

CHAPTER - V

5.0 TRENDS IN AGRICULTURE AND FOOD PRODUCTIVITY

Madhya Pradesh economy continues to be predominately agrarian, agricultural sector's contribution being 26.01 percent in GSDP for 2007-08. Though the contribution of the primary sector to the State Domestic Product is gradually coming down, agriculture still remains the mainstay of the State 's economy with 70% of the population is still dependent upon agriculture. The net sown area of Madhya Pradesh is 15.07 million ha., which is 49.01% of geographical area. The gross cropped area is 20.30 million ha. More than 70% of workforce finds employment in agriculture sector. 65% of land holders are small and marginal farmers with only 26% land, whereas 35% of land holders are big farmers with 74% of land. Agriculture in Madhya Pradesh is mostly rain-fed, and has to contend with the impeding factors of soil erosion due to rolling topography, the practice of keeping land fallow during the kharif season and taking only one crop in rabi, existence of large areas of cultivable waste land, high proportion of low value crops with low productivity, low consumption of fertilizers.

Cropping Pattern

Madhya Pradesh is predominantly a kharif crop growing state. Kharif crops occupy about 54-56% whereas rabi crops occupy 44 – 46% area out of the total cropped area in the state. About 38% of the cropped area is generally occupied by cereal crops, while pulses occupy 22% area and oilseed occupy 31% area. Vegetables, fruits, fodder and other horticultural crops occupy the remaining 6% area. The major crops, there area and production is given in **Table - 16**.

Table - 16 : Area, Production & Yield of Major Crops in Madhya Pradesh

Crops	Year 2006-07		
	Area (000 ha.)	Production (000 Tonnes)	Yield (Kg./ha.)
Peddy (Rice)	1661	1368	868
Jowar	571	593	1042
Maize	861	840	979
Bajra	186	254	1360
Kodokutki	303	78	255
Crops	Year 2006-07		

	Area (000 ha.)	Production (000 Tonnes)	Yield (Kg./ha.)
Other cereals	31	12	387
Kharif Cereals	3613	3145	870
Wheat	3993	7326	1915
Barley	59	70	1186
Other cereals	4	3	750
Rabi Cereals	4056	7399	1824
Total Cereals	7669	10544	1680
Tur	323	220	679
Urad	436	152	347
Moong	77	26	315
Kulthi	28	8	292
Other Pulses	5	2	400
Kharif Pulses	869	408	470
Gram	2463	2413	981
Peas	199	90	452
Lentil	522	259	497
Teora	44	30	682
Other Pulses	12	4	333
Rabi Pulses	3240	2796	863
Total Pulses	4109	3204	780
Kh. Foodgrains	4482	3553	793
Rabi Foodgrains	7296	10195	1397
Total Foodgrains	11778	13748	1167
Groundnut	204	193	940
Soyabean	4757	4785	1007
Sesamum	192	66	344

Crops	Year 2006-07		
	Area (000 ha.)	Production (000 Tonnes)	Yield (Kg./ha.)
Niger	117	26	219
Castor	2	1	355
Sunflower	1	N	514
Kh. Oilseeds	5272	5071	962
Rape/Mustard	694	693	1000
Linseed	120	49	411
Sunflower & Others	2	N	
Rabi Oilseeds	816	742	909
Total Oilseeds	6088	5813	955
Cotton (B)	639	829	665
Prod. in 000 Tonnes		423	
Sugar Cane (G)	64	281	4367
Total Kharif	10393	9047	870
Total Rabi	8176	11218	1372
Total (Kharif + Rabi)	18569	20265	1091

Change in Cropping Pattern

The area under kharif and rabi crops from 1992-93 to 2005-06 is shown in **Table - 17**. The analysis of this data is showing change in cropping pattern. There is gradual decrease in area of food crops in both kharif and rabi season due to the decrease in area of cereals like Jowar, small millets and pulses like Urad, Moong. The area of non food crops are showing increasing trend due to increase in the area of oilseeds like Soyabean, Til, Niger, Rapeseed etc.

