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AGRICULTURAL DEVELOPMENT IN TRIBAL MADHYA PRADESH

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The scheduled tribes in Madhya Pradesh number 66.78 lakhs in a total population of 323.72 lakhs, constituting 20.63 per cent of the total (22.13 per cent of the total scheduled tribe population of Indian Union). Tribal population of, Madhya Pradesh¹ is mainly concentrated in 15 forest-dominated districts, viz., Durg, Bastar, Bilaspur, Raigarh, Surguja, Balaghat, Chhindwara, Mandla, Shahdol, Ratlam, Dhar, Jhabua, Khargone, Raisen and Betul. When compared to the concentration of tribal population among the districts, 85 per cent population of Jhabua district, more than 62 per cent population of Bastar and Mandla, more than 52 per cent population of Surguja, Shahdol and Dhar, more than 40 per cent population of Raigarh and Khargone, more than 32 per cent population of Chhindwara and Betul and between 11 and 20 per cent population of Bilaspur, Balaghat, Ratlam, Durg and Raisen districts are composed of tribal population.

Characteristics of Tribal Agriculture

The tribal economy is quite primitive in organization and is mainly based on natural resources comprising of primitive methods of agriculture and collection of forest produce. In Madhya Pradesh there are tribal pockets in Durg, Bastar, Chhindwara, Balaghat, Mandla, Surguja, Raigarh and Bilaspur districts where shifting cultivation popularly known as *bewar* or *taungia kheti* is still practised in an area of about 32,876 acres² by *Agaria, Baiga, Bharia, Korwa, Mandia, Mawasi* and *Majhwar* tribes. The factors responsible for the backwardness of tribal agriculture in Madhya Pradesh are : (a) poor soil, (b) very less area under irrigation, (c) lack of manuring, (d) ignorance of the people about the new techniques and practices, (e) use of crude and primitive agricultural implements, and (f) greater intensity of soil erosion on hill slopes and inability of the tribal farmers to arrest it.

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1. Out of 43 districts in the State, 15 districts have been declared as 'tribal areas' of Madhya Pradesh by the President of India.

2. Shifting Cultivation Practices in India, Review Series No. 24, Indian Council of Agricultural Research, New Delhi, 1958.

An examination of Table I reveals that in the tribal districts, not only irrigated area is less as compared to the non-tribal districts and at the State level but the rate of increase in irrigated area is also very slow and even in one district (Bastar) the proportion of irrigated land has gone down between 1955-56 and 1968-69.

TABLE I—PERCENTAGE CHANGE IN ARABLE LAND IRRIGATED

District	Percentage of arable land* irrigated			Percentage increase in arable land	Percentage of cultivated area irrigated			Percentage increase in cultivated area
	1955-56	1968-69	Percentage change in irrigated area		1955-56	1968-69	Percentage change in irrigated area	
Durg ..	7.14	7.67	0.53	28.20	9.13	12.52	3.39	0.54
Bastar ..	1.97	0.41	-1.56	200.89	3.46	1.76	-1.70	21.84
Bilaspur ..	5.70	9.23	3.53	41.06	7.74	17.38	9.64	1.70
Raigarh ..	0.58	1.32	0.74	36.40	0.88	2.55	1.67	6.66
Surguja ..	0.23	0.35	0.12	44.76	0.46	0.90	0.44	11.82
Balaghat ..	21.64	16.30	-5.34	62.19	32.54	37.69	5.15	5.90
Chhindwara ..	2.27	2.39	0.12	14.09	3.63	4.06	0.43	7.59
Mandla ..	0.12	0.23	0.10	74.74	0.24	0.64	0.40	22.90
Shahdol ..	0.17	4.26	4.09	3.79	0.29	7.15	6.86	7.15
Ratlam ..	3.31	4.34	1.03	10.32	5.33	5.92	0.59	30.09
Dhar ..	2.36	3.80	1.44	5.72	3.37	4.80	1.43	19.48
Jhabua ..	0.68	1.70	1.02	-3.32	1.25	2.23	0.98	36.45
Khargone ..	2.22	2.81	0.59	50.85	3.10	5.25	2.15	11.05
Raisen ..	0.32	0.90	0.58	1.60	0.51	1.10	0.59	31.56
Betul ..	3.21	3.18	-0.03	36.96	5.46	6.73	1.27	11.59
Tribal districts ..	3.26	3.60	0.34	46.99	5.10	7.40	2.30	11.80
Non-tribal districts	3.36	4.68	1.32	17.24	5.56	7.65	2.09	18.87
Madhya Pradesh	3.32	4.16	0.84	30.00	5.36	7.54	2.18	15.78

* Arable land is defined to include total land minus forests and land not available for cultivation.

