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CHAPTER - III

A PROFILE OF BIJAPUR DISTRICT

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## C H A P T E R - I I I

### A PROFILE OF BIJAPUR DISTRICT

#### 3.1 INTRODUCTION :

The occurrence of frequent droughts and consequent setbacks in agricultural production since the beginning of the planned era, especially the occurrence of the unprecedented drought during 1987-88 aroused the interest among the researchers both at the official and non-official, as to the problems of the drought prone areas from the economics point of view. As such the present researcher thought it worthwhile probing into the major problems of drought and allied aspects relevant to the policy measures by selecting the Bijapur district which constitutes one of the districts of Karnataka State.

Among sixtyseven districts all over the Indian Union, identified by the Irrigation Commission (1972) Bijapur district is one of them. The geographical area of the Karnataka State amounts to 191,773 sq.kms. forming 5.85 per cent of the total area of the country. According to the census of 1981, the population of the State works out to be 37.04 million which forms 5.51 per cent to the total population of the country. Agriculture is still the main occupation of the State. Despite agriculture being the main occupation of the State, the State has the greatest percentage share, to the total drought prone area of the country. Among the districts of the State, Bijapur is having the largest percentage of the drought prone area in the State. The

Irrigation Commission has estimated 132,374 sq. kms. area in the whole of Karnataka State forming 69.03 per cent of the total area subject to the frequent droughts. This area covers the 12 districts' area (Table No.1.5). The Central Water Commission estimate which identifies 14 districts covering the area of 152,983 sq. kms. forming 79.77 per cent of the total geographical area. The addition of two more districts added to the list of the Irrigation Commission are Belgaum and Chikkmagalore.

### 3.2 GEOGRAPHICAL LOCATION AND PHYSICAL FEATURES :

The district under study formed a part of the Bombay State and as a result of the reorganization of the states in 1956, it was transferred to the Mysore State which is now known as Karnataka State. This is the largest of all the districts in the State and ranks fifth in respect of population according to 1981 census. The district having an area of 170,69 sq.kms., is located between 15°-20' and 17 °-28 north latitude and 74°-58' and 76°-28' east longitude. The district is situated in the interior of the deccan peninsula and is about 209 kms from the west coast. The district is bounded by Solapur district on the north and on northwest by the Sangli district of Maharashtra State, on the west by Belgaum district, on the south by Dharwad district and on the east by Gulburga district and on the southeast by Raichur district. The district could be divided into three belts namely: (i) the northern belt consisting of the northern parts of Bijapur taluka. Indi and Sindgi, (ii) the central belt consisting of Don valley region which begins to the south of Bijapur city and (iii) the southern belt consisting of the rich alluvial plane of the Krishna separated from the central belt by a stretch of the barren tract.

(i) Northern Part : It consists of no hills but at the same time it can not be called plane, as it is not flat. The soil in the uplands being shallow the villages are confined mostly to the vallies. The villages which are generally on the banks of the streams are far apart from one another. But inspite of all the general barrenness the trap country has excellant water, many built wells yielding a good supply for irrigation.

(ii) Central part : It consists of Don valley having a rich tract of deep black soil. It crosses the district from the west to the east. We find many true planes in this tract. But the valley is badly off for water. Even wells are scarce and the water is generally brackish.

(iii) Southern part : It is a rich plane crossed from west to east by two lines sand-stone hills hardly over 300 feet high, covered by brush-woods. Though it is rich, yields little drinking water, so that almost all the villages are ranged along the banks of the rivers or close to the bases of the hills. As we go further south towards Badami and southwest of Hungund, the hills increase in number and also become rougher and steeper. Here the black soil gives place to the red. At Talikoti limestone supplants sandstone.

### 3.3 TYPES OF SOIL :

Soil formation of the district indicate that they are poor in organic matter constituents. The sand silica content is very low which may be due to the high proportion of lime in those soils. There are two main classes of soils (i) Yeri bhoomi which means black soil and (ii) Masuri bhoomi which means red soil. The major portion of the district consists of black soil which has great moisture holding capacity. When unmixed with any

foreign matter it becomes clayey in the rain season and in the hot weather it is deeply fissured. The first heavy rains carry the dried surface film into these fissures, so that without any efforts the upper layer of which is renewed partly year after year. The salt in the rich deep black soil of the Don valley is very nourishing to some crops, especially jowar and wheat. The soil needs ploughing only once in three or four years. A single heavy rainfall is enough to give a fair crop. The sandy red soil is found chiefly near the sand stone hills of Badami, Bagalkot and Hungund talukas. This type of soil is generally manuring and tillage. It also yields fair crops. For taluka-wise details see the table below.