Table – 17 : Area under Kharif and Rabi Crops

Particulars		92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	00-01	01-02	02-03	03-04	04-05	05-06
Kharif	Food Crops	5880	5597	5199	5120	5076	4821	4929	4884	4882	4942	4936	5274	4970	4800
	Non Food Crops	4878	5260	4992	5587	5875	6180	6183	6052	6104	6077	5792	5829	6221	7639
	Total	10758	10857	10191	10707	10951	11001	11112	10936	10986	11019	10728	11103	11191	12439
Rabi	Food Crops	6538	7186	7664	7535	7735	8310	8414	8511	6336	7368	6877	8042	8153	6290
	Non Food Crops	972	1049	1018	1031	1053	955	956	972	651	760	576	746	962	1030
	Total	7510	8235	8682	8566	8788	9265	9370	9483	6987	8128	7453	8788	9115	7320
Net Area Sown		14871	15019	14937	15022	15068	15103	15130	15070	14766	14962	14621	15048	15078	15074
Area Sown More Than Once		3397	4073	3937	4251	4671	5163	5352	5349	3207	4185	3560	4843	5228	4637
Total Cropped Area		18268	19092	18874	19273	19739	20266	20482	20419	17973	19147	18181	19891	20306	19711
% of Area Sown More Than Once To Net Area Sown		23	27	26	28	31	34	35	30	18	22	24	32	35	31
% of Area Sown During	Kharif	59	57	54	56	55	54	54	54	61	58	59	56	55	63
	Rabi	41	43	46	44	45	46	46	46	39	42	41	44	45	37

The compound growth rate of production of various crops is shown in **Table -18**, which is also indicating the decrease in the production of Jowar and increasing trend of production of Soyabean.

Table – 18 : Compound Growth Rate of Production in Madhya Pradesh

(Unit – Thousand Tonnes)

S.No.	Crops	Long Term Growth Rate (1970-71 to 2005-06)			Short Term Growth Rate (1990-91 to 2005-06)		
		1970-71	2005-06	Growth Rate %	1990-91	2006-06	Growth Rate %
1	Rice	950	1694	1.67	1435	1694	1.11
2	Wheat	2536	6200	2.59	5742	6200	0.51
3	Jowar	1322	610	-2.19	1468	610	-5.69
4	Maize	505	1248	2.62	1126	1248	0.69
5	Bajra	120	275	2.40	152	275	4.03
6	Gram	803	2378	3.15	1792	2378	1.90
7	Food Grains	7380	13486	1.74	12896	13486	0.30
8	G.Nut	311	231	-0.85	218	231	0.39
9	Soyabean *	97	4814	16.90	2182	4814	5.42
10	Rape/Mustard	44	856	8.85	492	856	3.76
11	Cotton (Thousand Bales)	208	709	3.57	397	709	3.94

The status of share of Madhya Pradesh and other states in National Agriculture Production (based on year 2005-06) is described **Table - 19**, which shows the state has been ranked as 1st in the production of pulses with the 24.14% share of country and second in the production of oilseeds with the 20.44% share of the country.

Table – 19 : State-wise Share in National Agriculture Production and Their Status 2005-06

