

CHAPTER - III

THE CHANGE IN CROPPING PATTERN



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The ultimate aim of any irrigation project is to bring about the change in land utilisation pattern into modern agricultural practices. Such change in crop production includes commercial crops such as sugarcane, cotton, groundnut, grapes and also foodcrops/foodgrains of High Yielding Varieties.

An effort is made in this chapter to analyse land use pattern and change in cropping pattern. Here, the data available to us was very limited due to the limitation beyond our control. The information was collected from the office of the divisions namely, Bhima Canal Circle, Bhima Project Circle, Solapur and Command Area Development Authority (C.A.D.A.) Pandharpur.

3.1 THE TRADITIONAL CROPPING PATTERN IN THE PROJECT AREA :

In order to study the change in the cropping pattern due to Bhima (Ujjani) irrigation project. We have tried to study the traditional cropping pattern in year 1980-81 for the talukas such as Pandharpur, Mohol, Karmala, Malshiras, Mangalwedha and Madha which come in the command area of Bhima irrigation project. The year of 1980-81 was selected because the utilisation of irrigation water started in the

year 1983-84. The selected year of 1980-81 was a normal year. The table No. III-1 gives the idea of traditional cropping pattern of the talukas i.e. Pandharpur, Mohol, Madha, Karmala etc.

- 1) The corpping pattern in the talukas under study mainly includes foodcrops such as Jawar, which contributes 74.27% of net sown area in Pandharpur Taluka, 74.25% in Mohol, 61.80% in Mangalwedha, 76.60% in Karmala, 60.99% in Malshiras, and 77.94% in Madha respectively.
- 2) The other foodcrops includes wheat, Bajari etc., but percentage share to the total net sown area was very less.
- 3) Among commercial crops, taluka of Malshiras was on the top level where sugarcane, cotton and ground nut were grown.
- 4) Though less in percentage, sugarcane was major commercial crop in talukas such as Pandharpur, Malshiras and Madha.
- 5) Ground nut was the next to major cash crops in Mangalwedha, Pandharpur and Malshiras talukas.

TABLE NO. III.1 : TALUKAWISE INFORMATION OF THE CROPPING PATTERN BEFORE ESTABLISHMENT OF BHIMA (UJJANI) DAM :

Sr.No.	Name of the Taluka	Total net sown Area	Area under total food-grains	Wheat	Jawar	Bajari	Tur	Harbara	Sugar cane	Cotton	Groundnut	Cash Crops
										(1980-81)		
										(Hectare)		
1.	Pandharpur	110795	97215	4110	72207	3837	764	2748	3128	1158	2062	9612
			87.74%	4.22%	74.27%	3.94%	0.78%	2.82%	32.54%	12.04%	21.45%	
2.	Mohol	114139	103330	4840	76726	2422	3585	2745	613	2135	1265	8868
			90.92%	4.68%	74.25%	2.34%	3.46%	2.65%	6.91%	24.07%	14.26%	
3.	Mangalwedha	93928	84754	3383	52382	13453	588	2245	461	755	4083	7734
			90.23%	3.99%	61.80%	15.87%	0.69%	2.64%	5.96%	9.76%	52.80%	
4.	Karmala	124507	105990	7765	81198	3932	375	3945	662	375	1860	17301
			85.13%	7.32%	76.60%	3.70%	0.35%	3.72%	3.82%	2.17%	10.75%	
5.	Malshiras	107992	82341	9600	50225	5610	1522	1920	10462	6220	2635	14404
			76.25%	11.65%	60.99%	6.81%	1.84%	3.07%	72.63%	43.18%	18.30%	
6.	Madha	156297	135189	5110	105379	3497	3645	5125	730	365	2180	17819
			86.49%	3.77%	77.94%	2.58%	2.69%	3.79%	4.10%	2.05%	12.24%	

Source : Socio-Economic Review and District Statistical Abstract, Solapur.

3.2 BENEFITING VILLAGES :

The total command area of Bhima Project has covered 189 villages and 1,33,000 hectares of land. These villages will be getting irrigation water, out of 189 villages 106 villages in the catchment area of (Ujjani) left bank canal (U.L.B.C.) are getting irrigation water from agricultural season 1983-84. Till today remaining 83 villages are under catchment area of Ujjani right bank canal (U.R.B.C.) which is not yet completed. Table No. III.2 gives details above 106 benefiting villages under U.L.B.C.

As we have already seen in the last Chapter that the Bhima Project has divided into flow and left canals. The total length of Ujjani Right Bank Canal is 112 Km. and Ujjani Left Bank Canal is 126 Km. and thus total length of canal irrigation of Ujjani dam is 236 Km. 106 irrigated villages comes under Ujjani Left Bank Canal (U.L.B.C.). The administrative breakup of Ujjani Left Bank Canal is as follows :

- A) Bhima Irrigation Sub-Division Bhimanagar
Lift irrigation on back-water.
- B) Bhima Irrigation Sub-Division Temburni Ujjani
Left Bank Canal (U.L.B.C.) (1 to 76 Km.)
and Ujjani Right Bank Canal (U.R.B.C) 1 to 19 Km.

TABLE NO. III-2 : VILLAGES UNDER IRRIGABLE AREA OF BHIMA (UJJANI)
DAM (U.L.B.C.)