Table 3.1

Talukwise type of soils with percentage and P.H. value

Sr.No.	Taluk	Type of soil	Percentage	*P.H. value
1.	Badami	i) Mixed red & black soils	80	7.10 to 8.90
		ii) Deep black soils	20	
2.	Bagalkot	i) Medium black soils	60	7.30 to 8.30
		ii) Deep black soils	40	
3.	Bagewadi	i) Medium black soils	60	7.60 to 8.65
		ii) Deep black soils	40	
4.	Bijapur	i) Shallow black soils	45	7.35 to 8.70
		ii) Medium black soils	40	
5.	Bilgi	i) Medium black soils	90	N.A.
		ii) Deep black soils	10	
6.	Humgund	i) Deep black soils	55	7.10 to 8.85
		ii) Mixed red and black soils	40	
		iii) Medium black soils	5	

Sr.No.	Taluk	Type of soil	Percentage	*P.H.value
7.	Indi	i) Shallow black soils	50	7.30 to 8.50
		ii) Deep black soils	40	
		iii) Medium black soils	10	
8.	Jamkhandi	i) Medium black soils	100	7.55 to 8.10
9.	Muddebihal	i) Deep black soils	95	7.50 to 8.80
		ii) Medium black soils	5	
10.	Mudhol	i) Deep black soils	70	N.A.
		ii) Medium black soils	30	
11.	Sindgi	i) Medium black soils	80	7.50 to 8.30
		ii) Deep black soils	15	
		iii) Shallow black soils	5	

\* Range of PH value is given taluk as a whole.

Source : Report, Central Water Commission, 1982  
Ministry of Irrigation.

#### 3.4 GEOGRAPHICAL REGIONS :

The general discription of the main types of the soil of the Bijapur district would not <sup>be</sup> complete without at least a brief discription of the water resources that characterise its geography.

(i) Bhima basin : It is a belt spreading four to eight miles wide, spreading out from the southern bank of the Bhima river. The river Bhima influences the local economy in the following two ways: (a) the areas that are flooded during the monsoons and the areas which receive annually good soil cover also retain moisture and hence these are well known for their

agricultural products. (b) the immediate banks which are covered with Bhima waters for a longer duration.

(ii) Don basin : It forms a part of the central uplands. It must be considered as a separate geographical region because it has distinctive landscape with wide expanse. Its deep black soil cover that is furrowed by gullies, the saline patches interspersed with bull rush-marsh are in contrast with the deeply notched flanks of the uplands on either side. The bumper crop of jowar wheat, pulses and safflower awaits the farmer in years of good rain, but in years of scanty rainfall it becomes a notorious famine tract which takes a heavy toll of cattle and causes much distress to the population.

(iii) Krishna basin : The 1750 feet level marks off the Krishna valley as a distinct landscape from the adjoining trapean land on the north and Kaladagi sand stones on the south. This is the area covered annually by the flood waters of the river. There is very significant difference between the annually flooded lands and those which are left uncovered. The former area due to rich freshly deposited silt and soaking of water becomes one of the most highly prized agricultural lands while the latter has a very thin soil cover and yields much poorer crops. Such flooded areas are found in the neighbourhood of Algur in the Jamakhandi sub-division. This region recently has been acquiring new agricultural importance as a sugarcane growing area irrigated by Ghataprabha project.

Apart from these important geographical areas there are others too, namely the central uplands, the Bijapur urban area, the southern ranges and the south-eastern hills and the Hungund planes, which excepting some small

patches of Hungund planes are not so important areas from the agricultural point of view. Hence we have not described the broad geographical features of them.

### 3.5 CLIMATE AND RAINFALL :

The climate of the district is generally dry and healthy. The high degree of variation in the rainfall from year to year, both in the quantity and in its spread through the seasons makes the district more susceptible to drought. The hot season begins by the middle of February and lasts to the end of May or the beginning of June followed by the South-West monsoon season, which extends upto the end of September. During this rainy season weather is cool and damp. The North-East or the retreating monsoon season begins from the beginning of October and extends to the end of November, which is followed by the cold season which begins from December to the middle of February.