Crop Group	First Position		Second Position		Third Position		Position of M.P. if	
	State	(%) Share	State	(%) Share	State	(%) Share	Position	(%) Share
Total Cereals	Uttar Pradesh	19.56	Andhra Pradesh	7.98	West Bengal	7.91	Eight	5.11
Total Pulses	Madhya Pradesh	24.14	Uttar Pradesh	16.67	Maharashtra	15.02		
Total Food Grains	Uttar Pradesh	19.37	Punjab	12.27	Andhya Pradesh	8.13	Sixth	6.33
Total Oil seeds	Rajasthan	21.30	Madhya Pradesh	20.44	Gujarat	16.73		
Rice	West Bengal	15.81	Andhra Pradesh	12.75	Uttar Pradesh	12.13	Thirteenth	1.81
Jowar	Maharashtra	51.11	Karnatak	21.89	Madhya Pradesh	8.26		
Maize	Andhra Pradesh	21.01	Karnatak	18.56	Bihar	9.25	Fourth	8.50
Bajra	Rajasthan	35.94	Uttar Pradesh	16.28	Gujarat	13.93	Seventh	3.52
Wheat	Uttar Pradesh	34.71	Punjab	20.89	Haryana	12.78	Fourth	8.59
Arhar	Maharashtra	28.83	Karnatak	16.06	Uttar Pradesh	13.87	Sixth	8.76
Gram	Madhya Pradesh	42.32	Maharashtra	12.68	Uttar Pradesh	11.79		
Massor	NA		NA		NA			
Groundnut	Gujarat	42.43	Andhra Pradesh	17.15	Tamilnadu	13.77	Seventh	2.88
Soyabean	Madhya Pradesh	54.41	Maharashtra	30.59	Rajasthan	10.40		
Rape/Mustard	Rajasthan	54.37	Uttar Pradesh	11.19	Madhya Pradesh	10.46		
Cotton	Gujarat	36.59	Maharashtra	17.08	Punjab	12.97	Seventh	4.05
Sugarcane	Uttar Pradesh	44.62	Maharashtra	13.82	Tamilnadu	12.49	Eleventh	0.86

Agriculture Workforce

According to 2001 census the number of cultivators was 11058500 and agricultural labourers were 7380878, which constitutes 71.6% of the total workers (25756485) in the state. The share of agricultural and other workers to total workers is shown in the following graph.

Share of Agriculture in the State income: Table 20 : Share of Agriculture in the GSDP (Rs. In Crore)

Sector	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	CAGR (2001-07)
A. Agriculture Sector	21,715.16	17,677.89	24,173.98	23,132.75	24,867.11	25,377.33	5.15%
B. GSDP	79,891.10	76,765.49	85,530.48	88,168.08	93,881.44	98,344.43	4.90%

The percentage share of major crops of Madhya Pradesh in India is given below in **Table -21 (Area : 000 ha., Prod:- 000 Tonnes, Yield : Kg/ha.)**

Crops	All India (Estimates)			Madhya Pradesh (FFC)			% of M.P.	
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.
Kharif Crops								
Paddy (Rice)	43700	91050	2084	1661	1368	868	4	2
Jowar	8510	7630	896	573	596	1042	7	8
Maize	7770	13850	1783	861	840	979	11	6
Bajra	9480	8280	873	186	254	1360	2	3
Small Millets	2680	3160	1179	338	93	275	13	3
Tur	3530	2510	712	323	220	679	9	9
Groundnut	5800	4980	860	204	193	940	4	4
Soyabean	8250	8670	1051	4757	4785	1007	58	55
Cotton (000 Bales)	9130	21040	392	639	829	222	7	4
Rabi Crops								
Wheat	28170	73700	2617	3993	7328	1956	14	10
Gram	7630	5970	782	2463	2413	981	32	40
Lentil (2005-06)	1510	950	629	582	293	503	39	31
Rape/Mustard	6330	6690	1057	694	693	1000	11	10
Sugar Cane (G)	4830	32294	6683	64	280	4367	1	1

SPSP – 12 : Crop Production and Productivity

1 S. No.	2 Names of the Districts	3 Name of crops	4 Kharif			5 Rabi			6 Zaid		
			Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)	Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)	Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)
1	Balaghat.	Paddy, Wheat, Linseed	269.4	1278.0	344.3	59.9	671.0	40.2	-	-	-
2	Shahdol	Paddy, Kodokutki, Wheat	165.9	80.0	114.6	34.5	646.0	22.3	-	-	-

