Ad-hoc Study No. 65

IMPACT OF SUBSIDIES ON AGRICULTURAL DEVELOPMENT IN MADHYA PRADESH

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CHAPTER-I

I N T R O D U C T I O N

After green revolution the input use in agriculture increased. The rapid rate was observed in four major inputs viz. High Yielding Varieties(HYV)seeds, fertilizers, irrigation and pesticides. The terms such as 'modernising agriculture' or 'commercialising agriculture' or 'technological change in Agriculture' were not only understood but were also brought in practice to increase agricultural production. But in order to achieve it the Government had to bear a heavy cost either by way of direct input subsidies or by way of support prices.

In recent years there is a growing concern about the volume, role and efficacy of subsidies. Subsidies related to agricultural development have a crucial role where it not only has a bearing on the adoption of new technology and increased crop production but also on employment and investment.

In India majority of farmers are marginal and small and, therefore, poor. In agriculture adoption of modern technology requires huge investment. It is not possible for small and marginal farmers to adopt modern technology in agriculture without any assistance. Farmers enjoy subsidy in two ways: firstly by way of reduced prices at which seed, fertilizers, pesticides and other inputs are made available either in cash or on credit and secondly by way of incentive or higher floor or procurement prices for the produce,

1.1 Subsidy: Definition and Meaning

Subsidy is a handy tool for accelerating production and playing the role of catalyst in those innovative actions which

were economically desirable when compared with adoption of technology which normally required huge and apparently risky capital investment for increasing food production. This has been more relevant in the case of small landholders[1].

"Subsidy is necessary as a production accelerating catalyst for those new inventions, which are socially desirable but whose adoption needs huge capital and producers believe it to be risky investment"[2].

"Subsidies are negative taxes, they are instruments to transfer resources in favour of those who receive them"[3].

"Subsidy is the right instrument to maximise risk taking. The reduction in input price is found to be the most appropriate form of subsidy"[4].

The instrumentality of subsidy in affecting consumption, investment and welfare dynamics is well established. It is one of the powerful fiscal instruments, besides taxes and others, by which the objectives of growth and social justice may be achieved.

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1. Namasivam, D. and S.K. Balasundaram (1991) 'The role of interest rate subsidy on farm investment-A case study.' Journal of Rural Development Vol.10(3) PP.265

2. Randolph Barker and Yujiro Hayami (1976) 'Price support V/s input subsidy for Food Self-sufficiency in Developing Countries' American Journal of Agricultural Economics. Vol.58(4) PP.617-628

3. Shah, C.H. (1986) 'Taxation and subsidies on agriculture: A search for policy options' Indian Journal of Agricultural Economics Vol. 41 (3) PP. 367

4. Mohan, T.C. et.al. (1982) 'The Role of subsidy in risk-taking by formers- A study in a Scuth Arcot Village' Indian Journal of Agricultural Economics Vol.37 (3) PP.247-252

'Subsidies are also for manipulating or balancing the growth rates of production and trade in various sectors and regions, and for equitable distribution of income for protecting the weaker sections of the society. Support and procurement prices and issue prices of major agricultural products are some of the important measures which are to protect the interest of farmers and weaker sections of consumers'[1].

The subsidies may be direct or indirect, cash or kind, general or particular, budgetary or non-budgetary, etc. But their impact is practically visible on both the production and distribution. The economic rationale of subsidies lies in incentivising the producers to invest in productive activities and increase production leading to high growth in national income and obtaining desirable structure of production. The social justification of subsidies lies in reducting inter-personal income inequalities and inter-regional development imbalances.[2] The justification gets strengthened if the subsidies promote agricultural development besides equitable distribution of income.

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1. Sirohi, A.S. (1984) Impact of agricultural subsidies and procurement prices on production and income distribution in India' Indian Journal of Agricultural Economics, Vol.39 (4), PP.563

2. Bajpai, A.D.N. and S.K. Shrivastava (1991) 'Relevance of subsidies in determining fertilizer consumption in Indian Agriculture- An Econometric Analysis, Journal of Rural Development, Vol.10 (4) PP. 392.

1.2 Classification of Subsidy

The agricultural sector abounds in various types of subsidies. Price support, fertilizer subsidies and cheaper loans are the most readily identifiable forms of subsidy. Low irrigation rates, lower tariff on electricity, lower excise duties on diesel, differential freight rates for agricultural outputs and inputs, free availability of extension services are all examples of different forms of subsdies. Incentives offered for agro-processing industries or exports of agricultural commodities are also yet other forms of subsidy.

Table 1.1 Subsidies for agriculture and rural development and food subsidy

(Rs. crore)

Heads	1977-78	1980-81	1984-85	1989-90	1991-92
Food subsidy	244	650	850	2,200	NA
Fertilizer subsidy	266	505	1,927	4,542	6,219
Irrigation subsidy	281	478	NA	NA	NA
Rural Electrification	277	600	NA	NA	NA
Livestock subsidy	136	248	NA	NA	NA
Rural Development Programmes	67	726	472	NA	NA

Sources :

1. Desai, G.M. (1986) Fertilizers Use in India, Indian Journal of Agricultural Economics Vol.41 (3) PP. 265

2. Economic Survey - (1990-91) The Economic Times New Delhi, 21st July 1991

3. "Report of the JPC (Joint Parliamentary Committee) on fertilizer subsidy-I" The Economic Times New Delhi, 28th August 1992

4. Subbarao, K.(1985) Incentive policies and India's Agricultural Development: Some aspects of regional and Social Equity: Indian Journal of Agril-Economics Vol.40 (4) PP.495

1.2.1 Food Subsidy

Food subsidy is a developmental subsidy if it promotes agricultural production by protecting the producers from losses due to falling prices. Food subsidy has risen from Rs.244 crores in 1977-78 to Rs.2,200 crores in 1989-90. The Operation of Public Distribution System (PDS) involves heavy subsidy.