The district receives rainfall mainly from South-West monsoon (that is June to September). The normal annual rainfall of Bijapur district is 552.8 mm. Nearly 63.74 per cent of the annual rainfall occurs during June to October (South-West monsoon) while 21.78 per cent occurs in October and November (North-East monsoon). September is the rainiest month. The variation in the annual rainfall is appreciable.

### 3.6 WATER RESOURCES :

The district has five major watersheds consisting of 156 sub-water sheds. The major watersheds are : Bhima basin, Krishna basin, Don basin, Ghataprabha basin and Malaprabha basin. The major watershed zones and



the number of watersheds are shown talukawise in Table No. 3.2.

Table No. 3.2

Statement showing the details of talukwise breakup of water sheds  
in Bijapur district.

Sr.No.	Taluk	No. of water sheds in					T o t a l
		Bhima	Krishna	Dhone	Ghata- prabha	Mala- prabha	
1.	Badami	-	-	-	-	2	2
2.	Bagalkot	-	1	-	6	3	10
3.	Bagewadi	-	5	21	-	-	26
4.	Bijapur	12	6	11	-	-	29
5.	Bilgi	-	6	-	3	-	9
6.	Indi	13	-	-	-	-	13
7.	Humgund	-	4	-	-	8	12
8.	Jamkhandi	-	10	-	-	-	10
9.	Muddebihal	-	8	4	-	-	12
10.	Mudhol	-	-	-	16	-	16
11.	Sindgi	10	-	7	-	-	17
12.	Total	35	40	43	25	13	156

Source : Report Central Water Commission (1982)  
Ministry of Irrigation.

By taking into account the ground water and the surface water potential for irrigation purpose, the Water Resource Development Organisation's Expert Committee has assessed the ultimate irrigation potential for the district. It has taken into account three sources of irrigation namely major, medium and minor irrigation and wells. By all these sources, it is strange enough that though the Bijapur district is known for frequency of droughts, it has the higher potentiality of irrigation that is 37.8 per cent, in terms of percentage of irrigation with respect to cultivable area, than the state percentage of 31.69 (Table No.3.3). Data as regards the irrigation potential created up to 31-3-1986 reveals that the high percentage of the total irrigation seems to have been claimed by the major and medium irrigation projects (40.30 per cent) while 24.20 per cent has been claimed by the minor irrigation projects. In the total irrigation potential created so far the relative share of the well irrigation upto 1-1-1983 works out to be 35.50 per cent. However the percentage of the area irrigated by wells strangely works out to be just 0.05 per cent to the total net area sown. This percentage has been worked out on the basis of net draft that is actual utilisation of ground water, out of the net annual recharge at 85 per cent of the gross recharge, and the remaining balance out of which at the rate of 50 per cent, additional area that could be irrigated safely and thus the above percentage could be considered as the ultimate percentage of well irrigated area to net sown area. On the basis of existing figures of irrigated area and the net sown area the percentage of the former works out to be 15.30 per cent to the latter. After completing ongoing projects, as it is estimated by Expert Committee of W.R.D.O., the same will be more than doubled that is 37.78

Table No. 3.3

Ultimate irrigation potential in Karnataka with major, medium, minor irrigation, surface and ground water sources.

Sr. No.	Taluk	Geographical area	Cultivable area	Existing projects as on 1-4-86		Wells as on 1-1-83	On-going Projects		Total	Grand total col.no. 8 + 11	% of irrigation with respect to cultivable area	
				Major and Medium irrigation works	Minor irrigation works		Major and Medium irrigation works	Minor irrigation works				
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Bijapur	265769	222726	510	6291	16203	23004	8094	339	8433	31437	14.11
2.	Bagewadi	197865	187277	1255	8748	10631	20634	12983	770	13753	34387	18.36
3.	Muddebihal	149744	140598	22	3342	1527	3891	27645	304	27769	31660	22.52
4.	Indi	222492	201731	1683	7739	14330	23752	36828	250	37078	60830	30.15
5.	Hungund	135358	116105	640	5625	1545	7810	41087	2021	43108	50918	43.86
6.	Badami	139420	90969	5728	5812	1801	13341	33846	27	33873	47214	51.90
7.	Sindgi	217601	186535	400	5099	9410	14909	83368	190	83558	98467	52.77
8.	Bilagi	78169	54383	19829	3936	1380	25145	3597	61	3658	28803	52.96
9.	Jamakhandi	116853	92171	25646	2224	13248	41118	11771	-	11771	52889	57.38
10.	Bagalkot	93627	67089	1143	2685	2048	5876	38328	-	38328	44204	65.89
11.	Mudhol	95450	85335	30975	2062	5150	38187	26365	510	26875	65062	70.24
Dist. Total		1712348	1444919	87831	52563	77873	217667	323732	4472	328204	545871	37.78
State Total		19047870	12637158	1224295	892816	432098	2549309	1370915	84324	1455239	4064448	31.69