Sr. No.	Name of villages	Population	No of house-holds	Irrigated	Unirri-gated (in hectare)	Net sown Area
A) <u>MADHA (T)</u>						
1.	Ranjani	2641	566	190	651	841
2.	Adhegaon	1389	225	16	1013	1029
3.	Rui	442	65	-	270	270
4.	Alegaon (K)	610	99	206	440	646
5.	Takali	1441	228	251	440	691
6.	Gar Akole	854	127	104	796	900
7.	Chandaj	1335	220	506	200	706
8.	Vadoli	516	80	165	761	930
9.	Shevare	1514	317	275	843	1118
10.	Nagorli	852	125	22	901	923
11.	Tembhurni	9223	1657	138	4634	4772
12.	Malegaon	869	167	122	400	522
13.	Venegaon	1291	215	80	438	518
14.	Akole (B)	958	167	100	850	950
15.	Bembale	3166	510	1238	2000	3238
16.	Parite	1979	324	120	-	120
17.	Alegaon (B)	1035	164	250	751	1001

Sr. No.	Name of villages	Population	No. of house- holds	Irrigated	Unirri- gated (in hectare)	Net sown Area
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B) PANDHARPUR

1.	Kanhapuri	1446	246	12	1047	1059
2.	Karole	1547	213	-	1103	1103
3.	Umbare	1787	281	36	1106	1139
4.	Jaloli	1265	198	65	1457	1522
5.	Sangavi	861	154	41	5598	639
6.	Karkamb	11015	1979	338	4850	5188
7.	Badalkot	617	90	46	621	667
8.	Chavanwadi	600	125	30	200	230
9.	Pehe	964	164	-	1050	1050
10.	Nandore	1118	191	--	452	452
11.	Aavhe	1014	158	-	708	708
12.	Taratgaon	254	45	-	204	204
13.	Shevate	1414	270	52	1750	1802
14.	Patkurdi	2870	549	226	1620	1846
15.	Devade	1142	202	19	660	679
16.	Bhose	5513	1006	13	2107	2120
17.	(Kh) Bhose	1296	223	24	595	619
18.	Hole	2023	348	-	1041	1041
19.	Mendapur	2750	458	70	2658	2728
20.	Ropale	3949	733	-	1592	1592

Sr. No.	Name of villages	Population	No. of house-hold	Irrigated	Unirri-gated (in hectare)	Net sown Area
21.	Gursale	3248	662	97	1560	1657
22.	Babulgaon	2003	357	-	1712	1712
23.	Chincholi (N)	1070	221	82	818	900
24.	Adhiv	1519	254	-	980	980
25.	Chincholi (B)	704	127	-	258	258
26.	Bhatumbare	1077	198	-	512	512
27.	Degaon	2203	378	32	2056	2088
28.	Degaon (Du.)	1215	218	21	631	652
29.	Anjansond	1942	327	51	601	652
30.	Eshwarwatur	833	152	35	668	703
31.	Suste	2638	459	214	700	914
32.	Tarapur	2088	388	273	1100	1373
33.	Fulchincholi	2699	513	142	1221	1363
34.	Kharsoli	1204	235	-	756	756
35.	Phoorgaon	1063	185	10	481	491
36.	Vite (Ite.)	656	121	20	423	443
37.	Puluj	2578	509	153	2900	3053
38.	Tungat	2880	488	125	1634	1759
39.	Shankargaon	480	91	186	300	486
40.	Nematwadi	748	152	24	679	703

Sr. No.	Name of villages	Population	No. of house-hold	Irrigated	Unirri-cated (in hectare)	Net sown area
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PANDHARPUR (T)

41.	Nali	317	45	111	260	371
42.	Pulujwadi	1184	202	-	-	-
43.	Ambe (Chin.)	788	144	146	360	506
44.	Pandharewadi	1514	298	-	-	-
45.	N (Chincholi)	1070	221	82	818	900
46.	Bhogarwadi	2160	413	221	642	863

MOHOL (T)

1.	Koroli	2317	403	326	1727	2053
2.	Gorewadi	1062	187	47	699	746
3.	Katewadi	1017	196	75	793	868
4.	P. Pimpri	700	125	100	317	417
5.	Virvade (B)	1640	274	19	1624	1643
6.	(P) Takali	812	152	70	640	710
7.	Arabali	437	77	22	969	981
8.	Kamati (B)	2115	374	160	669	829
9.	Kamati (K)	1555	304	180	872	1052
10.	Wadval	1640	284	42	951	993
11.	Mohol	13590	2443	221	4050	4271
12.	Soundane	1394	270	225	384	609

Sr. No.	Name of villages	Population	No. of house-hold	Irrigated	Unirri-gated (in hectare)	Net sown area
<u>MOHOL (T)</u>						
13.	Kothale	802	156	30	712	742
14.	Yevati	1988	378	240	646	886
15.	Pennur	4170	741	331	2619	2950
16.	Patkul	3909	680	152	2115	2267
17.	Nandgaon	444	68	5	288	293
18.	Savaleshwar	2119	443	75	1174	1249
19.	Chincholi (K)	815	169	42	998	1040
20.	Takali (S)	2398	511	200	1032	1232
21.	Tambole	1828	266	150	747	897
22.	Auandhi	2528	462	80	598	678
23.	Ankoli	2013	2477	80	1841	1921
24.	Varkute	442	75	75	404	479
25.	Wagholi	1403	245	18	733	751
26.	Wadapur	2007	302	98	655	753
27.	Varvate	749	143	70	919	989
28.	Inchagaon	1225	219	40	977	1017
29.	Yenaki	1006	174	29	1302	1331
30.	Ardhanari	542	89	150	450	600
31.	Begampur	2541	308	125	525	650
32.	Miri	983	165	7	883	900