1.2.2 Subsidy on Rural Development Programmes

Subsidy on anti-poverty programmes (Integrated Rural Development Programmes) increased from Rs.67 crores in 1977-78 to Rs.472 crores in 1984-85. These subsidies are borne from the Central Government budget.

1.2.3 Subsidised Institutional Credit

The share of institutional credit flowing to the agricultural sector for the purchase of modern inputs has risen sharply over the last many years. Expansion of commercial banks and setting up of regional rural banks contributed to the easing of the flow of institutional finance for agriculture. In particular, farmers are supplied production credit at interest rates lower than the market rates of interest. The supply of finance at lower interest rates has enabled the beneficiaries to effect improvements in their productive activities and also adopt new activities leading to additional employment, production and income.

1.2.4 Fertilizer Subsidy

The fertilizer subsidy is a developmental subsidy and is meant to reduce the cost of production in agriculture and, therefore, treated as a means to stimulate agricultural production. Its importance becomes all the more greater

because the domestic cost of fertilizer production is higher. "Fertilizers in India are subsidised apparently with a view to promoting their consumption in agriculture. Therefore, with the increase in the consumption of fertilizerover time, fertilizer subsidy has also increased.[1]

'However, over the years, there has been a phenomenal increase in fertiliser subsidy which has gone up from a moderate Rs.266 crores in 1977-78 and Rs.505 crores in 1980-81 to a whopping Rs.6,219 crores in 1991-92'.[2] The total subsidy paid during the decade 1981-1992 has amounted to as much as Rs.28,285 crores.

A number of factors were responsible for such a steep increase in fertilizer subsidy. The responsible factors were(1) growth in fertilizer consumption which has gone up from 60.68 lakh tonnes (1981-82) to 130 lakh tonnes in 1991-92, (2) increase in the landed cost of imported fertilisers & devaluation of the rupee in July 1991, and (3) the prices have remained stagnant from 1981.

Since fertiliser constitutes an important input in increasing agricultural production, its pricing and subsidies can not be viewed in isolation. In the Joint Parliamentary Committee's view, protecting interest of small and marginal farmers is of utmost importance. The experience in regard to the scheme of exempting the small and marginal farmers from the price hike in August, 1991

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1. Gulati, Ashok (1990) Fertilizer subsidy : Is the cultivator net subsidised ? Indian Journal of Agril. Economics, Vol.45 (1) PP.1-2

2. Bhosale, P.B., (1992) 'Report of the JPC (Joint Parliamentary Committee) on fertilizer subsidies- I' The Economic Times 28th August 1992, Vol.32 (176) New Delhi.

has not been encouraging. Most of the states were not in favour of the dual pricing policy and did not administer the scheme. The administrative difficulties should not stand in the way of providing benefit to these target groups.

The question of subsidies for agricultural inputs, minor irrigation and other allied activities like dairying, fisheries, poultry, etc. is an issue that is sensitive for Indian policy makers. In India, successive five year plans have almost institutionalised subsidies, extended the scope and increased the quantum. However, its growing volume year by year is attracting critical attention about its role and impact on agricultural development.

1.3 Objectives of the Study

The specific objectives of the study were :

(i) To quantify level and spread of different types of subsidies in the State and districts and to work out their macro [illegible]

(ii) To assess the quantum of subsidies availed, the extent of utilization of subsidised inputs and their impact on different kinds of farmers with respect to asset formation & income generation [illegible]

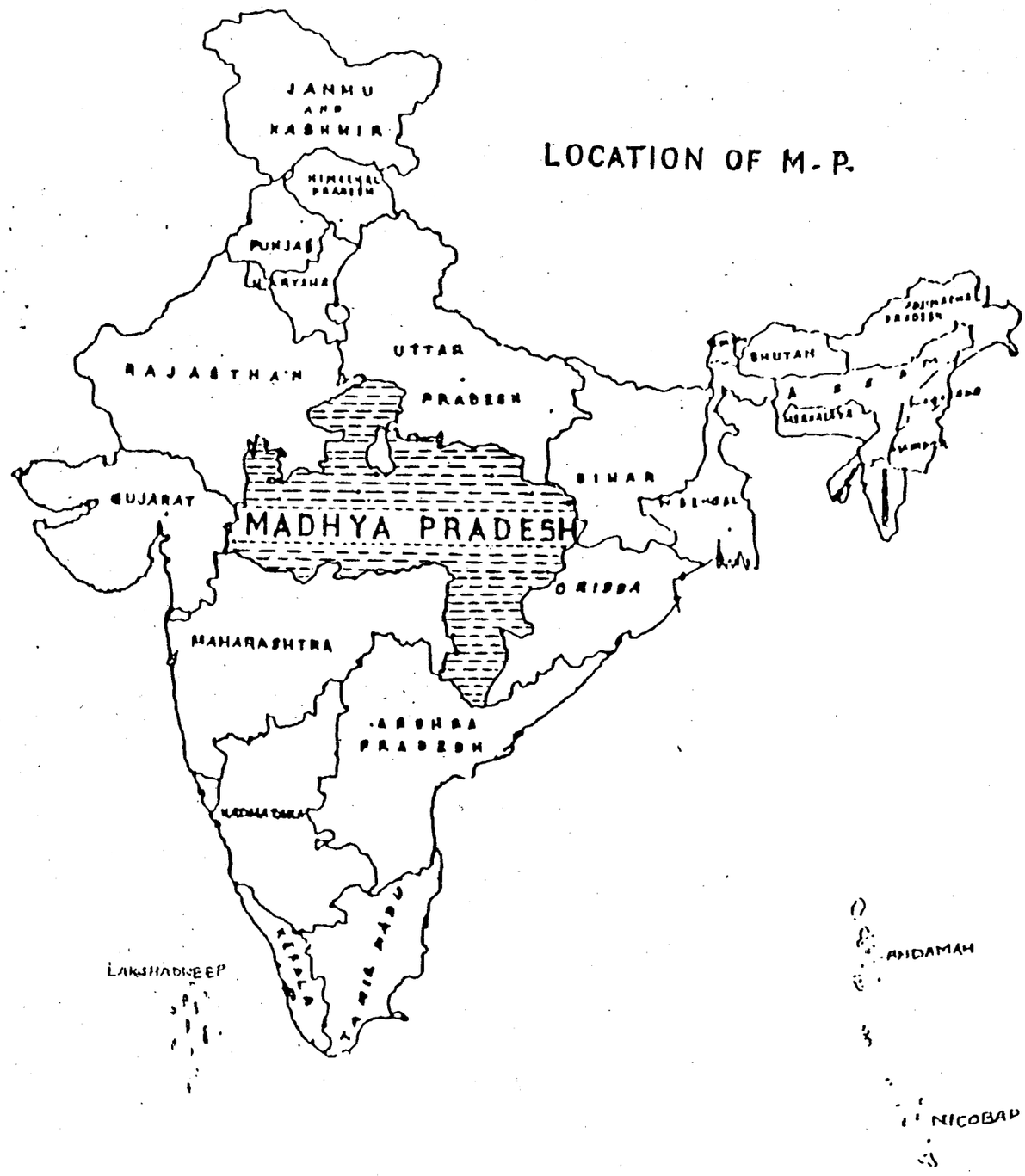
(iii) To study the role of subsidies on input use structure, crop pattern and production pattern on different categories of farms.