It also appears from Table I that most of the tribal districts substantially increased their arable land with the exception of Jhabua district which has shown a decline in arable land in 1968-69 as compared to the figure in 1955-56. This decline in arable land is mainly due to the increase in area under forest and 'land put to non-agricultural uses' by 18 per cent and 17 per cent respectively. A very high increase in arable land in Bastar district may be partly as a result of programmes for colonisation and settlements in the forests (Dandakaranya Project).

The districts which have high concentration of tribal population have shown relatively greater increase in cultivated area. Between 1955-56 and 1968-69, most of the tribal districts have shown a decline in net area sown as per cent of total arable land. The lower ratio of net area sown to total arable land at any point of time would broadly indicate higher potential for extension of cultivation and vice versa.

Table II throws light on various indicators of agricultural development.

TABLE II—OTHER INDICATORS OF AGRICULTURAL DEVELOPMENT

District	Net sown area as percentage of total arable land		Intensity of cropping		Average size of holding (hectares)	Arable land per agricultu- ral worker (hectares)	Percentage of agri- cultural workers to total popula- tion	Percentage of agri- cultural workers to total workers
	1955-56	1966-67	1955-56	1966-67				
	to 1957-58	to 1968-69	to 1957-58	to 1968-69				
Tribal districts ..	64.17	48.65	114.88	112.73	1.75	1.64	46.62	69.52
Non-tribal districts ..	60.17	61.16	110.56	108.29	2.86	4.44	36.99	74.75
Madhya Pradesh	61.95	55.16	112.46	110.17	2.32	2.44	41.48	79.31

For the both periods under study, the intensity of cropping was higher in the tribal districts of Madhya Pradesh as compared to the non-tribal districts and at the State level. Out of the 15 districts, Bastar, Ratlam, Shahdol, Dhar, Kargone and Raisen have average holdings above the average for the State and the remaining nine districts of the State with a high tribal content in population have their average land holdings below the State average. On account of high density of population in the tribal areas of Madhya Pradesh, the availability of arable land per agricultural worker is also very low as compared to the State figure. It will be seen from Table II that the percentage of population dependent on agriculture in the tribal areas is also very high. A close examination of the table reveals that 11 districts out of the 15 have very high proportion (between 80—90 per cent) of the workers engaged in agriculture. The very high percentage of workers in agriculture in the tribal districts is mainly due to the economic backwardness of these districts, lack of alternative job opportunities and traditional cultural practices.

Technological progress boils down to the increased use of modern inputs in the place of traditional inputs. As far as agriculture is concerned, increased use of improved seeds, fertilizers and pesticides, modern implements, etc., would symbolise technological progress. Table III gives the coverage of High-Yielding Varieties Programme (HYVP) in the tribal districts of Madhya Pradesh.

TABLE III—COVERAGE UNDER HYVP IN TRIBAL MADHYA PRADESH DURING 1968-69

District	(in hectares)					
	Paddy			Wheat		
	Total area under crop	Area under HYVP	Per cent of area under HYVP to total area of the crop	Total area under crop	Area under HYVP	Per cent of area under HYVP to total area of the crop
Tribal districts ..	28,49,970	73,339	2.57	6,10,448	13,236	2.17
Non-tribal districts ..	14,32,832	48,253	3.37	23,97,703	68,836	2.87
Madhya Pradesh ..	42,82,802	1,21,592	2.84	30,08,151	82,072	2.73

District	Jowar			Maize		
	Total area under crop	Area under HYVP	Per cent of area under HYVP to total area of the crop	Total area under crop	Area under HYVP	Per cent of area under HYVP to total area of the crop
	Tribal districts ..	6,52,018	14,531	2.23	3,51,831	12,060
Non-tribal districts ..	17,12,536	10,766	0.63	2,30,046	8,196	3.56
Madhya Pradesh ..	23,64,554	25,297	1.07	5,81,877	20,256	3.48

The percentage area under HYVP to the total area under paddy, wheat and maize is relatively very small in almost all the tribal districts as compared to the non-tribal districts and State level figure. However, in some districts the programme has achieved considerable success. Only in the case of jowar crop the success of HYVP in the tribal areas appears to be somewhat better.

Irrigation facilities pave the way for the use of chemical fertilizers. The variation in fertilizer use amongst the tribal districts is very high. The tribal districts used only 8.50 kgs. fertilizers per hectare of cultivated land as against 9.44 kgs. in the non-tribal districts and 9.04 kgs. at the State level. The consumption of fertilizers in the tribal districts is presented in Table IV.