Source : Expert Committee, W.R.D.O., Bangalore.

per cent. For talukawise details as the cultivable area, existing and ongoing projects and wells refer Table No. 3.3. Incidentally we note that talukas namely Hungund, Badami, Sindgi, Bilagi, Bagalkot and Mudhol will more than 50 per cent and less than 70 per cent of their respective total cultivable area, under irrigation.

### 3.7 CROPS GROWN IN THE DISTRICT :

The district being drought prone area, the agricultural production structure is dominated by the production of cereals both major and minor. Since the district is mainly a foodgrains producing area, roughly three-fourths of the total cropped area is under food crops. The main foodcrops of the district are Kharif and rabi jowar, bajra, wheat paddy and maize. Under pulses the main crops are bengal gram, tur, greengram, horsegram, chavali etc. Fruits, vegetables, spices and condiments are also grown. The non-food crops are also grown. The major non food crops are groundnut, sesame, linseed. Safflower, castor, niger, cotton and deccan hemp (ambadi). There is very small area under tobacco and betel leaf. Very recently sugarcane crop has cropped up wherever perennial sources of irrigation have been developed.

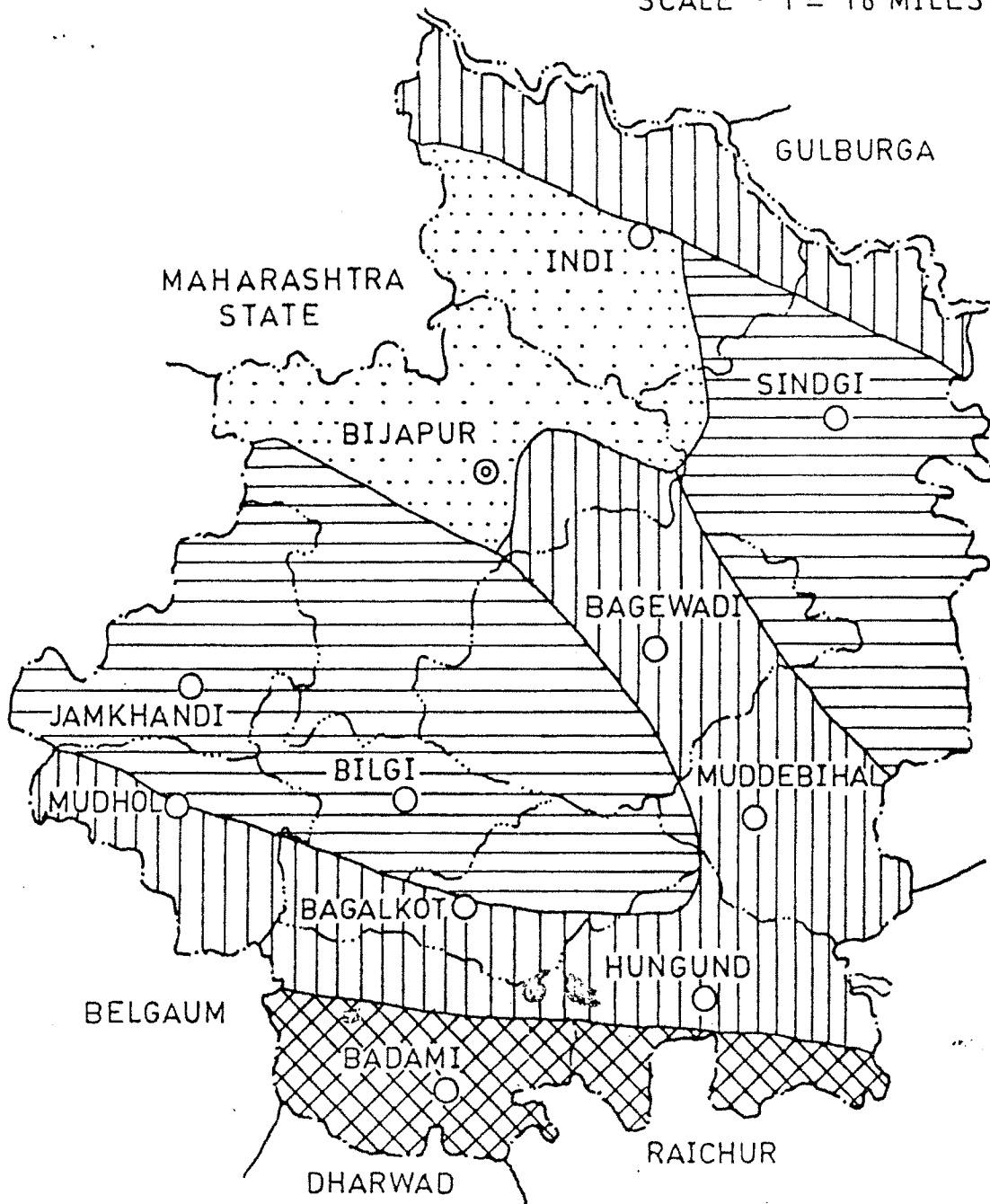
### 3.8 THE PURPOSE AND SELECTION OF THE TOPIC :