3	Mandla	Paddy, Maize, Kodokutki, Wheat, Peas, Mustard,Lentil	191.1	610.0	118.4	87.5	654.0	57.2	-	-	-
4	Dindori	Paddy, Maize,Kodokutki,Niger, Wheat, Mustard, Lentil	179.5	610.0	110.9	94.4	466.0	44.0	-	-	-
5	Anuppur	Paddy, Maize,Kodokutki, Niger, Wheat	152.5	660.0	101.6	39.7	471.0	18.7	-	-	-
6	Sidhi	Paddy, Maize, Kodokutki, Tur,Sesamum, Wheat, Barley, Gram, Linseed	297.3	670.0	200.1	178.6	629.0	112.3	-	-	-
7	Umaria	Paddy, Maize, Kodokutki, Wheat	87.2	520.0	45.6	50.9	601.0	30.6	-	-	-
8	Rewa	Paddy, Jowar, Tur, Soybean, Wheat, Gram, Lentil, Linseed	210.4	660.0	140.8	273.1	843.0	230.1	-	-	-
9	Satna	Paddy, Kodokuti, Soybean, Wheat, Gram,Lentil	167.6	84.0	114.1	293.6	786.0	230.7	-	-	-
10	Panna	Paddy, Wheat, Gram, Lentil	86.3	460.0	40.2	192.1	787.0	151.2	-	-	-
11	Jabalpur	Paddy, Urd, Wheat, Gram, Peas,Lentil	126.9	780.0	98.6	225.5	1205.0	271.7	-	-	-
12	Seoni	Paddy, Kodokutki, Soybean, Wheat,Gram	287.1	960.0	275.9	188.9	745.0	140.7	-	-	-
13	Katni	Paddy, Wheat,Gram,Lentil	128.8	650.0	84.0	112.7	771.0	86.9	-	-	-

1	2	3	4			5			6		
S. No.	Names of the Districts	Name of crops	Kharif			Rabi			Zaid		
			Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)	Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)	Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)
14	Narsinghpur,	Tur, Urd, Soybean, Wheat, Gram, Lentil, Sugarcane	123.9	1310.0	163.0	259.4	1653.0	428.8	-	-	-
15	Hoshangabad	Soybean, Wheat, Gram	227.6	120.0	227.5	258.2	2291.0	591.6	-	-	-
16	Bhopal,	Soybean, Wheat, Gram	98.8	1090.0	108.0	108.5	1478.0	160.4	-	-	-
17	Sagar,	Urd, Soybean, Wheat, Gram, Lentil	259.2	730.0	190.6	445.5	821.0	365.8	-	-	-
18	Damoh,	Paddy, Urd, Soybean, Wheat, Gram, Lentil	143.8	670.0	97.6	261.6	943.0	246.7	-	-	-
19	Vidisha,	Urd, Soybean, Wheat, Gram, Lentil	180.7	940.0	170.3	489.1	1130.0	552.5	-	-	-
20	Raisen	Tur, Soybean, Wheat, Gram, Lentil	120.7	980.0	118.5	380.4	1218.0	463.3	-	-	-
21	Sehore	Maize, Soybean, Wheat, Gram	301.0	1090.0	328.9	260.4	1560.0	406.1	-	-	-
22	Guna	Jowar, Maize, Soybean, Wheat, Gram, Mustard	196.0	1020.0	201.6	163.4	1136.0	185.6	-	-	-
23	Gwalior	Paddy, Urd, Soybean, Wheat, Gram, Mustard	66.5	1420.0	94.9	174.0	1712.0	297.9	-	-	-
24	Bhind	Bajra, Wheat, Mustard	64.5	1070.0	69.1	274.2	1244.0	341.0	-	-	-
25	Morena,	Bajra, Wheat, Mustard	92.1	1660.0	153.3	232.6	1818.0	422.9	-	-	-
26	Sheopur	Bajra, Soybean, Sesamum, Wheat, Mustard	65.0	1120.0	73.3	122.5	1613.0	197.6	-	-	-