(iv) To study usefulness of subsidies on the adoption of modern technology for agricultural production, and,

(v) To study the administration of the disbursement of subsidies and to suggest measures for improving it.

1.4 Sample Design

As per the guidelines provided, the data on different kinds of subsidies for the year 1990-91 were procured from all the districts of Madhya Pradesh. Then the extent of use of subsidies on different items in all the districts of the State were worked out and the relative position of the districts in terms of their performance was analysed. One district each with reference to a particular kind of subsidy was selected. Four agricultural and allied programmes were selected. These were : Crop production, minor irrigation, soil conservation, and animal husbandry. For these programmes, districtwise data on subsidy were invited from the Deputy Directors of Agriculture of all the districts of the state and Directorate of Animal Husbandry and Veterinary Services, M.P., Bhopal. One district was selected for each programme in which highest subsidy was provided. For crop production programme Raipur district was selected. Similarily, Vidisha and Sehore districts were selected for minor irrigation and animal husbandry programme respectively. For Soil Conservation Programme the data received from the selected districts was not good enough for consideration of the programme/district. Thus three programmes, namely, crop production, minor- irrigation and animal husbandry were considered for this study. After finalising the districts for three programmes a block each was selected with the highest subsidy in each district. The selected blocks for three programmes were Dhamtari (Raipur district), Basoda (Vidisha district) and Ashta (Sehore district). The lists of beneficiaries were obtained from each of the selected blocks for each programmes. From each selected block 50 respondents were selected (30 beneficiaries and 20 non-beneficiaries). In this way 50 respondents were


LOCATION OF M. P.
JAMMU AND KASHMIR
HIMACHAL PRADESH
PUNJAB
HARYANA
RAJASTHAN
UTTAR PRADESH
BHUTAN
MEGHALAYA
BIHAR
GUJARAT
MADHYA PRADESH
ORISSA
MAHARASHTRA
ANDHRA PRADESH
KERALA
TAMIL NADU
LAKSHADWEEP
ANDAMAN
NICOBAR

selected from Dhamtari block of Raipur and 50 respondents were from Ashta block of Sehore. Only 20 beneficiaries were available in Basoda block under minor irrigation programme. Due to this reason all the 20 beneficiaries were considered and 15 non-beneficiaries were also contacted. Thus, the total sample comprised 135 farmers (80 beneficiaries and 55 non-beneficiaries).

1.5 Reference year

The agricultural year 1990-91 was the reference year for the study. The study covered both kharif and rabi seasons.

1.6 Field Investigation

Both primary and secondary data were collected for the study. The secondary data were collected at the state, district and block levels. The state level data were collected at Bhopal from the Directorate of Agriculture and Directorate of Animal Husbandry. The district level data were collected from the offices of the Deputy Directors of Agriculture. Regarding selected blocks data were collected from the offices of SDO (Agriculture) and offices of Senior Agricultural Development Officer (SADO) of the concerned blocks.

Primary data were collected from the sample farmers (beneficiaries and non-beneficiaries). Data were collected in the schedules/questionaires specially prepared for three programmes.

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CHAPTER-II

PROFILE OF THE SELECTED DISTRICTS

A brief description of the selected districts is given in this Chapter.

2.1 Raipur District

2.1.1 Location

Raipur district is situated in the Chhattisgarh region of the state and occupies the south-eastern part of upper Mahanadi basin with a large belt of hilly area in the south and east. The district is third largest district in the state in respect of area. It lies between latitudes $19^{\circ}57'$ and $21^{\circ}53'$ north and longitudes $81^{\circ}25'$ and $83^{\circ}38'$ east. The district is bounded in the north by Bilaspur district of Madhya Pradesh, in the north-east by Raigarh district, also of M.P., and in the east by Sambalpur and Kalahandi districts of Orissa. In the south it is bounded by Koraput district of Orissa and in the south-west by Bastar district of M.P. In the west of Raipur district lies Durg district of M.P.