Sr. No.	Name of villages	Population	No. of house-hold	Irrigated	Unirri-gated (in hectare)	Net sown area
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MOHOL (T)

33.	Kurul	5239	975	600	2253	2853
34.	Varvade (S)	1640	274	25	1624	1649
35.	Dadapur	694	124	40	435	475
36.	Laman (T)	477	78	40	219	259
37.	Ramhingani	497	84	6	448	454
38.	Mundewadi	610	104	5	429	434
39.	Kolegaon	1786	399	1	702	703
40.	Bitale	1743	328	125	1200	1325
41.	Sarole	900	173	117	800	917
42.	Arjunsond	1166	212	109	700	809
43.	Morvanch	1200	198	50	615	665

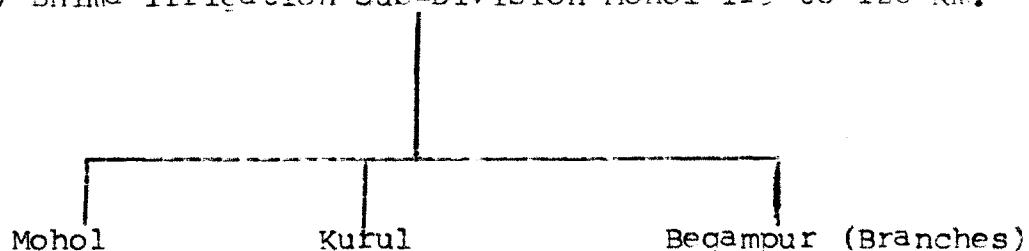
Source : District census handbook, Solapur, 1981.

C) Bhima Irrigation Sub-Division Karkamb Ujjani

Left Bank Canal 76 to 93 Km.

D) Bhima Irrigation Sub-Division Tungat 94 to 118 Km.

E) Bhima Irrigation Sub-Division Mohol 119 to 126 Km.



3.3 COMPOSITION OF CROPPING PATTERN :

Today out of 189 villages 106 villages are getting irrigation water for cultivation purposes. The irrigation system which is applicable for Bhima dam consists three cropping system of Kharif, Rabbi and Summer crops.

According to government rule of eight monthly irrigation system which increases the cropping intensity and the area under food crops. The Bhima project irrigation water is being available with two sources of lift and flow. Table No. III.3 and, III.4 give information about the impact of lift irrigation on Kharif, Rabbi and Summer crops. These two tables (III-3, III-4) reveal that, potential of lift irrigation was increased from 6000 hectares in 1983-84 to 15757 hectares in 1987-88. Its very remarkable that, particularly after 1985-86 the

III.3 : Irrigation Potential Under Lift (in hectare)

