, 1952-53 and 1954-55 are given above, while those of 1950-51, 1951-52, 1953-54, 1955-56 and 1956-57 are given below :—

1950-51	..	25.31"
1951-52	..	25.42"
1953-54	..	18.12"
1955-56	..	22.66"
1956-57	..	25.33"

According to the annavari data for the last 30 years, the frequency of scarcity in different villages was as shown below :

3 villages had 3 to 3½ full suspensions, 5 villages had 5 to 6 full suspensions, 14 villages had 6 to 9 full suspensions, and 36 villages had 9 to 12 full suspensions. The remaining 7 villages were not affected. Thus the majority of the villages had over 6 to 12 full suspensions. According to the land revenue suspension data, 41 villages had 9 to 14 full suspensions, while remaining had 5½ to 9 full suspensions. Taking all the factors together, this taluka is regarded as a chronic scarcity area of Class 'A'.

Baramati.—This taluka consists of 60 villages. All of them are rabi villages. Nira left bank canal passes through this taluka and it serves 26 villages. Except in the river valleys of Nira and Karha where the soil is better, the rest of the areas have shallower soils. The areas along the northern and western parts of the taluka are high-lying, with poor shallow soils. The major portion of the cropped area is under rabi crops. The main crops are—

Crops.				Acres.
Rabi Jowar	..	..	..	1,65,097
Bajri	..	..	..	28,220
Pulses	..	..	..	20,738
Oil seeds	..	..	..	14,115
Sugarcane	..	..	..	8,778

The total area under irrigation is 61,669 acres, which works out to 24.3 per cent. The southern portion of the taluka only is served by the Nira canals. Under the major canals, the area is 44,272 acres and under wells 17,397 acres. The average rainfall for the last 27 years is 18.07". It was deficient during the following years—

Year.	(in inches).		
	Monsoon Total.	Annual Total.	Rabi rainfall.
1934	.. 8.96	.. 12.54	.. over 8.
1936	.. 12.72	.. 16.30	.. over 10
1940	.. 10.77	.. 14.46	.. 7.00
1941	.. 11.66	.. 13.95	.. 10.29
1942	.. 12.16	.. 13.32	.. 4.47
1945	.. 11.19	.. 11.42	.. 6.74
1952	.. 10.92	.. 11.19	.. 7.98

This taluka was affected during the following years—

Year.	No. of villages affected.
1942-43	.. .. 40
1945-46	.. .. 41
1950-51	.. .. 40
1951-52	.. .. 42
1952-53	.. .. 41
1953-54	.. .. 28
1954-55	.. .. 24
1955-56	.. .. 26

According to the annavari data of the last 30 years, 30 villages had between 9 and 14 full suspensions, 11 villages had between 6 and 9 full suspensions, and the rest had less than 6 or no suspensions. The villages in the southern part of the taluka, which have irrigation facilities, do not suffer from scarcity. There are irrigation facilities even in the area not protected by the Nira Canal, as would be seen from the fact that there is an area of 17397 acres under well irrigation. Taking all factors into consideration, that portion is regarded as chronic scarcity area of Class B, while the area protected by left bank canal, i.e. the southern part of the taluka would be regarded as free from scarcity.

Purandhar.—This taluka consists of 82 villages. The soil is rich along the courses of the two rivers of Nira and Karha, but elsewhere it is light, shallow and stony. The main crops grown are kharif crops as shown below—

Crops.	Acres.
Bajri	.. .. 62,790
Rabi Jowar	.. .. 78,292
Pulses	.. .. 21,022
Oil seeds	.. .. 20,452

The area under irrigation is 11,225 acres or 5.1 per cent. of the cropped area. Of this, 1,945 acres are under canals, and the rest under wells. The average rainfall of the taluka for the last 27 years is 21.57". The average for June-July, August-September, and September-October period is 7.29", 9.86" and 10.04", and the co-efficients of variation for these periods are 32.6 and 39.2. The rainfall was deficient during the following years—

Year.	(Rainfall in inches).	
	Monsoon Total.	Annual Total.
1936	.. .. 10.47	.. 15.28
1941	.. .. 13.64	.. 15.00
1947	.. .. 12.12	.. 13.35

The taluka is shown to have been affected during the following years :—

Year.	Villages.
1925-26	46
1950-51	14
1951-52	1
1952-53	18
1953-54	23
1954-55	9
1955-56	14
1956-57	1

According to the annevari data for the last 30 years, out of 82 villages, 46 villages were affected sometime or the other. According to this data, the number of villages which had 3 or more than 3 full suspensions was 10, of these only one village had 5½ full suspensions. 13 villages had less than 3 but exceeding one full suspensions. The remaining had only one full suspension, while 36 villages had no suspension at all. In this taluka most of the villages were affected in 1925-26. Thereafter no part of the taluka is shown to have been affected till 1950-51.

In 1950-51, 14 villages were affected, in 1951-52 only one village was affected, while in 1952-53, 17 villages had half suspension and one village had one full suspension. In 1953-54, 11 villages had ½ suspension and 12 villages had one full suspension. In 1954-55, 2 villages had ¼ suspension and 7 had one full suspension. In 1955-56, 14 villages had half suspension. The villages which have suffered 3 to 5 full suspensions are situated on the eastern side of the taluka adjoining Dhond and Baramati talukas. However, there are many villages in between them which are either not affected or affected 1 to 2 times. The eastern part of this taluka has light to medium soils. Even the western part contains brown or reddish (tambat) soil, which is of a medium type and is capable of giving good yields when watered by frequent showers. Looking to the incidence of scarcity, however, the area having villages which suffered 3 to 5 suspensions situated to the east of the railway line, i.e. to the east of Rajewadi and Jejuri villages, may be regarded as scarcity area of Class B.

Haveli.—This taluka consists of 117 villages. The total cropped area is 2,26,018 acres. The eastern part of the taluka consists of brown and reddish (tambat) soil, while the western portion contains red soil which requires deep ploughing. The former is well suited for crops like wheat, jowar, bajri and groundnut and the yield per acre compares favourably with that of black soil when rains are adequate. The principal crops grown in the area are—

Crops.	Acres.
Rabi Jowar	46,790
Bajri	55,922
Groundnut and Oilseeds	6,037
Pulses	13,808
Sugarcane	2,694
Fruits and vegetables	7,820

The area under irrigation is 15,503 acres, which works out to 6.8 per cent. of the cropped area. The area under canals is 11,577 acres and under wells 3,942 acres. The area between the river Mula-Mutha and the canal which runs across the taluka from east to west is protected by the canals and is considered safe. However, according to the annevari data, the villages situated in this area are also affected as many as 10-11 times during the last 30 years. The average rainfall of the taluka for the last 27 years is 24.46". The average for June-July,

August-September and September-October is 10.85", 8.97" and 8.60", while coefficients of variation for these periods are 34.18, 38.72 and 49.97. The rainfall was much below the average during the following years.

Year.	(Rainfall in inches)			
	Monsoon Total.	Annual Total.	Rabi Rainfall.	
1936	... 15.35	... 18.30	... 11.00	
1939	... 17.75	.. 17.94	... 4.40	
1949	... 16.93	... 17.58	... 9.00	

According to the annevari data, 41 villages out of 117 were affected in one or the other year during the period of last 30 years. According to this data, the number of villages which suffered more than 9 full suspensions were 9, while those which suffered over 6 to 9 were 5, while the rest had 1 to 3 full suspensions. According to the land revenue suspensions data also, the frequency of scarcity occurrence is the same. Those villages which have suffered frequently, i.e. between 9 and 13 suspensions, adjoin Dhond taluka in the east, but as discussed above, many of these villages are adjoining the canals.

Considering all the factors, the western part of the taluka, which has not suffered in the past, may be regarded as free from scarcity, while the villages shown in Schedule A to this report may be treated as precarious area.

In short, Sirur and Dhond talukas may be regarded as chronic scarcity areas of Class A. Part of Haveli taluka situated to the North-east of the taluka, part of Baramati, not protected by irrigation canals, northern part of Indapur not protected by canals, and the eastern part of Purandhar situated on the east of the railway line, and to the east of Rajewadi and Jejuri villages should be treated as other scarcity areas of Class B.

SCHEDULE "A".

Serial No.	Name of village.	To be treated as precarious area of Class B.			
1	Borkegaon .. ..	..	..	..	..
2	Dongargaon .. ..	..	..	..	..
3	Pimpri Sangam .. ..	..	..	..	..
4	Nhavi .. ..	..	..	..	..
5	Sangvi-Sandas .. ..	..	..	..	..
6	Ashtapur .. ..	..	..	..	..
7	Hingangaon .. ..	..	..	..	..
8	Bhavrapur .. ..	..	..	..	..
9	Khangaon .. ..	..	..	..	..
10	Koregaon Mul .. ..	..	..	..	..
11	Naygaon .. ..	..	..	..	..
12	Theur
13	Urli Kanchan
14	Tarolu
15	Alandi Choranchi.
16	Shirol
17	Valati

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STATEMENT "A".

Basic data.

Serial No.	Taluka.	No. of villages	Gross area in		Popula- tion.	Density per sq. mile.	Gross cropped area.	Net cropped area and its percentage.		Area under forest.
			sq. miles.	acres.						
1	2	3	4	5	6	7	8	9	10	
1	Mulshi	.. 132	353.3	2,39,255	68,884	195	86,850	81,543	34.0	41,213
2	Bhor	.. 181	324.8	2,10,171	73,711	227	1,12,292	1,05,694	50.2	32,012
3	Dhond	.. 65	516.1	3,18,714	89,162	173	2,32,741	2,18,607	68.6	35,424
4	Ambegaon	.. 101	401.5	2,57,726	98,880	245	1,72,750	1,52,862	59.3	57,494
5	Junnar	.. 131	532.7	3,42,127	1,40,287	263	2,61,008	2,28,200	66.7	45,410
6	Maval	.. 168	413.8	2,80,574	98,386	237	1,70,805	1,64,896	58.6	58,534
7	Purandhar	.. 82	426.5	2,85,963	1,03,399	242	2,17,476	1,93,181	67.5	20,581
8	Baramati	.. 60	539.7	3,41,608	1,34,271	249	2,53,447	2,37,240	69.1	17,622
9	Khed	.. 155	539.4	3,39,632	1,26,457	234	2,58,922	2,37,473	69.9	45,410
10	Indapur	.. 85	585.8	3,62,346	1,12,304	192	2,67,586	2,56,295	70.7	22,265
11	Haveli	.. 117	514.9	3,30,206	1,80,653	351	2,26,018	2,04,044	61.8	36,414
12	Poona	.. 3	67.8	29,617	5,94,083	8,762	7,822	7,126	24.1	580
13	Velhe	.. 124	196.2	1,22,723	27,391	139	64,097	63,165	51.4	19,835
14	Sirur	.. 79	610.5	3,84,565	1,03,108	169	3,43,699	3,10,276	80.7	15,394
District Total		.. 1,483	6,023.0	38,39,626	19,50,976	324	26,75,513	24,59,602	64.0	4,48,188

STATEMENT " B ".

Rainfall Data.

(Figures in inches.)

Taluka.	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	Average of 10 years.	Average of 27 years (31 to 57)
1	2	3	4	5	6	7	8	9	10	11	12	13
Mulshi	41.4	57.6	40.5	59.9	57.2	73.6	65.8	89.0	45.1	72.7	60.2	....
Bhor	12.9	11.2	24.8	38.7	36.2	43.0	38.5	65.6	35.2	39.4	34.6	....
Dhond*	27.11	24.23	24.38	12.72	18.12	10.73	22.60	19.64	23.51	....	....	18.32
Ambegaon	31.90	25.62	26.92	24.40	21.59	25.80	26.81	49.64	24.14	....	....	31.23
Junnar	38.1	37.2	39.6	25.5	31.1	30.5	43.5	64.2	27.6	38.2	30.3	....
Maval*	34.78	47.48	33.35	73.84	43.15	53.71	47.01	66.67	37.29	....	....	48.52
Purandhar*	20.63	22.11	23.19	16.38	27.46	19.97	26.56	27.33	22.31	....	....	21.57
Baramati*	23.81	20.45	17.56	10.92	16.67	19.42	23.22	30.26	20.57	....	....	18.07
Khed	17.7	26.7	22.9	16.5	18.3	20.1	15.0	51.0	21.2	25.3	23.0	....
Indapur*	17.40	24.48	23.25	11.41	25.96	17.19	18.16	17.36	15.94	....	....	24.46
Haveli	16.93	23.93	23.88	22.03	19.69	25.99	29.49	39.46	18.49	....	....	....
Poona	21.2	23.3	23.8	22.8	28.6	30.3	39.4	43.7	19.3	25.5	28.0	....
Velhe	68.9	86.3	58.2	96.2	108.3	115.6	91.6	129.7	90.1	119.2	96.4	....
Sirur*	16.80	21.41	20.75	12.43	14.27	21.26	19.43	29.57	18.82	....	....	18.98

*Monthwise rainfall figures given in statement ' B-I '.

STATEMENT "B-1".
Monthly Rainfall Data.
 Taluka—Purandhar (Saswad).

(Figures in inches.)

Year.	May.	June.	July.	August.	September	October.	Total.	Total.	November	
1	2	3	4	5	6	7	8	Annual.	to April.	
								9	10	
1931	2.27	2.75	2.24	6.88	6.23	20.37	26.67	6.30
1932	..	2.78	1.67	7.20	4.63	3.45	7.28	27.01	29.69	2.68
1933	..	2.59	3.92	4.45	4.24	13.72	2.80	31.71	36.98	5.27
1934	..	0.22	3.21	3.28	0.31	4.03	1.96	15.01	20.05	5.04
1935	5.55	2.17	7.80	3.00	11.66	30.18	30.34	0.16
1936	..	1.39	2.12	1.18	1.55	5.32	0.30	11.86	15.28	3.42
1937	6.67	4.94	1.10	7.63	5.98	26.34	29.15	2.11
1938	..	0.27	2.85	5.14	2.26	5.07	6.32	21.90	23.77	1.87
1939	3.77	4.99	1.28	2.54	3.30	15.88	16.75	0.87
1940	..	1.56	5.19	2.75	1.88	3.22	3.11	17.71	18.91	1.10
1941	1.61	4.20	0.43	5.70	1.70	13.64	15.00	1.36
1942	..	0.04	4.53	7.24	2.38	0.64	0.86	15.69	18.52	2.84
1943	..	2.90	4.41	7.24	0.37	4.48	7.94	27.34	28.06	0.72
1944	..	0.81	4.27	7.73	2.39	8.03	5.74	28.96	30.70	1.73
1945	2.81	4.69	6.46	0.65	3.95	18.56	19.86	1.30
1946	..	2.74	1.12	6.07	3.89	4.99	1.03	19.48	27.64	8.16
1947	3.17	4.49	3.95	0.51	12.12	13.35	1.23
1948	..	0.75	4.78	1.46	2.86	4.67	6.14	20.66	29.30	8.64
1949	..	2.06	0.22	2.43	4.54	7.51	3.87	20.63	20.75	0.13
1950	..	1.33	3.05	6.71	1.49	4.79	4.74	22.11	22.83	0.72
1951	..	0.58	4.04	3.99	2.43	2.67	9.48	23.19	26.08	2.89
1952	3.83	5.60	2.17	2.70	2.08	16.38	16.38	....
1953	7.18	4.21	5.24	4.49	8.34	29.46	31.21	1.75
1954	..	0.30	6.83	8.73	2.85	1.89	1.37	19.97	22.60	2.63
1955	..	0.71	1.87	2.36	2.87	13.55	5.20	26.56	27.12	0.56
1956	..	2.18	2.71	7.38	6.37	2.67	6.02	27.33	36.94	9.61
1957	..	1.89	4.82	2.70	1.86	2.64	8.40	22.31	26.57	4.26

Average (1931-57)=21.57

STATEMENT "B-1".
Monthwise Rainfall Data.
 Taluka—Dhond

(Figures in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total annual.	November to April.
1	2	3	4	5	6	7	8	9	10
1931	.....	7.08	2.33	1.30	7.39	4.62	22.72	26.36	3.64
1932	.. 0.67	0.88	6.53	5.85	2.82	4.30	21.10	26.18	5.08
1933	.. 1.69	3.29	1.32	1.93	7.10	5.16	20.49	21.33	0.84
1934	.. ....	2.00	1.29	1.59	3.13	0.20	8.21	10.22	1.01
1935	.. ....	4.86	1.25	5.34	3.04	6.06	22.65	23.57	0.92
1936	.. 0.41	0.31	0.09	0.67	3.71	1.17	6.36	12.02	5.56
1937	.. ....	1.35	1.83	0.05	8.14	7.03	18.40	20.98	2.58
1938	.. 2.25	1.71	5.33	5.17	3.19	3.83	21.48	22.69	1.21
1939	.. ....	3.03	6.60	0.29	5.77	2.24	17.93	18.62	0.69
1940	.. 0.64	5.18	0.90	1.05	2.12	3.85	14.74	16.58	1.84
1941	.. ....	1.14	1.94	0.35	7.83	3.04	14.57	16.66	2.09
1942	.. 0.26	8.04	1.93	0.90	8.90	0.82	12.84	15.35	2.51
1943	.. 1.82	2.67	1.35	....	5.53	7.46	18.83	18.83	....
1944	.. 0.79	2.59	6.95	0.47	5.24	4.31	20.34	20.47	....
1945	.. ....	1.44	0.33	5.81	0.86	3.17	11.61	11.62	0.02
1946	.. 0.96	4.22	1.49	0.80	10.74	0.43	18.64	22.66	4.02
1947	.. 0.1	1.42	1.30	7.32	8.49	2.00	20.34	21.84	1.50
1948	.. ....	4.26	2.14	2.51	7.47	4.14	20.52	24.91	4.39
1949	.. 0.88	2.92	1.44	2.76	16.12	2.99	27.11	27.19	0.08
1950	.. 2.15	1.78	2.60	0.50	12.64	4.66	24.23	25.31	1.08
1951	.. 1.16	2.96	8.80	0.69	5.54	5.23	24.38	26.44	1.06
1952	.. 1.17	2.72	2.32	0.81	2.99	2.71	12.72	12.77	0.05
1953	.. ....	3.28	2.43	0.30	6.51	5.60	18.12	18.12	....
1954	.. 0.20	3.65	2.19	0.90	3.74	0.05	10.73	10.91	0.18
1955	.. ....	1.53	1.77	3.00	6.20	10.10	28.60	32.66	0.06
1956	.. 1.62	3.46	4.48	3.09	4.29	2.70	19.64	25.32	5.68
1957	.. 1.21	2.57	0.76	2.05	3.91	13.01	23.51	24.09	0.58

Average (1931-57)=18.32

STATEMENT "B-1".
Monthly Rainfall Data.
 Taluka—Maval

(Figures in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	1.29	18.80	12.80	8.63	8.16	49.63	54.92	5.24
1932	..	0.17	0.53	18.96	9.18	10.25	8.98	48.07	48.71	0.64
1933	..	2.96	10.28	17.60	14.54	14.60	4.68	64.56	65.69	1.13
1934	9.44	12.75	7.98	3.21	3.37	36.75	40.04	3.29
1935	6.32	15.96	6.18	4.00	4.58	37.04	38.09	1.05
1936	9.78	5.79	5.78	7.28	0.24	28.87	32.93	4.06
1937	8.40	17.75	4.38	8.27	5.95	44.74	45.34	0.60
1938	..	2.51	9.94	18.39	10.16	6.26	11.35	58.61	59.66	1.05
1939	4.00	17.83	9.43	2.62	2.85	36.73	37.01	0.28
1940	6.52	19.31	10.70	7.95	4.99	49.47	50.42	1.01
1941	5.09	24.14	4.61	3.53	2.98	40.35	31.15	0.80
1942	..	0.72	13.76	39.62	8.89	8.91	0.76	72.66	74.85	2.99
1943	..	3.42	8.01	26.47	4.80	3.63	5.09	51.42	52.53	1.16
1944	7.50	22.82	12.55	3.46	7.36	53.69	53.69	....
1945	6.69	22.88	12.65	2.52	2.35	47.09	48.22	1.13
1946	..	2.35	3.76	21.84	21.29	2.54	3.24	55.02	62.47	7.45
1947	..	0.70	0.03	18.11	12.28	10.13	0.83	42.08	44.92	2.84
1948	21.91	19.27	14.92	7.01	1.92	56.03	70.48	14.45
1949	..	3.79	1.32	9.77	9.04	7.57	3.29	34.78	34.83	0.05
1950	..	0.20	2.03	28.11	3.44	7.99	5.71	47.48	48.46	0.98
1951	..	4.25	2.95	8.63	8.67	1.46	7.39	33.35	35.96	2.61
1952	12.49	31.1	25.73	1.04	3.46	78.84	74.70	0.86
1953	15.22	6.56	14.22	1.80	5.35	43.15	45.06	1.91
1954	..	1.50	6.14	19.53	11.80	13.50	1.24	53.11	54.60	0.89
1955	..	0.93	7.83	8.14	13.27	12.07	4.77	47.01	48.19	1.18
1956	..	1.96	2.87	28.71	17.45	4.11	11.51	66.61	75.15	3.54
1957	..	2.28	12.00	9.64	10.25	1.91	1.21	37.29	38.76	1.47

Average (1931-57)= 48.52

STATEMENT "B-1"
Monthwise Rainfall Data.
 Taluka Ambegaon

(Fig. in inches)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.
1	2	3	4	5	6	7	8	9	10
1931	....	1.78	10.82	5.17	4.07	6.29	28.13	32.09	3.90
1932	0.44	0.61	14.09	6.53	8.79	6.76	37.22	37.49	0.27
1933	5.54	8.79	7.45	10.18	14.95	6.07	52.98	55.06	2.08
1934	....	5.37	8.76	5.63	1.06	2.75	23.67	28.95	5.30
1935	....	4.56	5.97	4.92	3.38	2.07	20.90	21.62	0.92
1936	1.46	3.76	3.72	3.34	5.77	0.18	13.23	22.18	3.95
1937	....	10.15	12.49	2.61	9.89	2.04	37.18	37.41	0.23
1938	2.53	10.84	12.93	4.89	3.73	14.28	49.25	52.29	3.04
1939	....	1.48	14.30	9.32	0.65	2.38	28.12	30.25	2.13
1940	0.53	7.95	11.15	7.00	7.85	3.32	37.80	40.34	2.54
1941	....	2.29	16.51	3.53	4.99	1.33	32.65	28.65	....
1942	0.31	5.54	21.14	4.39	3.85	....	35.23	37.80	2.57
1943	1.40	7.63	9.40	1.47	2.65	13.88	36.43	37.67	1.14
1944	0.07	8.50	19.30	7.32	4.54	3.91	44.54	44.54	....
1945	....	4.14	8.21	4.90	1.96	0.73	19.94	20.09	0.15
1946	0.83	2.56	11.85	8.03	5.18	1.13	29.63	40.88	11.25
1947	1.08	0.09	13.07	6.68	8.95	0.17	30.04	33.95	3.91
1948	....	6.23	10.00	5.55	4.96	1.75	28.49	43.82	15.33
1949	4.96	2.00	5.35	6.49	10.74	2.36	31.90	31.98	0.08
1950	0.59	0.87	14.48	2.59	4.43	2.66	25.62	26.65	1.03
1951	2.99	5.57	5.85	4.81	1.83	4.69	26.92	29.73	2.81
1952	....	6.08	11.83	4.93	1.42	2.94	24.49	27.85	3.36
1953	....	7.65	2.38	6.81	1.99	2.76	21.59	21.73	0.14
1954	0.70	6.16	7.81	2.79	7.13	1.21	25.80	27.16	1.36
1955	0.78	1.84	2.50	4.39	10.50	6.80	26.81	27.84	1.03
1956	3.90	3.00	17.82	13.24	3.88	7.80	49.64	54.23	4.59
1957	2.47	6.08	6.00	4.87	0.93	3.74	24.14	26.29	2.15

Average (1931-57) = 31.23

STATEMENT "B-1".
Monthly Rainfall Data.
Taluka Haveli

(Fig. in inches)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	1.62	5.33	3.45	7.67	2.65	20.67	23.89	3.12
1932	..	1.61	2.56	7.18	5.39	5.17	5.71	27.62	30.06	2.44
1933	..	5.98	5.43	5.89	7.24	8.29	1.51	34.34	36.55	1.21
1934	..	0.43	5.19	4.60	3.12	1.47	1.90	16.68	21.43	4.75
1935	5.08	5.08	3.98	3.54	5.53	23.21	23.28	0.07
1936	..	0.56	3.82	1.47	1.34	7.28	0.88	15.35	18.30	2.95
1937	6.59	6.39	1.08	10.70	3.40	28.16	30.76	2.60
1938	..	0.48	6.06	7.64	3.38	10.94	3.05	36.55	37.59	1.04
1939	2.76	7.14	3.67	0.74	3.44	17.75	17.94	0.19
1940	..	0.43	4.56	3.95	4.60	5.63	4.30	23.47	26.41	2.94
1941	4.07	11.21	0.99	1.96	1.67	19.90	20.34	0.44
1942	..	0.23	7.10	13.61	2.91	1.87	0.14	25.86	29.35	3.49
1943	..	3.65	4.63	11.09	1.70	4.48	8.84	34.39	35.40	1.01
1944	4.18	10.47	4.22	4.01	4.92	27.80	28.25	0.45
1945	1.99	8.32	8.26	1.64	0.79	21.00	22.75	1.75
1946	..	1.69	1.48	8.61	7.46	3.89	0.33	23.36	30.51	1.15
1947	0.04	7.80	7.74	5.03	0.80	21.49	23.56	2.07
1948	7.37	4.00	6.68	4.05	4.91	23.01	32.61	9.60
1949	..	0.43	0.35	1.73	5.90	6.93	1.59	16.93	17.58	0.65
1950	..	1.72	0.95	10.46	1.42	6.83	2.55	23.93	25.33	1.40
1951	2.45	5.42	2.17	3.21	10.10	23.88	26.62	2.74
1952	..	1.29	7.05	7.21	3.75	0.66	2.97	22.03	22.03	....
1953	5.94	2.74	4.36	3.00	3.65	19.69	22.39	2.60
1954	..	0.19	5.96	9.87	4.00	4.28	1.59	25.99	26.45	0.46
1955	..	1.27	2.32	3.07	3.34	12.03	7.46	29.49	32.67	3.18
1956	..	2.39	0.94	11.85	10.92	4.55	8.81	39.46	46.37	6.91
1957	..	2.78	6.76	2.42	1.76	1.08	3.69	18.49	19.69	1.20

Average (1931-57) = 24.46

STATEMENT "B-1".
Monthly Rainfall Data.
 Taluka Indapur

(Fig. in inches)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	8.60	2.03	0.78	4.79	3.02	19.22	21.25	2.03
1932	..	1.61	6.13	8.25	5.64	2.65	5.36	29.56	34.48	4.82
1933	..	0.38	1.68	1.73	1.96	6.48	3.24	15.47	17.91	2.44
1934	..	0.63	2.09	2.28	2.77	4.33	2.70	14.70	20.84	6.14
1935	9.32	1.11	6.97	2.80	4.14	24.34	24.04	0.60
1936	..	0.12	0.27	0.33	0.81	2.84	..	4.37	7.75	3.38
1937	3.63	3.39	0.30	6.29	7.72	21.33	24.27	2.94
1938	..	1.35	3.21	7.56	6.68	6.07	1.41	26.28	29.14	2.86
1939	4.16	3.81	1.03	7.96	1.57	18.33	20.99	2.40
1940	..	0.16	3.89	0.88	1.58	4.27	0.86	11.64	14.61	2.97
1941	..	0.2	0.71	1.48	1.62	12.03	2.15	18.01	21.51	3.60
1942	..	1.99	6.14	1.44	3.63	0.72	0.63	14.55	15.88	1.28
1943	..	1.00	4.21	1.56	0.32	6.43	7.43	21.15	21.09	0.84
1944	..	0.50	4.61	4.60	0.26	7.11	7.66	24.74	26.20	1.46
1945	0.79	0.32	1.20	0.79	0.62	3.72	4.28	1.56
1946	..	0.40	0.81	0.84	0.21	2.63	0.18	4.77	6.95	2.18
1947	..	0.11	3.28	0.48	3.42	2.61	..	9.87	11.71	1.84
1948	..	0.25	2.46	1.22	2.25	4.22	1.74	12.14	12.11	1.97
1949	..	1.59	2.37	0.43	1.16	7.72	4.13	17.40	17.46	0.06
1950	..	1.08	4.35	1.18	4.25	7.79	8.83	24.48	25.41	1.93
1951	..	0.47	6.39	5.19	0.74	2.95	7.51	23.25	24.80	1.55
1952	..	2.38	3.10	2.09	0.45	1.62	1.77	11.41	11.87	0.46
1953	5.38	6.08	0.37	6.14	7.92	25.86	26.28	0.42
1954	..	0.83	5.37	3.48	1.27	5.26	0.98	17.19	19.58	2.39
1955	..	0.27	3.68	3.47	3.88	5.04	1.82	18.16	18.58	0.52
1956	..	2.10	1.33	2.34	1.21	3.71	7.17	17.36	21.04	3.68
1957	..	0.82	3.11	1.60	3.34	2.90	4.17	15.94	17.48	1.54

Average (1931-57) = 17.02.