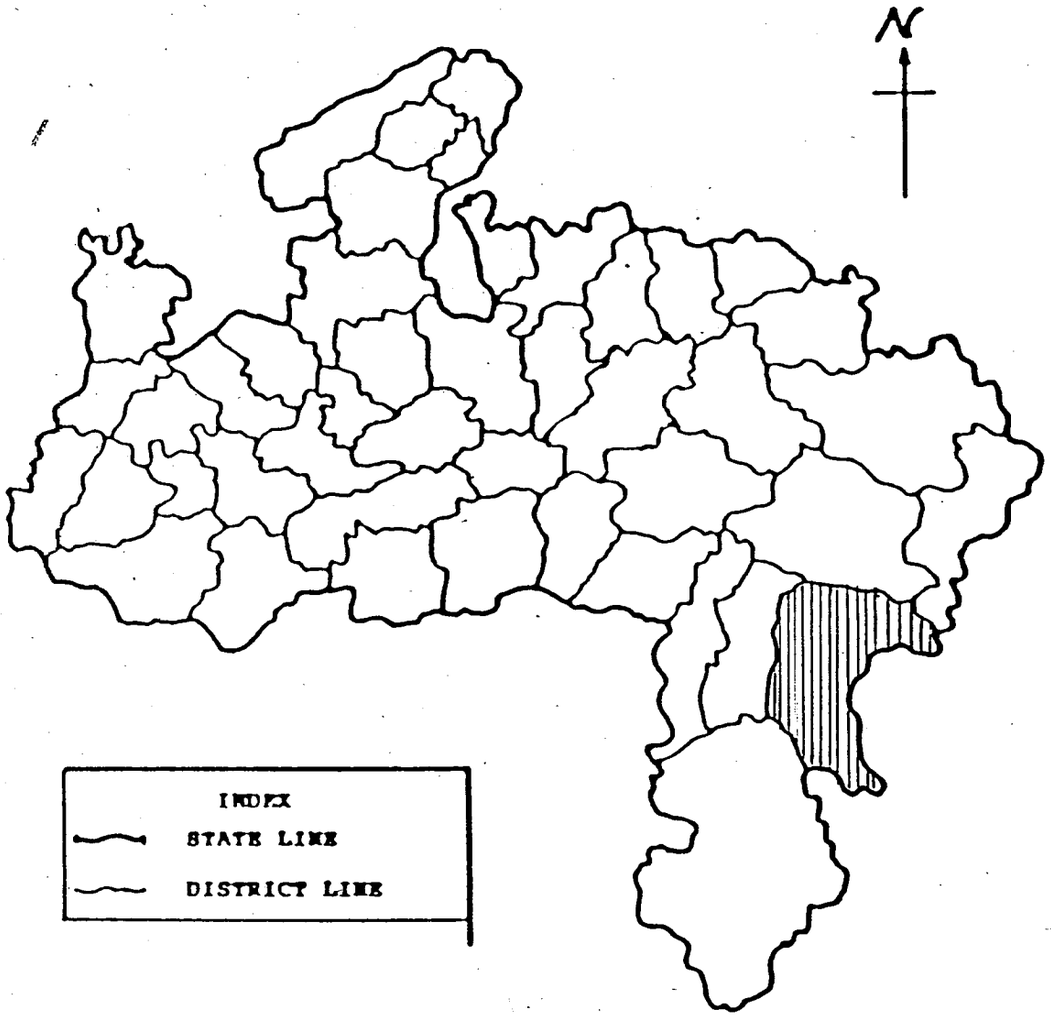
2.1.2 Area, Villages and Population

The total area of Raipur district is 2,257.1 thousand hectares. From the point of view of population and the number of villages Raipur district occupied first position having 4,006 villages and 30,79,476 persons.

2.1.3 Population by Castes and Occupations

According to 1981 census, the percentage of rural population in Raipur district was 82.81. Scheduled castes and scheduled tribes formed 13.77 and 18.56 per cent of the total population

LOCATION OF RAIPUR DISTRICT IN
MADHYA PRADESH



AREA UNDER RAIPUR DISTRICT

respectively. The proportion of male and female population was almost same (about 50 per cent). Workers formed 45.66 per cent of the total population. Among the various occupational categories, cultivators, agricultural labourers and other workers formed 22.68 per cent, 13.73 per cent and 9.25 per cent of the total population respectively. The literacy percentage of the district was 30.57. As in the case of other regions of the country, the percentage of literacy among rural population was remarkably lower (25.70 per cent) as compared to the urban population (54.06 per cent). (Table 2.1)

Table 2.1 Main features of population, Raipur districts, 1981 census

Characteristic	No.of persons	%
1. Total population	30,79,476	100.00
i) a) Rural	25,50,251	82.81
b) Urban	5,29,225	17.19
ii) a) Scheduled Castes	4,24,145	13.77
b) Scheduled Tribes	5,71,484	18.56
c) Other Castes	20,83,847	67.67
iii) a) Male	15,32,692	49.77
b) Female	15,46,784	50.23
2. Total workers	14,06,143	45.66
a) Cultivators	6,98,602	22.68
b) Agril.labourers	4,22,714	13.73
c) Other workers	2,84,827	9.25
3. Literats persons	9,41,565	30.57
i) Rural	6,55,445	25.70
ii) Urban	2,86,120	54.06

2.1.4 Operational Holdings

According to the Agricultural Census 1985-86 nearly 26.88 per cent area in Raipur district was operated by 71.61 per cent marginal and small farmers. On the other side of the distribution scale medium and large holdings together formed 11.87 per cent of the total number but these larger size holdings occupied disproportionately high percentage (49.39 per cent) of the total area. (Table 2.2)