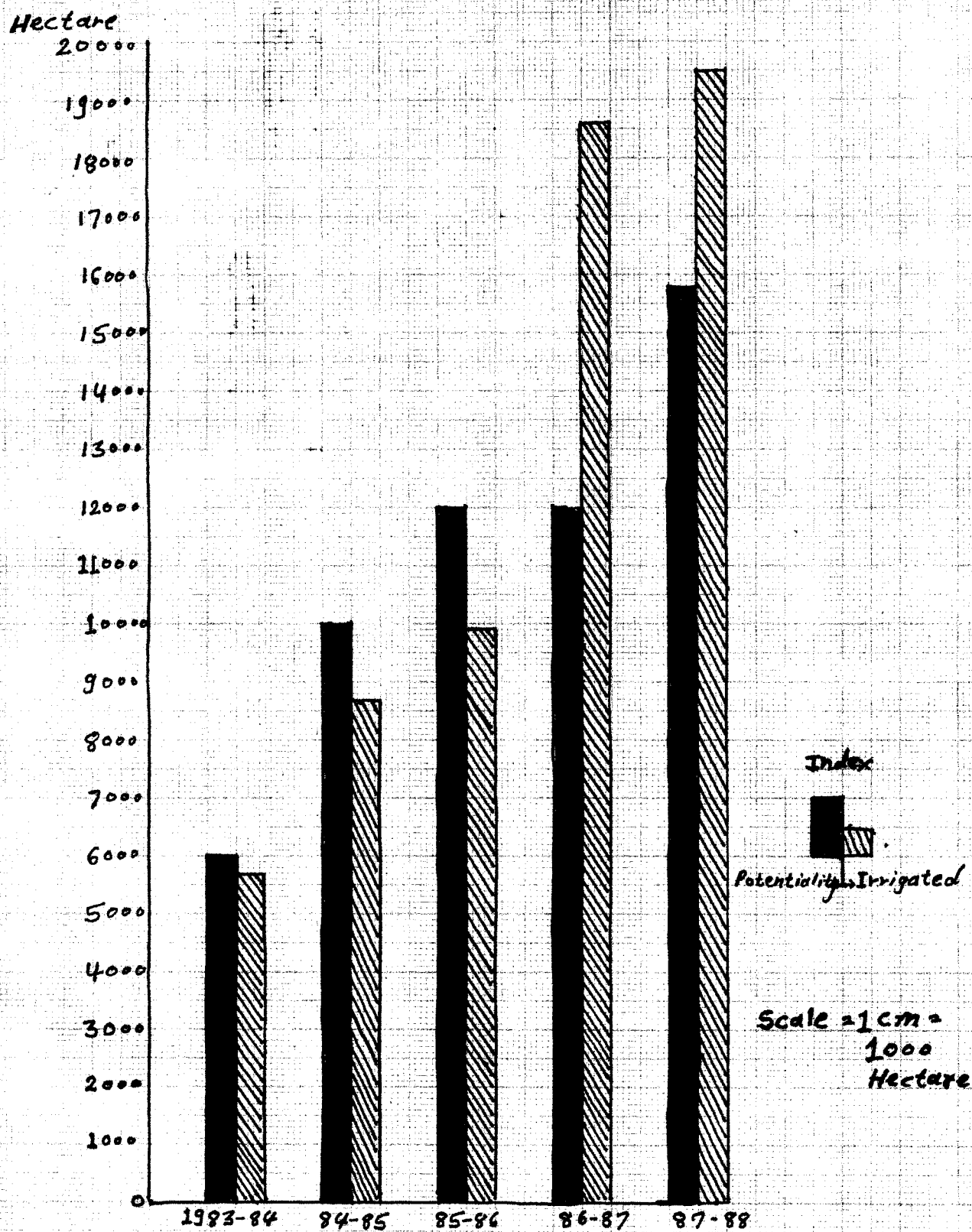


TABLE NO. III-3 : IRRIGATION POTENTIAL UNDER LIFT :

(in hectare)

Year	Total Potentiality	Total irrigated area Kharif + Rabbi + Summer	Percentage
1983-84	6000.00	5723.56	95.39%
1984-85	10000.00	8751.41	87.51%
1985-86	12054.00	9917.51	82.28%
1986-87	12054.00	18631.32	154.56%
1987-88	15757.00	19456.43	123.48

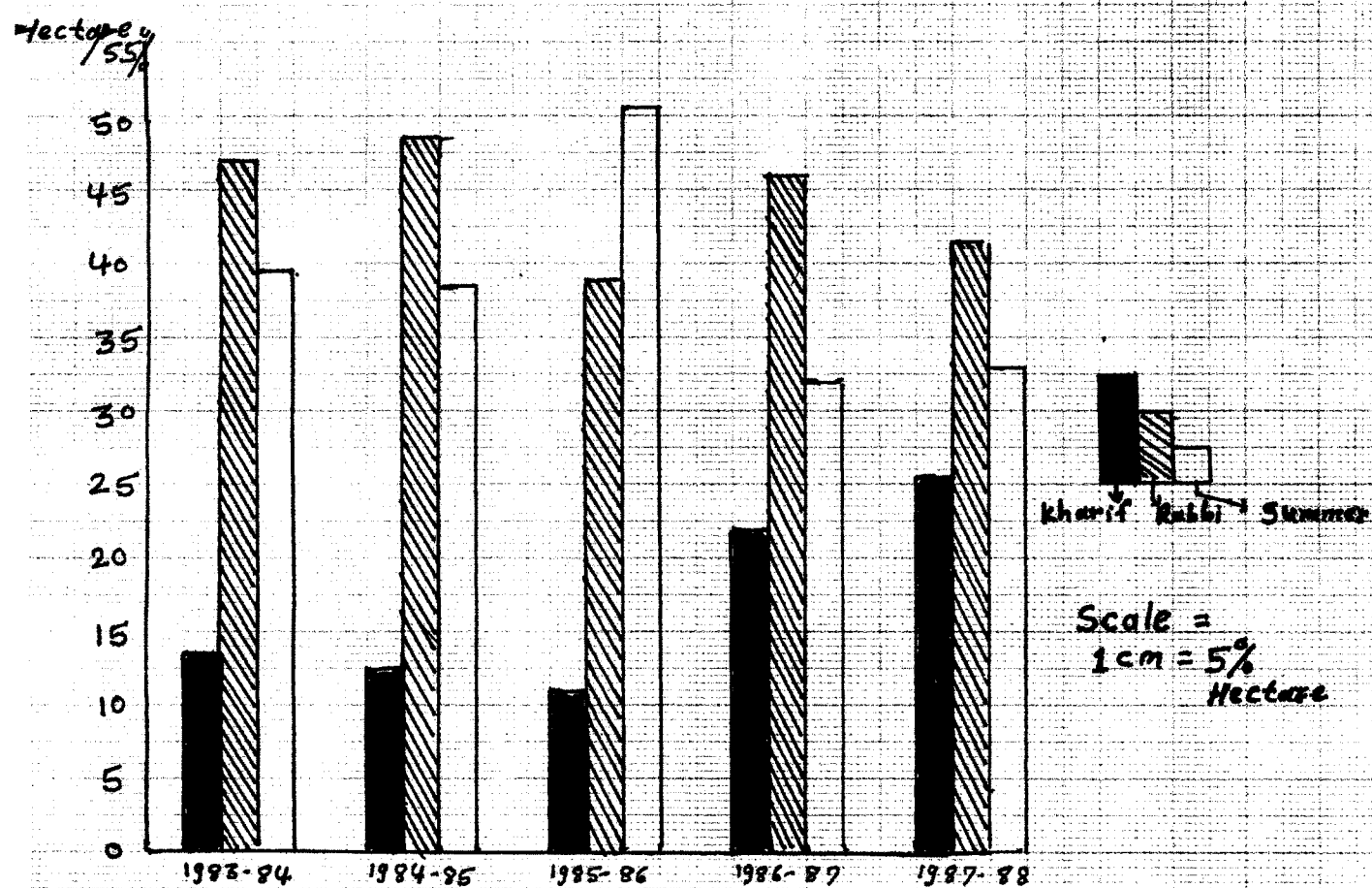
TABLE NO. III-4 : SEASONAL CLASSIFICATION UNDER LIFT IRRIGATION :