STATEMENT "B-1".
Monthly Rainfall Data.
 Taluka Sirur

(Fig. in inches)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.
1	2	3	4	5	6	7	8	9	10
1931	0.03	4.26	1.67	9.88	3.46	1.97	12.22	16.51	4.29
1932	0.30	1.60	5.35	6.26	5.42	4.66	23.59	25.15	1.56
1933	1.31	7.92	1.59	3.81	14.49	2.05	31.17	34.02	2.85
1934	..	4.23	4.56	1.41	4.91	2.08	17.19	20.58	3.49
1935	..	2.22	1.32	3.75	1.58	3.97	12.84	13.01	0.17
1936	1.97	1.10	0.04	0.28	2.62	1.04	7.00	10.31	3.31
1937	0.69	4.45	2.47	0.08	9.58	5.94	23.21	25.07	1.86
1938	0.59	5.49	4.77	2.09	7.54	4.88	25.35	27.63	2.28
1939	..	3.90	5.66	2.35	1.89	2.83	16.63	18.83	0.20
1940	0.25	9.12	0.71	1.02	1.25	4.10	17.45	18.42	0.97
1941	..	0.74	3.91	0.86	6.79	0.88	13.18	14.67	1.49
1942	..	8.16	4.34	1.41	0.99	1.12	15.92	20.80	4.88
1943	1.42	6.62	3.03	0.22	5.76	12.34	29.39	29.90	0.61
1944	0.60	3.71	5.05	0.94	4.01	1.71	16.02	16.02	..
1945	0.09	1.63	0.62	4.84	2.28	2.86	12.32	12.70	0.38
1946	0.55	8.45	1.67	1.56	11.21	0.14	18.88	28.34	9.46
1947	0.19	2.01	2.45	8.34	4.89	0.88	18.76	22.39	3.63
1948	0.36	6.44	3.83	1.31	9.58	5.06	28.58	32.66	6.08
1949	0.55	1.60	0.84	1.88	8.82	3.11	15.80	16.90	0.10
1950	0.60	2.14	2.74	1.57	11.18	3.18	21.41	21.51	0.10
1951	1.84	5.31	5.83	0.37	2.71	4.99	20.75	21.89	1.14
1952	..	4.22	2.31	0.44	2.84	2.62	12.43	12.43	..
1953	..	3.09	1.71	0.95	4.81	3.71	14.27	14.45	0.18
1954	1.65	9.06	3.93	1.56	4.97	0.19	21.26	23.31	2.05
1955	1.21	1.54	2.51	1.51	6.11	6.55	19.43	19.81	0.38
1956	5.19	2.95	3.58	5.50	6.32	6.03	29.57	37.03	7.46
1957	1.27	6.33	3.38	1.46	3.24	3.14	18.82	19.55	0.73

Average (1931-57) = 18.28.

STATEMENT "B-1",
 Monthwise Rainfall Data.
 Taluka—Baramati.

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	5.46	1.42	1.15	8.73	4.31	21.07	25.36	4.23
1932	3.04	4.22	7.76	3.78	7.29	26.09	27.03	1.54
1933	..	2.83	2.90	0.72	4.57	5.33	4.90	21.30	24.47	3.17
1934	..	0.50	1.01	1.75	0.86	4.29	0.55	8.96	12.54	3.58
1935	..	0.29	3.84	1.73	4.36	1.13	6.09	17.45	18.59	1.14
1936	..	3.24	1.27	0.02	0.78	5.34	2.07	12.72	16.80	3.58
1937	3.48	1.41	0.07	4.43	6.49	15.88	17.17	1.29
1938	..	2.47	0.94	4.47	2.59	6.38	1.19	18.04	19.13	1.09
1939	3.50	4.38	0.15	4.74	0.79	13.56	16.62	3.06
1940	..	0.45	3.54	1.85	0.71	2.83	1.39	10.77	14.46	3.69
1941	0.28	1.81	2.57	5.56	2.44	21.66	13.95	2.29
1942	..	0.58	5.74	1.58	1.00	0.06	3.25	12.16	13.32	1.16
1943	..	0.93	1.37	1.16	0.13	5.64	3.27	17.54	17.90	0.36
1944	..	1.92	5.22	6.99	0.46	6.22	7.06	28.97	29.32	0.35
1945	..	0.19	0.28	1.03	3.10	1.85	4.74	11.19	11.42	0.23
1946	..	1.27	2.00	2.00	0.58	7.87	0.39	14.11	17.26	3.15
1947	..	4.10	4.11	15.3	4.26	7.76	1.00	22.76	26.10	3.31
1948	..	0.16	4.24	2.78	3.81	7.27	1.47	19.73	25.29	5.56
1949	..	2.36	4.62	0.79	2.33	10.95	2.75	23.81	23.93	0.12
1950	..	0.81	2.40	1.55	2.50	0.15	4.34	20.85	21.14	0.29
1951	..	0.41	3.20	2.85	1.49	4.05	5.56	17.56	17.57	0.01
1952	..	0.28	1.04	1.65	0.16	4.98	2.81	10.92	11.19	0.27
1953	0.96	2.00	0.85	5.38	6.87	16.87	18.47	1.60
1954	..	0.35	7.43	5.39	2.48	2.07	1.70	19.42	21.19	1.77
1955	3.82	3.36	2.30	8.63	5.11	23.22	24.47	1.25
1956	..	4.36	2.46	3.67	6.38	5.43	7.96	30.26	37.34	7.08
1957	..	1.65	3.80	1.67	2.12	5.04	6.59	20.57	21.78	1.21

Average (1931-57) = 18.07

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under irrigation by				Total area under irrigation and its percentage to cropped area.
		Canals.	Tanks.	Wells.	Other sources.	
1	2	3	4	5	6	7
1	Mulshi	....	....	543	....	543 0.6
2	Bhor	..	475	....	1,807	2,282 2.0
3	Dhond	..	1,629	2,803	10,650	15,082 6.4
4	Ambegaon	..	420	....	2,594	3,014 1.7
5	Junnar	..	3,475	55	2,045	5,573 2.1
6	Maval	..	....	....	261	261 N.
7	Purandhar	..	1,945	....	9,280	11,225 5.1
8	Baramati	..	44,272	....	17,397	61,669 24.3
9	Khed	..	518	....	14,558	15,076 5.8
10	Indapur	..	38,556	....	14,282	52,838 19.7
11	Haveli	..	11,517	44	3,942	15,503 6.8
12	Poona	..	338	....	821	1,159 1.4
13	Velhe	..	9	....	....	9 N.
14	Sirur	..	....	....	5,542	5,542 1.6
District Total		..	1,03,154	2,902	83,722	1,89,778 7.1

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar under:		Bajri.	Total Cereals.	Total Pulses.	Total foodcrops and its percentage.	Oilseeds and its percentage.	Cotton and its percentage.		Total non-food crops.		
				Kharif.	Rabi.										
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
1	Mulshi ..	25,511	2,101	6,372	14,868	5,378	65,574	5,293	71,878	82.8	2,324	2.6	50	N	14,972
2	Bhor ..	13,458	2,290	....	20,413	9,092	55,707	7,304	63,853	56.8	5,274	4.7	75	N	84,439
3	Dhond ..	452	2,197	....	1,65,291	26,142	1,94,169	16,384	2,14,335	92.1	15,670	6.7	1440	.6	18,406
4	Ambegaon ..	5,734	4,747	3,308	34,002	56,398	1,04,742	16,619	1,26,919	73.5	8,491	4.9	16	N	45,831
5	Junnar ..	1,716	1,276	599	43,254	98,460	1,69,459	33,163	2,09,238	80.1	3,092	3.1	82	N	51,770
6	Maval ..	25,010	8,797	2,784	14,855	3,314	62,455	6,612	69,793	40.8	3,425	2.0	2	N	1,01,012
7	Purandhar ..	2,918	2,554	1,306	78,292	63,790	1,49,459	21,022	1,77,410	81.5	20,452	9.4	222	N	40,066
8	Baramati ..	2,735	3,989	....	1,65,097	28,220	2,00,403	20,738	2,32,025	91.6	14,115	5.6	4,822	6.9	21,422
9	Khed ..	14,818	5,747	14,617	28,460	58,003	1,32,871	22,403	1,64,372	68.5	18,988	7.3	59	N	94,550
10	Indapur ..	1,335	3,614	....	1,72,066	20,797	1,98,867	28,224	2,35,292	87.9	21,174	7.9	7,573	2.8	32,294
11	Haveli ..	6,432	2,276	....	46,790	55,922	1,13,507	13,808	1,40,077	61.1	6,037	2.7	346	N	85,941
12	Poona ..	221	184	....	1,077	900	2,370	187	3,454	44.3	39	N	10	N	4,368
13	Velhe ..	8,329	510	2,086	1,679	42	28,751	1,612	31,515	49.1	1,979	3.0	....	..	32,582
14	Sirur ..	189	4,516	5,400	1,44,078	1,21,199	2,76,504	25,468	3,05,236	88.8	27,402	8.0	1,123	0.3	38,463
District Total		1,18,658	56,283	37,472	9,30,240	5,45,657	17,54,838	2,18,637	20,45,397	76.4	1,53,462	5.7	15,820	.6	6,30,116

BOMBAY DIVISION

CHAPTER XXI.

RATNAGIRI DISTRICT.

Part I—Background.

1. *Location.*—Ratnagiri district lies along west coast, forming part of the Konkan. It is not more than 45 miles in width and about 300 miles in length from north to south. Along its western side is the Arabian sea and parallel to it in the east are the Sahyadri mountains. The slope of the district is from east to west. All rivers flow from east to west. It is bounded in the north by Kolaba district and in the south by the Portuguese territories and the State of Mysore. On the east are situated the districts of North Satara, South Satara and Kolhapur. The total area of the District is 5,212 sq. miles.

2. *Administrative set-up.*—For administrative purposes, the district is divided into following talukas :—

Serial No.	Taluka.	Area in Sq. Miles.	Population.	Density per Sq. Miles.
1	Rajapur	496	1,46,541	295
2	Devgad	204	97,918	345
3	Kankavali	299	1,03,101	345
4	Malvan	256	1,29,814	507
5	Vengurla	127	79,215	624
6	Kudal	316	1,01,545	321
7	Sawantwadi	516	1,24,291	241
8	Dapoli	327	1,29,105	395
9	Mandangad	160	48,956	306
10	Khed	386	1,24,861	324
11	Chiplun	434	1,53,102	353
12	Guhagar	242	87,886	363
13	Sangameshwar	499	1,48,331	297
14	Ratnagiri	358	1,59,377	445
15	Lanja	283	77,921	276

Detailed information about these talukas is given in Statements 'A' to 'D' attached.

3. *Physical features.*—The district is generally rugged and the whole of the eastern and northern part of the district is covered with hills which are a continuation of the Sahyadri hills. Near the Sahyadri hills, the valleys are more open and less rugged than towards the centre of the district. Towards the coast, the land is more level and parts of it are very fertile. Towards the east, the Sahyadri hills are high making the communication between different parts of the district almost impossible. Numerous water courses flow from east to west, forming the river system of the district.

4. *Rivers.*—The main rivers of the district are the Savitri, the Vashishti, the Mackkundi and the Shastri. None of these is useful for irrigation. Parts of these rivers are tidal and useful for navigation.

5. *Soils and cropping pattern.*—The rice lands are found mostly in the bottom of the valleys. Some of the rice lands are fertile and are capable of giving a second crop of pulses after rice is harvested. Garden or Bagayat lands chiefly grow cocoanut, betelnut and mango, which are found along the coast or the banks of the river where soil is alluvial. These lands also grow crops like sugarcane

and vegetables. The uplands or varkas soils are generally light and poor and grow coarse grains like Nagli, Wari, etc. The area under different crops of this district is shown below :—

Out of the total area of 31,65,800 acres, the area under irrigation is 26,936 acres. The main crops are as under :—

Crop.	Area in Acres.
Rice	... 3,15,840
Pulses	... 41,078
Groundnut	... 30,638
Fodder crops	... 2,07,868

6. *Rainfall*.—The talukawise rainfall and the minimum recorded during the last 27 years is as under:—

Taluka.	Average rainfall.	Minimum rainfall.	Rainfall figures for—
Ratnagiri	119.29	55.39 (1941)	27 years.
Khed	144.35	87.35 (1941)	27 years.
Devgad	94.66	57.16 (1941)	27 years.
Vengurla	119.30	60.71 (1941)	27 years.
Malvan	94.91	45.01 (1941)	27 years.
Rajapur	134.80	89.60 (1941)	27 years.
Chiplun	152.70	91.09 (1941)	27 years.
Guhagar	112.68	42.86 (1941)	27 years.
Dapoli	144.16	60.36 (1941)	27 years.
Mandangad	171.26	96.66 (1941)	27 years.
Sawantwadi	162.17	82.49 (1941)	27 years.
Kudal	128.12	70.45 (1941)	27 years.
Lanja	152.95	113.30 (1952)	12 years.
Kankavali	161.39	128.16 (1946)	12 years.
Sangameshwar	168.77	113.61 (1952)	10 years.

Part II—Determination of Chronic Scarcity or Precarious Areas.

During the last 10 years, land revenue suspension was given only in a few villages in Sawantwadi taluka during the year 1956-57. Except for this, no part of the district has been affected in the past. As will be seen from the rainfall figures, this district has heavy and assured rainfall and there is no part in which rainfall was less than 42.86", during the last 27 years.

The district cannot, therefore, be considered as affected by scarcity.

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross area.		Popula- tion.	Density per sq. mile.	Gross cropped area.	Net cropped area.	Area under forest.
			In sq. miles.	In acres.					
1	2	3	4	5	6	7	8	9	10
1	Rajapur ..	144	496	3,12,201	1,46,541	295	85,757	83,975	6
2	Devgad ..	64	284	1,80,063	97,918	345	34,917	34,726	11
3	Kankavali ..	67	299	1,90,904	1,03,101	345	50,761	50,287	..
	Malvan ..	57	256	1,52,616	1,29,814	507	52,410	49,611	656
5	Vengurla ..	127	127	71,617	79,215	624	30,682	29,631	1,526
6	Kudal ..	75	316	2,02,079	1,01,545	321	37,668	30,975	5,046
7	Sawantwadi ..	120	516	3,29,993	1,24,291	241	62,536	58,662	27,648
8	Dapoli ..	151	327	2,12,763	1,29,105	395	92,120	91,206	2,288
9	Mandangad ..	91	160	1,05,196	48,956	306	26,847	26,062	39
10	Khed ..	146	386	2,50,659	1,24,861	324	55,281	53,616	5,706
11	Chiplun ..	131	434	2,75,914	1,53,102	353	1,15,031	1,13,424	592
12	Guhagar ..	78	242	1,55,211	87,886	363	34,125	33,273	..
13	Sangameshwar ..	163	499	3,16,606	1,48,331	297	55,238	51,231	326
14	Ratnagiri ..	121	358	2,27,913	1,59,377	445	69,359	68,080	7
15	Lanja ..	84	283	1,82,423	77,921	276	61,865	61,521	2,479
District Total ..		1,625	4,983	31,66,148	17,11,964	343	8,64,597	8,36,190	46,930

STATEMENT " B ".

Rainfall Data.

(Fig. in inches.)

Year.	Ratnagiri.	Vengurla.	Malvan.	Devgad.	Rajapur.	Chiplun.	Guhagar.	Khed.	Dapoli.	Mandana- gad.	Lanja.	Kanka- vali.	Savant- wadi.	Kudal.	Sangame- shwar.
1931	.. 151.92	129.73	110.77	132.12	191.30	203.69	163.33	205.94	184.98	229.09	....	....	200.94	161.24	
1932	.. 111.56	109.07	100.93	104.14	129.99	143.16	95.01	145.23	128.09	163.19	....	....	150.84	145.12	
1933	.. 123.60	106.99	86.23	95.84	139.76	175.40	103.60	135.33	168.22	190.45	....	....	179.42	141.26	
1934	.. 129.45	113.22	104.17	106.78	127.31	153.20	118.49	147.65	149.51	155.91	....	....	152.56	141.14	
1935	.. 99.31	89.48	76.53	80.05	106.43	104.17	93.25	95.71	107.28	118.39	....	....	98.26	106.47	
1936	.. 109.85	94.98	71.37	74.62	111.17	142.24	96.64	114.06	125.86	132.11	....	....	146.71	134.10	
1937	.. 110.25	117.21	85.83	86.69	136.69	159.33	108.34	150.30	152.46	169.22	....	....	157.08	122.03	
1938	.. 141.41	104.88	85.03	104.85	147.98	176.55	131.47	161.16	153.93	216.23	....	....	146.98	122.01	
1939	.. 125.80	125.34	97.56	93.57	124.62	126.15	89.79	112.65	142.24	147.45	....	....	147.11	133.35	
1940	.. 100.90	113.91	81.98	100.81	132.39	127.95	101.68	130.68	122.66	146.62	....	....	141.41	114.32	
1941	.. 55.39	60.71	45.01	57.16	39.60	91.09	42.86	37.35	60.36	95.66	....	....	32.49	70.45	
1942	.. 112.83	111.82	89.22	93.76	137.25	141.23	99.75	149.66	139.94	158.87	....	....	160.53	125.58	
1943	.. 99.88	115.82	82.45	74.93	137.38	143.39	100.12	150.33	152.97	160.53	....	....	194.14	116.33	

1944	..	104.76	88.19	70.59	62.90	111.79	125.60	98.09	120.30	144.11	130.62	....	....	199.11	87.83
1945	..	95.41	129.02	83.55	86.82	115.81	127.45	92.80	136.74	122.78	173.88	....	....	151.77	127.49
1946	..	..	126.61	116.31	75.15	122.42	130.10	98.90	143.97	143.50	154.94	145.67	128.16	151.92	120.77
1947	..	....	115.72	85.88	88.18	128.39	187.81	172.30	162.08	155.36	197.86	133.60	142.07	144.44	116.11
1948	..	....	143.35	118.71	117.23	163.03	132.74	113.74	133.07	126.87	153.22	160.58	146.55	159.50	139.57
1949	..	141.48	127.35	94.00	95.54	131.11	158.02	151.26	156.05	141.24	197.11	141.06	149.63	163.60	141.67 179.88
1950	..	111.57	132.41	104.33	107.81	140.73	130.30	126.55	132.33	118.28	156.33	156.78	152.28	180.83	145.58 141.59
1951	..	140.09	136.85	98.66	107.38	133.35	132.48	105.83	144.09	98.39	166.75	139.04	142.42	169.28	130.96 147.71
1952	..	95.24	138.89	89.64	86.81	112.96	110.06	82.11	127.45	119.05	118.95	113.30	164.18	257.01	118.25 113.61
1953	..	159.16	142.54	118.35	109.20	149.86	172.33	158.29	166.20	146.99	166.72	169.50	168.45	173.30	135.66 173.88
1954	..	134.50	135.48	113.58	98.09	170.89	227.60	128.75	174.25	167.16	192.63	158.70	158.96	184.34	135.26 179.19
1955	..	161.15	173.78	148.01	123.50	173.80	274.81	181.30	203.04	151.75	255.41	205.68	182.01	181.26	163.99 213.14
1956	..	119.91	123.57	99.48	89.68	155.15	168.86	107.09	156.90	142.89	243.96	164.02	184.83	176.44	140.69 168.56
1957	..	127.52	109.29	94.51	102.35	120.58	160.11	125.07	159.6	174.51	211.51	147.57	219.14	162.51	122.14 163.11
Average	..	119.29	119.30	94.91	94.66	134.80	152.70	112.68	144.35	144.16	171.26	152.95	161.29	162.17	128.12 168.77

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under Irrigation.			Total irrigated area and its percentage to cropped area.
		Canals.	Tanks.	Wells.	
1	2	3	4	5	6
1	Rajapur ..	....	....	431	431 0.5
2	Devgad ..	916	....	1,078	1,994 5.7
3	Kankavali ..	....	....	434	434 0.8
4	Malvan ..	617	307	1,383	2,307 4.6
5	Vengurla ..	234	180	5,064	5,478 18.4
6	Kudal ..	....	861	2,175	3,036 9.8
7	Sawantwadi ..	9,115	....	....	9,115 15.5
8	Dapoli ..	1,151	....	856	2,007 2.2
9	Mandangad ..	144	....	32	176 0.6
10	Khed ..	....	....	15	15 N
11	Chiplun ..	53	....	18	77 N
12	Guhagar ..	447	....	286	733 2.2
13	Sangameshwar ..	....	....	158	158 0.3
14	Ratnagiri ..	....	....	975	975 1.4
15	Lanja ..	....	....	....	....
District Total ..		12,685	1,348	12,905	26,936 3.2

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Area Under Main Crops.						
		Rice.	Total cereals.	Total pulses.	Total food crops.	Groundnut.	Fodder.	Total non-food crops.
1	2	3	4	5	6	7	8	9
1	Rajapur ..	24,227	51,051	2,509	54,521	1,629	28,883	31,236
2	Devgad ..	14,137	21,417	477	23,512	1,315	9,734	11,405
3	Kankavali ..	24,884	36,923	4,338	41,709	1,377	7,620	9,652
4	Malvan ..	25,814	34,540	6,157	43,858	5,435	3,055	8,552
5	Vengurla ..	10,834	15,920	2,788	23,231	5,250	2,150	7,451
6	Kudal ..	37,335	46,634	7,467	35,483	1,905	258	2,185
7	Sawantwadi ..	31,963	49,294	6,474	58,460	3,946	20	4,069
8	Dapoli ..	18,231	46,236	2,245	51,308	2,779	37,998	40,812
9	Mandangad ..	9,461	19,675	751	21,544	987	4,315	5,303
10	Khed ..	29,521	48,357	1,841	50,492	318	4,460	4,789
11	Chiplun ..	28,994	71,395	1,619	73,508	747	40,760	41,523
12	Guhagar ..	8,240	28,254	879	29,794	1,597	2,701	4,331
13	Sangameshwar ..	23,122	48,869	1,203	50,423	791	3,998	4,815
14	Ratnagiri ..	16,160	30,650	1,760	34,929	1,342	32,921	34,430
15	Lanja ..	12,917	30,739	570	31,639	1,220	28,995	30,226
District Total ..		3,15,840	5,79,964	41,078	6,24,418	30,638	2,07,888	2,40,179

CHAPTER XXII.

KOLABA DISTRICT.

Part I—Background.

1. *Location and Physical features.*—The Kolaba District has an area of 2,719 sq. miles. It is a narrow strip of land along the Arabian sea 15 to 35 miles in width and 70 to 100 miles in length. The Sahyadri mountains run parallel to the district along its eastern boundary. On the north, the district is bounded by Thana District, on the east by Poona and North Satara, in the south by Ratnagiri District and on the west by the Arabian sea. It has a rugged surface and a broken coast right from Bombay Harbour in the north to the limits of Ratnagiri in the south. Along the greater part of the coast, there is a rich belt of palm gardens and orchards. Behind these palms and the mangrove-fringed banks of the Amba, the Kundalika and the other tidal rivers, stretch low tracts of salt and rice lands which in the dry season are bare, without trees. Beyond this tidal tracts in the valleys, we find uplands which grow only coarse grains or are used for grazing. Behind the bare uplands are the hills of the Sahyadri and Raygad covered with forests. The line of natural drainage divides the District into 3 parts: North Kolaba, draining north into Bombay Harbour and into the sea; Central Kolaba draining west along the Kundalika or Roha and Mandad rivers and South Kolaba draining both from the north and from the south into the Savitri or Bankot rivers. The greater part of the district is covered with hills which are a continuation of the Sahyadri ghats.

2. *Rivers.*—The main rivers of the district are the Amba or Nagothan, the Roha and Nizampur-Kal and the Savitri. The rivers are divided into 2 parts, the lower portion of which is tidal and the upper portion of which passes through the steep hills and rocky belts. In the north of the district there are about 15 large reservoirs and lakes for storing water. Most of these reservoirs are not useful for irrigation.

3. *Rainfall.*—The rainfall in the district varies from 104" to 166". The average rainfall for the last 10 years and the minimum during this period in different talukas is as under:—

Taluka.	Average.	Minimum.
Roha	... 144.8	91.0 (1952)
Alibag	... 85.9	28.2 (1941) for 27 years.
Sudhagadh	... 138.0	102.2 (1952)
Poladpur	... 166.0	77.0 (1952)
Pen	... 122.5	87.6 (1952)
Mahad	... 140.0	94.7 (1952)
Mhasala	... 150.7	97.0 (1952)
Mangaon	... 138.1	69.3 (1952)
Panvel	... 124.6	89.3 (1952)
Murud	... 104.1	70.8 (1952)
Karjat	... 135.0	96.0 (1952)
Khalapur	... 140.3	96.1 (1952)
Uran	... 104.0	70.0 (1952)
Shrivardhan	... 117.7	98.3 (1957)

On account of heavy rainfall and peculiar nature of the tract, only rice and coarse grains like Nagli and Kodra are grown in this area.

4. *Crop Pattern.*—The main crop of the district is rice, which has an area of 3,26,076 acres out of the net cropped area of 5,11,281 acres. A large area is under grass. The area under pulses is 30,392 acres. The area under orchards is 5,166 acres. Some of the talukas have garden crops also.

Part II—Determination of Chronic Scarcity and Precarious Areas.

According to the annewari and suspension data, the villages of Alibag and Pen Talukas and Uran Mahal were affected by scarcity in 1941-42. Out of 204 villages in Alibag, 105 villages were affected, 35 villages out of 134 in Pen, and all the villages of Uran Mahal, were affected. However, this was the only year during the period of 30 years in which crops had suffered on account of inadequate rains.

The minimum rainfall recorded for the district was in Alibag in 1941 when the total was only 28.20". The distribution of rainfall was as under in this year :—

June	...	...	...	7.44
July	...	...	...	11.22
August	...	...	...	2.16
September	..	...	...	6.11
October	...	...	...	1.27

Except this year, in no other year was the rainfall less than 62". None of these talukas would be considered as scarcity area.

STATEMENT "A".

Basic Data.