Table 2.2 Classification of holdings by size of farms, Raipur district

Size of holdings	No.of holdings	(Area) hect.
Marginal (below 1 hect.)	2,66,529	1,17,364
(%)	(50.61)	(11.33)
Small (1- 2)	1,10,608	1,61,055
(%)	(21.00)	(15.55)
Semi Medium (2- 4)	86,986	2,45,794
(%)	(16.52)	(23.73)
Medium (4- 10)	51,695	3,06,458
(%)	(9.81)	(29.59)
Large (10 & above)	10,836	2,05,144
(%)	(2.06)	(19.80)
Total	5,26,654	10,35,815
(%)	(100.00)	(100.00)

Source : Agril. Census, 1985-86

2.1.5 Land Use

Of the total geographical area of 2,257.1 thousand hectares the net area sown was 41.49 per cent. Forest occupied 40.19 per cent, land not available for cultivation, 6.98 per cent and other uncultivated land excluding fallow land, 6.35 per cent. Thus, it is observed that a significant portion of the geographical area of Raipur district was under forest. The gross cropped area of the district was 1178.7 thousand hectares. The cropping intensity was 125.89 per cent. (Table 2.3)

Table 2.3 Land utilization of Raipur districts 1990-91

(Area- thousand hect.)

Particulars		Thousand Hectares	(%)
1.	Forest	907.2	40.19
2.	Not available for cultivation	157.6	6.98
	a) Land put to non agril. uses	135.3	6.00
	b) Barren and un-cultivable land	22.3	0.98
3.	Other un-cultivated land excluding fallow land	143.4	6.35
	a) Permanent pastures and grazing land	142.9	6.33
	b) Land under Misc. trees, crops & groves	0.5	0.02
4.	Culturable waste land	47.2	2.09
5.	Fallow land	65.4	2.90
	a) Current fallow	27.8	1.23
	b) Old Fallow	37.6	1.67
6.	Net area sown	936.3	41.49
Total Geographical Area		2257.1	100.00
Gross cropped area		1,178.7	-
Cropping Intensity (%)		125.89	-

2.1.6 Sources of Irrigation

Of the gross cropped area of 1,178.7 thousand hectares, 383.3 thousand hectares were irrigated. Irrigation was mainly done by canals (84.24 per cent). Tanks provided irrigation to 6.39 per cent of the irrigated area. The area irrigated by wells was 4.10 per cent. (Table 2.4)

Table 2.4 Area irrigated by different sources, Raipur district, 1990-91

(Area- thousand hectares)

Source	Area	%
Canals	322.9	84.24
Tanks	24.5	6.39
Tubewells	6.7	1.75
Wells	15.7	4.10
Others	13.5	3.52
All Sources	383.3	100.00

2.1.7 Cropping Pattern

The cropping pattern was kharif dominated. Raipur was one of the districts of Chhattisgarh plain called the "rice bowl" of the state. Paddy was the most largely cultivated crop of the district contributing 71.89 per cent of the cropped area. The area covered by kharif and rabi crops was 78.83 and 21.17 per cent respectively. Food crops and non-food crops covered 96.40 and 3.60 per cent respectively. The area under cereals & millets was 76.34 per cent followed by pulses (18.57 per cent). Although, crop statistics does not mention it is lathyrus (teora) (13.75 per cent) which dominated the pulses. (Table 2.5)

Table 2.5 Area under important crops in Raipur district, 1990-91

(Area - thousand hectares)

C r o p	Area under crops	% to total area
Paddy	847.3	71.89
Wheat	17.0	1.44
Jowar	0.6	0.05
Bajra	-	-
Barley	-	-
Maize	0.7	0.06
Other cereals & Millets	34.2	2.90
Total Cereals & Millets	899.8	76.34
Gram	17.1	1.45
Tur	2.6	0.22
Moong-Moth	6.1	0.52
Urad	22.7	1.92
Kulthi	4.1	0.35
Teora	162.1	13.75
Pea	0.6	0.05
Lentil	2.8	0.24
Other Pulses	0.8	0.07
Total Pulses	218.9	18.57
Groundnut	8.6	0.73
Sesamum	8.6	0.73
Rape & Mustard	0.8	0.07
Linseed	21.3	1.81
Soybean	0.3	0.02
Other Oilseeds	0.4	0.03
Total Oilseeds	40.0	3.39
Other Crops	20.0	1.70
Cross Cropped Area	1,178.7	100.00
Kharif Crops	929.2	78.83
Rabi Crops	249.5	21.17
Food Crops	1,136.3	96.40
Non-Food Crops	42.4	3.60

2.1.8 Productivity of important crops

The yield of paddy, the most important crop of the district, was 1,435 kg/hectare. The yields of paddy, wheat, bajra, kodo-kutki, gram, soybean and rapeseed-mustard were higher in 1990-91 than the average yield of the district. The yields of paddy, bajra and groundnut were more in the district than those of the state. (Table 2.6)

Table 2.6 Yield per hectare of important crops in Raipur district, 1990-91

	(Yield (kg/hectare)	
C r o p	Average	Obtained
Paddy	1130	1435
Wheat	920	1152
Jowar	910	878
Bajra	790	1000
Barley	870	-
Maize	1110	908
Kodon-Kutki	170	180
Gram	450	515
Arhar	910	847
Moong-Moth	250	188
Urad	250	198
Kulthi	400	291
Teora	340	338
Pea	340	236
Lentil	400	299
Sugarcane	3900	3245
Groundnut	850	845
Ramtil	220	151
Til	170	170
Soybean	630	813
Linseed	200	150
Rape & Mustard	550	698
Safflower	280	222
Castor	390	300

Source : Agricultural Statistics, Directorate of Agriculture, Govt. of M.P., Bhopal.

2.1.9 Irrigated Crops

The gross irrigated area was 386.3 thousand hectares in 1990-91. Since paddy was the most important crop, it formed the highest percentage of the irrigated area (94.49).