TABLE IV—CONSUMPTION OF FERTILIZERS IN TRIBAL AREAS OF MADHYA PRADESH

District	Kgs. per hectare of cultivated land		Kgs. per hectare of arable land		Kgs. per capita	
	1964-65	1968-69	1964-65	1968-69	1964-65	1968-69
	Tribal districts	6.04	8.50	4.17	4.13	3.18
Non-tribal districts	5.04	9.44	3.23	5.57	2.57	5.32
Madhya Pradesh	8.55	9.04	3.63	4.99	2.83	5.05

Productivity Patterns

It hardly needs any elaborate discussion to prove that agricultural productivity in the tribal areas of Madhya Pradesh has remained depleted over a long period. Even today, the rate of yield of principal crops in the tribal areas is much lower than that of the State average. In the case of rice, the average yield per hectare is well above the State average mainly in the rice-growing areas, in the remaining districts the yield rate is certainly below the State average. In the case of maize also the yield rate is above the State average in the maize-growing areas. In the case of gram, all the districts (except Riasen) have an yield below the State average. Table V shows the annual yield per hectare of principal crops in the tribal areas of Madhya Pradesh for the triennium ending 1968-69.

TABLE V—ANNUAL YIELD OF PRINCIPAL CROPS DURING 1966-67 TO 1968-69

District	(in kgs. per hectare)				
	Rice	Wheat	Jowar	Gram	Maize
Durg	676	535	239	400	905
Bastar	739	581	811	298	1,254
Bilaspur	722	557	768	426	1,133
Raigarh	784	665	977	417	1,245
Surguja	528	531	766	276	1,271
Balaghat	791	315	961	444	1,080
Chhindwara	483	536	481	399	632
Mandla	433	598	888	387	1,282
Shahdol	367	394	591	284	612
Ratlam	374	581	716	398	781
Dhar	304	631	500	343	636
Jhabua	281	698	550	377	646
Khargone	351	832	549	450	621
Raisen	437	720	921	528	816
Betul	800	678	469	376	659
Madhya Pradesh	665	640	700	471	844

The average yield of wheat is also found below the State average in most of the tribal districts (with the exception of a few districts). In contrast, the average yield of jowar has been found in most of the tribal districts well above the State average.

It would be worthwhile at this stage to attempt a comparative study of the value productivity per hectare and per agricultural worker among the tribal

districts of Madhya Pradesh. A close examination of Table VI reveals that in the tribal districts, the value productivity per hectare and per agricultural worker is low as compared to the State figure. In contract, we also observe rapid changes in the productivity figures in the tribal areas as compared to the State level figures. The variation in value productivity amongst the tribal districts is very high.

TABLE VI—VALUE PRODUCTIVITY PER HECTARE OF NET SOWN AREA AND AGRICULTURAL WORKER

District	Value productivity per hectare (Rs.)			Value productivity per worker (Rs.)		
	First period (1955-56 to 1957-58)	Second period (1966-67 to 1968-69)	Percentage change	First period (1955-56 to 1957-58)	Second period (1966-67 to 1968-69)	Percentage change
	Tribal districts	183.96	245.25	33.15	202.59	255.24
Madhya Pradesh	248.72	273.10	9.63	232.16	284.91	22.84

Note : Gross value of agricultural produce per hectare and per worker is worked out by dividing the total gross value of agricultural produce in each district by the total net sown area and the total number of agricultural workers (cultivators + agricultural labourers) of the district. The valuation has been done with the average prices prevailing during 1955-56 to 1957-58 and the crops included are rice, jowar, wheat, maize, gram, *tur*, *til*, groundnut, linseed, *kodo-kutki*, sugarcane and cotton which account for a little more than 92 per cent of the total cropped area of the State.

Nature and Extent of Subsistence Agriculture

In order to get some insight into the subsistence nature of tribal agriculture, we have worked out the percentage distribution of area by different crop-groups. The figures in Table VII reveal significant differences in the cropping pattern followed by the tribal and non-tribal farmers. Over the period 1955-56 to 1968-69,

TABLE VII—PERCENTAGE DISTRIBUTION OF AREA BY DIFFERENT CROP-GROUPS

District	Superior cereals			Coarse cereals		
	1955-56 to 1957-58	1966-67 to 1968-69	Difference	1955-56 to 1957-58	1966-67 to 1968-69	Difference
Tribal districts	40.10	40.34	+0.24	23.79	25.02	+1.23
Non-tribal districts	34.10	33.79	-0.31	26.62	25.62	-1.00
Madhya Pradesh	36.79	36.61	-0.18	25.35	25.36	+0.01

District	All food crops			Commercial crops		
	1955-56 to 1957-58	1966-67 to 1968-69	Difference	1955-56 to 1957-58	1966-67 to 1968-69	Difference
Tribal districts	85.17	88.57	+3.40	15.45	14.48	-0.97
Non-tribal districts	88.72	81.24	-1.48	16.59	14.08	-2.51
Madhya Pradesh	83.82	83.00	-0.82	16.08	14.26	-1.82

Superior cereals : paddy and wheat; Coarse cereals : jowar, bajra, barley, maize, *kodo-kutki*, *madwa*, *rala*, etc.; Commercial crops : sugarcane, all fruits and vegetables, condiments and spices, all oilseeds and all fibres.