Serial No.	Taluka	No. of villages.	Gross Area		Population	Density per sq. mile	Gross cropped area	Net cropped area.	Area under Forest.
			in Sq. miles.	in Acres					
1	2	3	4	5	6	7	8	9	10
1	Murud	86	133	65,519	39,968	300	18,631	17,629	17,348
2	Shrivardhan	73	108	63,405	50,885	471	26,505	24,726	6,789
3	Uran	44	75	45,768	47,322	831	21,986	21,556	6,689
4	Sudhagadh	88	162	1,12,943	33,066	204	25,404	23,072	41,851
5	Poladpur	100	188	91,935	51,742	275	18,906	18,767	11,059
6	Mahad	144	271	2,00,254	92,439	341	49,143	46,580	23,624
7	Mangason	225	363	2,32,885	1,07,633	291	68,820	58,636	34,755
8	Roha	180	272	1,56,375	70,502	259	49,353	44,408	55,943
9	Khalapur	140	157	1,00,171	41,801	365	42,325	41,249	34,474
10	Karjat	165	242	1,80,836	70,672	292	33,932	31,542	41,115
11	Panvel	178	218	1,42,719	91,388	419	57,400	53,679	41,378
12	Pen	194	200	1,23,282	69,664	343	44,167	43,192	39,959
13	Alibag	167	196	1,23,121	1,05,455	538	66,203	66,161	34,800
14	Mhasala	74	134	77,557	37,247	277	23,874	23,104	18,640
District Total		1,776	2,719	16,96,740	9,09,532	334	5,42,149	5,11,281	4,03,374

STATEMENT " B "

Rainfall Data.-

(Fig. in inches.)

Taluka	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	Average of last 10 years.	Average of last 27 years.
Roha	120.0	107.0	119.0	91.0	144.0	175.0	175.0	174.3	144.4	193.4	144.8	....
*Alibag	108.34	80.30	90.01	62.02	89.56	123.98	114.58	100.78	75.49	132.55	....	85.89
Sudhagadh	128.0	115.0	106.0	102.2	108.2	167.1	173.2	165.5	131.4	183.3	138.0	....
Poladpur	N. A.	N. A.	N. A.	77.0 (21-7 to 31-12)	137.2	184.4	178.2	153.4	166.1	177.0	166.0	....
Pen	126.2	102.3	91.2	87.6	117.3	156.0	193.6	144.5	96.0	160.3	122.5	....
Mahad	147.7	127.5	125.3	94.7	127.0	171.0	158.7	164.5	108.3	170.1	140.0	....
Mhasala	N. A.	125.5	114.7	97.0	156.4	174.2	190.4	201.1	115.0	182.0	150.7	....
Mangaon	N. A.	118.5	121.3	89.3	135.2	160.3	157.8	167.5	123.7	175.7	138.1	....
Panvel	134.2	89.9	121.2	89.3	131.2	110.6	145.2	129.3	167.8	106.9	124.6	....
Murud	75.1	75.1	95.1	70.8	113.6	140.2	147.5	119.7	104.2	93.2	104.1	....
Karjat	121.0	114.2	106.5	96.0	112.0	157.8	161.0	189.0	119.5	172.6	135.0	....
Khalapur	145.3	159.2	121.8	96.1	125.3	106.6	155.9	173.5	137.1	167.7	140.3	....
Uran	108.7	80.2	72.2	70.0	101.8	150.8	118.8	121.2	81.7	135.0	104.0	....
Shrivardhan	N. A.	N. A.	N. A.	N. A.	102.1	135.5	132.3	103.9	98.3	133.6	117.7	....

* Monthwise rainfall figures given in Statement B-I.

STATEMENT "B-1".
Monthwise Rainfall Data.
 Taluka Alibag.

(Fig. in inches.)

Year	May	June	July	August	September	October	Total	Total Annual	November to April
1931 ..	0.83	11.17	41.70	21.61	71.16	14.15	90.62	100.58	8.96
1932 ..	0.25	18.20	33.30	7.37	11.72	8.66	79.50	79.59	0.09
1933 ..	3.46	22.26	18.71	21.94	18.65	2.73	87.95	88.78	0.83
1934 ..		39.34	23.10	33.80	11.46	0.35	108.05	113.39	5.34
1935 ..		29.36	22.75	20.66	16.65	0.53	81.95	90.03	8.08
1936 ..	0.35	36.69	12.46	11.45	12.11	0.01	73.07	76.43	3.36
1937 ..		20.04	36.84	5.21	9.57	1.65	73.31	73.53	0.22
1938 ..	6.73	41.56	16.27	21.88	6.86	18.12	111.42	112.28	0.86
1939 ..		6.30	31.29	12.92	8.64	0.88	59.52	60.94	1.42
1940 ..		32.80	21.49	25.40	9.66	7.17	96.53	98.00	1.47
1941 ..		7.44	11.22	2.16	6.11	1.27	28.20	28.37	0.17
1942 ..		33.04	34.50	13.21	9.58	..	90.33	90.85	0.52
1943 ..	2.70	26.51	33.02	3.79	13.37	2.84	82.21	83.12	0.91
1944 ..		11.88	40.48	17.66	0.88	1.33	72.23	72.23	..
1945 ..		22.62	9.91	27.01	7.05	..	66.59	67.13	0.54
1946 ..	0.37	23.42	29.99	14.67	14.44	0.21	83.10	90.76	7.66
1947 ..		6.07	25.33	26.84	18.31	4.82	81.37	83.52	2.15
1948 ..		10.60	34.13	17.37	9.88	4.00	75.98	83.14	7.16
1949 ..	0.92	11.22	31.87	12.00	48.61	1.72	106.34	106.34	..
1950 ..		10.95	35.55	3.47	25.69	4.60	80.30	80.30	..
1951 ..		32.43	43.27	7.86	2.83	3.62	90.01	98.61	8.60
1952 ..		19.04	29.68	7.62	5.37	0.71	62.02	62.42	0.40
1953 ..		21.78	41.50	18.46	6.13	1.69	89.56	89.66	0.10
1954 ..		13.89	50.97	36.48	31.37	0.37	123.98	123.14	0.84
1955 ..		14.34	25.02	50.67	19.64	4.91	114.58	114.92	0.34
1956 ..	0.27	23.19	33.27	17.93	21.05	5.07	100.78	104.93	4.15
1957 ..	0.92	13.12	29.43	27.73	1.80	3.19	75.49	77.54	2.05

Average (1931-57)=85.89

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.					Area irrigated under wells.	Total area under irrigation and its percentage to cropped area.	
1	2					3	4	
1	Murud	..	..	..	..	735	735	4.2
2	Shrivardhan	..	..	..	..	....	....
3	Uran	..	..	..	..	185	185	0.8
4	Sudhagadh	..	..	..	..	....	....
5	Poladpur	..	..	..	..	....	....
6	Mahad	..	..	..	..	....	....
7	Mangson	..	..	..	..	....	....
8	Roha	..	..	..	..	....	....
9	Khalapur	..	..	..	..	....	....
10	Karjat	..	..	..	..	....	....
11	Panvel	..	..	..	..	1,015	1,015	1.9
12	Pen	..	..	..	..	....	....
13	Alibag	..	..	..	..	1,687	1,687	2.6
14	Mhasala	..	..	..	..	....	....
Total						3,622	3,622	0.7

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Total cereals.	Total pulses.	Total food crops.	Oilseeds.	Fodder crops.	Total non-food crops.
1	2	3	4	5	6	7	8	9
1	Murud	10,029	10,695	1,014	12,199	212	6,209	6,432
2	Shrivardhan	9,920	15,779	1,833	19,077	605	6,771	7,428
3	Uran	17,949	18,048	244	18,572	14	3,394	3,414
4	Sudhagadh	12,582	18,772	1,591	20,436	232	4,855	4,968
5	Poladpur	8,335	17,615	425	18,503	388	....	403
6	Mahad	30,307	43,488	3,865	47,581	604	958	1,562
7	Mangson	38,411	56,312	5,881	62,342	1,453	....	1,478
8	Roha	28,058	33,636	5,620	39,417	345	10,074	10,436
9	Khalapur	19,399	20,933	555	21,749	33	20,543	20,576
10	Karjat	27,762	30,926	2,566	33,705	167	....	227
11	Panvel	40,260	41,290	1,901	45,176	10	12,213	12,224
12	Pen	32,638	35,041	1,025	36,391	180	7,561	7,776
13	Alibag	42,139	42,198	2,049	46,493	1,358	18,272	19,710
14	Mhasala	8,287	16,535	803	17,827	651	5,392	6,047
Total		3,26,076	4,01,268	30,392	4,36,468	6,252	96,062	1,05,681

CHAPTER XXIII.

THANA DISTRICT.

Part I—Background.

1. *Location.*—This district forms part of the area known as North Konkan, which lies between the Arabian Sea and the Sahyadri Hills. Except a narrow strip of 15 miles along the coast line, which is a plain area, the remaining part of the district is a hilly tract intersected by valleys. The district covers an area of 3,729 sq. miles. It is bounded on the north by Surat District, on the east by the Western Ghats, on the south by Kolaba and Bombay Suburban District and on the west by the Arabian Sea.

2. *Administrative set-up.*—The district is divided for administrative purposes into the following talukas :—

Serial No.	Taluka.	Area in Sq. Miles.	Population.	Density per Sq. Mile.
1	Dahanu	372.1	1,31,287	355
2	Umbergaon	288.8	1,13,462	401
3	Palghar	421.9	1,48,504	352
4	Bassein	203.2	1,33,523	657
5	Thana	84.2	1,17,078	1,390
6	Wada	284.3	55,184	194
7	Bhiwandi	263.7	1,13,632	431
8	Kalyan	278.9	2,73,261	983
9	Murbad	346.9	69,563	200
10	Mokhada	242.2	39,140	161
11	Shahapur	635.3	99,019	156
12	Jawhar	310.7	67,400	217

Detailed information is given in Statement "A".

3. *Physical features.*—All along the western border of the District is the Arabian Sea. To the east of the coast line is a plain and fertile land sloping to the west. It is covered with beautiful fruit gardens. The level of this plain rises as one goes towards the east. The greater part of the eastern side of the district is a continuation of Sahyadri hills some of them 1,500 feet to 2,500 feet above the sea level. Towards the west, not far away from the sea coast, the plain area is intersected by hills covered with forests with rice fields below these hills. The main rivers of the district are the Ullhas, the Vaitarna, the Tansa, the Surya and the Bhorji. The Vaitarna and its distributaries flow through the greater part of the district in the centre, while the Ullhas flows in the north of the district. Parts of the rivers on the west are tidal and provide communications for small cargo ships. The whole of the eastern part of the district is covered with dense forests, while along the western boundary are beautiful gardens of coconut, mango and other trees. The sub-soil water in the coastal area is good both for drinking and for irrigation.

4. *Soils and Crop Pattern.*—The soil all along the coast line, particularly in Umbergaon, part of Dahanu, Palghar and Bassein is blackish and contains sand. It is, however, suitable for garden crops. Beyond the western railway towards the east, is found red and brown soil, not very deep but suitable for rice crops. Further east on the hill slope, the soil is poor and is used for growing only grass or coarse grains, such as Nagli, Vari and Kodra. In the valleys, there are patches of black soil in Bhiwandi, Kalyan, Mokhada and Shahapur talukas, where rice, which is the principal crop of the district covering more than 50 per cent. area, is grown. A large area grows only grass which is sent to Bombay. The small cultivators belonging to backward classes, cultivate land only during parts of the year, particularly in monsoon, and go for labour in forests during the rest of the year. This is a source of supplementary income to these people. The area under forests in the district is 8,89,075 acres.

The area under different crops in the district is given below :—

Crop.	Aores.
Rice	3,79,144
Nagli	43,668
Wari	16,921
Pulses	29,564
Fruit trees	5,951
Vegetable and condiment spices	5,400
Grass	2,13,588

5. *Rainfall*—Talukawise average rainfall and minimum recorded during the last 27 years is given below :—

Taluka.	Average rainfall.	Minimum Rainfall.
Thana	109.5	61.78 (1941)
Kalyan	107.7	63.73 (1941)
Murbad	110.6	73.78 (1941)
Shahapur	113.6	80.89 (1951)
Mokhada	103.7	68.66 (1957)
Bhiwandi	105.0	67.70 (1941)
Bassein	88.0	45.52 (1941)
Wada	113.6	80.37 (1939)
Dahanu	81.7	52.23 (1950)
Umbergaon	62.6	32.14 (1941)
Jawhar	142.5	84.50 (1951) 10 years.
Palghar	115.5	61.70 (1950) 10 years.

Part II—Determination of Chronic Scarcity and Precarious Areas.

No part of this district has been affected by scarcity during the last 30 years. It appears, however, that in a few villages rice crops had failed on account of inadequate rains in the years 1941 and 1942, in Palghar and Dahanu talukas. In a few villages in Murbad, Kalyan and Thana talukas, land-revenue was suspended on account of the failure of crops. Such villages were, however, very few and these were affected only once. On the whole, this district receives heavy and assured rainfall and should, therefore, be considered as free from scarcity.

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross Area		Population.	Density per Sq. Mile.	Gross cropped area.	Net cropped area.	Area under forest.
			In Sq. Miles.	In Acres.					
1	2	3	4	5	6	7	8	9	10
1	Dahanu	128	372.1	2,41,633	1,31,237	355	37,044	36,149	1,15,004
2	Umbergaon	74	228.8	1,55,293	1,13,462	491	97,003	93,937	20,132
3	Falghar	184	421.9	2,60,190	1,43,504	352	99,744	98,135	1,13,929
4	Baesein	84	202.2	1,33,284	1,33,523	657	43,343	40,557	58,339
5	Thana	41	84.2	84,711	1,17,073	1,390	31,431	31,101	12,749
6	Wada	163	384.3	1,94,277	55,134	194	33,969	30,713	93,299
7	Bhiwandi	195	263.7	1,69,735	1,13,632	431	64,121	63,437	61,366
8	Kalyan	222	273.9	1,60,630	2,73,261	983	60,615	59,333	39,293
9	Murbad	169	346.9	2,24,201	69,563	200	76,826	76,019	58,979
10	Mokhada	69	242.2	1,63,279	39,140	161	39,577	39,315	61,506
11	Shahapur	193	635.3	3,33,531	99,019	156	78,157	75,199	1,93,421
12	Jawhar	111	310.7	2,11,552	67,400	217	66,345	66,263	64,563
District Total		1,636	3,672.2	23,92,421	13,61,053	370	7,79,135	7,60,176	8,39,075

STATEMENT "B",

Rainfall Data.

(Fig. in inches.)

Year.	T A L U K A S												
	Thana.	Kalyan.	Murbad.	Shahapur.	Mokhada.	Bhiwandi.	Bassein.	Wada.	Dahann.	Umbergaon.	Jawhar.	Palghar.	
1931	..	132.40	131.39	137.44	137.28	120.22	125.26	130.28	170.14	79.41	62.75	.....	.....
1932	..	91.98	70.95	97.27	108.99	109.16	88.20	83.40	99.76	77.31	66.18	.....	.....
1933	..	106.87	111.11	129.18	119.71	121.90	107.19	86.08	108.09	70.43	61.83	.....	.....
1934	..	105.88	104.00	102.38	109.70	94.59	96.49	86.43	101.14	82.25	80.25	.....	.....
1935	..	96.91	85.96	81.45	90.58	81.08	89.07	73.26	105.65	78.42	43.25	.....	.....
1936	..	131.09	85.90	94.36	94.30	92.59	84.14	63.58	96.04	66.55	60.82	.....	.....
1937	..	157.06	119.68	117.62	114.89	111.78	112.78	88.41	124.88	99.18	65.13	.....	.....
1938	..	115.83	118.53	140.82	136.77	116.45	131.25	90.36	115.43	73.72	74.91	.....	.....
1939	..	77.23	78.08	91.57	85.20	84.05	75.84	64.49	80.37	58.33	51.06	.....	.....
1940	..	123.20	103.81	123.72	122.24	119.22	125.79	83.34	117.43	100.53	67.64	.....	.....
1941	..	61.73	63.73	73.73	88.20	94.35	67.70	45.42	91.50	58.60	32.14	.....	.....
1942	..	95.77	116.99	125.12	129.00	115.96	119.78	101.80	122.29	83.05	63.61	.....	.....
1943	..	110.17	122.63	115.31	139.19	104.28	125.45	92.12	111.59	66.59	45.42	.....	.....

1944	..	..	103.80	120.61	180.69	128.58	118.74	108.74	84.68	114.49	84.11	72.98	....	...
1945	..	..	111.45	123.62	109.66	112.76	111.24	118.26	88.35	118.86	88.99	89.57	....	....
1946	..	..	104.39	128.88	124.80	124.85	112.71	122.22	77.97	110.53	73.88	69.03	....	....
1947	..	..	90.44	97.84	104.81	98.89	103.76	90.84	79.22	109.08	75.64	63.04	....	....
1948	..	..	94.81	90.82	84.89	93.39	88.66	69.05	72.02	91.58	61.89	49.27	....	....
1949	..	..	102.72	101.53	104.14	107.44	93.11	99.91	87.98	112.87	88.05	68.77	115.5	123.4
1950	..	..	71.61	66.00	90.11	97.38	108.60	88.17	87.07	99.04	52.23	46.91	135.0	61.7
1951	..	..	101.44	81.03	75.96	80.89	69.50	101.58	94.12	85.70	58.30	45.77	84.5	75.2
1952	..	..	98.63	85.24	87.46	96.20	84.88	77.27	69.42	93.52	94.97	37.73	130.5	71.5
1953	..	..	115.03	105.54	92.70	123.82	96.83	99.88	115.54	122.62	103.56	74.41	168.2	120.0
1954	..	..	149.30	149.05	129.23	121.09	117.29	140.72	120.80	145.95	141.90	100.30	165.5	202.7
1955	..	..	131.78	116.54	118.69	130.81	115.25	112.04	92.51	121.42	84.88	52.06	144.3	109.8
1956	..	..	142.11	137.52	142.30	155.44	138.36	119.39	106.49	143.02	122.73	65.84	184.5	113.5
1957	..	..	104.54	124.43	98.30	95.61	68.66	95.21	73.30	99.26	70.79	53.43	118.4	129.9
1958	..	..	140.41	173.55	124.47	138.07	108.20	150.07	156.69	168.76	140.40	102.18	174.1	147.6
Average	..	..	109.5	107.7	110.6	113.6	103.7	105.0	88.0	113.6	81.7	62.6	142.5	115.5
Minimum	..	..	61.78 (1941)	63.73 (1941)	73.78 (1941)	80.89 (1951)	68.66 (1957)	67.70 (1941)	45.42 (1941)	80.37 (1939)	52.23 (1950)	32.14 (1941)	84.5 (1951)	61.7 (1950)

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.				Area under irrigation by wells.	Total area under irrigation and its percentage to cropped area.	
1	2				3	4	
1	Dahanu				2,138	2,138	2.5
2	Umbergaon				780	780	0.8
3	Palghar				1,876	1,876	1.7
4	Bassein				3,687	3,687	9.0
5	Thana				420	420	1.3
6	Wada .. .. .				....	..	..
7	Bhiwandi .. .. .				....	..	..
8	Kalyan				26	26	N
9	Murbad .. .. .				....	..	..
10	Mokhada .. .. .				....	..	..
11	Shahapur .. .. .				....	..	..
12	Jawhar .. .. .				....	..	..
District Total ..					8,927	8,927	1.2

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar under Kharif.	Total cereals.	Total pulses.	Total food-crops.	Oil seeds.	Fodder crops.	Total non-food crops.
1	2	3	4	5	6	7	8	9	10	11
1	Dahanu	39,572	....	399	43,021	3,723	48,336	586	37,950	38,708
2	Umbergaon	33,200	90	282	33,212	5,551	45,108	461	51,837	52,485
3	Palghar	54,962	....	64	57,774	1,675	60,707	220	38,586	38,977
4	Bassein	31,622	....	....	32,460	1,664	38,091	244	4,701	5,752
5	Thana	19,914	....	....	20,099	175	20,656	12	10,763	10,825
6	Wada	28,475	....	2	30,123	1,122	31,384	131	2,402	2,585
7	Bhiwandi	44,575	....	....	46,731	1,574	49,308	428	13,962	14,763
8	Kalyan	30,580	....	....	32,192	1,076	34,016	323	25,932	26,599
9	Murbad	32,091	....	....	42,403	3,865	46,976	1,257	27,703	29,650
10	Mokhada	6,891	....	97	31,889	5,153	37,096	2,470	....	2,481
11	Shahapur	36,008	....	....	48,525	2,405	51,208	714	25,822	26,949
12	Jawhar	21,194	530	55,450	1,581	64,107	1,862	63	2,238
	Total	3,79,144	90	1,374	4,78,879	29,564	5,27,113	8,948	2,39,711	2,52,022

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CHAPTER XXIV.

NASIK DISTRICT.

Part I—Background.

1. *Location.*—The district is bounded on the north by the Districts of Dangs and West Khandesh, on the east by the East Khandesh and Aurangabad Districts, in the south by the Ahmednagar District and on the west by the Districts of Thana and Surat. The present Surgana Taluka of this District was an ex-State area merged with Bombay State in 1948.

2. *Administrative set-up.*—The total area of the district is 6,012.5 sq. miles with a population of 14,29,916. The density per sq. mile is 237 persons according to 1951 Census. For administrative purposes, the district has been divided into 11 Talukas and 2 Mahals as shown below :—

Serial No.	Name of Taluka/Mahal	Number of Villages.	Area in square miles.	Population.
1	✓ Baglan	149	628.5	11,999
2	✓ Chandor	101	369.8	75,798
3	✓ Dindori	122	496.1	87,405
4	✓ Kalwan	159	431.0	75,005
5	✓ Malegaon	145	754.2	2,10,347
6	✓ Nandgaon	80	430.7	95,133
7	Nasik	132	524.5	2,54,076
8	✓ Niphad	115	417.4	1,24,727
9	✓ Sinnar	101	516.6	1,07,267
10	✓ Yeola	116	408.7	88,379
11	Peint Mahal	148	341.8	51,815
12	Surgana Mahal	159	316.4	43,813
13	Igatpuri	126	377.1	96,182

Statistical data about each Taluka is given in Statements A to D, attached.

3. *Topography.*—The western part of the District lies in the Western Ghats. It is a hilly area covered with forests, with heavy annual rainfall varying from 50" to 150" mostly from south-west monsoon. This area is known as Dangi or Konkan area. The main crops of this area are paddy and hill millets. It comprises the whole of Surgana, Igatpuri, Peint and western parts of Nasik, Dindori, Kalwan and Baglan talukas. The eastern parts of Nasik, Dindori, Balgan, Kalwan and the talukas of Chandor, Niphad and Sinnar form the central part, known as the transitional tract, with low but fairly assured rainfall, capable of growing both kharif and rabi crops. This tract is well-known for its garden crops cultivation due to large acreage under wells and bandharas. The third zone on the extreme east of the district comprises the talukas of Malegaon, Nandgaon and Yeola, with precarious rainfall and inferior soils, with the exception of the villages located near the River Godawari. The transition as well as the eastern belt of the district is fairly plain, devoid of any forests. The rainfall in the transition zone varies from 25" to 35", while that in the eastern zone it is less than 25".

4. *Soils.*—The soils of the district are derived from the trap-volcanic rock and hence the soils all over the district are either black or murmad. These soils present a lateritic appearance in the western zone due to heavy rains and humid conditions. Most of the soils are formed *in situ* excepting those along river banks which are transported black alluviums quite deep and fertile. The soils all over the district are undulating with the exception of the river valleys and hence have been severely affected by erosion. The soils along the Girna and Mosum, in the upper reaches of their confluence are fairly deep and enjoy the benefit of

large bandharas irrigation. The eastern part of Malegaon, including the upghat area, is rocky with no irrigation facilities. The talukas of Nandgaon and Chandor have poor soils and have to be contented with the crops like bajri and pulses. The Godawari and Kadva river valleys offer considerable scope for growing both kharif and rabi crops, as they have deep black soils.

5. *Rainfall*.—The average rainfall for each taluka is as given below. A detailed statement showing monthwise rainfall of the scarcity affected talukas is appended :—

Taluka.				Average rainfall (inches).
Igatpuri	...	...	...	140.4
Surgana	...	...	...	78.7
Peint	...	...	...	96.87
Dindori	...	...	...	26.60
Niphad	...	...	...	21.50
Chandor	...	...	...	24.52
Malegaon	...	...	...	21.20
Sinnar	...	...	...	22.93
Kalvan	...	...	...	29.01
Nandgaon	...	...	...	21.92
Yeola	...	...	...	21.43
Baglan	...	...	...	20.70
Nasik	...	...	...	20.10

6. *Land Utilization*.—Of the total area of 38,32,727 acres of the district, 3,66,800 acres are barren and uncultivable. The area under forests is 8,34,507 acres, which is also not available for cultivation. Cultivable waste is 26,800 acres and under permanent pasture and grazing is 1,55,000 acres. Thus the net area available for cultivation is 23,12,743 acres, which is 60 per cent. of the gross area.

7. *Crop pattern*.—The main crops of the district with the acreage under each crop are as shown below. The major part of the district area is under kharif crops :—

Crops.				Acreage.
1. Bajri	...	...	...	8,62,908
2. Oilseeds	...	...	...	2,76,155
3. Wheat	...	...	...	2,51,153
4. Rabi Jowar	...	...	...	1,43,765
5. Rice	...	...	...	81,935
6. Kharif Jowar	...	...	...	27,179
7. Cotton	...	...	...	47,735

The area under kharif crops in the district is roughly 78 per cent. of the cultivated area. The talukas of Niphad, Yeola, Dindori, Kalvan, and Nasik have a fairly large acreage under rabi crops like wheat, gram, and rabi jowar. The net area sown under crops is roughly 23 lakh acres of which about one lakh acres are irrigated by canals and wells. The area under sugarcane is about 20,000 acres, while that under vegetables and fruits is 35,000 acres.

8. *Irrigation*.—The main rivers are Mosum, Girna, Godavari, Kadva and Darna. Some of them are used for irrigation. The irrigable area under major schemes in the district is 7,600 acres. Under medium irrigation schemes, which have been completed or in progress, an area of 15,000 acres is expected to be irrigated. There are also second class bandharas and tanks by which an area of about 25,071 acres is being irrigated. The canals serve Baglan, Dindori, Malegaon, Nasik, Niphad, Sinnar and Yeola talukas.

Under Gangapur project, an additional area of 25,000 acres under mixed cropping is likely to be brought under irrigation.

The following works are in progress and are likely to be completed by the end of the 2nd plan :—

Name of work.	Area to be irrigated (acres).
Bhandara at Andarsul, Taluka Yeola ...	300
Bhandara at Ajmirseundane, Taluka Malegaon.	100
Bhandara at Mirgaon, Taluka Baglan ...	700
Bhandara at Gangawan, Vispur, Badwan, Taluka Kalwan ...	189
Bhandara at Verule, Taluka Kalwan ...	300
Mosum River Canal Project, Taluka Malegaon	12,000
Girna Right Bank Canal, Taluka Malegaon. ...	15,000
Bhandara at Soegaon, Taluka Malegaon ...	400
Bhandara at Chinchwad, Taluka Peint ...	100
Khadak Ozer Tank in Chandor, to benefit Niphad ...	3,187
Diversion of Galoti, Nalla ...	N. A.
Total ...	29,176

The present acreage under irrigation is about one lakh, which is only 4.3 per cent. of the cultivated area.

9. *Forests.*—Generally all talukas in the district have forests. However important forest areas are Surgana, Peint, Kalwan and Baglan.

10. *Transport and Communications.*—The main Railway line of the Central Railway viz. Bombay-Delhi line passes through the district. Manmad is an important junction from which meter gauge Railway line goes to Aurangabad. The main line serves Igatpuri, Nasik, Dindori, Chandor, Nandgaon and Yeola talukas, while the meter gauge line serves the Chandor and Yeola Talukas.