(in hectare)

Year	Total irrigated area	Kharif	Rabbi	Summer
1983-84	5723.56	776.18	2679.45	2267.93
	(100)	(13.56%)	(46.81%)	(39.63%)
1984-85	8751.41	1108.41	4260.00	3383.00
	(100)	(12.67%)	(48.68%)	(38.65%)
1985-86	9917.51	1076.65	3850.12	4990.74
	(100)	(10.86%)	(38.92%)	(50.32%)
1986-87	18631.32	4124.09	8534.96	5972.27
	(100)	(22.14%)	(45.81%)	(32.05%)
1987-88	19456.43	4994.05	8071.04	6391.34
	(100)	(25.67%)	(41.48%)	(32.85%)

Source : Bhima C.A.D.A. Office, Pandharpur.

III.4 : Seasonal Classification Under Lift Irrigation
Kharif, Rabbi, Summer



total irrigated area crossed its potentiality in 1986-87, 1987-88. The potential of lift irrigation in the year 1986-87 was 12054 hectares whereas the total irrigated area recorded more than 154% increase i.e. 18613.32 hectares. This achievement is due to the rule of eight monthly supply.

As given in Table No. III.4 the total irrigated area was classified into three seasons of Karif, Rabbi and Summer. The area under Karif season shows an increasing trend except the 1985-86. The area under summer crops does not show any increasing trend. The Rabbi season has the substantial contribution of the lift irrigation of Bhima Dam Project.

3.4 FLOW IRRIGATION :

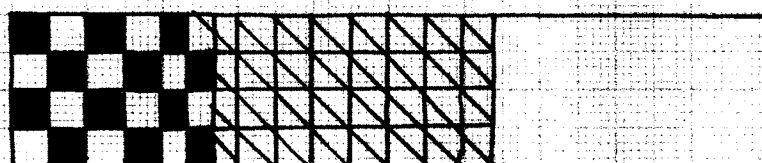
The availability of Flow irrigation is the greatest contribution of Bhima project. As given in Table No. III-5 and III-6 the potential of flow irrigation was showing continuously increasing trend from 1983-84 (15500 hectares) to 1987-88 (37827 hectares). The utilisation of irrigation potentiality reached, its optimum level in year 1985-86 (106%) and 1986-87 (100.5%).

The seasonwise classification of flow irrigation as shown in Table No. III-6, makes it very clear that the Rabbi season is dominating season and the area under summer

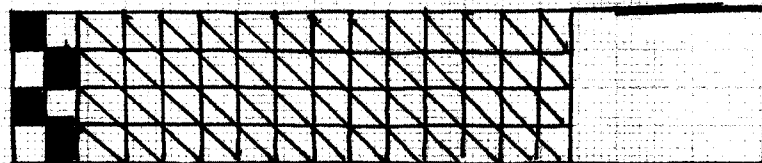
III.6 : Seasonal Classification Under Flow (Canal)

(in hectare)

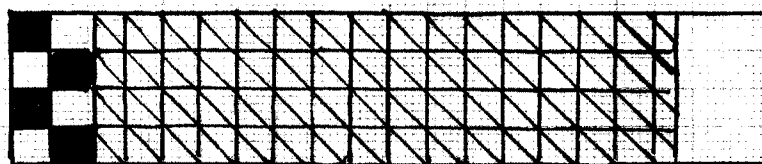
1987-88



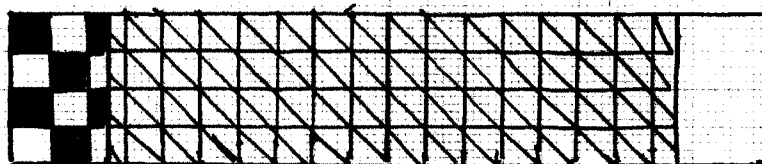
1986-87



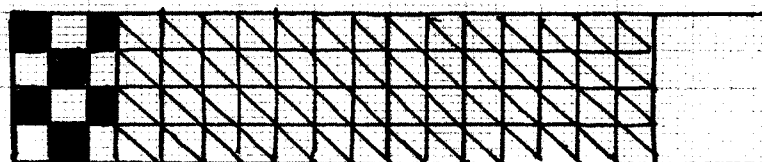
1985-86



1984-85



1983-84



Index



Kharif Rabi Summer

Scale →

1 cm = 10%
Hectare

0 10 20 30 40 50 60 70 80 90 100% Irrigation in hect.

TABLE NO. III-5 : FLOW IRRIGATION POTENTIAL :

(in hectare)

Year	Total Potentiality	Total irrigated area Kharif + Rabbi + Summer	Percentage
1983-84	15500-00	13506.51	87.14%
1984-85	22000-00	16201.96	73.65%
1985-86	22000-00	23327.73	106.03%
1986-87	31235-00	31390.37	100.50%
1987-88	37827-00	21012.71	55.55%

TABLE NO. III-6 : SEASONAL CLASSIFICATION UNDER FLOW (CANAL) :

(in hectare)

Year	Total irrigated area	Kharif	Rabbi	Summer
1983-84	13506.51 (100)	1875.12 (13.88%)	9657.00 (71.50%)	1974.39 (14.62%)
1984-85	16201.96 (100)	2046.25 (12.63%)	12215.60 (75.40%)	1940.11 (11.97%)
1985-86	23327.73 (100)	2593.19 (11.10%)	17815.17 (76.40%)	2919.37 (12.50%)
1986-87	31390.87 (100)	2722.85 (8.67%)	10572.82 (65.54%)	8095.20 (25.79%)
1987-88	21012.71 (100)	5605.07 (26.67%)	7727.36 (36.78%)	7680.28 (36.55%)

Source : Bhima C.A.D.A. Office, Pandharpur.

season increased 1974.39 hectares to 7680.28 hectares. Both the Kharif and summer seasons have more or less equal share.