Of the cropped area of 1,178.7 thousand hectares, 386.3 thousand hectares (32.77 per cent) were irrigated. Wheat, paddy, rape-mustard, groundnut and other crops (specially fruits & vegetables) were the crops irrigated to a large extent. Wheat was irrigated to the extent of 47.06 per cent followed by paddy (43.08 per cent), rape-mustard (25.0 per cent) and groundnut (19.77 per cent).

In the case of other crop groups specially sugarcane, spices and fruits & vegetables although the area under these crop was very small the extent of irrigation was very high. (Table 2.7)

Table 2.7 Irrigated crops, Raipur district

(Area in '000 ha.)

Crops	Irrigated area	% to total	Cropped area	% of irrigated area to area under crop
Rice	365.0	94.49	847.3	43.08
Wheat	8.0	2.07	17.0	47.06
Jowar	-	-	0.6	-
Bajra	-	-	-	-
Maize	-	-	0.7	-
Barley	-	-	-	-
Others cereals & Millets	0.1	0.02	34.2	0.29
Total Cereals	373.1	96.58	899.8	41.46
Gram	1.0	0.26	17.1	5.05
Tur	-	-	2.6	-
Others Pulses	0.7	0.18	199.2	0.35
Total Pulses	1.7	0.44	218.9	0.78
Groundnut	1.7	0.44	8.6	19.77
Sesamum	-	-	8.6	-
Soybean	-	-	0.3	-
Sunflower	0.1	0.02	-	-
Rape & Mustard	0.2	0.05	0.8	25.00
Linseed	-	-	21.3	-
Other Oil Seeds	-	-	0.4	-
Total Oil Seeds	2.0	0.52	40.0	5.00
Sugarcane	0.3	0.08	0.3	100.00
Spices	1.4	0.37	2.2	63.64
Fruits & Vegetables	7.2	1.87	15.1	47.68
Fodder Crops	0.1	0.02	-	-
Cotton	-	-	1.7	-
Others Crops+Fodder	0.5	0.13	0.7	71.43
Total Irrigated Area	386.3	100.00	1178.7	32.77

2.2 Vidisha District

2.2.1 Location

Vidisha district is nearly centrally located. It lies between latitudes $23^{\circ}20'$ and $24^{\circ}22'$ north and longitudes $77^{\circ}24'$ and $78^{\circ}18'$ east. The district is surrounded by Sagar district in the east, Raisen district in the south, Bhopal district in the west and Guna district in the north and north-west. The district lies in the plateau with scattered hills with an elevation between 427 metres to 671 metres.

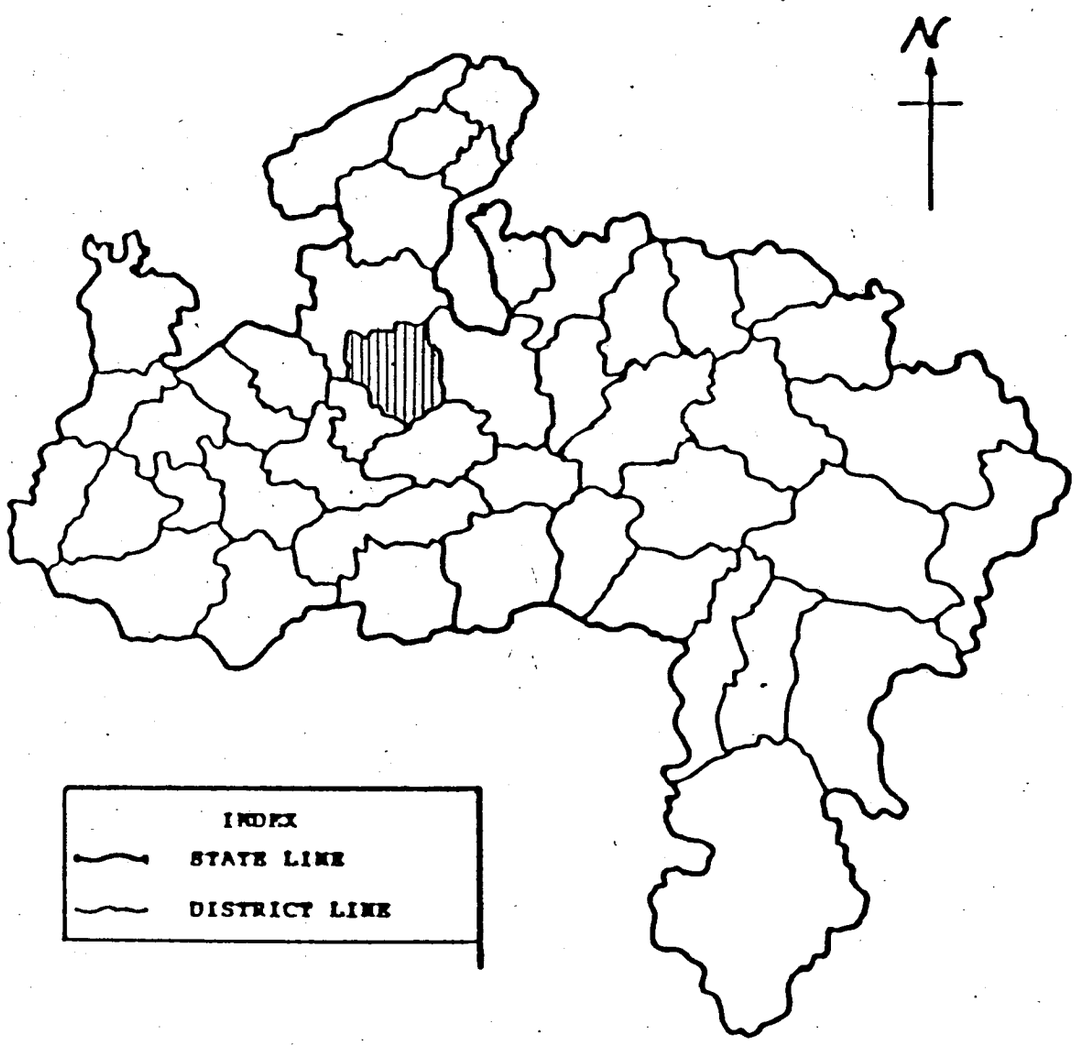
2.2.2 Area, Villages and Population

The total area of Vidisha district was 730.2 thousand hectares. It had 1,618 villages with a population of 7,83,098 (1981 census). The density of population (per hectare) was 1.07.