The Bombay-Agra National Highway passes through the centre of the district, dividing the district almost in two equal parts. Another highway is Nasik-Poona road. There are a number of other roads connecting important places in the district. Total roads mileage of all the roads is more than 700 miles. On the whole, therefore, communication facilities are satisfactory.

11. *Industries.*—There are no major industries in the district. However, there are a number of small units of handlooms employing 26,312 weavers.

The registered factories in the district is 251 of which 236 are working employing on an average 13,749 persons daily.

12. *Livestock.*—Of the total cattle population of 7,28,274, the number of bullocks is 3,19,991 and cows 4,05,074. The number of buffaloes is 91,925. The number of sheep is 1,39,059 and goats 3,53,587.

13. *Livelihood.*—Of the population of 14,29,916, the number of persons employed in agriculture are 9,61,928, in production other than agriculture are 1,64,186, in commerce 79,502 and in transport 31,335 persons. Services and other miscellaneous occupations account for 1,92,965 persons.

Part II—Determination of Precarious and Chronic Scarcity Areas.

Igatpuri, Surgana and Peint.—Igatpuri taluka and Surgana and Peint Mahals are heavy rainfall areas. Rainfall data is available for Surgana and Igatpuri for the last 10 years. The minimum rainfall in Surgana was 48" during 1951. No

part of it was affected by scarcity in the years for which data is available, though most of the neighbouring areas were affected in 1951-52 and 1952-53. In Igatpuri the minimum rainfall recorded was 106.5 in 1957. The taluka town is situated amidst the Western Ghats and hence the high figure of rainfall. The eastern part of the taluka has less rainfall. In this year about 4 villages are shown to have been affected, and their annewari was between 4 and 6 annas. These villages are on the eastern border adjoining Sinnar taluka. In Peint, the minimum rainfall recorded was in 1952 which was 6.1". No part of Peint has been affected by scarcity in the past. Thus, one taluka and two mahals of this district are heavy and assured rainfall areas and consequently would be regarded as free from scarcity.

According to the previous history of this district, the following areas were affected during the last 30 years:—

Taluka.	Circle.	Year in which affected.	
		1946-47.	1952-53.
Chandor	Digwad	Yes.	Once.
	Chandor	"	"
	Vadner	"	"
Yeola	Yeola	"	"
	Patoda	"	"
	Andarsul	"	"
Kalwan	Deola	"	"
Dindori	Dindori	Yes.	"
Niphad	Niphad	Yes.	Twice.
	Saikheda	"	"
	Pimpalgaon	"	"
	Lasalgaon	"	"
Nandgaon	Manmad	"	"
Malegaon	Vadner	"	Once.
	Karanjgaon	"	"
	Malegaon	"	"
	Saundane	"	"
	Nimgaon	"	"
	Kalwadi	"	"
Baglan	Zodge	"	"
	Satana	"	"

According to the annewari data, the incidence of scarcity in different areas is as shown below:—

	Number of villages affected.		
	Once.	More than once.	More than twice.
Chandor	71	20	1
Kalwan	17	....	....
Malegaon	100	....	....
Nandgaon	32	4	....
Niphad	56	28	10
Sinnar	38	13	3
Yeola	69	10	....
Nasik	8	....	....
Igatpuri	4	....	....
Baglan	12	....	....

Kalwan, Nasik, Baglan and Dindori.—The above data would show that in Kalwan, Nasik and Baglan talukas, only a few villages were affected once during the last 30 years. The number of villages affected were 17 out of 159 in Kalwan, 8 out of 132 in Nasik and 12 out of 142 in Baglan. The land revenue suspension data also shows that except for one village in Baglan taluka which had $3\frac{1}{2}$ suspensions, no village had more than three full suspensions during the last 30 years in the above talukas. In Kalwan, only one village had three full suspensions, 9 villages had 2 suspensions, 45 villages had 1 suspension and the rest had no suspension of land revenue during 30 years. In Nasik only 53 villages had $\frac{1}{2}$ to 1 full suspension, while the rest had no suspension of land revenue.

The average rainfall in the above three talukas was as under:—

		Average rainfall.	
		Worked out on basis of last 30 years data.	according to 10 years data.
Nasik	...	.....	20·10"
Kalwan	...	29·01"	.....
Baglan	...	.....	20·70"

The rainfall during lean years was as shown below:—

		(Fig. in inches.)				
		1936	1951	1952	1953	1957
Nasik	..	....	14·7	13·04	14·6	....
Baglan	..	....	13·1	12·7	....	13·1
Kalwan	..	12·7	....	....	....	12·35

According to the rainfall data, the lean years are not exceeding three in each of the above talukas. The area under irrigation in Baglan is 9,626 acres (4·1 per cent. of the net cropped area), in Kalwan it is 7,895 acres (4·8 per cent.), out of which 3,419 acres are under canals. In Nasik it is 7,745 acres out of which an area of 2,346 acres is under canals. The taluka of Dindori which adjoins Peint and Nasik talukas was not affected by scarcity during the last 30 years. The average rainfall recorded at Taluka Headquarters of Dindori on the basis of the last 10 years rainfall figures is 26·6". The rainfall is more towards the west. From the old Settlement Report in which rainfall figures are given for different places, it appears that the average was as high as 60" at Chachadgaon, a village on the western side of the taluka, adjoining Sahyadri ranges. The rainfall figures for last 10 years show that this area had assured rainfall. Even during 1951-52, which was a lean year in most of the adjoining talukas of Nasik district, the total rainfall in Dindori was 25·3". For these reasons, this taluka along with Nasik, Baglan and Kalwan, may be regarded as free from scarcity.

The statements regarding incidence of scarcity given above would show that Niphad and Sinnar talukas have been affected more frequently than other talukas.

Niphad Taluka.—The taluka is mostly a plain, broken only by solitary hills of no great height. It slopes gradually down to the Godavari. Among all the talukas of the district, this taluka has comparatively better soil which is medium, growing crops like grapes, onions, bajri, wheat and sugarcane.

The average annual rainfall worked out on the basis of 1931-57 figures is 21·50". It was 10·50" only once in 1952 resulting in failure of crops in a majority of villages. Some area is under the Godavari canals. As far back as the year 1914, the area under irrigation in this taluka was 6·58 per cent. of the total cropped area. The percentage of irrigation in Niphad is 7·3 at present. There is a considerable area under wheat viz. 63,073 acres, which shows that the taluka has a good soil. The taluka is shown to have been affected three times during the last 30 years. According to annawari data, out of 115 villages, only 10 villages were affected 3 times, 28 villages were affected twice and 56 villages were affected once, the rest were not affected at all.

The villagewise annewari data of last 30 years, translated into full suspensions, has shown that—

- 1 village had $7\frac{1}{2}$ full suspension.
- 1 village had 6 full suspensions.
- 2 villages had $5\frac{1}{2}$ full suspensions.
- 1 village had 5 full suspensions.
- 3 villages had $4\frac{1}{2}$ full suspensions.
- 3 villages had 4 full suspensions.
- 10 villages had $3\frac{1}{2}$ full suspensions.
- 7 villages had 3 full suspensions.
- 19 villages had $2\frac{1}{2}$ full suspensions.
- 25 villages had 2 full suspensions.
- 27 villages had $1\frac{1}{2}$ full suspensions.
- 17 villages had 1 full suspension.
- 5 villages had $\frac{1}{2}$ full suspension.

121 villages.

The monthwise rainfall data is available for a period of 1931-57. The study of this data shows that the precipitation was scanty during the years 1934, 1936, 1939, 1942, 1945, 1952, 1954, 1955 and 1957. The rainfall actually recorded during the above years in monsoon months June to October is reproduced below :—

Year.	June.	July.	August.	September.	October.	Total.
1934	3.57	3.25	6.82	1.70	0.15	15.49
1936	4.59	1.14	1.56	5.50	....	12.79
1939	1.26	7.26	6.00	0.78	1.68	16.98
1942	3.49	7.59	2.16	1.55	....	14.79
1945	0.97	3.25	7.01	3.23	0.43	14.89
1952	1.81	4.78	1.30	0.91	0.62	9.42
1954	2.06	....	4.59	8.24	....	14.89
1955	0.50	1.38	2.87	3.95	7.01	15.71
1957	2.59	2.37	3.27	0.46	0.77	9.46

From the above figures, it may be inferred that the crops must have failed during the years 1936, 1952, 1954 and 1957, whereas, partial scarcity or partial failure of crops must have been experienced during the rest of the years. The inferences drawn with reference to rainfall are fully supported by the annewari figures of the last ten years which are available. According to these figures, 26 villages had 3 to 5 annas kharif crops during 1952-53 and 5 villages had 4 to 5 annas kharif crops during 1957-58. The rabi crops are shown to have been assessed at less than two annas in 68 villages during the years 1952-53 and 1956-57. Nine villages have been shown to have secured 5 annas rabi crops during the year 1957-58. The rabi crops suffered due to heavy rains in 1956-57.

In view of the above facts, the eastern portion of the taluka comprising the Niphad and Lasalgaon circles, with the exception of ten villages served by Godawari Left Bank canal, needs, to be grouped under category 'C', but in view of the other conditions like better soil and increasing acreage under irrigation, this whole taluka has been considered free from scarcity.

Sinnar Taluka.—This taluka constituted the southern part of the district, bordering Sangamner and Kopergaon talukas of Ahmednagar district. The whole taluka in general has light soils and undulating terrain. The western and southern parts of the taluka are hilly with rolling murmad soils, while the eastern portion and the narrow strips along the rivers are plain with medium black soils. Most of the soils are susceptible to erosion.

The crops grown are mainly bajri—1,33,000 acres, jowar—24,800 acres, wheat—21,300 acres and pulses—24,500 acres roughly. The area under irrigation is 12,743 acres, of which about 5,200 acres are under canals and the rest under wells. The irrigated acreage is mostly under wheat, onions, sugarcane, and paddy. The average rainfall, as recorded at the taluka headquarters over a period of 30 years, has been 22·93". On account of the lighter soils, kharif crops are mainly resorted to and hence the rainfall during the months of June to September is most vital in deciding the crop harvests. The area under irrigation is 12,743 acres, out of which the area under canals is 5,245 acres. According to the previous history of the taluka, out of 101 villages, only 54 villages were affected during the last 30 years. 38 villages were affected once, 13 more than once and 3 villages were affected more than twice. The history of scarcity would thus show that except for 3 villages, none of the villages in the taluka was affected more than twice in the last thirty years. For these reasons, this taluka also may be regarded as free from chronic scarcity.

Yeola Taluka.—The taluka is situated along the eastern side of the district, with the river Godavari flowing along the southern boundary. It adjoins the Vaijapur Taluka of Aurangabad district on the eastern side and Kopergaon taluka. The soils are better, capable of growing kharif as well as Rabi crops. The taluka is cut up by a few seasonal nalas and the streams and the terrain is an undulating plain except to the north, where the Satmala range exhibited by the Anka hills has made the soils very poor and stony. The soils all over the taluka have been badly eroded. The average rainfall for 1931-57 period is 21·43", but the rainfall is not assured and it fluctuates to a great extent as seen from the Coefficients of Variation for August-September and September-October periods, which are 101·40 and 102·16 respectively. Moreover, the rainfall decreases towards the west in the area adjoining Vaijapur Taluka of Aurangabad district. The rainfall was less than 15" during the following years :—

1944	14·40"
1952	13·18"

In the following years the rainfall was deficient during certain months as shown below :—

Year.	June.	July.	August.	September.
1936	0·77	0·97	....
1937	0·67	....
1955	1·88	1·67	....

The main crops of the taluka are :—

Crop.	Acres.
Bajri	87,140
Rabi Jowar	40,157
Wheat	21,921
Oilseeds	22,097

The total area under irrigation is 8,523 acres. The area under canals is 2,482 acres. The area under canals is partly under Darna dam scheme, which is a major irrigation scheme and partly (about 700 acres) under the minor irrigation scheme viz. Khirdisathe tank. The irrigation is done only when the tank is full. The northern and western parts, it seems, have no irrigation facilities. Out of 116

villages, 79 villages appear to have been affected once and 10 twice. According to the land revenue suspension data for the period 1923-53, no suspensions were given in any of the villages of this taluka. Looking to the number of times these villages were affected, it would not be regarded as a scarcity area.

Nandgaon Taluka.—This taluka is situated on the eastern border and to the north of Yeola taluka. There is an extensive area in this taluka which is hardly fit for cultivation. The soil is light and shallow, unable to bear heavy rainfall. There are, however, stretches of fairly good black soil, particularly to the south of Devu. The main crops of the taluka are—

Crops.	Acres.
Bajri	98,608
Rabi Jowar	3,296
Kharif Jowar	3,896
Wheat	5,422
Oilseeds	21,607

The area under irrigation is only 3,200 acres, mostly under wells. The average rainfall worked out on the basis of 1931-57 figures is 21.92". During the following years, the rainfall was less than 15"—

Year.	Rainfall.
1936	12.76"
1937	14.50"
1941	12.54"
1952	11.49"
1957	13.28"

In 1936, the rainfall during July and August was only 0.93" and 0.59". In 1937, it was only 0.69" in August. Thus out of 30 years, the rainfall was scanty during five years. The coefficient of variation for August-September period is 41.19 and for September-October it is 47.08. Apart from the above average, it appears that the rainfall is lower towards south-west in Manmad area, as appears from the figures quoted in the Revision Settlement Report.

According to the previous history of scarcity, out of 80 villages of this taluka, 36 villages were affected during the last 30 years. 32 villages were affected once and 4 villages twice. According to the land revenue suspension data for the period 1923 to 1953, no villages were affected more than once. Looking to this data, this taluka would not be regarded as a scarcity area.

Chandor Taluka.—It is situated in the central part of the district to the south of Satmala range. The country is mostly undulating. Barren uplands alternate with fertile low-lying lands known as Lavans. The major part of the taluka consists of light Kharif land usually shallow, stony and slopy. Small patches of lands used for raising bagayat crops, like wheat and gram by means of wells, are found scattered here and there. The soil in the villages in the eastern part is poor on the whole, being mostly 'barad' with a classification seldom exceeding 4 annas. The rainfall is not uniform throughout the taluka on account of its great length from west to east and also because of the range of mountains in the north. The average rainfall for the period 1931-57 is 24.52". The total annual rainfall was never less than 15" during the period 1931 to 1957, but if only rainfall from June to October is considered, then it was less than 15" during 1935 when it was 13.21".

The Taluka place is located near the hill range and hence the rainfall recorded at Chandor proper is more than that received in southern and eastern parts of the Taluka. The rainfall in these parts would average to hardly 20".

The distribution also appears to be quite normal. The main crops grown in the area are :—

Crops.				Acres.
Bajri	...	...	...	1,05,134
Wheat	...	..	...	13,786
Oilseeds	...	..	..	10,894

The area under irrigation is 9,385 acres (5.1 per cent.). The area under seasonal bandharas being 2,694 acres. Thus, Bajri is the major crop which may be grown with 15" to 20" of rainfall. Under the Khadak Ozar tank, which is the medium irrigation work in progress, the area likely to be benefitted in this taluka would be 4,000 acres. Looking to the rainfall data, there was no abnormal year during the last 30 years. Out of 101 villages of the taluka, 71 villages were affected once and 20 villages twice, according to annewari data of last 10 years. According to the Land Revenue suspension data, 9 villages had 5 to 6½ full suspensions, 17 had 3½ to 4½ full suspensions, 14 villages had 3 full suspensions, 28 villages had ½ to 1 full suspension, while 8 villages had no suspensions. Though some of the villages of this taluka have been affected frequently, there is no tract as such, which could be regarded as affected by chronic scarcity. This taluka would not therefore be regarded as a scarcity area.

Malegaon Taluka.—There are 145 villages in the taluka. It is situated in the north-eastern corner of the district. It is the largest taluka in the district, its area being 754 sq. miles. The soil in this taluka is generally medium black, but a portion of the taluka has got undulating and shallow soil. The average rainfall of the taluka on the basis of the annual figures of 1931-57 is 21.20". It was less than 15" twice during the period of 27 years, once in 1951 when it was 14.01" and during 1952 when it was 9.36". The other lean years, according to the June-October rainfall figures, are 1934 when the total for June-October period was 11.87", 1936 when it was 12.93", 1941 when it was 13.16" and 1952 when it was 9.56" during June-October period. During the years 1936, 1937 and 1952, the distribution was also not fair. The total rainfall during July 1936 was 0.84" and in August it was 0.59". In 1937 it was 0.10" in August. Except for these years, the distribution appears to be fair. The main crops of the taluka are :—

Crops.				Acres.
Bajri	..	...	...	1,50,447
Wheat	...	...	...	13,947
Kharif Jowar	..	...	...	21,209
Rabi Jowar	...	...	..	6,550
Oilseeds	..	..	...	48,665
Cotton	...	...	...	34,290

The area under irrigation is 17,064 acres (5.8 per cent.), the area under canals being 15,600 acres. Under the Mosam Right Bank Canal, which is almost completed, additional area of 15,000 acres in Malegaon will be irrigated.

Out of 145 villages, according to annewari data, 100 villages were affected once and two villages were affected twice during the last 10 years. According to the land revenue suspension data for the period 1923 to 1953, 95 villages had no suspension. In view of the annewari and land revenue suspensions data, this taluka would not be regarded as a scarcity affected area.

Some parts in Yeola, Malegaon, Niphad, Nandgaon and Chandor, have been affected sometimes in the past on account of deficient rains or poor soils. However, the Land Revenue suspension or annewari data which is available for the last 30 years shows that these areas have not been affected frequently and may not therefore be treated as scarcity area. For these reasons, the whole of the Nasik District should be regarded as free from scarcity.

STATEMENT "A".

Basic Data.

Serial No.	Taluka.	No. of villages.	Gross area in		Popula- tion.	Density per Sq. mile.	Gross cropped area.	Not cropped area and its percent- age to total area.	Area under forests.		
			Sq. miles.	Aores.							
1	2	3	4	5	6	7	8	9	10		
1	Baglan	..	149	628.5	3,93,318	1,19,949	191	2,31,786	2,22,618	55.9	1,18,502
2	Chandor	..	101	369.9	2,36,759	75,798	205	1,83,271	1,73,641	73.3	23,904
3	Dindori	..	122	496.1	3,26,947	87,405	176	2,10,041	2,03,608	62.2	53,420
4	Igatputi	..	126	377.1	2,52,285	96,162	255	1,33,631	1,28,596	51.0	53,853
5	Kalwan	..	159	431.0	2,78,045	75,005	174	1,62,919	1,50,120	54.0	89,429
6	Malegaon	..	145	754.2	4,78,812	2,10,347	279	3,26,685	3,05,493	63.6	98,856
7	Nandgaon	..	80	430.7	2,69,828	95,133	221	1,60,839	1,50,615	55.8	65,291
8	Nasik	..	132	524.5	3,14,878	2,54,076	..	1,80,411	1,74,204	55.3	44,478
9	Point Mahal	..	148	341.8	2,18,421	61,815	152	64,419	61,977	28.4	1,13,475
10	Niphad	..	115	417.4	2,60,615	1,24,727	299	2,31,204	2,17,204	85.5	2,796
11	Sinnar	..	101	516.6	3,31,155	1,07,267	210	2,47,721	2,41,987	73.0	34,925
12	Surgana Mahal	..	159	316.4	2,04,236	43,813	138	82,018	81,818	40.0	1,08,850
13	Yeola	..	116	408.7	2,62,432	88,379	216	2,10,792	2,00,964	77.0	26,729
District Total		..	1,653	6,012.8	38,32,727	1,42,916	237	24,25,737	23,12,743	60.3	8,34,507

STATEMENT "B".

Rainfall Data.

(Figure in inches.)

Taluka/Mahal.	Years.										Average.	Average of 27 years.
	1949.	1950.	1951.	1952.	1953.	1954.	1955.	1956.	1957.	1958.		
Niphad*	24.96	22.24	21.36	10.05	16.25	19.43	15.75	35.98	14.19	....	....	21.50
Chandor*	38.35	23.29	16.93	16.52	30.44	25.02	24.81	27.13	16.62	....	....	24.52
Point*	79.46	106.63	61.45	60.78	83.10	103.56	90.32	109.16	67.36	....	....	96.57
Malegaon*	30.52	17.94	19.38	9.36	23.65	26.65	25.95	28.53	15.57	....	....	21.20
Sinnar*	25.01	17.00	23.84	15.60	17.54	17.02	21.44	32.06	14.19	....	....	22.93
Kalwan*	49.44	42.49	21.53	24.80	16.69	26.39	21.06	42.67	9.68	....	....	29.01
Nandgaon*	35.47	15.11	25.48	11.49	18.92	23.85	23.26	29.43	13.28	....	....	21.92
Yeola*	28.50	22.06	25.07	13.18	15.26	17.13	16.82	32.48	16.80	....	....	21.43
Dindori	33.04	36.07	25.03	23.07	28.00	33.05	30.09	48.02	21.06	38.04	26.06	....
Surgana	82.02	89.08	48.09	68.09	68.09	89.08	86.03	96.05	47.06	98.02	78.07	....
Nasik	28.05	15.00	14.07	13.04	14.06	24.01	26.01	23.06	19.03	22.06	20.10	....
Baglan	23.09	18.07	13.09	12.07	20.03	22.06	21.03	32.04	13.09	25.07	20.07	....
Igatpuri	134.05	160.00	111.02	116.05	132.00	160.07	131.07	178.07	106.05	172.02	140.04	....

* Detailed monthwise figures given in Statement 'B-I'.

STATEMENT "B-I".

Monthwise Rainfall Data.

Taluka-Nandgaon.

(Fig. in inches)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total annual.	November to April.	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	
1931	..	2.95	5.31	1.02	5.78	10.50	26.46	29.15	2.69	
1932	..	0.05	2.85	3.77	3.18	8.79	3.12	21.76	23.53	1.76
1933	..	2.43	3.14	2.08	4.16	13.66	1.13	26.60	27.59	0.99
1934	2.21	3.80	6.53	5.21	..	17.75	21.01	3.26
1935	..	0.14	7.15	3.40	6.33	5.42	5.57	28.11	28.15	0.04
1936	..	1.94	3.97	0.93	0.59	5.21	0.12	12.77	25.16	12.40
1937	0.61	5.42	0.69	6.16	1.62	14.50	15.58	1.08
1938	..	4.45	5.12	51.12	6.38	6.66	3.58	31.31	32.33	1.02
1939	5.14	7.08	5.58	1.40	0.86	20.06	22.32	2.26
1940	..	0.45	6.14	1.52	6.71	4.50	1.15	20.47	21.58	1.11
1941	0.44	5.34	1.20	4.42	1.14	12.54	13.92	1.38
1942	4.06	2.52	5.03	4.13	..	15.74	16.71	0.97
1943	..	0.80	14.77	3.39	1.84	9.74	5.67	34.71	35.68	0.97
1944	..	0.10	3.62	5.35	5.76	6.58	0.28	22.69	22.69	..
1945	5.24	3.57	6.18	7.68	..	22.69	23.88	1.21
1946	..	0.89	1.30	2.58	2.06	10.30	..	17.13	26.49	9.25
1947	2.04	2.80	6.79	14.61	1.25	27.49	29.07	1.58
1948	9.56	5.71	3.34	2.63	1.42	22.66	27.17	4.51
1949	..	1.44	7.38	3.71	5.78	11.50	5.66	35.47	35.47	..
1950	..	0.05	1.69	6.31	2.08	4.71	1.27	15.11	15.36	0.25
1951	..	0.19	2.45	9.37	1.60	1.82	10.05	25.48	27.64	2.12
1952	..	0.41	3.07	4.07	1.40	2.53	0.01	11.49	11.49	..
1953	6.76	3.45	2.32	4.41	1.98	18.92	18.92	..
1954	5.18	1.72	5.45	11.40	0.10	23.85	26.48	2.63
1955	..	0.35	3.72	3.19	6.18	5.98	3.84	23.26	23.87	0.61
1956	..	2.58	2.97	4.84	4.33	11.93	2.98	29.43	33.54	4.11
1957	..	0.30	3.02	1.90	5.10	2.96	..	13.28	17.80	3.52
Average (1931-57)=21.92										

STATEMENT " B-1 ".

Monthwise Rainfall Data.

Taluka-Niphad.

(Fig. in inches.)

Year.	May.	June.	July.	August.	Septem- ber	October.	Total.	Total.	Novembe annual. to April.	
1	2	3	4	5	6	7	8	9	10	
1931	1.56	8.76	2.61	6.42	8.80	23.15	31.45	3.30
1932	..	0.10	1.34	9.09	5.97	8.96	4.84	30.30	31.98	1.68
1933	..	3.12	7.56	2.43	9.34	12.04	2.41	36.95	37.06	0.11
1934	3.57	3.26	6.82	1.70	0.15	15.50	21.10	5.60
1935	6.70	3.52	5.94	3.30	7.83	27.29	27.29	..
1936	..	0.95	4.59	1.14	1.56	5.59	..	13.83	20.83	7.00
1937	..	0.14	2.65	3.66	0.46	11.19	1.50	19.60	20.46	0.86
1938	..	8.68	5.72	5.51	2.65	5.84	10.45	38.86	34.80	3.94
1939	1.26	7.26	6.00	0.78	1.68	16.98	17.99	1.01
1940	5.48	3.19	3.16	2.28	1.96	15.97	18.38	2.41
1941	..	0.10	3.49	7.59	2.16	1.55	..	14.89	16.24	1.35
1942	..	0.10	3.49	7.59	2.16	1.55	..	14.89	16.24	1.35
1943	..	0.99	4.22	4.73	1.07	4.06	8.25	23.32	23.32	..
1944	..	0.40	8.76	8.62	5.51	4.05	2.03	29.37	29.50	0.13
1945	..	0.33	6.37	8.91	5.93	2.96	1.85	26.35	26.35	..
1946	..	0.91	1.28	1.88	4.37	5.57	0.08	17.09	25.67	7.58
1947	..	0.30	0.06	4.64	3.71	7.83	1.02	17.56	19.37	1.81
1948	..	0.40	8.00	4.01	2.78	1.70	2.29	19.18	25.76	6.58
1949	..	3.13	0.34	2.93	2.86	11.68	4.02	24.96	25.17	0.21
1950	..	0.77	0.55	12.42	0.36	7.61	0.58	22.24	28.45	1.21
1951	..	0.84	5.70	5.16	2.16	0.14	7.36	12.36	21.48	0.12
1952	..	0.63	1.81	4.78	1.30	0.91	0.62	10.05	10.05	.....
1953	3.35	2.38	5.19	2.02	3.31	16.25	17.02	0.77
1954	2.06	4.54	4.59	8.24	..	19.43	20.81	1.38
1955	..	0.04	0.50	1.38	2.87	3.95	7.01	15.75	17.43	1.68
1956	..	2.29	1.05	6.78	6.26	11.25	8.32	35.98	40.27	4.29
1957	5.50	2.59	2.37	0.27	0.46	14.19	15.12	0.93

Average (1931-57)=21.50

STATEMENT " B-1 ".

Monthwise Rainfall Data.

Taluka-Chandor.

(Fig. in inches.)