The seasonal breakup of irrigated area under flow and lift system is given in the table No. III-7 and III-8. Remarkably the area under lift irrigation for perennial season is showed increasing trend 37.71 in 1983-84 to 53.26 in 1987-88. Thus the impact of Bhima (Ujjani) dam on the irrigation development of 106 villages in the talukas Madha, Pandharpur and Mohol is a remarkable progress of agricultural development in the region.

3.5 CHANGE IN CROPPING PATTERN :

The availability of irrigation water through lift and canal sources has changed the composition of cropping pattern in the command area of Bhima project. Here eight monthly cropping is adopted accordingly the branches of Ujjani left bank canal vize Begampur branch, Kurul branch and Karamba branch and U.R.B.C. from 112 onwards are extended to irrigation about 38860 hectares of additional land. As per this proposal the areas of 22120 hectares, 9040 hectares and 7700 hectares are coming under command of South Solapur, Akkalkot and Mangalwedha respectively.

III.7 : Seasonal Break-up Of Irrigated Area Of Flow Irrigation

(in hectare)

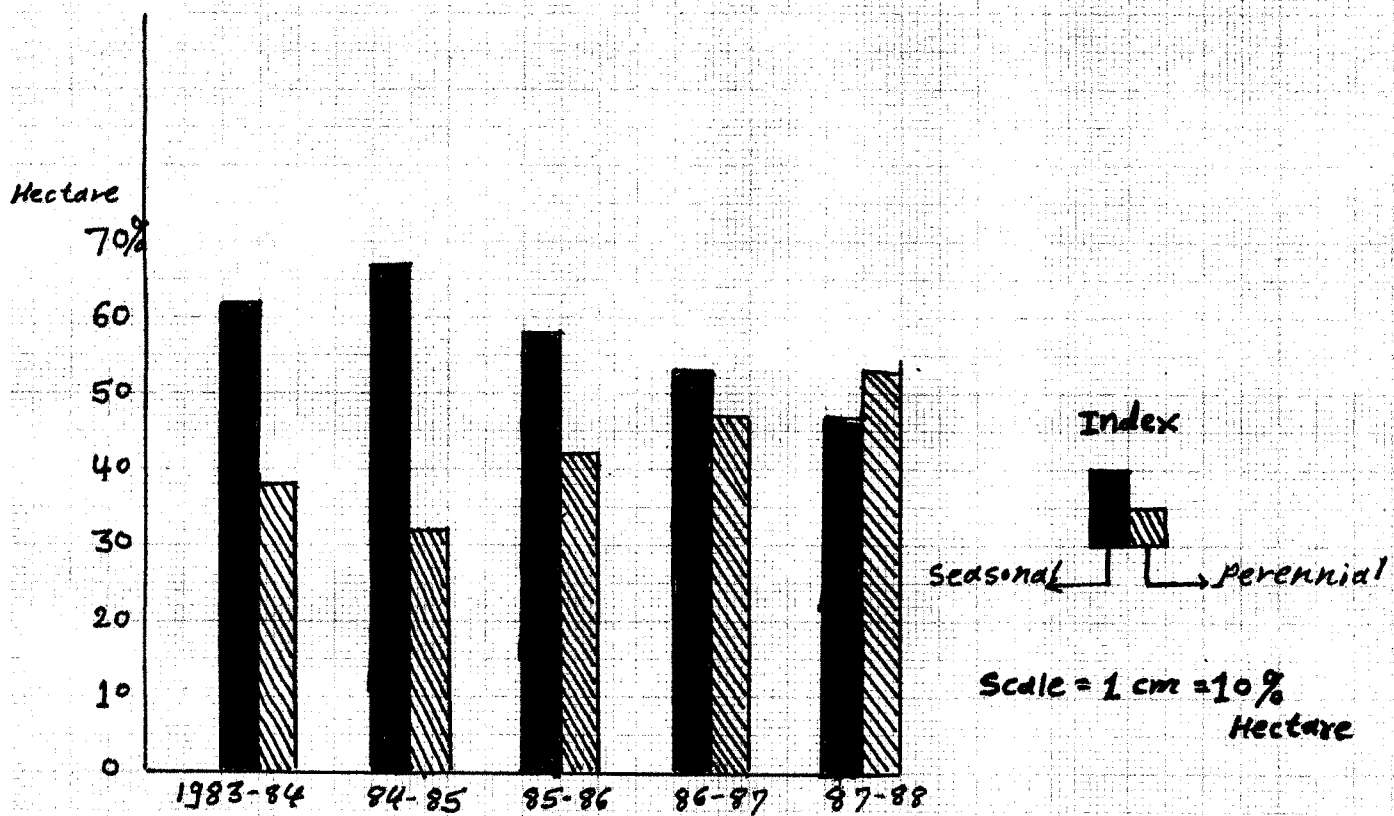


TABLE NO. III-7 : SEASONAL BREAK-UP OF IRRIGATED AREA
OF FLOW IRRIGATION :