1	2	3	4			5			6		
S. No.	Names of the Districts	Name of crops	Kharif			Rabi			Zaid		
			Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)	Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)	Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)
27	Ashoknagar	Urd,Soybean, Wheat, Gram,Lentil	95.4	860.0	82.3	264.1	939.0	247.9	-	-	-
28	Chhattarpur	Urd, Sesamum, Wheat, Gram, Peas	163.2	390.0	65.0	269.1	1080.0	290.7	-	-	-
29	Datia	Sesamum, Wheat, Gram, Peas	58.0	520.0	30.5	165.7	1492.0	247.3	-	-	-
30	Tikamgarh,	Urd,Soybean, Sesamum, Wheat, Gram,Mustard	175.1	520.0	91.7	143.1	1333.0	190.7	-	-	-
31	Shivpuri	Maize, Soybean, Groundnut, Wheat, Gram,Mustard	250.3	950.0	239.3	234.1	1291.0	302.2	-	-	-
32	Betul	Paddy,Jowar, Maize, Tur, Soybean, Wheat, Gram, Sugarcane	385.3	930.0	360.5	139.9	1329.0	185.9	-	-	-
33	Chhindwara	Paddy, Jowar, Maize, Tur, Soybean, Groundnut, Cotton, Wheat, Gram, Sugarcane	431.9	1340.0	582.8	141.9	1831.0	259.8	-	-	-
34	Mandsaur	Maize, Urd, Soybean, Wheat, Gram, Mustard	317.7	900.0	288.0	122.8	1429.0	175.5	-	-	-
35	Neemuch	Maize, Soybean, Wheat, Gram, Mustard	160.1	970.0	155.4	80.2	1499.0	120.2	-	-	-
36	Ratlam	Maize, Soybean, Wheat, Gram	292.0	1290.0	378.2	131.2	1902.0	249.5	-	-	-
37	Ujjain	Soybean, Wheat, Gram	449.5	1022.0	459.8	264.8	1585.0	419.6	-	-	-
38	Dewas	Soybean, Wheat, Gram	355.1	1210.0	431.6	193.9	1673.0	324.4	-	-	-

1	2	3	4			5			6		
S. No.	Names of the Districts	Name of crops	Kharif			Rabi			Zaid		
			Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)	Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)	Area (000' ha)	Average Yield (kg) per ha.	Total Production (000' tonnes)
39	Indore	Soybean, Wheat, Gram	231.2	1180.0	273.3	144.5	1965.0	284.0	-	-	-
40	Shajapur	Jowar, Maize, Soybean, Wheat, Gram	403.8	980.0	397.2	191.1	1304.0	249.2	-	-	-
41	Rajgarh	Jowar, Maize, Soybean, Wheat, Gram	372.9	1050.0	378.6	145.9	1222.0	178.3	-	-	-
42	Khandwa	Jowar, Soybean, Wheat, Gram, Cotton	293.7	780.0	230.3	74.4	1449.0	107.8	-	-	-
43	Burhanpur	Jowar, Soybean, Wheat, Cotton	86.2	910.0	78.7	14.2	2444.0	34.7	-	-	-
44	Khargone	Jowar, Maize, Soybean, Cotton, Wheat	383.6	1030.0	398.1	64.9	2271.0	147.4	-	-	-
45	Barwani	Jowar, Maize, Soybean, Cotton, Wheat	218.7	740.0	162.5	34.6	1642.0	56.8	-	-	-
46	Harda	Soybean, Wheat, Gram	169.6	1310.0	223.4	134.3	2217.0	297.8	-	-	-
47	Dhar	Maize, Soybean, Cotton, Wheat, Gram,	473.6	1200.0	571.1	203.2	1937.0	393.5	-	-	-
48	Jhabua	Paddy, Maize, Rrd, Soybean, Cotton, Wheat, Gram	348.3	780.0	272.5	58.4	1317.0	76.9	-	-	-
Total			10405.0		9592.2	7718.8		10896.7	0.0	0.0	0.0

Table – 22 : Per Capita Availability of Foodgrains :

Year	Availability foodgrains (Lakh Tonnes)	Per Capita availability (Tonne/Year)
1956-57	132.01	0.56
1960-61	138.06	0.42
1970-71	151.77	0.36
1980-81	160.24	0.30
1990-91	161.94	0.25
1999-2000	144.58	0.24