Year.	May.	June.	July.	August.	September	October.	Total.	Total annual	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	3.48	10.14	3.00	4.21	12.82	33.65	43.47	9.82
1932	2.64	9.13	4.19	4.30	4.05	24.31	27.21	2.90
1933	..	2.80	8.00	2.29	10.36	20.01	2.17	45.73	45.95	0.12
1934	1.25	4.62	5.64	4.00	..	15.51	26.38	10.87
1935	5.58	3.89	5.04	4.32	3.01	21.64	22.82	0.98
1936	..	1.53	2.70	2.35	1.00	5.63	..	13.21	22.41	9.20
1937	..	0.17	2.98	6.79	0.98	7.41	1.12	19.35	20.32	0.97
1938	..	4.57	7.87	6.46	3.84	7.63	4.68	35.65	38.22	3.17
1939	5.89	8.17	5.81	1.41	0.34	21.62	25.01	3.39
1940	11.35	3.47	5.10	6.17	5.82	31.91	33.22	1.31
1941	0.75	8.40	2.50	10.06	1.29	23.00	23.81	0.61
1942	3.56	6.40	3.53	2.34	..	15.33	16.90	1.66
1943	..	1.46	6.67	5.89	1.38	5.43	6.58	27.41	27.43	0.02
1944	..	0.07	5.74	11.48	9.39	4.19	4.19	35.06	35.10	0.04
1945	2.00	5.10	3.55	5.04	0.23	15.92	16.43	0.51
1946	..	3.16	4.63	4.77	5.98	6.99	..	25.53	34.28	8.75
1947	..	0.78	0.55	4.61	5.02	6.78	0.46	18.20	19.28	1.08
1948	8.79	3.66	2.37	3.13	1.69	19.64	24.21	4.57
1949	..	0.96	4.85	5.87	6.29	14.21	6.17	38.35	38.79	0.34
1950	..	0.15	2.33	12.44	1.16	6.77	0.44	23.29	23.43	0.14
1951	..	2.64	4.51	6.01	2.33	0.39	1.17	16.95	21.21	4.25
1952	4.48	9.01	1.67	0.99	0.37	16.52	16.53	0.01
1953	..	0.27	9.87	7.31	5.64	4.56	2.79	30.44	30.53	0.09
1954	5.41	3.83	2.42	13.33	0.03	25.02	26.20	1.18
1955	..	0.15	2.95	1.50	5.88	6.63	7.70	24.81	26.44	1.63
1956	..	3.20	1.64	3.91	8.21	7.86	3.31	27.13	35.47	8.34
1957	..	0.45	3.24	2.08	6.17	4.14	0.54	16.62	18.99	2.37

Average (1931-57)=24.52

STATEMENT "B-1".
Monthwise Rainfall Data.

Taluka-Malegaon.

(Fig. in inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	4.32	4.15	2.19	1.89	7.37	20.92	21.86	0.94
1932	..	0.12	2.80	6.02	2.01	4.57	3.18	18.77	21.86	3.16
1933	..	1.27	2.97	1.32	8.28	13.18	3.41	30.41	30.70	9.29
1934	..	0.88	2.29	2.84	2.94	2.69	0.23	11.87	14.01	3.14
1935	..	0.15	5.85	2.98	3.91	5.06	2.45	18.60	20.42	1.82
1936	..	0.23	5.66	0.84	0.59	5.60	0.01	12.93	14.81	1.88
1937	2.41	7.72	0.19	5.01	1.64	16.97	17.91	0.94
1938	..	3.60	4.10	6.58	2.00	11.82	2.39	30.49	30.67	0.18
1939	3.19	6.44	6.27	2.95	0.15	19.00	21.22	2.22
1940	..	0.40	5.12	1.35	3.48	4.84	1.48	16.65	19.56	2.91
1941	1.23	6.02	0.82	3.87	1.22	13.16	14.01	0.85
1942	..	0.04	5.88	3.57	4.24	4.14	..	17.87	19.97	2.10
1943	..	1.35	8.79	6.31	0.96	6.96	3.60	27.97	27.97	..
1944	3.02	9.04	8.53	5.09	2.23	26.91	26.91	..
1945	2.66	2.84	8.14	7.95	1.34	22.93	23.97	1.04
1946	..	0.92	3.06	3.95	2.17	6.38	0.94	16.52	25.99	9.47
1947	4.07	7.88	4.87	8.25	1.09	26.16	27.49	0.33
1948	11.72	6.81	3.95	3.50	..	25.98	29.39	3.41
1949	..	0.85	5.34	2.31	4.06	12.36	5.60	30.52	30.52	..
1950	9.41	0.31	7.44	0.78	17.94	17.94	..
1951	..	0.73	8.16	4.69	1.77	1.57	2.46	19.38	20.53	1.15
1952	..	0.03	2.28	3.31	0.74	3.00	..	9.36	9.36	..
1953	6.04	4.54	3.09	4.80	5.18	23.65	23.66	0.01
1954	5.72	2.73	9.87	8.28	0.05	26.65	27.29	0.64
1955	..	0.48	2.23	2.74	5.29	8.76	6.45	25.95	26.46	0.51
1956	..	3.42	4.46	4.89	2.58	6.31	6.87	28.53	32.88	4.33
1957	..	0.60	3.34	1.16	6.35	4.12	..	15.57	19.71	4.14

Average (1931-57) = 21.20

STATEMENT "B-1".

Monthwise Rainfall Data.

Year.	Mahal-Point							(Fig. in inches.)		
	May.	June.	July.	August.	September	October.	Total.	Total Annual.	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	1.48	81.79	61.19	16.94	20.12	181.51	183.94	2.43
1932	..	0.90	5.83	82.48	15.78	16.89	10.32	129.30	143.08	14.78
1933	..	4.88	22.51	22.03	37.34	25.73	6.79	119.18	118.75	0.57
1934	12.86	26.89	38.24	6.59	0.48	85.26	88.51	3.25
1935	13.44	35.60	12.88	15.53	1.98	79.43	79.77	0.34
1936	..	3.00	26.50	25.57	17.89	15.76	0.10	88.82	92.46	2.64
1937	16.80	45.75	10.84	20.10	0.49	93.78	96.35	2.57
1938	..	1.71	28.06	35.67	24.41	6.87	13.31	101.33	110.21	8.88
1939	3.03	37.38	38.49	5.59	0.88	85.37	85.84	0.47
1940	11.68	27.98	30.13	17.53	7.98	95.39	98.80	3.41
1941	12.14	70.20	14.16	4.42	0.64	101.56	102.05	0.49
1942	..	0.01	12.37	60.42	18.00	11.21	..	102.35	102.35	0.34
1943	..	1.71	12.47	54.06	13.01	9.77	8.32	97.34	90.34	2.00
1944	10.96	60.64	44.06	3.12	3.04	121.82	121.82	..
1945	13.94	51.61	23.98	18.17	1.21	108.91	109.63	0.72
1946	..	0.23	9.50	38.48	44.13	14.22	0.97	107.53	116.63	9.10
1947	0.39	25.80	23.58	27.35	0.86	77.98	82.00	11.02
1948	12.43	44.41	19.76	8.62	2.24	87.47	92.55	5.08
1949	..	1.52	3.13	24.95	23.33	22.05	4.48	79.46	79.46	..
1950	1.97	73.75	9.84	20.30	0.77	106.63	106.63	..
1951	..	0.09	3.40	22.27	24.49	1.25	9.47	61.45	65.05	3.60
1952	14.90	25.80	17.23	2.60	0.25	60.78	61.10	0.32
1953	20.50	17.21	40.00	4.49	0.90	83.10	83.10	..
1954	..	1.56	10.29	30.30	18.45	42.73	0.23	103.56	104.75	1.19
1955	..	1.32	10.63	18.46	33.31	20.90	6.70	90.32	92.32	2.00
1956	..	0.36	7.88	51.71	30.37	9.86	8.78	109.16	113.06	3.90
1957	..	0.93	9.13	20.96	28.49	7.79	0.05	87.36	89.18	1.82

Average (1931-57)=96.57

STATEMENT "B-1".
Monthwise Rainfall Data.

Taluka-Sinnar.

(Fig. in inches.)

Year:	May.	June.	July.	August.	September.	October.	Total.	Total Annual.	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	4.05	5.01	2.54	6.93	8.08	26.27	32.30	6.03
1932	..	0.48	1.18	8.91	6.45	10.92	5.40	23.34	34.42	1.08
1933	..	1.36	6.82	2.30	11.02	13.47	4.63	39.60	40.37	0.77
1934	1.73	3.71	5.00	4.34	0.03	14.81	17.65	2.84
1935	3.23	3.39	6.09	3.50	4.04	20.25	20.90	0.65
1936	2.72	2.23	1.61	5.43	2.40	14.39	24.09	9.70
1937	..	0.85	3.21	6.43	1.42	15.45	4.11	31.47	33.16	1.69
1938	..	2.14	4.88	4.83	3.10	8.81	15.20	38.93	40.40	1.47
1939	2.42	6.08	6.14	2.27	1.16	19.07	19.23	1.16
1940	3.94	3.81	3.80	6.89	2.50	20.94	23.67	2.73
1941	1.54	12.61	2.15	4.05	0.84	21.19	21.30	0.11
1942	2.23	10.09	N. A.	N. A.	N. A.	12.32	N. A.	..
1943	..	1.17	2.68	5.69	1.05	3.33	6.55	20.47	20.47	..
1944	..	0.46	5.61	9.70	4.91	3.88	6.42	30.96	30.96	..
1945	1.56	5.07	4.65	2.51	0.89	14.68	15.59	0.91
1946	2.82	6.49	5.84	8.04	0.46	23.65	32.06	8.41
1947	0.3	9.60	5.28	7.39	0.20	22.50	23.54	1.04
1948	6.33	6.29	4.72	3.00	0.04	20.38	27.22	6.84
1949	..	3.68	1.96	2.34	2.93	11.11	2.99	25.01	25.53	0.62
1950	0.82	9.66	0.88	5.06	0.59	17.00	17.00	..
1951	..	1.07	2.28	7.53	3.35	0.42	9.19	23.84	26.36	2.52
1952	2.85	8.68	3.02	0.17	0.88	15.60	15.60	..
1953	3.50	1.36	4.82	1.31	6.55	17.54	17.54	..
1954	..	0.23	4.27	5.24	2.64	5.54	..	17.92	21.54	3.62
1955	..	1.38	0.60	1.56	3.96	5.57	8.37	21.44	22.51	1.07
1956	0.78	8.20	10.36	3.61	9.12	32.06	35.28	3.22
1957	5.86	1.47	1.73	3.62	1.61	14.19	16.24	2.05

Average (1931-57)=22.93

STATEMENT "B-1".
Monthly Rainfall Data.
 Taluka Yeola.

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total annual.	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	5.13	4.28	1.52	3.81	7.06	21.80	24.70	2.90
1932	..	0.03	1.61	7.51	4.22	4.27	3.41	21.05	24.01	2.96
1933	..	2.95	5.00	1.99	7.64	13.79	0.40	31.77	32.57	0.80
1934	4.11	5.80	8.38	2.25	..	20.54	24.99	4.45
1935	..	0.79	4.12	2.21	6.25	2.59	3.11	19.07	19.09	0.03
1936	..	0.93	3.48	0.77	0.97	5.83	0.10	11.08	20.03	8.25
1937	1.85	3.40	0.67	12.23	2.31	20.46	20.73	9.27
1938	..	3.15	5.47	6.04	1.82	5.80	3.50	25.78	27.37	1.59
1939	4.00	5.77	5.08	1.95	0.02	16.82	17.53	0.71
1940	..	1.87	12.88	2.92	4.63	3.77	2.36	27.63	30.44	2.81
1941	0.10	6.80	2.07	9.70	1.38	20.05	21.32	1.27
1942	10.51	4.39	1.86	4.14	..	20.90	24.96	4.06
1943	..	1.96	11.42	7.01	0.67	8.06	11.44	39.50	40.89	1.39
1944	2.98	0.23	3.03	5.52	1.36	15.12	21.74	6.62
1945	0.71	2.14	3.16	4.71	0.85	11.57	14.40	2.83
1946	..	0.07	4.59	1.58	2.76	6.10	0.02	15.11	23.94	8.83
1947	..	0.27	3.07	1.90	7.50	7.33	2.65	22.72	23.94	1.22
1948	..	0.09	15.91	3.75	1.81	4.30	2.59	28.45	36.50	8.05
1949	..	2.26	6.58	2.57	4.04	9.47	3.58	28.50	28.75	0.25
1950	..	2.11	1.30	7.44	1.89	7.37	2.45	22.06	22.70	0.64
1951	..	0.84	3.97	5.34	1.81	0.98	12.08	25.07	26.54	1.47
1952	..	0.68	1.26	2.32	0.96	6.30	0.68	13.18	13.18	..
1953	..	0.14	3.32	4.06	2.57	8.06	1.21	15.26	15.26	..
1954	..	0.61	4.00	2.25	1.84	8.43	..	17.13	18.43	1.30
1955	1.88	1.67	4.97	3.82	4.48	16.82	17.23	0.41
1956	..	2.97	3.47	5.43	6.70	6.32	7.59	32.48	38.98	6.50
1957	..	0.86	4.96	1.53	5.77	4.08	0.70	18.80	19.70	2.90

Average (1931-57)=21.43

STATEMENT "B-1".
Monthwise Rainfall Data
 Taluka, Kalwan.

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.	Total annual.	November to April.	
1	2	3	4	5	6	7	8	9	10	
1931	4.13	9.40	3.52	4.21	5.90	27.16	31.80	4.64
1932	8.68	9.11	7.85	5.79	4.01	29.44	31.19	1.75
1933	..	2.19	5.13	2.12	13.50	16.32	0.53	39.84	40.17	0.33
1934	3.50	4.53	4.78	1.14	0.08	14.63	17.50	2.87
1935	..	0.05	5.65	4.04	3.42	3.02	3.75	19.93	20.03	0.10
1936	5.97	1.76	0.88	3.66	0.57	12.74	20.41	7.67
1937	6.13	9.83	1.01	6.41	0.57	23.97	24.97	1.00
1938	..	3.19	6.49	4.03	4.29	8.28	11.71	38.26	39.39	1.13
1939	1.34	13.08	7.03	2.09	0.97	24.41	25.17	0.68
1940	..	0.04	11.97	6.22	6.76	6.62	5.96	37.58	40.41	2.85
1941	..	0.44	1.91	14.58	3.94	3.56	0.66	25.09	25.42	0.33
1942	..	0.10	3.14	14.14	5.15	2.96	..	25.49	26.59	1.10
1943	..	2.87	6.53	17.03	1.77	3.28	6.74	38.22	38.23	0.01
1944	..	0.17	8.29	21.99	23.41	6.82	1.56	62.24	62.24	..
1945	..	0.39	3.00	10.14	6.41	10.17	0.35	30.46	31.04	0.58
1946	..	0.36	2.34	8.08	8.42	5.45	..	24.65	45.62	20.97
1947	..	0.44	..	9.87	6.63	8.67	0.86	25.97	29.02	3.05
1948	9.77	8.11	4.66	2.63	3.55	28.32	34.83	6.51
1949	..	2.78	0.93	12.38	6.98	17.46	8.91	49.44	49.44	..
1950	6.08	26.24	0.34	9.55	0.30	42.49	42.49	..
1951	..	0.33	5.36	7.19	3.08	0.91	4.66	21.53	22.35	1.32
1952	5.56	16.93	2.04	0.23	0.04	24.80	24.80	..
1953	3.42	3.80	6.00	2.48	0.99	16.69	16.73	0.04
1954	2.80	3.95	4.63	14.96	0.05	26.39	27.51	1.12
1955	..	0.25	0.86	1.36	4.28	5.92	8.40	21.06	21.09	0.03
1956	..	2.92	2.14	8.27	9.13	8.96	11.25	42.67	48.17	3.30
1957	..	0.16	0.76	2.30	2.36	4.10	..	9.68	12.25	2.55

Average (1931-57)=29.01

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Area under irrigation.				Total area under irrigation and its percentage to cropped area.
		Canals.	Tanks.	Wells.	Other sources.	
1	2	3	4	5	6	7
1	Baglan	6,292	43	3,291	....	3,626 4.1
2	Chandor	2,694	....	6,391	....	9,385 3.1
3	Dindori	3,893	....	3,950	....	7,343 3.7
4	Igatpuri .. ..	....	7	300	....	307 0.3
5	Kalwan	3,412	....	4,476	....	7,095 4.8
6	Malegaon	2,036	105	9,923	....	19,064 5.8
7	Nandgaon	32	....	3,168	....	3,200 1.0
8	Nasik	2,346	....	5,399	....	7,745 4.3
9	Niphad	7,751	....	9,195	....	16,946 7.8
10	Point Mahal .. ..	....	1	....	....	1 N
11	Sinnar	3,245	....	7,498	....	10,743 5.1
12	Sungana Mahal .. ..	....	....	10	....	10 N
13	Yeola	2,482	....	6,041	....	8,523 4.0
District Total ..		43,190	156	59,942	....	1,03,288 4.2

STATEMENT "D".

Distribution of Crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total Cereals.	Total Pulses.	Total food crops and its percentage.		Oilseeds and its percentage.		Cotton and its percentage.	Total non-Food Crops.	Fodder Crops.	
				Under Kharif.	Under Rabi.											
1	2	3	4	5	6	7	8	9	10	11	12	13	14			
1	Baglan ..	2,601	9,148	1,642	12,306	1,08,794	1,41,756	36,425	1,82,752	78.8	40,641	17.5	6,726	2.9	49,034	1,660
2	Chandor ..	858	13,786	....	2,600	1,05,134	1,22,719	23,852	1,52,424	83.1	10,897	4.9	206	0.1	30,847	19,312
3	Dindori ..	7,231	42,540	....	10,300	19,710	1,07,848	29,620	1,44,377	68.7	21,876	10.4	289	0.13	65,664	43,485
4	Igatpuri ..	30,191	11,872	....	2,391	858	74,596	19,090	94,627	70.8	16,607	12.4	35	N. A.	39,004	22,362
5	Kalwan ..	4,755	9,343	....	23,950	53,049	1,01,307	32,428	1,37,018	84.1	22,977	14.1	1,313	0.8	25,901	591
6	Malegaon ..	1,523	13,947	21,209	6,550	1,50,447	1,94,802	30,241	2,34,175	71.6	48,665	14.8	34,290	10.5	82,510	9,539
7	Nandgaon ..	582	5,422	3,896	3,295	98,608	1,12,010	18,889	1,31,880	82.0	21,607	13.4	3,421	2.1	28,959	3,031
8	Nasik ..	8,282	36,292	....	2,788	28,772	98,645	22,369	1,26,609	71.3	8,692	4.8	221	0.1	51,805	42,887
9	Niphad ..	1,888	63,073	....	13,894	77,200	1,56,591	23,822	1,94,628	84.2	21,391	9.2	339	0.1	36,576	14,343
10	Peint Mahal ..	12,207	77	21	....	21	43,961	8,661	52,646	81.7	11,598	18.0	7	N.	11,773	155
11	Sinnar ..	2,586	21,279	330	24,500	1,33,175	1,83,376	24,525	2,16,309	87.3	14,526	5.8	346	0.1	31,412	16,109
12	Surgana Mahal ..	9,143	2,453	81	1,084	....	44,921	11,072	56,276	67.1	14,591	17.7	7	N.	25,942	11,344
13	Yeola ..	83	21,921	....	40,157	87,140	1,49,509	30,871	1,84,532	87.6	22,097	10.5	523	0.2	26,260	8,281
District Total ..		81,935	2,51,153	27,179	1,43,765	8,62,908	15,32,041	3,11,855	19,10,050	78.7	2,76,155	11.4	47,733	1.9	5,15,687	1,89,499

CHAPTER XXV.

WEST KHANDESH DISTRICT.

Part I—Background.

1. *Location and Area.*—The District of West Khandesh is situated in the north-eastern part of the Bombay State. It is bounded on the north by Madhya Pradesh, on the west by the Districts of Broach, Surat and Dangs, on the south by the District of Nasik, and on the east by the district of East Khandesh.

2. *Administrative Set-up.*—The area of the district is 5,320.5 sq. miles. There are 1,513 towns and villages with a total population of 11,41,024 and a per sq. mile density of 214 persons. The District is divided into 9 talukas and one mahal as shown below :—

Name of Taluka.	Total area in Sq. miles.	Number of villages.	Total population.
Dhulia	757.0	150	2,30,609
Nandurbar	506.8	154	1,46,418
Navapur	421.8	123	99,360
Sakri	926.2	153	1,85,670
Shahada	446.6	132	1,34,552
Sindkheda	494.3	139	1,42,469
Shirpur	756.0	119	1,00,347
Taloda	107.9	131	70,680
Akkalkuva	672.0	197	58,661
Akrani Mahal	232.0	153	22,517
	5,405.2	1,501	11,41,024

Statistical information about each taluka is given in Statements A to D attached.

3. *Physical features.*—The Khandesh region differs from the Deccan plateau in many respects. Unlike the Deccan plateau, the orientation of the Khandesh tract is towards the west coast. It is a distinct topographical unit, drained by the Tapti river and separated from Gujarat and Central India by the Satpudas and from the Deccan by the Satmala hill range, an arm of the Sahyadri mountains stretching out in easterly direction. West Khandesh is a part of this large Khandesh region, comprising the north-western part of this tract.

The Tapti river cuts through the centre of this entire region and also through the centre of West Khandesh district with a deep cut-up bed and deltaic deep black soil fertile plains along both the banks. This Tapti valley plain has an elevation of about 600 to 700 feet above sea level. The bed of the river is 50' to 60' deep from the ground level. Beyond the banks of the Tapti northwards, the Satpuda mountains offer a steep face which, at places, is cut up by tributary river valleys like the Aner, Arunavati and Gomati, mostly arising from the fractures in the mountain crust. Toranmal in the Akrani mahal of this district is a high-lying plateau, with 3,300' elevation above the sea level. South of Tapti valley, the terrain is marked with low barren hills and narrow river valleys of the Panjhara, Burai and Bori in the talukas of Sakri, Dhulia and Sindkheda. The spurs of the Sahyadri mountains at their northern end are spread out in the talukas of Nawapur, Sakri and Nandurbar, which have made the tract vulnerable to erosion.

The district is generally hilly excepting the wide deep black soil plains on either side of the Tapti river. This plain extends from 10 to 15 miles on either side of the river and covers about 30 per cent. of the total area of the district. The rest of the area is undulating and cut up by hills and streams. The northern parts in the midst of Satpudas are covered with hill ranges and forests. Low hills with good vegetation is a remarkable feature of the western part of the district, which includes Nawapur and western parts of Sakri and Nandurbar talukas.

4. *Soils.*—The soils of this district are similar to those of East Khandesh and can be grouped into three categories :—

(i) *Deep black alluvial soils of the Tapi valley.*—These cover a width of about 10 miles on each of the two banks and are very fertile. They show a greyish-black to grey-brown colour in the surface horizon, which is cloudy in structure. They are highly clayey and crack heavily on drying. Lower horizons are browner in colour, clayey and compact, interspersed with lime nodules. These are typical black cotton soils, retentive of moisture and support a variety of crops.

(ii) *Medium deep soils in the western higher rainfall areas.*—These are dark brown to greyish brown in the surface horizon getting darker in the lower horizon, and gradually changing to yellowish brown sandy or silty loam. These soils are well suited for irrigation and yield good crops under normal rainfall conditions.

(iii) *Light to medium soils.*—These are met with in the southern half of the district comprising the talukas of Dhulia, Nandurbar, Sakri and Sindkheda. They are greyish brown to light brown in colour. They are residual soils on trap, shallow loose granular structure with murum and lime nodules mixed. These soils on lower slopes are deeper and support crops like Bajri, Kharif, Jowar, Groundnut and at times Cotton.

5. *Rainfall.*—The average rainfall of the district varies from 20" to 46". Sakri taluka has the minimum rainfall of 21", while Nawapur taluka has maximum rainfall of 46", the average rainfall of the district as a whole being 30". The entire rainfall is received during the monsoon period from June to October. The western part of the district consisting of Nawapur, Akkalkuwa, Taloda, Shahada and Nandurbar talukas gets more and assured rainfall from the south-west monsoon; whereas the talukas of Sakri, Sindkheda and Dhulia from the rain shadow zone and suffer occasionally on account of scanty showers. The climate, except in the proximity of the forests, is generally fair; the months of April and May are, however, hot.

6. *Forests.*—There are 1,330 sq. miles of forest proper. Additional 130 sq. miles of fuel and fodder reserves are in charge of the Forests Department, while 126 sq. miles of pasture reserves are in charge of the Revenue Department. The total forest area thus in 1,586 sq. miles covers 13,90,555 acres. The forests in the west and north-west of the district are valuable for their timber yield, a large proportion of which is exported. The forests in the north in Shahada and Shirpur are also fairly good and afford considerable employment to forest villagers.

7. *Land Utilisation.*—Of the total gross area of 39,79,782 acres the area of barren and uncultivable land is 4,90,000 acres and under forests is 1,39,550. The area of permanent pasture is 1,15,800. The net cropped area is 17,31,933 acres.

8. *Crops.*—Total net cropped area in the district is 17,31,933 acres. The principal crops grown and the area under each crop is as shown below :—

Crop.	Acres.
1. Bajri	3,52,514
2. Cotton	2,68,398
3. Kharif Jowar	1,56,985
4. Rabi Jowar	2,98,859
5. Oil seeds	2,95,363
6. Wheat	1,32,844
7. Rice	85,594
8. Gram	48,366
9. Tur	19,664
10. Ragi	16,220
11. Kodra	13,258
12. Maize	9,890

9. *Irrigation.*—The principal irrigation works functioning at present in the district are—

1. Panzara and Kan bandhara works supplemented by Mukti and Syed Nagar tanks. This system consists of 73 bandharas on river Panzara and Kan in Dhulia and Sakri talukas. Out of these, 64 bandharas are up stream of Dhulia and 9 bandharas are down stream of Dhulia.

2. The Bandhara on Gomati river in Shahada taluka.

3. The Burai system of Bandharas in Sakri and Sindkheda talukas.

4. Tank at Purmipada on the border of Dhulia taluka.

The net area under irrigation is 76,268 acres. This area includes 31,001 acres under Government canals, 2,413 acres under private canals, 42,575 acres under wells, and 279 acres under tanks.

In the district the following works were taken up during the 1st Five-Year Plan, benefiting a total area of 94,449 acres of land. Some of these works are in progress and will be completed in the Second Plan period :—

Name of work.	Area irrigated (Acres).
Purmepada tank	... 5,000 (in progress)
Vasmar Bandhara	... 8,000
Karawand Dam	... 12,000 (in progress)
Kapadne canals	... 5,000 (in progress)
Shahada canals	... ..
Kapadne canals (in 2 stages)	... 35,000 (in progress)
Chimthana Bandhara	... 11,000 (in progress)
Sayyad Nagar Bandhara	... 14,000 (in progress)
Betwad bandhara	... 4,000
Canals from Susari river	... 3,000
Bandharas at Shirud and Katharde	... 100
85 Katcha Bandharas	... 2,349
	99,449

During the period of Second Five-Year Plan, the following works in addition to those in progress at the end of the First Five-Year Plan period are being taken up bringing an additional area of 14,890 acres of land under irrigation on completion :—

Name of work.	Acres to be irrigated.
Special repairs to bandharas at Bhadwad	... 125
Construction of a bandhara at Thanepada	... 150
Special repairs to bandhara at Chadwel Pakhrun	... 40
Construction of a bandhara and channel across Khalaji Nala near Kharde.	200
Construction of a bandhara and channel across Ajud Nala near Nageshwar.	200
Construction of a bandhara and channel across Sati Nala near Baradi.	150
Construction of a bandhara and channel across Malani Nala near Taloda.	300
Special repairs to bandhara and channel at Bhone.	300
Susari Bandhara	... 6,000
Extension of Betwad Pashte channel	... 6,000
Dadmad Bandhara	... 125
Bandhara on Moti Nala	... 300
Lower Panzara river work	... ..
Bandhara and channel across Malvi Nala (near Ambad).	300
Kadhi Bandhara	... 800
	14,890

10. *Communications.*—The Dhulia-Chalisgaon Branch of the Central Railway traverses a distance of 19 miles in this district. The Tapti Valley branch of the Western Railway runs from east to west over a distance of 94 miles. This rail-line has not benefitted the West Khandesh District substantially except from the point of view of local trade in foodgrains and timber. The trade from Gujarat is tapped by the main line of Western Railway, while that of Central India and the Berar and East Khandesh by the Central Railway.