(in hectare)

Year	Seasonal	Perennial	Total
1983-84	13142.01	364.50	13506.51
	97.30%	2.70%	(100)
1984-85	15775.18	425.78	16201.96
	97.36%	2.64%	(100)
1985-86	22768.43	559.30	23327.73
	97.60%	2.40%	(100)
1986-87	30262.04	1128.83	31390.87
	96.40%	3.60%	(100)
1987-88	20128.57	884.14	21012.71
	95.79%	4.21%	(100)

TABLE NO. III-8 : SEASONAL BREAK-UP OF IRRIGATED AREA OF LIFT
IRRIGATION

Year	Seasonal	Perennial	Total
1983-84	3565.23	2158.33	5723.56
	(62.29%)	(37.71%)	(100)
1984-85	5901.41	2850.00	8751.41
	(67.43%)	(32.57%)	(100)
1985-86	5738.82	4178.69	9917.51
	(57.87%)	(42.13%)	(100)
1986-87	9911.45	8719.77	18631.32
	(53.20%)	(46.80%)	(100)
1987-88	9094.50	10361.93	19456.43
	(46.74%)	(53.26%)	(100)

Source : Bhima C.A.D.A. Office, Solapur.

The basic data related to major cropping pattern under Bhima dam is given in appendix (A) at the end of this Chapter. The following tables have been prepared on the basis of this information.

In view of this fact the area under foodgrains was showing increasing trend from 1983-84 (11921.07 Ha.) to (13122.45 Ha.) in 1987-88 including all Kharif, Rabbi and Summer seasons. In foodgrains jawar is having the great contribution. In commercial crops sugarcane and groundnut have the major contribution. The area under commercial crops has almost doubled from 5524.76 hectares in 1983-84 to 13252.76 hectares in 1987-88.

Thus the composition of cropping pattern is given in table No. III-9 and table No. III-10. It is observed from these tables that rabbi, jawar contributes major share in the foodgrains crops. Sugarcane and groundnut have the greater share in the commercial crops. Though there was restriction for adoption of the perennial crop like sugarcane due to the eight monthly irrigation system the area under sugarcane is still increasing. It is reported that, the farmers can afford to take sugarcane even after paying penalty and heavy irrigation charges.

TABLE NO. III-9 : COMPOSITION OF CROPPING PATTERN :

(in hectare)

	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
Foodgrains	11921.07 (68.33)	15930.16 (70.07)	21359.23 (88.46)	26730.23 (72.38)	13122.45 (49.75)	6192.68 (Kharip) (39.60)
Commercial Crops	5524.69 (31.67)	6802.89 (29.93)	2785.97 (11.54)	10201.54 (27.62)	13252.76 (50.25)	9443.98 (Kharip) (60.40)
T.C.A.	17445.76 (100.00)	22733.05 (100.00)	24145.20 (100.00)	36931.77 (100.00)	26375.21 (100.00)	15636.66 (100.00)

Source : Bhima C.A.D.A. Office, Pandharpur.

(Figures in the brackets shows% to total cropped area)

TABLE NO. III.10 : CROPPING PATTERN (MAJOR CROPS) :

(in hectares)

	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
Jawar	10508.88 (60.24%)	14206.79 (62.89%)	19603.11 (81.19%)	23135.89 (62.64%)	10724.22 (40.66%)	4519.32 Rabi (28.90%)
Groundnut	4522.86 (25.92%)	5483.72 (24.12%)	1598.35 (6.62%)	7371.72 (19.96%)	8870.00 (33.63%)	5260.00 Kha. (33.64%)
Sugarcane	847.77 (4.86%)	1057.10 (4.65%)	1070.30 (4.43%)	2651.00 (7.18%)	3594.28 (13.63%)	3594.39 (22.99%)
Others	(8.98%)	(8.34%)	(7.76%)	(10.22%)	(12.08%)	(14.47%)

Source : Bhima C.A.D.A. Office, Pandharpur.

(Figures in the brackets shows % to total cropped area)

APPENDIX - ACROPPING PATTERN OF BHIMA UJJANI LEFT CANAL

(in hectare)

1983-84

Sr. No.	Food-grains	Kharif	Rabbi	Summer	Total
1.	Jawar	94.77	10384.70	39.41	10508.88
2.	Bajari	74.90	-	-	74.90
3.	Maize	84.37	-	39.85	124.22
4.	Wheat	-	596.03	-	596.03
5.	Rice	20.85	-	-	20.85
6.	Tur, Moog, Harbhara	1.65	194.65	-	196.30
7.	Others	82.48	229.92	77.49	389.89
	Total Food-grains	359.02	11405.30	156.75	11921.07
8.	Sugarcane	847.77	-	-	847.77
9.	Cotton	-	-	-	-
10.	Fruit garden	-	-	-	-
11.	Sun flower	26.75	-	-	26.75
12.	Groundnut	1440.15	-	3082.71	4522.86
13.	Vegetables	75.46	30.87	20.98	127.31
	Total commercial crops	2390.13	30.87	3103.69	5524.69

Source : Bhima C.A.D.A. Office, Pandharpur.