TABLE VIII—ANNUAL REQUIREMENTS, PRODUCTION, SURPLUS OR DEFICIT OF FOODGRAINS

(in thousand tonnes for the triennium ending 1968-69)

District	Cereals and millets				Pulses				Total foodgrains			
	Require- ments	Produc- tion	Surplus or deficit	Surplus as percentage of produc- tion	Require- ments	Produc- tion	Surplus or deficit	Surplus as percentage of produc- tion	Require- ments	Produc- tion	Surplus or deficit	Surplus as percentage of produc- tion
Durg	320	509	+189	37·23	69	136	+67	49·52	389	645	+256	39·69
Bastar	163	367	+204	55·54	26	20	—6	—	189	387	+198	51·08
Bilaspur	345	600	+255	42·57	64	74	+10	14·17	409	674	+265	39·32
Raigarh	172	297	+125	42·18	30	24	—6	—	202	321	+119	37·13
Surguja	166	283	+117	41·46	30	28	—2	—	196	311	+115	37·16
Balaghat	125	175	+50	28·64	24	23	—1	—	149	198	+49	24·84
Chhindwara	123	171	+48	28·04	25	39	+14	35·46	148	210	+62	29·42
Mandla	104	144	+40	28·03	20	25	+5	19·29	124	169	+45	26·76
Shahdol	132	183	+51	28·12	24	17	—7	—	156	200	+44	22·10
Ratlam	61	80	+19	23·97	13	22	+9	40·31	74	102	+28	27·46
Dhar	91	147	+56	38·10	19	31	+12	40·12	110	178	+68	38·76
Jhabua	63	113	+50	44·30	14	35	+21	59·38	77	148	+71	47·86
Khargone	128	150	+22	14·67	26	30	+4	13·33	154	180	+26	14·44
Raisen	70	126	+56	44·30	19	64	+45	70·40	89	190	+101	53·11
Betul	85	127	+42	33·07	19	42	+23	55·42	104	169	+65	38·38
Tribal districts	2,148	3,472	+1,324	38·10	422	610	+188	30·82	2,570	4,082	+1,512	37·04
Non-tribal districts	2,824	4,134	+1,310	31·68	582	954	+372	38·99	3,406	5,088	+1,682	33·05
Madhya Pradesh	4,972	7,606	+2,634	34·63	1,004	1,564	+560	35·78	5,976	9,170	+3,194	34·83

the relative importance of coarse cereals has increased by 1.23 per cent in the tribal districts whereas in the non-tribal districts the importance of coarse cereals has declined by one per cent.

It is also found that the tribal districts are predominantly cereal producing areas.

In Table VIII we have made an attempt to measure the extent of subsistence agriculture in the tribal areas of Madhya Pradesh. Subsistence farming is indentified by drawing a line indicating the physical quantity of foodgrains required to maintain an average family. The subsistence norm³ is worked out by taking into account the annual foodgrains requirements for an average family equivalent to four adult units on the basis of 18 ounces of foodgrains (15 ozs. of cereals and 3 ozs. of pulses) per adult per day as well as by making allowances for feed, seed and wastage at 12½ per cent of production.

It is interesting to note that all the tribal districts in Madhya Pradesh are surplus in cereals, out of which five rice-producing districts (Durg, Bastar, Bilaspur, Raigarh and Surguja) contribute 890 thousand tonnes (or 34 per cent) of cereals to the total surplus of the State. The share of the tribal districts to the total surplus of cereals of the State is 50 per cent. Out of the 15 tribal districts, ten districts have as high a surplus as 19 thousand tonnes or above. In the case of total foodgrains too, all the tribal districts are surplus. Durg, Bastar, Bilaspur, Raigarh, Surguja and Raisen districts together account for nearly 33 per cent of the total surplus of the State. The contribution of the tribal districts in the foodgrains surplus of the State is 47 per cent. In the case of pulses, however, five districts are found deficient and the relative contribution of the tribal districts to the total surplus of the State is found to be about 34 per cent.

3. V. M. Jakhade and N. A. Mujumdar, "Subsistence Sector in Indian Agriculture," *Reserve Bank of India Bulletin*, Vol. XVII, No. 9, September, 1963, pp. 1144-1156.