The most important road is the Bombay-Agra Road which traverses a distance of about 74 miles in the district. The total length of roads maintained by the P.W.D. is 375 miles. Likewise the District Local Board maintains a total length of 398 miles of road.

11 *Minerals and Industries.*—No mineral wealth worth the name has so far been found in the district. Deccan trap is the only geological formation. Abundant building material is however available in the district except in the Tapti Valley.

There are 146 factories in the district. These include a textile mill, and 110 seasonal factories dealing mostly in processing of cotton and oil extraction. The factories employ in all 7,421 persons. There are two principal weaving centres where handloom weaving is carried on viz. Dhulia and Shahada. Printing of coarse cloth was a prominent industry in a few villages of Sindkheda Taluka which is now dying away.

12. *Live-stock.*—The number of bullocks in the district is 2,40,600 and cows are 2,68,102 including heifers. The number of buffaloes is 77,316, sheep and goats are 50,701 and 2,48,854 respectively.

13. *Livelihood.*—Out of the total population of 11,41,084 those depending on agriculture are 11,17,900, on commerce 50,907. In production other than agriculture are 83,588, in service and other miscellaneous occupations are 1,18,513.

Part II—Determination of Precarious and other Chronic Scarcity Areas.

The previous history of this district for the last 30 years shows that in Dhulia, Sirpur, Sindkheda, Nandurbar, Shahada and Sakri talukas, scarcity was declared during the years shown in the statement below :—

Name of Taluka.	Name of circle.	Year in which affected.	No. of villages.	No. of times.
Dhulia	.. Whole taluka ..	.. 1952-53 ..	.. 150 ..	.. Once.
Sirpur	.. Arthe ..	.. 1951-52 ..	.. 16 ..	.. Do.
	.. Sirpur ..	.. 1951-52 ..	.. 11 ..	.. Do.
Sindkheda	.. Sindkheda ..	.. 1952-53 ..	.. 34 ..	.. Do.
	.. Nardhana ..	.. 1952-53 ..	.. 25 ..	..
	.. Chimthana ..	.. 1952-53 ..	.. 25 ..	..
	.. Dondaicha ..	.. 1952-53 ..	.. 35 ..	..
Nandurbar	.. Dhanora ..	.. 1951-52 and 1952-53 ..	.. Whole ..	.. Twice.
	.. Nandurbar ..	.. Do. ..	.. Do. ..	.. Do.
	.. Nizar ..	.. 1952-53 ..	.. Do. ..	.. Once.
	.. Ranala ..	.. 1952-53 ..	.. Do. ..	.. Do.
Shahada	.. Vadali ..	.. 1951-52 ..	.. 14 ..	.. Twice.
	.. ..	.. 1952-53 ..	.. 20 ..	..
Sakri	.. Sakri ..	.. 1936-37 ..	.. 34 ..	.. Once.
	.. Nizampur ..	.. 1936-37 ..	.. 31 ..	.. Do.

It is seen that scarcity has not been declared in Akrani, Akkalkuva, Navapur, and Taloda talukas during the last 30 years. These talukas have generally higher rainfall as shown below :—

Taluka.	Average rainfall.
Akrani	... 40" (for 10 years).
Akkalkuva	... 36.02" (for 10 years).
Taloda	... 33.73" (for 27 years).
Navapur	... 47.64" (for 27 years).

Akrani and Akkalkuva are very thinly populated with a density of 97 and 87 per square mile. Akrani is almost entirely a forest area, the area under forest being 5,17,435 acres which comes to 87.3 per cent. of the gross area. In Taloda and Navapur the area under forests is quite large being 61,613 acres and 86,166 acres respectively, that is 37.5 per cent. and 29.5 per cent. respectively of the gross area. The area under forest in Akkalkuva is however not very large being 40,768 acres, i.e., 8.5 per cent. of the total gross area.

The detailed rainfall data which is available for the last 10 years shows that the rainfall was below the average only once in Akrani which was 18.6". In Akkalkuva it was never less than 22.8 per cent. during the last 10 years. In the case of Taloda the rainfall figures are available for 27 years. It has never been less than 20" during this period. In the case of Navapur also the minimum rainfall recorded during the last 27 years has never been less than 24". The years 1951 and 1952 were the years of scanty rainfall in most of the talukas in the district. However, even in these years the rainfall in these talukas was not less than 20". The rainfall in these talukas is, therefore, generally assured. Regarding the soils, it is noticed that except in the northern portion of Taloda which is a hilly area and in parts of Akrani and Akkalkuva which are under forest, the lands in the valleys are fairly good and retentive. Owing to these factors and the history of scarcity and the annewari and suspension data, it is clear that these talukas are free from scarcity.

As regards the other talukas, viz. Dhulia, Shirpur, Sindheda, Nandurbar, Shahada and Sakri, which are shown to have been affected by scarcity in the past, the various factors are discussed in the following paragraphs :—

Dhulia.—Medium black cotton soils are more common in the villages east of Chalisgaon-Dhulia-Nardana Road and in the villages along the bank of Panjhara river. Shallow murmad soils predominate in rest of the taluka. The number of villages in this taluka is 150. The main crops are as under :—

Crops.	Aores.
1. Bajri	96,721
2. Groundnut and oilseeds	80,617
3. Kharif jowar	47,190
4. Cotton	46,339
5. Wheat	11,532

About 94 per cent. of the total cropped area is under kharif crops.

The average rainfall for the period 1931-57 is 24.66". The rainfall as given in Statement 'B' attached to the note would show that it was deficient during the years 1936, 1937, 1941, 1950 and 1952. The figures are shown below :—

(Rainfall in inches)

Year.	June.	July.	August.	September.	October.	Total.
1936	.. 5.09	1.60	1.21	5.04	0.04	12.98
1937	.. 2.55	9.29	0.32	2.96	1.33	16.45
1941	.. 0.28	7.46	1.17	5.64	0.24	14.79
1950	.. 1.52	6.28	....	4.50	1.04	13.40
1952	.. 3.02	4.03	1.23	1.37	0.17	9.82

It is evident that the crops must have failed miserably during these years except in 1937, when a semi-failure of crops must have been experienced. The annewari data however does not support the inference drawn from monthly rainfall figures. During 1951-52, only 13 villages had annewari less than 6 annas and during 1952-53, 153 villages had 4 annas crops only. During 1955-56, only 2 villages had less than 6 annas crop and during 1956-57, 5 villages had annewari less than 6 annas. Thus, according to the annewari data, 1952-53 was the only year in which the majority of the villages were affected. According to the Land Revenue Suspension data also, most of the villages in this taluka had less than 2 full suspensions. There were only about 5 villages which had more than 2 full suspensions. Therefore, the annewari data and the land revenue suspension data both support the fact that this taluka was not affected by scarcity more than twice during the last 30 years. The total area under irrigation in this taluka is 34,150 acres. The Baglan system of irrigation by Bandharas is in vogue in this taluka, under which the area under bandharas is 10,015 acres. The area under tanks is 650 acres and under wells is 6,440 acres. Under Sayednagar medium irrigation scheme, an area of 14,000 acres is likely to come under irrigation in this taluka. Under another scheme known as Purnepada, an area of 5,000 acres is likely to be brought under irrigation. Therefore, this taluka will have a fairly large area under irrigation. Taking all these factors into consideration, this taluka may be regarded as free from scarcity.

Sakri.—The number of villages in this taluka is 153. The soil of this taluka is mostly poor and shallow. The main crops are :—

Crop.	Acres.
1. Bajri	1,16,145
2. Pulses	54,143
3. Oil-seeds	48,071
4. Kharif jowar	37,308
5. Cotton	20,240
6. Rice	12,661
7. Wheat	11,217

The main crops are kharif, the maximum area being under bajri, pulses, jowar, oil-seeds and cotton. The total area under irrigation is 8,300 acres out of which 6,300 acres are under bandharas and 2,000 acres under wells. The total area under irrigation is 6 per cent. of the cropped area.

The average rainfall for the last 27 years, i.e. for 1931-57 is 19.2". The rainfall was deficient during the years 1934, 1936, 1939, 1941, 1942 and 1951, which is given below so far as crop season is concerned :—

Year.	(Rainfall in inches)					
	June.	July.	August.	September.	October.	Total.
1934	2.19	1.89	2.01	0.77	0.25	7.11
1936	2.32	0.42	0.75	1.70	....	5.19
1939	1.04	6.83	4.90	1.72	1.13	15.62
1941	....	6.04	1.40	6.07	0.50	14.01
1942	3.56	4.11	6.03	0.77	....	14.47
1951	1.92	7.25	2.15	1.05	.31	15.68

No crop can be expected to have been harvested during the years 1934 and 1936, whereas the crops must have failed partially in some villages during the rest of 4 years.

This taluka is shown to have been affected in 1936-37 when 34 villages of Sakri circle and 34 villages in Nizampur circle were affected. The other year in which this taluka was affected was 1951-52, when the annewari of 32 villages out of 153 villages was less than 6 annas. The previous history of scarcity would, therefore, show that the taluka has not been affected frequently.

According to the land revenue suspensions data, only 10 villages had over 2 full suspensions, the rest of villages had 1 to 2 suspensions. The western part of this Taluka has a fairly good rainfall. It is only the eastern part of the taluka that is a shadow area and had suffered in the past. This area, however, has better well irrigation and bandhara irrigation facilities. It is also observed that after 1942, there was only one bad year i.e. 1951-52 when crops had suffered. In view of the above facts, this taluka is considered free from scarcity.

Shahada.—The number of villages of the taluka is about 182. About 2/3rd of the taluka has deep black cotton soil. The main crops of the taluka are :—

Crops.	Acres.
1. Rabi Jowar	67,814
2. Cotton	40,491
3. Wheat	31,929
4. Groundnut and oilseeds	24,628
5. Bajri	10,600

The area under rabi crops is slightly more than the area under kharif crops on account of the heavy retentive soils.

The average rainfall of the last 27 years is 27.3". During the last 27 years it was less than 20", in 1935 when it was 18.28", in 1939 when it was 17.43", in 1951 when it was 16.52" and during 1952 when it was 17.48". During the remaining years it was over 20". The area under irrigation is 14,219 acres, which comes to 7.5 per cent. of the total cropped area. Most of the area is under wells and a small area under bandharas. Under the Second Five-Year Plan, the Shahada canals were undertaken which are still under completion. The area likely to be brought under irrigation by this canal is 35,000 acres.

According to the previous history, this taluka was affected in 1951-52 and 1952-53. In 1951-52 most of the villages of the taluka had been affected, while in 1952-53, only a few villages were affected. According to the suspension data, no village of this taluka was affected more than twice. In view of all the factors, particularly the previous history of scarcity of this taluka, it is not considered as a scarcity affected area.

Sirpur.—The number of villages in this taluka is 119, about 1/2 of the area of this taluka has deep black cotton soil. The main crops of the taluka are :—

Crops.	Acres.
1. Cotton	39,931
2. Rabi Jowar	30,860
3. Groundnut and oilseeds	27,829
4. Bajri	19,148
5. Kharif jowar	13,480

Thus main crops are kharif crops.

The rainfall for the period 1931-57 is given in Statement 'B' attached to this note. It would appear from this data that the average rainfall for the last 27 years is 26.86". It had less than 15" only during 1952 when it was 12.20". During the remaining years it was never less than 18". The area under irrigation in this taluka is only 1,028 acres.

According to the previous history of this taluka, it was affected only during 1951-52 and 1952-53. During 1951-52 only 8 villages were affected where annewari was 4 annas, while during 1952-53, 50 villages were effected. Except these 2 years, there was no other scarcity year in this taluka. According to the annewari data, no village had been affected more than twice. This is also supported by the Land Revenue suspension data. This taluka therefore may not be considered as a scarcity area.

Nandurbar.—The number of villages of this taluka is 154. The soil of the northern half of the taluka adjoining the Tapti river is deep black, while the soil of the remaining part is shallow. The major crops of the taluka are kharif, the area under Kharif being 54 per cent. The main crops are as under :—

Crops.	Acres.
1. Rabi Jowar	66,317
2. Bajri	34,573
3. Groundnut and oilseeds	33,934
4. Wheat	30,735
5. Cotton	14,932
6. Kharif jowar	10,549

The total area under irrigation is 3913 acres only, which is mostly under wells.

The average rainfall worked out on the basis of the rainfall for the last 27 years is 28.11". According to the rainfall data, the following years had inadequate rainfall :—

Years,	Inches.
1934	14.90
1936	14.52
1951	16.06
1952	16.51

During the remaining years it was above 20". The previous history of scarcity shows that this taluka was affected in 1951-52 and 1952-53. In 1951-52 the whole of Dhanora and Nandurbar circles are reported to have been affected, whereas according to the annewari data only 6 villages had 5 annas crop. In 1952-53, according to the previous history of scarcity, the whole of Nizar circle and Ranala circle were affected, but according to the annewari data 13 villages had 4 annas and less crop. In 1955-56 according to the annewari data, 13 villages had between 4 and 6 annas crop, while the land revenue suspension data would show that no village had more than 2 full suspensions during the last 30 years. Thus, according to the previous history and annewari data and land revenue suspension data, no village of this taluka has been affected more than 2 to 3 times. Looking to all the factors mentioned above, this taluka may not be considered as a scarcity area.

Sindkheda Taluka.—There are 109 villages in the taluka. The river Tapti forms the natural boundary of the north. The whole taluka is drained by feeders of that river namely Burai, Amravati and Panjhara.

The northern part of the taluka is flat with a gradual fall towards the north. Along the southern portion, the country is broken by low hills. The altitude of the southern part of the taluka is roughly 1200 feet as against the Tapti belt on the north which is roughly 600 feet above sea level.

The soil along the Tapti is black and deep. It grows wheat, rabi jowar, linseed and cotton. Like all deep black soil areas, water is not found at workable depth and therefore wells are few in this plain area. The southern part has light to medium soils, but underground water has made it possible for the farmers to sink wells. This area is most susceptible to erosion. The hills are treeless and barren. This tract can afford to grow crops like bajri, pulses and groundnut, kharif-rabi jowar and wheat under well irrigation. Cotton and kharif jowar are also grown in better low lying fields. The main crops of the taluka are :

Crops.	Acres.
1. Groundnut	80,617
2. Bajri	65,349
3. Cotton	46,339
4. Rabi jowar	38,816
5. Kharif jowar	16,580
6. Wheat	14,841

The area under canals in this taluka is 620 acres, under bandharas 1108; under wells 10,060 and under other sources 450 acres, in all 12,238 acres, which works out at 4.8 per cent.

The average rainfall worked out on the basis of the last 27 years rainfall data comes to 23.09". During the following years the rainfall was inadequate.

(Rainfall in inches)

Year.	June.	July.	August.	September.	October.	Total.
1934	2.20	5.98	3.55	2.08	0.10	13.91
1936	7.26	1.11	0.79	5.34	....	14.50
1937	2.39	6.12	0.42	8.02	1.10	18.05
1939	0.64	8.12	6.78	2.59	0.03	18.16
1952	2.57	2.84	2.34	1.17	0.06	8.98
1950	0.33	7.98	0.62	7.49	0.08	16.53
1957	8.23	5.88	3.17	1.45	0.96	17.39

The above figures would indicate the possible bad harvests reaped by the people especially during the years 1934, 1936, 1950 and 1952.

The June-July average works out at 10.97". The coefficient of variation is 30.60 which is on the low side. The average of August-September is 9.90". The coefficient of variation is 38.64. As there is also a large area under rabi, the rainfall figures for September-October would also be significant.

The average of September-October is 6.77". The coefficient of variation is 58.79.

According to previous history of scarcity, this taluka was affected in 1952-53. In Sindhkheda circle 34 villages were affected, in Nardhana circle 25 villages were affected, in Chimthana 25 villages were affected and in Dondaicha 35 villages were affected.

According to annewari data villages were affected in 1951-52. 15 villages had annewari of 4 annas and less. The remaining villages had between 4 and 6 annas. In 1952-53, 119 villages were affected and scarcity was not declared. In 1944-45, although scarcity was not declared, 117 villages were affected out of which 65 had full suspension. The remaining villages had half suspension. According to the annewari data, 17 villages had 3 full suspensions and 98 villages had two full suspensions. The land revenue suspension data shows that 9 villages had half suspension during 1935-36, and 4 villages had half suspension, during 1936-37. During the whole period of 30 years, 13 villages had two full suspensions; 7 villages had between 2 and 3 full suspensions and one village had 3½ full suspensions. The remaining 100 villages had one or less than one full suspension. Thus according to the previous history, the annewari data and the land revenue suspensions data, it appears that this area is not frequently affected. For these reasons, the taluka may be regarded as free from scarcity.

To sum up, though certain villages in this district have occasionally been affected by scarcity, there is no large tract which has been frequently affected. The whole West Khandesh district may therefore be regarded as free from scarcity.

STATEMENT " A ".

Basic Data.

Serial No.	Taluka.	No. of Villages.	Gross Area.		Population.	Density per Sq. Mile.	Gross cropped area.	Net cropped area and its percentage.	Area under forest and its percentage.		
			In Square miles.	In Acres.							
1	2	3	4	5	6	7	8	9	10		
1	Akrani (Mahal)	153	232	5,92,417	22,517	97	48,719	48,633	8.2	5,17,435	87.3
2	Akkalkuva ..	197	672	4,81,214	58,561	87	89,840	68,259	14.2	40,768	8.5
3	Taloda ..	131	107.8	1,64,117	70,886	655	94,594	86,524	52.7	61,613	37.5
4	Navapur ..	123	421.8	2,91,984	99,360	235	1,78,878	1,70,722	58.5	86,166	29.5
5	Shabada ..	182	446.6	3,07,885	1,34,552	301	2,15,452	1,89,330	61.4	72,775	23.6
6	Nandurbar ..	154	506.2	3,43,007	1,46,413	289	2,56,583	2,36,723	69.0	57,926	19.9
7	Sakri ..	153	926.2	6,03,247	1,35,570	146	3,49,547	2,85,973	47.4	2,05,317	34.0
8	Shirpur ..	119	756	3,81,847	1,00,347	133	1,55,919	1,29,025	33.8	2,22,855	58.4
9	Sindki eda ..	139	494.3	3,22,757	1,42,469	288	2,72,813	2,33,496	72.3	15,317	4.7
10	Dhulia ..	150	757	4,91,307	2,30,809	305	3,21,970	2,83,248	57.7	1,10,383	22.5
District Total		1,501	5,820.5	39,79,782	11,41,084	214	19,64,324	17,31,933	43.5	13,90,555	34.9

STATEMENT "B-1".
Monthly Rainfall Data.

Taluka—Dhulia.

Year.	(Fig. in Inches.)							Total.
	May.	June.	July.	August.	September.	October.		
1931	....	2.38	7.88	5.66	5.25	9.98	31.15
1932	0.12	1.72	10.04	7.21	9.18	1.17	19.44	
1933	1.54	6.14	2.66	7.83	6.91	1.04	26.12	
1934	....	2.89	6.91	5.59	5.96	....	21.35
1935	....	11.75	4.22	6.18	5.62	2.84	30.59
1936	0.85	5.09	1.00	1.21	5.04	0.04	15.83	
1937	....	2.55	9.20	0.32	2.96	1.33	16.45
1938	0.82	8.80	5.61	5.25	6.81	4.80	32.15	
1939	....	1.97	6.74	6.33	1.44	0.46	16.94
1940	0.16	6.16	1.76	2.35	11.19	4.31	25.93	
1941	0.16	0.28	7.46	1.17	5.64	0.24	14.95	
1942	....	4.59	6.66	9.22	2.68	....	23.15
1943	2.22	8.98	4.78	0.58	9.20	3.52	29.30	
1944	....	4.62	9.57	12.83	4.40	2.45	34.20
1945	....	1.74	5.91	7.05	6.89	0.23	21.83
1946	....	6.67	5.45	3.63	6.39	....	22.34
1947	0.55	3.05	4.50	6.95	12.52	0.48	28.05	
1948	....	10.76	6.55	3.96	2.63	0.69	24.61
1949	1.47	5.98	13.98	3.28	22.15	7.94	54.78	
1950	0.41	1.52	6.28	....	4.56	1.04	18.81
1951	....	6.94	8.87	3.37	0.83	1.44	21.45
1952	0.22	3.02	4.03	1.23	1.37	0.17	10.04	
1953	....	4.00	4.36	5.03	4.97	2.64	21.00
1954	....	8.74	4.89	5.68	7.18	0.53	27.02
1955	....	6.30	5.20	10.91	8.14	2.93	33.48
1956	0.33	7.03	0.49	1.31	13.38	2.00	29.41	
1957	1.27	7.64	3.59	5.94	2.93	....	22.37

Average (1931-57)=24.66

STATEMENT "B-1".

Monthly Rainfall Data.

Taluka Nandurbar.

(Fig. in Inches)

Year.	May.	June.	July.	August.	September.	October.	Total.
1931	....	0·91	15·88	8·40	4·90	5·18	35·27
1932	....	0·92	12·32	3·28	6·22	3·94	26·68
1933	0·77	4·53	3·17	7·83	13·10	1·11	29·51
1934	....	2·12	3·84	7·22	1·51	0·21	14·90
1935	....	6·08	5·13	5·62	3·12	0·65	20·60
1936	0·25	6·85	2·89	1·02	3·51	....	14·52
1937	....	4·57	9·95	2·07	7·84	0·75	25·18
1938	1·28	16·58	12·28	1·94	4·63	1·34	38·05
1939	....	1·36	8·10	8·47	1·95	0·18	20·06
1940	0·03	7·49	4·47	5·02	10·30	5·62	32·93
1941	0·09	0·56	12·37	3·97	3·10	0·38	20·47
1942	0·14	9·91	9·92	8·83	3·73	....	28·53
1943	1·87	3·90	7·77	2·14	3·94	5·88	25·50
1944	0·08	9·26	13·44	17·83	5·52	3·09	49·22
1945	....	8·96	14·48	5·47	9·00	0·89	38·80
1946	....	5·99	9·51	12·18	4·82	0·34	32·84
1947	....	0·43	7·17	6·90	7·76	0·25	22·53
1948	....	8·07	9·98	4·89	2·70	2·04	27·68
1949	0·11	3·36	5·68	6·51	19·48	3·58	38·72
1950	0·07	0·13	16·51	1·88	7·59	0·46	26·64
1951	1·02	2·12	6·92	4·00	0·50	1·50	16·06
1952	0·13	3·35	8·52	3·24	1·27	....	16·51
1953	....	7·42	9·59	6·94	1·65	0·84	26·44
1954	0·23	6·07	4·00	3·05	16·71	0·60	30·66
1955	....	1·76	6·02	12·23	8·08	5·34	33·43
1956	5·27	1·18	12·27	9·92	6·65	2·38	37·67
1957	0·84	7·61	8·99	5·95	5·56	0·61	29·56

Average (1931-57) = 28·11

STATEMENT " B-1 "

Monthly Rainfall Data.

Talaka Sakri.

(Fig. in Inches)

Year.	May.	June.	July.	August.	September.	October.	Total.
1931	....	2.76	5.40	7.90	5.13	6.03	27.22
1932	....	0.98	8.57	2.35	6.06	3.19	21.14
1933	1.88	4.46	1.08	6.60	10.30	0.08	25.18
1934	....	2.19	1.89	2.01	0.77	0.25	7.11
1935	....	3.40	1.72	3.57	4.55	1.27	14.40
1936	0.10	2.32	0.42	0.75	1.70	....	5.29
1937	....	4.65	5.30	0.72	5.30	0.46	16.45
1938	2.35	11.77	4.70	2.51	4.01	1.81	27.25
1939	....	1.04	6.83	4.90	1.72	1.13	15.62
1940	1.03	4.03	1.53	1.53	6.42	3.11	17.65
1941	....	....	6.04	1.40	6.07	0.69	14.01
1942	0.03	3.56	4.11	6.03	0.77	....	14.50
1943	1.83	4.03	6.69	0.95	2.06	7.55	23.11
1944	....	2.81	8.78	11.18	2.63	0.05	25.43
1945	....	5.48	3.63	2.03	3.97	0.30	15.59
1946	....	2.58	3.79	4.98	10.32	0.18	21.05
1947	....	0.53	3.40	4.92	5.80	0.85	15.30
1948	....	11.82	4.96	4.63	2.30	0.92	24.43
1949	0.75	3.40	3.28	4.76	13.22	2.47	27.88
1950	0.50	1.60	10.61	....	9.03	1.08	22.82
1951	0.10	1.92	7.25	2.15	1.05	3.31	15.78
1952	0.15	3.63	5.80	1.89	6.32	0.06	18.25
1953	....	5.78	4.36	5.03	4.97	2.94	20.78
1954	....	2.82	2.24	6.78	9.92	0.08	22.00
1955	....	4.65	1.18	6.19	4.12	4.33	20.53
1956	4.30	3.34	3.33	2.41	4.08	3.18	20.69
1957	1.38	9.35	1.11	2.40	3.34	0.06	17.61

Average (1931-57) = 19.21

STATEMENT "B-1":
Monthly Rainfall Data.
 Taluka-Sindkheda.

(Fig. in Inches.)

Year.	May.	June.	July.	August.	September.	October.	Total.
1931	.. ....	1.31	12.37	11.62	6.29	6.16	37.75
1932	.. ....	3.23	6.04	1.50	8.22	6.69	25.68
1933	.. 2.30	3.29	2.86	11.09	8.65	0.07	28.08
1934	.. ....	2.20	5.98	3.55	2.08	0.14	13.91
1935	.. ....	4.04	3.06	5.02	3.09	3.36	18.57
1936	.. 2.06	7.26	1.11	0.79	5.34	....	10.56
1937	.. ....	2.39	6.12	0.42	8.02	1.10	18.05
1938	.. 2.95	13.70	8.23	2.47	4.01	4.60	33.96
1939	.. ....	0.64	8.12	6.78	2.59	0.03	18.16
1940	.. 0.10	4.30	3.04	3.01	6.51	3.04	20.00
1941	.. ....	2.08	14.04	1.97	5.64	....	23.73
1942	.. ....	7.18	6.32	12.04	1.41	....	26.45
1943	.. 0.36	2.95	8.87	0.98	2.88	4.49	20.53
1944	.. 0.07	3.28	12.15	14.59	4.84	3.06	37.99
1945	.. ....	1.92	5.03	5.00	9.07	0.56	21.58
1946	.. 0.96	8.37	5.10	10.34	3.23	0.92	28.92
1947	.. 0.50	4.15	5.05	4.13	7.18	0.53	21.54
1948	.. 1.21	14.64	7.41	4.50	1.71	0.32	28.79
1949	.. 1.00	0.63	6.95	2.31	9.53	2.80	24.27
1950	.. 0.46	0.33	7.99	0.62	7.49	0.08	10.97
1951	.. ....	3.05	13.69	2.62	0.82	1.59	21.77
1952	.. 0.13	2.57	2.84	2.34	1.17	6.06	9.11
1953	.. ....	3.47	7.03	4.76	0.93	1.23	17.42
1954	.. ....	3.66	5.72	3.53	13.88	0.31	27.10
1955	.. ....	2.61	2.16	10.95	4.82	2.01	22.55
1956	.. 2.16	6.04	6.32	2.01	4.42	3.32	24.27
1957	.. ....	8.23	3.58	3.17	1.45	0.96	17.39

Average (1931-57)=23.09

STATEMENT "C".

Irrigation Data.