2.2.3 Population by Castes and Occupations

Of the total population (7,83,098) about 83 per cent was rural and the remaining 16.97 per cent, urban. The percentage of scheduled castes population was 20.44, while the scheduled tribes population formed only 4.30 per cent. The remaining population (75.26 per cent) belonged to other castes. Male & female population formed 53.17 and 46.83 per cent of the total population respectively. The percentage of total workers was 31.68. Cultivators, agricultural labourers and other workers formed 15.27, 8.94 and 7.47 per cent respectively. The literacy percentage of the district was 25.51. The percentage of literacy among urban population was remarkably higher (53.18 per cent) as compared to the rural population (19.85 per cent). (Table 2.8)

LOCATION OF VIDISHA DISTRICT IN
MADHYA PRADESH



AREA UNDER VIDISHA DISTRICT

Table 2.8 Main features of population, Vidisha district, 1981 census

Characteristics			No.of persons	(%)
1.	Total population		7,83,098	100.00
	i)	a) Rural	6,50,193	83.03
		b) Urban	1,32,905	16.97
	ii)	a) Scheduled Castes	1,60,044	20.44
		b) Scheduled Tribes	33,706	4.30
		c) Others Castes	5,89,348	75.26
	iii)	a) Male	4,16,356	53.17
		b) Female	3,66,742	46.83
2.	Total Workers		2,48,059	31.68
		a) Cultivators	1,19,610	15.27
		b) Agril. Labourers	69,989	8.94
		c) Other Workers	58,460	7.47
3.	Literats persons		1,99,752	25.51
	i)	Rural	1,29,074	19.85
	ii)	Urban	70,678	53.18

2.2.4 Operational Holdings

Vidisha district had 1,03,027 holdings. Of these 19.0 per cent were marginal, 18.26 per cent small, 22.67 per cent semi-medium, 26.12 per cent medium and 13.95 per cent were large. Marginal & small holdings formed 37.26 per cent of the total number. These occupied only 6.68 per cent of the area. On the other hand big land holders (medium + large) formed 40.07 per cent of the total number of holdings but commanded a comparatively larger percentage of area (80.97). (Table 2.9)

Table 2.9 Classification of holdings by size of farms, Vidisha district

Size of holdings	No.of holdings	Area (Hectares)
Marginal (below 1 hect.)	19,578	8,591
(%)	(19.00)	(1.57)
Small (1 - 2)	18,816	27,913
(%)	(18.26)	(5.11)
Semi Medium (2- 4)	23,351	67,453
(%)	(22.67)	(12.35)
Medium (4- 10)	26,907	1,69,385
(%)	(26.12)	(31.01)
Large (10 & above)	14,375	2,72,924
(%)	(13.95)	(49.96)
Total	1,03,027	5,46,266
(%)	(100.00)	(100.00)

Source- Agricultural Census, 1985-86

2.2.5 Land use

The total geographical area was 730.2 thousand hectares and 71.31 per cent of it was net area sown. Of the remaining area 14.31 per cent was under forest, 6.38 per cent was not available for cultivation, 5.20 per cent was under pastures, grazing land, tree crops and groves, and 1.88 per cent was culturable waste. The gross cropped area was 568.7 thousand hectares and the cropping intensity was 109.22 per cent. (Table 2.10)

Table 2.10 Land utilization of Vidisha District, 1990-91

(Area- Thousand Hect.)

Particulars	Thousand Hect.	%
1. Forest	104.5	14.31
2. Not available for cultivation	46.6	6.38
a) Land put to non agril.uses	35.5	4.86
b) Barren and un-cultivable land	11.1	1.52
3. Other un-cultivated Land excluding fallow land	38.0	5.20
a) Permanent pasture and grazing land	37.9	5.19
b) Land under Misc.tree crops & groves	0.1	0.01
4. Culturable waste land	13.7	1.88
5. Fallow land	6.7	0.92
a) Current fallow	4.0	0.55
b) Old Fallow	2.7	0.37
6. Net area sown	520.7	71.31
Total Geographical Area	730.2	100.00
Gross cropped area	568.7	Cropping intensity 109.22

2.2.6 Sources of Irrigation

In 1990-91, the area under irrigation was 71.9 thousand hectares. Of the gross cropped area of 568.7 thousand hectares, only 12.64 per cent was irrigated. The main sources of irrigation were canals (43.67 per cent), other sources (36.58 per cent), wells (15.44 per cent) and tube wells (3.34 per cent) (Table 2.11).

Table 2.11 Area irrigated by different sources in Vidisha district, 1990-91

Source	Area	Percentage
Canals	31.4	43.67
Tanks	0.7	0.97
Tubewells	2.4	3.34
Wells	11.1	15.44
Others	26.3	36.58
All sources	71.9	100.00

2.2.7 Cropping Pattern

Vidisha district was rabi crops dominated which covered 83.93 per cent of the gross cropped area. Food and non-food crops covered 84.72 and 15.28 per cent respectively. Cereals and pulses dominated the cropping pattern. These two crop groups occupied 84.16 per cent of the cropped area. Oilseeds and "other crops" occupied sizable area of 11.02 and 4.22 per cent respectively.