As mentioned somewhere earlier the agriculture being still an important sector of the overall economy, and in the overall development process, though the role of agriculture was emphasised, it has been realised that the agricultural production had been subjected to year to year fluctuations and uncertainty and as such the overall growth rate of the economy, of course

barring some few exceptional years, remained below the targeted rate growth. The uncertainty and the violent fluctuations in respect of agricultural output were caused by mostly vagaries of the monsoon. The regions which are subject to such type of fluctuations and uncertainty have recently been identified. Karnataka State being one of them, and within Karnataka Bijapur being one of the districts which has suffered heavily from uncertainty or failure of the rainfall which adversely affected the agricultural output intermittantly since long back, even in the recent <sup>past</sup> and presently for the consecutive fifth year ( 1983-84 - 87-88). We have selected this district purposively with a view to work out the overall growth rates of area, production and yield of major crops both food and non-food crops and examine critically the measures adopted so far. To relieve the economy of the district from the ravages of the drought and ultimately to make suggestions to improve the economy in the form of increased incomes of the agricultural population which still forms roughly three-fourth of the total population. The statistical method we have adopted is  $y = A (1 + r)^T$ .

Fig. 3-1-BIJAPUR DISTRICT SOILS.

SCALE - 1" = 16 MILES.



LEGEND

- STATE BOUNDARY \_\_\_\_\_ - - - -
- DISTRICT BOUNDARY \_\_\_\_\_ - - - -
- TALUKA BOUNDARY \_\_\_\_\_ - - - -
- DISTRICT H.Q. \_\_\_\_\_ ⊙
- TALUKA H.Q. \_\_\_\_\_ ○

REFERENCE

- SHALLOW BLACK SOILS \_\_\_\_\_ [Dotted pattern]
- MEDIUM BLACK SOILS \_\_\_\_\_ [Horizontal line pattern]
- DEEP BLACK SOILS \_\_\_\_\_ [Vertical line pattern]
- MIXED RED AND BLACK SOILS \_\_\_\_\_ [Cross-hatch pattern]

Fig. 3-2- BIJAPUR DISTRICT  
WATERSHED MAP

SCALE - 1" = 16 MILES



LEGEND

- STATE BOUNDARY \_\_\_\_\_
- DISTRICT BOUNDARY \_\_\_\_\_
- TALUKA BOUNDARY \_\_\_\_\_
- DISTRICT H.Q. \_\_\_\_\_ ⊙
- TALUKA H.Q. \_\_\_\_\_ ○
- RIVER \_\_\_\_\_
- BASIN BOUNDARY \_\_\_\_\_