Serial No.	Taluka.	Total area under irrigation and its percentage to cropped area.	
1	2	3	
1	Akrani (Mahal)	..	..
2	Akkalkava	8,154	11.9
3	Taloda	14,290	7.5
4	Navapur	954	0.56
5	Shahada	18,924	0.79
6	Nandurbar	107	0.12
7	Sakri	18,906	6.6
8	Shirpur	1,028	0.79
9	Sindkheda	11,196	4.8
10	Dhulia	18,810	6.10
Total		92,369	4.9

STATEMENT "D".

Distribution of crops.

Serial No.	Taluka.	Rice.	Wheat.	Jowar.		Bajri.	Total cereals.	Total pulses.	Total food crops and its percentage.	Oilseeds and its percentage.	Cotton and its percentage.	Total Non-food crops.			
				Kharif.	Rabi.										
1	2	3	4	5	6	7	8	9	10	11	12	13			
1	Akrani (Mahal) ..	1,615	97	18,224	66	8,504	40,830	6,389	4,492	97.3	826	1.6	297	N	1,227
2	Akkalkuwa ..	15,226	3,508	2,814	14,235	228	41,802	9,605	51,493	73.7	4,969	7.1	1,326	19.0	18,356
3	Taloda ..	5,456	18,675	578	36,304	387	64,529	9,267	75,916	80.2	9,559	10.1	7,761	8.2	18,678
4	Navapur ..	38,191	3,505	1,628	31,573	859	1,07,267	22,134	1,29,998	72.6	7,656	3.2	37,048	20.7	48,880
5	Shahada ..	2,262	31,929	8,644	67,814	10,600	1,21,904	9,871	1,49,027	69.1	24,628	11.4	40,491	18.8	66,423
6	Nandurbar ..	7,889	30,735	10,549	66,317	34,572	1,59,680	36,569	2,04,858	79.8	33,934	13.2	14,932	5.8	51,725
7	Sakri ..	12,661	11,217	37,308	7,984	1,16,145	2,19,356	54,143	2,81,185	80.4	48,071	13.9	20,240	5.9	56,362
8	Shirpur ..	922	6,805	13,480	30,660	19,148	71,800	11,928	88,068	56.5	27,829	17.8	39,931	25.6	87,861
9	Sindkheda ..	455	14,841	16,580	38,816	65,349	1,36,460	24,566	1,67,059	61.2	57,274	20.1	48,123	17.6	1,05,654
10	Dhulia ..	917	11,532	47,190	4,890	96,721	1,61,484	28,409	1,94,142	62.9	80,617	25.0	46,339	14.4	1,27,828
District Total ..		85,594	1,32,844	1,56,985	2,98,859	3,52,514	11,25,112	2,12,821	13,89,238	70.8	2,95,363	15.0	2,68,398	13.7	5,75,086

**B—RECOMMENDATIONS REGARDING DEVELOPMENT
MEASURES**

CHAPTER XXVI.

DEVELOPMENT MEASURES (AURANGABAD DIVISION).

I. District Osmanabad.

This is the southern-most district of the Marathwada region, touching Sholapur district on the south and Ahmednagar district on the west. The district is free from scarcity except for the two talukas of Parenda and Bhoom, encircled by Karmala, Madha and Barsi talukas of Sholapur district and Jambhed taluka of Ahmednagar district. Two-thirds of Parenda taluka and the whole of Bhoom taluka are considered as precarious areas of class 'C'. These two talukas are hilly having undulating and shallow soils. The rainfall here is uncertain. The area and population of these talukas are as follows :—

Name of Taluka.	Area in sq. miles.	Population.
Parenda (Part)	271.0	47,686
Bhoom	339.0	50,619

2. *Irrigation.*—Due to their topography, the talukas are deprived of the advantages of major irrigation. The possibility of developing well irrigation here is also limited due to the rocky strata and poor underground currents. The existing irrigation is shown in the following table :—

Taluka.	Area irrigated by different sources (in acres).					Percentage to cropped area.
	Wells.	Tanks.	Canals.	Total.		
Parenda	7,977	.....	3,605	11,082	4.1
Bhoom	10,496	.....	.....	10,496	7.2

The Khasapur project in Parenda taluka has an irrigable command of over 13,500 acres, but the area actually irrigated is still low, though the tank was constructed in 1954. Another medium project on Chandani river is undertaken, which would irrigate about 4600 acres. The Sina project ex-Kolegaon has been surveyed, which would also bring about 27,350 acres under irrigation in this taluka. It is recommended that this Project should be taken up early to give relief to this area. On completion of the above medium projects and the full utilisation of waters, the irrigated area in this taluka would be 24 per cent. of the cultivated area. In case of Bhoom taluka, the present irrigation is exclusively by wells and works to about 7.2 per cent. of the cultivated area. There are no prospects of any major or medium irrigation here except the Moha-sangvi Project on Manjra river, which would bring a few hundred acres of this taluka under irrigation, the rest of the benefit going to adjoining areas.

3. *Soil Conservation.*—The soils of these talukas are generally light and undulating, except along the banks of Sina and Manjra rivers which run along the western and northern borders respectively. The total bundable area in these two talukas is estimated at 2,00,000 acres. The programme of contour bunding has, however, not been extended to this area so far. As Bhoom taluka is not expected to be adequately protected by major irrigation, it would be desirable to have a rapid soil survey of that taluka to determine the areas on which contour bunding could be started with advantage and to take up a large programme in suitable soils. This area grows both kharif and rabi crops. Contour bunding followed by dry farming and strip cropping practices would give great relief to this high-lying hilly terrain.

4. *Minor Irrigation.*—A ridge of the Balaghat range which passes through these talukas, acts as a watershed between the Sina valley on the south and the Manjra valley on the north. Most of the streams, therefore, originate from this

hill range and are seasonal. There is scope for developing minor irrigation, i.e. tanks and bundharas for seasonal irrigation. The following sites which have been suggested for the purpose deserve investigation :—

(i) *Parenda*—

- (a) Bandharas across Khairi river at Chinchpur and Shelgaon.
- (b) Bandharas across Haran river at Kandri, Bhonja and Sonari.
- (c) Bandhara at Antarwali.

(ii) *Bhoom*—

- (a) Tanks at Manjrewadi and Pardi.
- (b) Bandharas on Arsuli river.

In view of the fact that no major or medium irrigation is likely to benefit these talukas to an appreciable extent, a programme of bandharas and tanks would be necessary, specially when well construction in these areas is also difficult and costly. A programme for wells construction in bunded areas should, however, be taken up so as to bring a sufficiently large area under irrigation to rid the area of scarcity.

5. *Afforestation*.—The tract is hilly with a large area lying as waste or barren and uncultivable. The forest area is practically nil. It is possible to develop fairly large areas under scrub forests and agave plantations. It is recommended that sizeable areas should be transferred to the Forest Department and a planned programme of afforestation and agave plantations chalked out. Anjan cultivation would also assist in securing the necessary afforestation and increasing the supplies of fodder.

6. *Cattle Breeding*.—The tract is suited for animal husbandry and sheep rearing. A large number of villagers have been pursuing these occupations. Facilities for the development of khillar cattle and cross-bred marino sheep should be provided. A large number of premium bulls and rams should be located to up-grade the non-descript stock.

7. *Communications*.—The parenda taluka was considered as a Sarf-e-Khas Jagir of the Nizam himself and Bhoom was also a Jagir under the Nizam Government. Both these talukas were, therefore, neglected. Due to lack of proper communications and road transport, the farmers are hit both ways by getting lower rates for their produce and higher prices of the imported commodities. Though the development of road communications would not give direct protection from scarcity, it would facilitate the movement of food and fodder and generally open up these areas. It is, therefore, recommended that certain essential road links like those mentioned below, should be taken up as a part of the Development Programme of these areas.

- (1) Kuntal giri-Bhoom road.
- (2) Pardi-Bhoom-Parenda road.
- (3) Parenda-Kharda road.
- (4) Barsi-Parenda-Awti-Karmala road.
- (5) Parenda-Nanaj road.

II. District Bhir.

8. This district, which also forms part of the Marathwada region, lies between Aurangabad and Osmanabad districts. The Balaghat range passes through the centre of this district and forms a watershed between the two river valleys of the Majra on the south and the Sindphana and Godawari on the north. This hill range has made the land around undulating and rocky. The rivers have short courses and are seasonal. The western talukas of Ashti and Patoda have mostly light soils with precarious rainfall. The talukas of Ashti, Patoda, Manjalegaon and part of Bhir are regarded as scarcity areas of Class "C". The scarcity areas

of this district can be divided into two zones—Ashti and Patoda form one homogeneous area, while Bhir and Manjalegaon form another zone. The details of area and population are given in the following table :—

Taluka.	Class of scarcity area.	Area in sq. miles.	Population.
Ashti	C	581.12	86,222
Patoda.. .. .	C	510.08	83,536
Bhir (Part)	C	388.00	87,590
Manjalegaon	C	594.66	1,17,020
		2,073.76	3,74,368

9. *Irrigation.*—The existing irrigation in these areas is shown in the following table :—

Taluka.	Irrigable areas in acres by different sources.					Percentage to cropped areas.
	Wells.	Tanks.	Canals.	Total.		
1	2	3	4	5	6	
Ashti	10,271	....	....	10,271	3.7
Patoda	17,105	2,502	....	19,607	8.3
Bhir	9,111	3,192	....	12,303	4.9
Manjalegaon	4,857	....	....	4,857	1.4

The medium irrigation project Rooty in Ashti taluka has recently brought an area of 4,600 acres under irrigable command. The other two projects of Talwar and Kambli in this taluka, would irrigate an additional area of 2,600 and 2,630 acres respectively. There is scope for further irrigation of about 2,500 acres from the Kada Project. Thus, after the completion of these projects the total irrigable area would be about 22,600 acres. In Patoda taluka there was no major or medium project so far. A medium project on Sindphana at Ruper is included in the Second Plan and would, on completion, irrigate an area of 13,000 acres in this taluka. It is understood that the Mohasangvi Project on the river Manjra would benefit some area in this taluka, though its major benefit would go to Jamkhed taluka in Ahmednagar district. An area of 3,000 acres in this taluka could also be benefitted by Kinha project which would also serve the Pathardi taluka in Ahmednagar district. On completion of these proposed projects, the acreage under irrigation in Patoda taluka would be about 34,600 acres. In the absence of any major projects, there is need for taking up these medium schemes at an early date. In the Bhir—Manjalegaon zone, the Bendusura Irrigation Project near Bhir was completed during the First Plan period. It has brought an area of 10,000 acres under irrigable command. The Bombri project has been undertaken during the Second Plan and would benefit an area of 1,500 acres. Thus, the area under canal irrigation in Bhir taluka would be 11,500 acres in addition to 9,101 acres benefitted by wells. In Manjalegaon the lower Godawari canals—Ex-Jayakwadi would benefit an area of 44,550 acres, which means 13 per cent. of the cultivated acreage besides 1.4 per cent. by wells.

10. *Soil Conservation.*—Due to the hilly terrain, the lands are undulating and shallow. There is large scope for contour bunding in all the four talukas. The present position is shown in the table below :—

Taluka.	Bundable area.	Area bunded upto 31st March 1959.	Area proposed to be bunded upto 31st March 1961.	Area available for bunding later.
1	2	3	4	5
Ashti	2,00,000	4,100	16,000	1,79,900
Patoda	2,00,000	1,000	2,000	1,97,000
Bhir	1,00,000	4,000	3,100	92,900
Manjalegaon	2,00,000	100	....	1,99,900

This scarcity area is predominantly kharif with the exception of Ashti taluka which has a higher proportion of rabi. There is good scope for dry farming and strip-cropping methods. An intensive programme of wells construction in bunded areas should also be undertaken.

11. *Minor Irrigation.*—The hilly terrain gives rise to a number of small seasonal streams. A survey for locating suitable sites for bandharas and tanks for seasonal irrigation should be undertaken and those found technically feasible taken up to supplement the irrigation from wells.

12. *Animal Husbandry.*—Since agriculture in this part, especially in Ashti and Patoda is uncertain, the development of animal husbandry and sheep rearing would provide a valuable source of income to the agriculturists. There are large areas under forests and pastures providing grazing for a few months. Facilities to develop the Khillar and Deoni breeds should be provided by establishing a cattle breeding farm of about 500 cows near Ashti for khillar or for Deoni to supply proven bulls.

13. *Afforestation.*—The areas under forest and pasture in the four talukas affected by scarcity are shown below :—

Taluka.	Forests (Acres).	Pastures (Acres).
1	2	3
Ashti	8,101	11,212
Patoda	13,698	20,481
Bhir	1,953	24,243
Manjalegaon	Nil	9,976

Ashti and Patoda talukas are more suited for forests and grass areas than for agriculture. A planned programme of afforestation and planting agave should be undertaken in these areas.

14. *Communications.*—This area has been badly neglected from the point of view of communications, due probably to its hilly nature and being on the border of the territories of the Ex-Nizam. It is recommended that certain essential road links like those mentioned below should be completed to facilitate the movement of food and fodder and to generally open up the areas for further development—

- (1) Rajur — Chichpur road in Patoda taluka.
- (2) Rajuri Tambe to Chiklambe road in Patoda taluka.
- (3) Nirgudi — Amalner road in Patoda.
- (4) Dahithan — Ashti road in Ashti taluka.

There is also need for a rail link from Purlī to Ahmednagar via Kaij, Bhir and Ashti so that communications with adjacent areas could develop.

15. *Power.*—Provision of cheap electric power to give an impetus to the weaving, oil pressing and cotton ginning industries, especially in the talukas of Bhir and Manjalegaon, should be made.

16. *Drinking Water.*—There is difficulty in getting drinking water in many of the villages of Ashti, Patoda and Bhir. The number of such villages is estimated by the district authorities at 47 in Bhir, 21 in Ashti and 18 in Patoda. It would be necessary to provide for the construction of wells in these villages as an immediate measure.

III. District Aurangabad.

17. The talukas of Vaijapur and Gangapur in this district which are considered as scarcity areas of Class C form a homogeneous tract on the south-west. Vaijapur has an area of 615.45 sq. miles with a population of 1,04,825, while Gangapur has an area of 505.20 sq. miles and a population of 85,924 persons. The area under irrigation in Vaijapur Taluka is 9,838 acres or 2.9 per cent. of the cropped area and that in Gangapur Taluka is 8,689 acres or 3.1 per cent. of the cropped area. These areas are exclusively under well irrigation. Recently, three bandharas at Nandgaon, Lendi and Bhaigaon have been undertaken in Vaijapur Taluka. These are expected to provide seasonal irrigation to about 600 acres. The medium irrigation project on Dheku river in Vaijapur Taluka, which is in progress will, on completion, provide irrigation to 6,700 acres. Similarly, the Kham Project in Gangapur Taluka will provide irrigation to 1,200 acres.

18. *Irrigation.*—There is scope for major irrigation in the scarcity areas in this district. The upper Godawari Project ex-Nandur Madhameshwar Weir, is expected to provide irrigation to about 1,00,000 acres, in these two talukas. Of this proposed acreage, about 80,000 acres are likely to be in Vaijapur and 20,000 acres in Gangapur. On completion of this project, the total area under irrigation in these two talukas together would be 25 per cent. of the net cropped area. Thus, the entire tract will be protected against scarcity. An intensive programme of constructing wells in the commanded area would obviate the possibility of soils going out of cultivation. The soils along the left bank of Godavari, which would be benefitted by the above irrigation are fairly deep with restricted sub-soil drainage, and a large programme of wells, is, therefore, specially called for there. Supply of electric power for pumping water in these areas should, therefore, be provided for the economic and effective working of these wells.

19. *Soil Conservation.*—The soils in these talukas are generally light to medium black, with undulating topography. It is estimated that an area of 3,00,000 acres outside the irrigation command is bundable. Only an area of 1,100 acres has been contour bunded till the end of March 1959 and a further area of 23,000 acres is proposed to be protected till the end of the Second Plan period. Work on a large scale should be undertaken in Gangapur taluka, after clearly demarcating the area which would come under major irrigation. The programme of contour bunding should be followed by an intensive programme of wells construction. These wells should be located to take maximum advantage of the rise in sub-soil water due to bunding. This area would, however, be suitable for dry farming and strip cropping methods of cultivation.

20. *Minor Irrigation.*—There are a number of streams here which have post-monsoon flows. Some of these streams can be harnessed by constructing bandharas and tanks for providing seasonal irrigation in the area outside the command of major irrigation. Some sites for bandharas have been suggested at Nagzari, Lendi and Gandha in Vaijapur Taluka and Nandgaon and Zarul in Gangapur Taluka. The river, Shivana, passes through these talukas. It is suggested that a survey to explore possibilities of harnessing the waters of this river should be taken up.

21. *Industries.*—There is a sugar factory recently established in Gangapur Taluka, which is mainly fed by sugarcane grown under wells and lifts on rivers. A small Khandsari sugar plant is established at Bhamthan village in the same taluka. After the upper Godawari Project is completed, it would be possible to establish one more sugar factory in Vaijapur Taluka. The commercial crops like cotton and groundnut are grown in this area and altogether, therefore, the prospects of development of Industries like ginning and pressing factories and oil mills in this area appear to be bright. The supply of power in these areas would go a long way in facilitating the development of these industries.

22. *Horticulture and Dairy farming.*—This tract appears to be particularly suited for horticultural crops and dairy farming. Special facilities for the development of fruit crops like grapes, mosambies, bananas, and mangoes should be provided. Irrigation fruit blocks should also be considered. There would be scope for fruit preservation factories side by side with the development of gardens. This area is not suitable for animal husbandry or for sheep rearing due to lack of grazing areas and forests. In the event of provision of irrigation facilities, this tract should be developed for dairy purposes to meet the needs of Bombay City and other urban centres. To facilitate the growth of dairy and horticulture, it is necessary that this area should have a broad gauge rail link with Manmad.

CHAPTER XXVII.

DEVELOPMENT MEASURES—(POONA DIVISION).

I. District North Satara.

The scarcity areas in this district are as under :—

Taluka.	Class of scarcity area.	Area in sq. miles.	Population.
Khandala (East)	B	102.0	23,548
Man	B	556.0	83,478
Khatav (East)	C	340.0	47,574
Phaltan (South)	C	152.0	33,260

The soils of the scarcity areas in the district are light and undulating. There are no major irrigation works in Man and Khatav Talukas. The Nira Right Bank Canal benefits the northern half of Phaltan Taluka and a few villages of Khandala Peta. There are however a few medium and minor irrigation works, which benefit these talukas. Well irrigation is quite common and gives some relief. The present position of irrigation in these areas is as indicated below :—

(in Acres).

Taluka.	Area irrigated by different sources.				Percentage to cultivate area.
	Canals.	Tanks.	Wells.	Total.	
Khandala	2,005	....	5,509	7,514	13.70
Man	2,663	....	13,592	16,255	9.00
Khatav	6,842	....	13,323	20,165	9.80
Phaltan	43,809	....	15,802	59,611	29.40

2. *Major Irrigation.*—There are no possibilities of developing any major irrigation in this area, due mainly to the topography; excepting the Medium Irrigation Projects of Andhali in Man Taluka and Tambeve tank in Phaltan Taluka. These two projects would add 3,680 and 1,660 acres respectively to the existing irrigable areas at the end of the Second Plan period. There is, however, scope for minor irrigation tanks and wells. The following sites for developing tanks and bandharas have been suggested and should be taken up for investigation. Surveys for other suitable works should also be made :—

Taluka.	Works.	Area to be irrigated (Acres).
Man	Feeder tank for Pingli tanks	No additional area.
"	Irrigation tank at Diwad	2,000
"	Irrigation tank at Lodhawada	400
Khatav	Irrigation tank at Palasgaon	1,076
"	Irrigation tank at Yelmarwadi	667
"	Irrigation tank at Kokarale	400
"	Irrigation tank at Bombale	80
Khandala	Bandhara near Ahire	150
"	Bandhara near Inam Bk.	100
"	Bandhara near Lonand	100
Phaltan	Bandhara near Javali	80

3. *Soil Conservation.*—The scope for contour bunding in this area is estimated as follows :—

Taluka.	Bundable acreage.	Area bunded upto March 1959.	Additional area proposed to be bunded upto March 1961.	Approximate scope for bunding.
Man	2,00,000	12,500	7,500	1,80,000
Khatav (Part) ..	1,00,000	9,300	6,500	84,200
Phaltan (Part) ..	50,000	2,400	2,500	45,100
Khandala (Part) ..	20,000	1,800	2,500	15,900

It would appear that there is large scope for bunding in Man and Khatav Talukas, which are also more seriously affected by scarcity. As the cropping pattern is predominantly kharif, strip-cropping in bunded areas would be very beneficial. There is scope also for programme of well construction in the bunded areas.

4. *Animal Husbandry.*—Animal husbandry and sheep-rearing are also practised on a large scale by the farmers in this area. In order to assist in the improvement of livestock, facilities for the development of khillar cattle and cross-bred Merino sheep should be provided. A large cattle breeding farm for khillar should be established in or near Man Taluka and the existing sheep-breeding centre at Dahiwadji should be extended to meet the demand of the scarcity talukas in the district.

5. *Afforestation.*—It is understood that about 6,000 acres in Man Taluka, 325 acres in Khatav Taluka and 225 acres in Khandala Peta can be brought under afforestation by the system of trenches, pits and uralies. It is possible to grow here forest species like anjan, sisoo, khair, neem, kahsid, karanj and babkul. The saline patches could be brought under prosopis juliflora or Villaiti Babul.

6. *Industries and Power.*—There are a large number of wells in Man, Khatav, and Phaltan Talukas with fairly good underground currents. The underground strata will be enriched further as the contour bunding programme gets through. A more intensive programme of well construction in the bunded areas has been suggested. If cheap electric power from Koyna is made available, it would not only help in pumping water and thereby increasing the area under irrigation, but could also be utilised for small scale industries, specially in Khandala Mahal, where Lonand circle is well served by rail and road communications, and where availability of cheap power would facilitate the growth of small scale industries. In other areas power should be extended primarily for irrigation purposes.

II. District South Satara.

7. The district of South Satara is considered free from scarcity with the exception of Jath Taluka and Atpadi area of Khanapur Taluka, which are regarded as precarious areas of Class 'B'. The area and population of these parts are as follows :—

	Area	Population.
	Sq. miles.	
1. Jath	873.07	1,08,270
2. Khanapur (Atpadi) ...	169.00	22,690

There are no rivers of major importance in these parts as most of the streams are of local origin. The area under irrigation is as shown below :—

Taluka.	Acreage under irrigation by different sources.			
	Canals.	Tanks.	Wells.	Total.
Jath .. ..	....	....	20,524	20,524
Khanapur	1,398	....	16,421	17,819

The area under canals in Khanapur is under Mhaswad tank, which benefits four villages of Atpadi circle.

8. *Soil Conservation*.—There are no prospects of major irrigation in these areas. The major projects of Krishna and its tributaries like Koyna, Varna and Yerala cannot benefit this area due to the topography. These parts have, therefore, to be developed through other measures. There is, however, good scope for soil conservation and land improvement. The position of bundable areas in Jath and Khanapur Talukas is given below :—

Taluka.	Bundable acreage.	Acreage banded upto March 1959.	Acreage proposed to be banded upto March 1961.	Acreage available for bunding during III and IV Plans.
Jath	3,10,000	31,800	55,000	2,23,200
Khanapur (Part)	70,000	7,500	10,000	52,500

It is necessary to complete this programme early. An intensive programme of wells sinking in the banded catchments should also be undertaken together with provision of electric power for economic pumping of water from the wells. This area would appear to be well suited for cultivation of groundnut and the Committee suggests that it would be useful to establish a demonstration farm to popularise the cultivation of groundnut by the strip-cropping method of cultivation.

9. *Minor Irrigation*.—Since no major or medium irrigation projects can benefit these areas, minor irrigation tanks offer the only possibility to increase the area under flow irrigation. The cost of such works is, however, likely to be high. Such works should be investigated and taken up as supplementary to the wells programme in areas where wells are not likely to irrigate a substantial percentage of the total area. The tanks at Shegaon in Jath Taluka to bring about 4,800 acres under irrigation and tanks at Atpadi and Nimbavada to irrigate 2,769 and 2,045 acres respectively in Khanapur Taluka should be considered for construction. The possibility of having tanks at other suitable spots should also be investigated and plans kept ready for implementation later, if necessary.

10. *Animal Husbandry*.—The areas of Jath Taluka and Atpadi circle of Khanapur are noted for the Khillar cattle. Farmers have already taken to animal husbandry as their subsidiary occupation. It is necessary to strengthen this activity by locating a larger number of premium bulls in the area. A cattle farm with a herd of about 500 cows at one place or two farms — one in Jath and another in Atpadi area, each of 250 cows should be located. These areas are also noted for sheep rearing. This occupation needs improvement and encouragement by way of supply of good rams for upgrading the country stock. An intensive programme for supply of good rams should be undertaken. It is necessary to establish a Government farm for production of good cross-bred rams for supplying to the shepherds. Similar assistance should also be afforded to poultry breeders in the area.

11. *Afforestation and Fodder Supply*.—There are large areas under revenue forests, pasture lands and uncultivable wastes. The sizeable areas under the above categories should be transferred to the Forest Department for improvement of grass, afforestation and agave planting. The Forest Department should take up the development of these areas on a systematic basis. Shortage of fodder is usually experienced in these areas during scarcity years. In order to protect cattle during these periods, large scale Dutch Barns should be constructed at Jath and Atpadi and the stocks of such fodder renewed periodically to avoid serious losses to Government. The chaff-cutters — both worked by power and manual labour, should be introduced and supplied to the farmers at subsidized rates.

12. *Industries and Power*.—Though there does not appear to be any immediate prospect of development of large or small scale industries in this area, there are a large number of wells for which cheap electric power would be needed to extend the scope of well irrigation in the area.

III. District Sholapur.

13. The scarcity areas in this district are as under :—

Taluka.	Class of scarcity area.	Area in sq. miles.	Population.
Sangola	A	699.8	1,03,990
Karmala	A	621.5	1,00,089
Pandharpur	B	497.6	1,28,552
Madhr /	B	596.5	1,22,174
Malshiras (Part)	B	196.0	40,943
Mohol	C	549.5	1,02,119
Mangalvedha	C	440.5	70,008
North Sholapur	C	284.3	3,25,632
South Sholapur	C	461.5	93,503
Akkalkot	C	536.8	1,49,647
Barsi (Part)	C	105.0	31,129
		4989.0	12,67,786

The soils of this district are light to medium with undulating topography. The soils along the river basins of the Nira, Bhima and Sina are however flat and heavy. The rainfall all over the district is scanty and ill-distributed causing partial or complete failure of crops frequently. About 2/3rds of the cultivated area is under rabi crops, the main crops being rabi jowar and bajra. The area under forests is small. The grass lands are practically barren. Khillar cattle, sheep and poultry form important subsidiary occupations. Shortage of fodder is experienced during scarcity years only, as the acreage under grain crops is quite substantial.

14. Major Irrigation.—The position of irrigation at the end of the First Five-Year Plan was as shown in the following table :—

(Fig. in acres.)