APPENDIX - ACROPPING PATTERN OF BHIMA UJJANI LEFT CANAL

(in hectare)

1984-85

Sr. No.	Foodgrains	Kharif	Rabbi	Summer	Total
1.	Jawar	61.60	14173.43	61.76	14296.79
2.	Bajari	98.75	-	-	98.75
3.	Maize	62.42	11.10	44.92	118.44
4.	Wheat	-	665.66	-	665.66
5.	Rice	55.73	-	-	55.73
6.	Tur, Moog, Harbhara	2.15	319.89	143.55	465.59
7.	Others	38.82	111.60	78.78	229.20
	Total Foodgrains	319.47	15281.68	329.01	15930.16
8.	Sugarcane	1057.10	-	-	1057.10
9.	Cotton	-	-	13.30	13.30
10.	Fruit garden	-	-	00.10	00.10
11.	Sun flower	66.73	34.51	23.90	125.14
12.	Groundnut	1690.40	-	3793.32	5483.72
13.	Vegetables	17.49	54.84	51.20	123.53
	Total commercial crops	2831.72	89.35	3881.82	6802.89

Source : Bhima C.A.D.A. Office, Pandharpur.

APPENDIX - ACROPPING PATTERN OF BHIMA UJJANI LEFT CANAL

(in hectare)

1985-86

Sr. No.	Foodgrains	Kharif	Rabbi	Summer	Total
1.	Jawar	274.35	19328.76	-	19603.11
2.	Bajari	305.91	-	-	305.91
3.	Maize	132.45	50.89	-	183.34
4.	Wheat	-	599.01	-	599.01
5.	Rice	62.35	-	-	62.35
6.	Tur, Moog, Harbhara	12.90	392.61	-	405.51
7.	Others	127.10	72.90	-	200.00
	Total Foodgrains	915.06	20444.17	-	21359.23
8.	Sugarcane	1070.30	-	-	1070.30
9.	Cotton	0.60	-	-	0.60
10.	Fruit garden	-	0.10	-	0.10
11.	Sun flower	9.10	21.27	-	30.37
12.	Groundnut	1598.35	-	-	1598.35
13.	Vegetable	27.70	58.55	-	86.25
	Total commetcial crops.	2706.05	79.92	-	2785.97

Source : Bhima C.A.D.A. Office, Pandharpur.

APPENDIX - ACROPPING PATTERN OF BHIMA UJJANI LEFT CANAL

(in hectare)

1986-87

Sr. No.	Foodgrains	Kharif	Rabbi	Summer	Total
1.	Jawar	128.35	23007.54	-	23135.89
2.	Bjari	351.45	-	-	351.45
3.	Maize	420.29	104.27	325.30	849.86
4.	Wheat	-	1645.23	32.12	1677.35
5.	Rice	40.90	-	-	40.90
6.	Tur, Moog, Harbhara	70.82	344.26	-	415.08
7.	Others	-	259.70	-	259.70
	Total Foodgrains	25361.00	357.42	357.42	26730.23
8.	Sugarcane	2651.00	-	-	2651.00
9.	Cotton	-	-	-	-
10.	Fruit garden	44.11	11.90	-	56.01
11.	Sun Flower	12.45	22.70	5.00	40.15
12.	Groundnut	2940.72	-	4431.00	7371.72
13.	Vegetable	28.75	53.31	0.60	82.66
	Total commercial crops.	5677.03	87.91	4436.60	10201.54

Source : Bhima C.A.D.A. Office, Pandharpur.

APPENDIX - ACROPPING PATTERN OF BHIMA UJJANI LEFT CANAL

(in hectare)

1987-88

Sr. No.	Foodgrains	Kharif	Rabbi	Summer	Total
1.	Jawar	199.84	10409.73	114.65	10724.22
2.	Bajari	1131.44	-	-	1131.44
3.	Maize	384.60	32.99	324.50	742.09
4.	Wheat	131.45	-	-	131.45
5.	Rice	11.65	-	-	11.65
6.	Tur, Moog, Harbhara	120.15	-	-	120.15
7.	Others	-	108.01	143.44	251.45
	Total Foodgrains	1989.13	10550.73	582.59	13122.45
8.	Sugarcane	3594.28	-	-	3594.28
9.	Cotton	-	-	-	-
10.	Fruit garden	-	-	-	-
11.	Sun Flower	99.30	41.28	521.00	661.58
12.	Groundnut	4265.00	-	4605.00	8870.00
13.	Vegetable	64.25	38.98	23.67	126.90
	Total commercial crops.	8022.83	80.26	5149.67	13252.76

Source : Bhima C.A.D.A. Office, Pandharpur

APPENDIX - ACROPPING PATTERN OF BHIMA UJJANI LEFT CANAL

		<u>1988-89</u>	(in hectare)	
Sr. No.	Foodgrains	Kharif	Rabbi	Total (Kharif)
1.	Jawar	5.60	4513.72	4519.32
2.	Bajari	982.03	-	982.03
3.	Maise	208.02	160.87	368.89
4.	Wheat	-	-	-
5.	Rice	16.85	-	16.85
6.	Tur, Moog, Harbhara	80.45	-	80.45
7.	Others	124.85	100.29	225.14
Total Foodgrins		1417.80	4774.88	6192.68
8.	Sugarcane	3594.39	-	3594.39
9.	Cotton	-	-	-
10.	Fruit garden	15.57	-	15.57
11.	Sun flower	310.50	199.61	510.11
12.	Groundnut	5260.00	-	5260.00
13.	Vegetable	54.81	9.10	63.91
Total commercial crops.		9235.27	208.71	9443.98

Source : Bhima C.A.D.A. Office, Pandharpur