Taluka.	Areas actually irrigated according to different sources.				Percentage to cultivated area.
	Canals.	Tanks.	Wells.	Total.	
1. Sangola	2,698	400	25,836	28,934	10.9
2. Karmala	1,397	....	11,761	13,158	4.2
3. Pandharpur	9,236	....	13,893	23,129	9.4
4. Madha .. .. .	....	....	19,922	19,922	6.2
5. Malshiras	42,385	....	22,181	64,566	27.7
6. Mohol	132	....	21,089	21,221	8.1
7. Mangalvedha .. .. .	....	....	19,094	19,094	7.8
8. North Sholapur	4,139	....	6,284	10,423	7.5
9. South Sholapur .. .. .	....	672	10,190	10,862	4.0
10. Akkalkot .. .. .	....	176	12,174	12,350	4.0
11. Barsi	84	1,274	17,408	19,766	5.0

The foregoing statement gives the areas actually irrigated during 1956-57. The irrigable areas would be somewhat higher. The Second Five-Year Plan includes the following projects :—

(i) The Vir Dam project which would bring additional area under irrigation on the Nira Right Bank Canal benefitting the Mangalvedha, Malshiras, Pandharpur and Sangola talukas; and

(ii) The Kurnoor Tank Project in the Akkalkot taluka. The Vir Dam is under construction, while the Kurnoor tank is not yet started. In the meanwhile, a survey of the projects which could be included in the Third or later Plans has been made. This shows that the following major projects are feasible.:

1. Kukadi Left Bank Canal ex-Pimpalwadi.
2. Bhima Lift Irrigation Scheme ex-Ujjaini Stage I.
3. Sina Canals ex-Kolegaon.

The position of total irrigated area in respect of each scarcity affected taluka in the district after the completion of these schemes would be as shown below :—
(Fig. in acres.)

Name of the Project.	Irrigable areas to be benefitted.				Total.
	Prior to I Plan.	During I Plan.	During II Plan.	During III and subsequent Plans.	
1	2	3	4	5	6
<i>Sangola Taluka.</i>					
1. Mhaswad Tank	5,000	.....	.....	.....	.....
2. Gheradi Tank	1,400	.....	.....	.....	.....
3. Budhial Tank .. .. .	.....	10,000	.....	.....	.....
4. Chinchola Tank .. .. .	.....	1,000	.....	.....	.....
5. Jewali Tank .. .. .	.....	1,000	.....	.....	.....
6. Nira R. B. C. Project and Vir Project .. .. .	.....	.....	1,850	35,188	.....
	6,400	12,000	1,850	35,188	55,438
<i>Karmala Taluka.</i>					
1. Vadashivane Tank	2,100	.....	.....	.....	.....
2. Mangi Tank .. .. .	.....	10,000	.....	.....	.....
3. Sangvi Tank .. .. .	.....	.....	1,200	.....	.....
4. Parewadi Tank .. .. .	.....	.....	1,500	.....	.....
5. Sina canal ex-Kolegaon .. .. .	.....	.....	.....	6,950	.....
6. Kukadi L. B. C. ex-Pimpalwandi .. .. .	.....	.....	.....	76,000	.....
	2,100	10,000	2,700	82,950	97,750
<i>Pandharpur Taluka.</i>					
1. Mhaswad Tank	5,000	.....	.....	.....	.....
2. Aahli Tank	7,700	.....	.....	.....	.....
3. Vir Project .. .. .	.....	.....	20,700	.....	.....
4. Bhima Left Irrigation Scheme, ex-Ujjaini Stage I .. .. .	.....	.....	.....	76,050	.....
5. Nir R. B. C. Project .. .. .	.....	.....	.....	78,300	.....
	12,700	.....	20,700	1,54,350	1,87,750

(Fig. in acres.)

Name of the Project.	Irrigable areas to be benefited.				Total.
	Prior to I Plan.	During I Plan.	During II Plan.	During III and subsequent Plans.	
1	2	3	4	5	6
<i>Madha Taluka.</i>					
1. Sapatne Tank	1,000	.....	.....	.....	.....
2. Irrigation tank at Akola .. ..	.....	.....	.....	2,220	.....
3. Sina canals ex-Kolegaon .. ..	.....	.....	.....	7,500	.....
4. Bhima Lift Irrigation Scheme, ex-Ujjani Stage I.	.....	.....	.....	11,600	.....
Stage II .. ..	.....	.....	.....	11,200	.....
	1,000	.....	.....	32,520	33,520
<i>Malshiras Taluka.</i>					
1. Nira B. B. Canal	46,000	.....	.....	.....	.....
2. Vir Project .. ..	.....	.....	41,450	.....	.....
3. Nira B. B. C. Project .. ..	.....	.....	.....	49,050	.....
	46,000	.....	41,450	49,050	1,36,500
<i>Mohol Taluka.</i>					
Bhima Lift Irrigation Scheme, ex-Ujjani—					
Stage I .. ..	.....	.....	.....	20,300	.....
Stage II .. ..	.....	.....	.....	72,800	.....
	.....	.....	.....	93,100	93,100
<i>Mangalvedha Taluka.</i>					
1. Talsangi Tank	1,000	.....	.....	.....	.....
2. Tank at Phadwalkarwadi .. ..	.....	.....	.....	1,760	.....
3. Nira B, B, C, Project .. ..	.....	.....	.....	42,000	.....
	1,000	.....	.....	43,760	44,760
<i>North Sholapur Taluka</i>					
1. Ekruk Tank	6,000	.....	.....	.....	.....
	6,000	.....	.....	.....	6,000

(Fig. in acres.)

Name of the Project.	Irrigable areas to be benefitted.				Total.
	Prior to I Plan.	During I Plan.	During II Plan.	During III and subsequent Plans.	
1	2	3	4	5	6
<i>South Sholapur Taluka</i>					
1. Hotgi Tank	1,400	....	....	....
2. Harni canals, ex-Hatgaon	4,550	....	....
3. Kurnoor Project	1,000	....	....
4. Bhima Lift Irrigation Scheme, ex-Ujjani— Stage II	28,250	....
	1,400	5,550	28,250	35,200
<i>Akkalkot Taluka.</i>					
1. Kurnoor Project	7,000	....	....
	7,000	....	....
<i>Barsi Taluka.</i>					
1. Koregaon and Pathri tanks	2,200	....	....	....	....
2. Vairag Tank	890	....	....
3. Sina Canals ex-Kolegaon	4,000	....
	2,200	....	890	4,000	7,090

From the above details it will be seen that the likely percentage of total irrigable area to cropped area would be :—

Taluka.	Percentage of irrigable area.
Sangola	31.8 per cent.
Karmala	35.9 per cent.
Pandharpur	33.7 per cent.
Madha	17.0 per cent.
Malshiras	70.7 per cent.
Mohal	44.6 per cent.
Mangalvedha	26.1 per cent.
North Sholapur	9.0 per cent.
South Sholapur	16.5 per cent.
Akkalkot	6.4 per cent.
Barsi	6.7 per cent.

It will be seen that a fair amount of security would be possible for the talukas of Sangola, Karmala, Pandharpur, Malshiras, Mohal and Mangalvedha due to large and compact areas coming under major irrigation. Of the areas classified as A or B, only the taluka of Madha will be inadequately protected. The three eastern talukas of North Sholapur, South Sholapur and Akkalkot and part of Barsi which are considered scarcity areas of Class C, will also not get adequate protection by irrigation.

15. *Soil Conservation*.—Next to major and medium irrigation, soil conservation combined with improved cultivation techniques would offer a protective measure of wide application. The position in respect of contour bunding, in respect of different talukas is shown in the following table :—

Name of Taluka.	Bundable Area (Acres).	Area bunded upto 31-3-59 (Acres).	Additional area to be bunded upto 31-3-61 (Acres).	Area available for bunding during III and IV Plan Periods (Acres).
1	2	3	4	5
Sangola	2,25,000	63,000	....	1,61,500
Karmala	2,50,000	43,000	....	2,07,000
Pandharpur	1,84,000	49,800	20,000	1,14,200
Madha	2,25,000	31,200	....	1,93,800
Malshiras	1,23,000	9,800	....	1,13,200
Mohol	2,00,000	27,000	....	1,73,000
Mangalvedha	1,48,000	19,800	....	1,23,200
North Sholapur	1,00,000	3,100	20,000	76,900
South Sholapur	1,50,000	23,500	20,000	1,06,500
Akkalkot	2,00,000	6,100	....	1,93,900
Barsi	2,00,000	2,800	60,000	1,37,200

The figures of estimated area given in the foregoing table do not take into account the large areas which would come under major irrigation. A fresh estimate would, therefore, have to be made and the programme of contour bunding taken up in areas which are not likely to come under major irrigation. As the area under major irrigation in Sangola, Karmala, Pandharpur, Malshiras, Mohol and Mangalvedha talukas is expected to be over 20 per cent, the Committee would recommend that contour bunding in the immediate future should be restricted to the remaining talukas of the district. In areas where contour bunding is completed, intensive work regarding the introduction of dry farming measures should be taken up early.

16. *Wells and Minor Irrigation*.—Fairly large areas are likely to be commanded by major irrigation projects, especially in the talukas of Malshiras, Pandharpur, Sangola, Karmala, Mohol and Mangalvedha, as a result of which underground strata will get saturated with water. An intensive wells sinking programme to exploit this underground source of water should be taken up to extend the areas under irrigation. Koyna electric power is expected to be supplied to almost all the taluka places in Sholapur district.

A large number of sites for minor irrigation tanks and bandharas are reported to be available. As a number of talukas in this district are expected to be served by major irrigation, such minor irrigation works should be taken up only in talukas in which major irrigation covers less than 20 per cent. of the cropped areas.

17. *Animal Husbandry*.—The farmers in this district have developed the khillar cattle breed to a great extent. Animal husbandry, sheep rearing and poultry keeping would be the most appropriate subsidiary occupations. It is necessary to take special measures to strengthen these occupations in areas which are not likely to come under major irrigation. A large farm with 500 cows of khillar breed should be located in this area. It is also necessary to establish a large sheep breeding farm at a suitable place in order to supply superior cross breed rams to the shepherds. There is scope for a large-sized poultry farm near Sholapur or Barsi for supplying pure breed birds to the poultry keepers. There is need for additional veterinary facilities and for marketing facilities for poultry in this area.

18. *Forests.*—The total area under forests in this district is 197 sq. miles, of which 105 sq. miles are classed as Revenue Forests. The existing area under forests should be increased sufficiently. There is scope for afforestation in Revenue Forests and in blocks of waste land which should be transferred to the Forest Department for development. A programme of planting Agave around these areas should be taken up. Inclusion of Anjan amongst the different species for afforestation of new areas should be regarded as necessary. Development of grazing areas on scientific lines should be taken in large areas in each taluka, as animal husbandry forms an important subsidiary occupation of the district.

IV. District Ahmednagar.

19. The scarcity areas in the Ahmednagar district are—

Name of Taluka.	Class of scarcity area.	Area in sq. miles.	Population.
1. Shrigonda	A	617.6	95,007
2. Karjat (Rashin Circle)	A	140.0	18,414
3. Karjat (Rest)	B	420.1	55,244
4. Parner	B	690.2	1,06,078
5. Ahmednagar	B	585.2	2,06,153
6. Sangamner	C	624.5	1,29,381
7. Pathardi	C	425.4	97,575
8. Jamkhed	C	336.8	59,397

The cropped area is roughly 75 per cent, of the total area in this district. Barring the river valleys, the terrain is hilly and undulating with shallow soils. The whole district except Akola is situated in the arid zone. The average rainfall varies from 18" to 27". The area under different classes of forests is 11.5 per cent. of the total area. Area classed as barren and uncultivable waste is also quite high. The important crops are rabi jowar, bajri, wheat, sugarcane and cotton. Being the heart of the scarcity area in the Deccan, this district has already received some attention by way of protection measures. Among these, the most important measures have been the construction of the Godavari and Pravara canals, which have transformed the agriculture economy of the Kopergaon, Rahuri and Shrirampur talukas. With the introduction of irrigated farming growing commercial crops, specially sugarcane, there has been development of sugar industry in the area which has led to further increase in opportunities of investment and employment. The area now offers opportunities of employment to people from adjoining areas as well. The completion of Mula project is expected to extend this zone to the adjoining talukas of Nevase and Shevgaon. It will benefit an area of 12,860 acres in Rahuri, 26,300 acres in Shevgaon and 92,090 acres in Newasa talukas. The Ghod Project started during the latter part of the First Plan period is nearing completion and would benefit an area of about 30,800 acres in Shrigonda and 28,000 acres in Karjat talukas. Contour bunding has also been undertaken on a large scale in this district particularly in the Parner and Karjat talukas. The scope for further development of the scarcity area is considered in the following paragraphs.

20. *Major Irrigation.*—The Kukdi project has been prepared in two stages and the first is expected to irrigate an area of 32,300 acres in Parner taluka and 44,500 acres in Shrigonda taluka, Stage II of this project is expected to irrigate 62,500 acres in Karjat taluka and 29,500 acres in Shrigonda taluka. In view of this, it would appear that Parner, Shrigonda and Karjat talukas would receive fair protection from major irrigation. In Shrigonda taluka, the irrigated area is at present 24,342 acres. Of this 21,871 acres is under wells and tanks. The Ghod project is expected to irrigate an additional area of 30,800 acres. With the coming up of the Kukdi project, the total irrigated area would increase to 1,11,390 acres. In Karjat taluka, the total area under irrigation at present is 23,458 acres of which 17,100 acres is under wells, and 3,658 acres under tanks. With the completion of the Ghod project and Kukadi Stage I and Stage II

and the tank at Nimgaon on Sina river, the area under major irrigation will be 1,15,800 acres. A tank at Nimgaon Gangurde across the river Sina which is considered feasible, is expected to irrigate an area of 19,000 acres of this taluka. In Parner taluka, the area under irrigation at present is 16,352 acres of which 15,321 acres is under wells and the rest under canals. On account of higher elevation, this taluka cannot be easily served by major irrigation. The proposed Kukdi Left Bank Canal is, however, expected to irrigate 32,000 acres in this taluka along the southern border. On completion of this project, the total irrigable area would be 14 per cent. only. Except Shrigonda and Karjat talukas, where the total irrigated areas would be substantial, the unirrigated areas would also deserve consideration.

21. *Soil Conservation.*—As the soils in this district are light and erodible there is considerable scope for contour bunding in areas which are not likely to be served by major irrigation. The details in respect of each taluka are given in the following table:—

(Fig. in Acres).

Name of taluka.	Total bundable area.	Area bunded by March 1959.	Area likely to be bunded by the end of the Second Plan Period.	Area available for further scope for Bunding.
Shrigonda	1,30,000	42,200	....	87,800
Karjat	1,15,000	94,600	1,15,000	....
Parner	1,69,000	86,300	1,69,000	....
Ahmednagar	1,00,000	13,000	15,000	85,000
Sangamner	1,50,000	10,800	....	1,39,200
Pathardi	1,20,000	2,700	42,700	77,300
Jamkhed	1,16,000	19,200	74,200	41,800

It will, thus, be seen that due to the recent programme of intensive contour bunding taken up in this district, the talukas of Parner and Karjat will have been completely covered by contour bunding by the end of the Second Five-Year Plan. In respect of the remaining talukas, a phased programme is recommended for the talukas of Ahmednagar, Sangamner, Pathardi and Jamkhed as the other talukas would receive adequate protection from major irrigation. There is scope for dry farming and strip cropping methods of cultivation and for a programme of wells in bunded areas.

22. *Minor Irrigation.*—In Pathardi, Jamkhed, Ahmednagar, Parner and Sangamner talukas, which are not likely to be covered sufficiently by major irrigation, it would be necessary to survey the possibilities of minor irrigation tanks. In this district, there are a number of irrigation tanks already and further sites deserve investigation.

23. *Afforestation.*—The Ahmednagar district has 138 sq. miles of reserved forests and 486 sq. miles of Revenue Forests. Of this, Shrigonda taluka has roughly 47 sq. miles of forests. There is a large area of land which is classed as barren and uncultivable. A regular afforestation programme in the existing forests and also by enclosing the sizeable uncultivated barren areas should be undertaken. There are large areas maintained as Kurans which could be improved. Along with afforestation, the programme of Agave planting should be taken up with a view to intensifying the existing sisal fibre industry in the area. There are large areas of barren and uncultivated land, which can be utilised for Agave plantation. The high-lying rugged plateau of Sangamner, Parner and Rahuri, which is not very suitable for agriculture should be developed into a forest belt. This area produces Hirda nuts (Myrabolans) which are in great demand in the tanning industry. A large scale programme for planting Hirda and Agave should be taken up by the Forest Department. In Pathardi and Jamkhed, there is scope for the growth of Anjan trees. The area under forests in Jamkhed is 17,877 acres. A regular afforestation programme to improve the existing denuded forests should be taken up. The barren and uncultivable wastes should be brought under Agave by transferring sizeable areas to Forest Department or to the local gram panchayats.

24. *Animal Husbandry*.—The tract in Karjat taluka which would remain uncommanded by irrigation would be suitable for developing subsidiary occupations like animal husbandry, sheep rearing and poultry keeping. Parner, Ahmednagar and Jamkhed talukas are well suited in this respect, as this tract is contiguous to the high-lying plateau of Sangamner and Rahuri, where sheep rearing has developed already. There is scope for production of woollen carpets and blankets in this area. This tract is suited mainly for animal husbandry and rearing of sheep for which facilities for further development should be provided.

V. District Poona.

25. The scarcity areas in this district consist of the talukas of Dhond and Sirur, which are considered precarious areas of Class A and parts of talukas of Baramati, Indapur, Purandhar and Haveli, which are graded as scarcity areas of Class B.

26. *Dhond Taluka*.—The area of this taluka measures 3,18,714 acres, of which 68.6 per cent., i.e. 92,18,607 acres is the net cropped area. The area under forest is 35,424 acres. The acreage under irrigation is 15,082 which works out to 6.4 per cent. of the cropped area. Of the total irrigated area, 10,650 acres are under wells and 4,432 acres under the Matoba and Varvand tanks which have an irrigation potential of 2,708 and 3,240 acres respectively. The Khadakwasla Project Phase II consisting of a dam at Panset which is under construction is expected to irrigate an area of 1,02,044 acres in this taluka. The Mutha canal which is being remodelled will also feed Matoba and Varvand tanks. The area of 1,02,044 acres will be inclusive of the irrigation from these tanks. The villages in the north-western part of the taluka between the rivers Mutha and Bhima will be commanded by the Bhima Right Bank Canal Ex-Pimpalgaon Weir. This scheme has been investigated and is ready for inclusion in the Third Plan. The area irrigated by this scheme in the Dhond Taluka is estimated at 16,260 acres. Thus the total acreage which can be protected by major irrigation in this taluka would be about 1,33,386 acres inclusive of the acreage benefitted by wells. As the cropping pattern under this major irrigation would provide for 15 per cent. sugar cane, the area under cane would suffice to meet the requirement of two or three sugar factories in this area.

27. A portion of the taluka has no prospects of major irrigation and can only benefit by a programme of soil conservation including contour bunding and the extension of dry farming and strip cropping methods of cultivation. The bundable area in this taluka was estimated at 1,00,000 acres of which 9,400 acres have been bunded so far. In view, however, of the fact that over 60 per cent. area in this taluka would be covered by irrigation, the Committee considers that it would not be necessary to take up contour bunding in this taluka in the near future. The taluka is reported to have the following suitable sites for the construction of irrigation tanks :—

- (i) Kurkumbh, (ii) Jiregaon, (iii) Roti, (iv) Hingingada, (v) Wasande, (vi) Boriandi, (vii) Bharatgaon and (viii) Dalimb.

As these tanks are outside the areas likely to be served by major irrigation, they should be taken up as supplementary to the contour bunding and wells programme. Cheap electric grid power should be provided to this area, to make the installation of pumps on irrigation wells, specially in the area commanded by major irrigation, economical. Since the main Broad Gauge Railway line and the State Highway run across the full length of this taluka, there would also be scope for some industries, if cheap power is made available. The present area demarcated as forests is 35,424 acres. It is necessary to enclose this area properly and take up an afforestation programme. This would help in providing fire wood and grass to a large extent.

28. *Sirur Taluka*.—The area of this taluka is 3,84,565 acres of which 3,10,275 acres i.e., 80 per cent. is the net cropped area. The area under forests is 15,394 acres only. The area under irrigation is 5,542 acres, all under wells. The Left Bank Canal from Ghod weir is expected to irrigate an area of about 15,300 acres in the south, eastern part. There is a ridge running from north-west to south-east separating the Ghod Valley from Vel river valley. The central part

of the taluka is therefore high-lying and cannot possibly be commanded by any irrigation projects, either from the Bhima or from the Ghod. The Bhima-Chaskaman Project, which has been investigated, is expected to irrigate about 38,100 acres in the south-western part of the taluka. An area of 4,000 acres can also be benefitted by a tank to be constructed near Kendur across the river Vel. The Kukadi Project would irrigate an area of 16,600 acres, lying between the two rivers of Ghod and Kukadi. Thus a total area of about 74,000 acres i.e. 24 per cent. of the net cultivated area can be brought under major or medium irrigation, leaving only the central belt of the taluka out. It would be possible to establish a sugar factory at a convenient centre in the irrigated zone. The bundable area in this taluka is estimated at 2,10,000 acres, of which 68,500 acres have been protected by contour bunding till the end of March 1959. It is estimated that the existing three sub-divisions in this taluka would cover another 90,000 acres till the end of March 1961, leaving only about 51,500 acres to be completed in later years. In view of the fact that this taluka would receive sufficient protection from major irrigation, the Committee considers that it should not be necessary to take up the contour bunding programme in this taluka immediately. The contour bunding programme should be followed by intensive programme of dry farming and strip cropping. Cheap electric grid power will be available at Sirur (Ghodnadi) from Ahmednagar. This power should be made available for pumping water from the wells in the major canal areas. The present acreage of 15,394 acres under forests, should be taken up under regular afforestation programme. There are large stretches of cultivable waste lands and barren uncultivable wastes. Sizeable areas should be enclosed and improved as grass areas.

29. *Indapur Taluka*.—The area of the taluka is 3,62,345 acres of which 70.7 per cent. is under crops. Of the rest, forests occupy an area of 22,265 acres. The acreage under irrigation is 52,838 which is 19.7 per cent. of the area under crops. Of this 38,556 is under canals and the rest 14,282 acres under wells. The Nira Left Bank Canal and the Tail Water Tank at Shetphal constitute the canal irrigation along the southern boundary of the taluka. A few villages in the west have perennial irrigation, while those beyond the Walchandnagar sugar factory, have seasonal irrigation with the exception of the villages fed by Shetphal tank. There are also two small tanks at Bhadalwadi and Palas-deo along the northern border of the taluka, which irrigate about 3,400 acres. There are two sugar factories namely Walchandnagar and Sansar and a third one is contemplated at Bavda under the Shetphal tank. The Vir Dam which is under construction, is not likely to benefit this area. Under the Khadakvasala-Project II, it is proposed to feed the Nira Left Bank Canal by cutting a tunnel through the ridge from Dhond to Baramati taluka. The project will, on completion, bring an area of about 75,150 acres under irrigation in the eastern half of the taluka which will include the present seasonal irrigation zone. This will bring the total irrigated area in the taluka to about 1,18,000 acres. This is really a highly precarious area and has been graded as B and not as A because of the southern portion of the taluka which is served by the existing Nira canal irrigation. The Khadakvasala Project II should therefore be taken up early. It would be possible to establish two additional sugar factories in this area after irrigation has been extended.

30. The area which will be left out of the proposed irrigation command, will be mostly a plateau occupying the north-western part of the taluka. This is a rocky area and mostly barren, supporting inferior grass and a few shrubs. There is, however, another area which will remain partly unirrigated; and that lies in the eastern and northern parts of the taluka. This area needs contour bunding, but in view of the fact that this taluka is expected to receive sufficient protection from major irrigation, the Committee considers that no programme of contour bunding should be necessary for this taluka. Due to the precarious nature of agriculture, the farmers have developed subsidiary occupations of animal husbandry, sheep rearing and poultry keeping. There are villages on the plateau which are suited for these occupations. Facilities for the development of khillar cattle, sheep and improved poultry should be provided in this area. The forest area is mainly located along the Bhima river. These are the good reserved forests. Revenue forests are in a neglected condition and should be transferred to the Forest Department for taking up an afforestation programme for regeneration of these forests.

31. *Baramati Taluka*.—The area of this taluka is 3,41,600 acres of which 69.1 per cent. i.e. 2,37,400 acres forms the net cultivated area. Of the rest, forests occupy 17,600 acres only. A large acreage of over 33,800 acres is classified as barren and uncultivable. The area under irrigation is 61,669 acres or roughly 24.3 per cent. of the cropped area. The major Nira Left Bank Canal irrigates 44,272 acres, while the wells benefit 17,397 acres. There is a tank at Shirasuphal, but the benefits from this accrue to the villages in Dhond taluka. There is one co-operative sugar factory in this taluka and another contemplated. The Vir Dam Project will not benefit this taluka any more beyond the present area of 44,272 acres, which are irrigated by the Nira Left Bank Canal. It is, however, proposed to construct a tank at Nazare in Purandhar taluka and at Barhanpur in Baramati taluka across the river Karha. Both these tanks together would irrigate 21,850 acres, seasonal and perennials together. Besides these two tanks, there appears to be no scope for developing flow irrigation. The total area that would be protected by irrigation would be roughly 83,500 acres or 35 per cent. of the net cultivated area. Nearly 2/3rd of the taluka, mainly towards the south and west, will not be covered by major irrigation. This area is somewhat high lying with undulating shallow soils. The area suitable for contour bunding outside irrigation command is estimated at 70,000 acres. So far, 9,700 acres have been protected by contour bunding. As the taluka is expected to be adequately protected by major irrigation, the Committee considers that programme of contour bunding should not be taken up in this taluka in the near future. This area is highly precarious, but due to irrigation facilities in the southern parts of the taluka, it is treated as of Class B. The wells sinking programme and intensive Dry Farming programme should necessarily follow the bunding programme, to achieve full benefits of contour bunding. It is necessary to exploit the underground water resources especially in the irrigation command area, by making the cheap electric grid power available for pumping. The L. T. line is proposed to be taken from Nira to Baramati through the canal zone, and hence it should be quite easy to utilize this power. This dry tract is not quite suitable for agriculture and as such people have already resorted to the subsidiary occupations like animal husbandry, sheep rearing and poultry keeping. Facilities for development of these occupations should be provided. The area under forests in taluka is quite low. It is suggested that sizeable areas classed as pastures, open and uncultivable wastes, should be closed to cattle grazing and developed as grass areas and scrub forests. A regular afforestation programme should be taken up by the department by enclosing all the revenue forests.

32. *Purandhar Taluka*.—The eastern part of this taluka covering about 1/3rd of the area is considered as precarious area of class B. This is contiguous to Baramati scarcity zone. The total area under irrigation in the taluka is 11,200 acres, of which hardly 2,000 acres are under canals and the rest is under wells. The area under forests is 20,581 acres, mostly located in the western part. There are no possibilities of providing major and medium irrigation for this area. There is also little possibility of developing tank irrigation, except the one at Nazare, which would feed Baramati taluka rather than Purandhar. However, other suitable sites should be surveyed for the protection of this area. Since there are no prospects of irrigation development, it would be necessary to take up contour bunding programme on a priority basis. It is estimated that an area of 60,000 acres is bundable in the eastern half of the taluka, which includes the precarious area. Against this, an area of 14,000 acres has been bunded upto 31st March 1959 and it is proposed to complete an additional area of 10,000 acres till the end of March 1961, leaving 36,000 acres to be taken up during the Third Plan period.

33. *Haveli Taluka*.—The development of large factories around Poona has created good opportunities for employment in this taluka. Large areas are occupied by aerodromes, military colleges, and camps which also provide some scope for employment. The problem of scarcity in this taluka is solved to a great extent by the employment potential created in Poona and round about. The eastern villages to the north of Mutha river from Wagholi to Nhavi Sandus, constitute precarious area of Class B. The Bhima Right Bank Canal from Pimpalgaon weir proposed to be included in the Third Plan is expected to bring about 8,200 acres under irrigation in this taluka. No other source of major or minor irrigation appears to be available to serve the remaining villages. There is scope for some contour bunding in this area. As the nearness to Poona City and irrigated areas on three sides provide considerable security to this area, no further measures are considered necessary.