Wheat was the major cereal (39.86 per cent area of the gross cropped area). The kharif cereals like jowar and maize together occupied 5.30 per cent of the gross cropped area. Pulses occupied 38.68 per cent. Among pulses gram was important and occupied 28.29 per cent area. Other important pulses were lentil (7.81 per cent) and teora (lathyrus) 1.28 per cent. Among oilseeds (11.03 per cent), soybean covered largest area (8.76 per cent). (Table 2.12)

Table 2.12 Area under important crops in Vidisha district, 1990-91

(Area in '000 hect.)

Crop	Area under crops	% to total area
Paddy	1.2	0.21
Wheat	226.7	39.86
Jowar	22.5	3.96
Bajra	-	-
Barley	0.3	0.05
Maize	7.6	1.34
Other Cereals & Millets	0.3	0.05
Total Cereals & Millets	258.6	45.47
Gram	160.9	28.29
Tur	3.0	0.53
Moong-Moth	2.3	0.40
Urad	0.1	0.02
Kulthi	-	-
Teora	7.3	1.28
Pea	1.9	0.33
Lentil	44.4	7.81
Other Pulses	0.1	0.02
Total Pulses	220.0	38.68
Groundnut	3.4	0.60
Sesamum	0.4	0.07
Rape & Mustard	3.0	0.53
Linseed	5.0	0.88
Soybean	49.8	8.76
Other Oil Seeds	1.1	0.19
Total Oil Seeds	62.7	11.03
Other Crops	27.4	4.82
Gross Cropped Area	568.7	100.00
Kharif Crops	91.4	16.07
Rabi Crops	477.3	83.93
Food Crops	481.8	84.72
Non-Food Crops	86.9	15.28

2.2.8 Productivity of Important Crops

The yields obtained for the crops like wheat, paddy, bajara, barley, groundnut, soybean and rape & mustard in 1990-91 were higher than the normal yields. (Table 2.13)

Table 2.13 Yield per hectare of Important Crops in Vidisha district 1990-91

Crop	Yield - Kg./hect. Average	Obtained
Paddy	540	622
Wheat	900	1,046
Jowar	860	830
Bajra	760	1,000
Barley	1130	1,456
Maize	1320	1,158
Kodo-kutki	350	333
Gram	740	694
Arhar	780	738
Moong-Moth	490	352
Urad	390	299
Kulthi	400	-
Teora	490	451
Pea	500	392
Lentil	600	506
Sugarcane	2200	1855
Groundnut	900	942
Ramtil	220	171
Til	240	237
Soybean	530	1,013
Linseed	430	413
Rape & Mustard	490	685
Safflower	290	-
Castor	450	-

Source : Agricultural Statistics, Directorate of Agriculture, Govt.of M.P. Bhopal

2.2.9 Irrigated crops

Wheat occupied highest percentage of irrigated area (54.24). The next was gram (41.45 per cent).

Wheat and gram were the crops irrigated to a large extent. Gram was irrigated to the extent of 18.52 per cent followed by wheat (17.2 per cent). Sugarcane and fruits & vegetables were the other crops irrigated to the extent of 100 per cent and 61.54 per cent but the area under these crops was not significant.(Table 2.14)

Table 2.14 Irrigated crops, Vidisha district

(Area in '000 ha.)

Crop	Irrigated area	% to total	Cropped area	% of Irrigated area to area under crop
Rice	-	-	1.2	-
Wheat	39.0	54.24	226.7	17.2
Jowar	-	-	22.5	-
Bajra	-	-	-	-
Maize	-	-	7.6	-
Barley	-	-	0.3	-
Other Cereals & Millets	0.1	0.14	0.3	33.33
Total Cereals	39.1	54.38	258.6	15.12
Gram	29.8	41.45	160.9	18.52
Tur	-	-	3.0	-
Others Pulses	1.7	2.36	56.1	3.03
Total Pulses	31.5	43.81	220.0	14.32
Groundnut	-	-	3.4	-
Sesamum	-	-	0.4	-
Soybean	-	-	49.8	-
Sunflower	-	-	-	-
Rape & Mustard	-	-	3.0	-
Linseed	-	-	5.0	-
Other Oil Seeds	-	-	1.1	-
Total Oil Seeds	-	-	62.7	-
Sugarcane	0.3	0.42	0.3	100.00
Spices	0.1	0.14	1.6	6.25
Fruits & Vegetables	0.8	1.11	1.3	61.54
Fodder crops	-	-	-	-
Cotton	-	-	0.2	-
Other Crops +(Fodder)	0.1	0.14	24.0	0.42
Total [illegible]	71.9	100.00	568.7	12.64

2.3 Sehore District

2.3.1 Location

Sehore district lies in the Central part of the State and adjoins Vidisha. The shape of the district is irregular. The extremities of Sehore district measure from $22^{o}33'$ to $23^{o}54'$ north latitudes and from $76^{o}28'$ to $78^{o}02'$ east longitudes. Physiographically it lies on the eastern part of the Malwa plateau and includes a narrow belt of the Narmada alluvial plain in the south. The district is bounded by the districts of Rajgarh and Shajapur in the north west, Bhopal in the east, Raisen in the south east and Hoshangabad in the south. In the west lies Dewas district.

2.3.2 Area, villages and Population

The total area of Sehore district is 656.4 thousand hectares. The district had 1,115 villages with a population of 6,57,381. The density of population per hectare was 1.00.

2.3.3 Population by Castes and Occupations

The total population of Sehore district according to 1981 Census was 6,57,381. The district is rural in character as more than 85 per cent (86.69 per cent) of its population is rural. Scheduled tribes population formed 9.11 per cent. Scheduled castes (20.34 per cent) and other castes population formed 70.55 per cent. The break up of working population showed that as high as 80 per cent of the total workers were engaged in agricultural pursuits (cultivators + agricultural labourers). The literacy percentage of the district was 23.23. The literacy percentage among rural & urban population was 19.46 and 47.78 respectively. (Table 2.15)

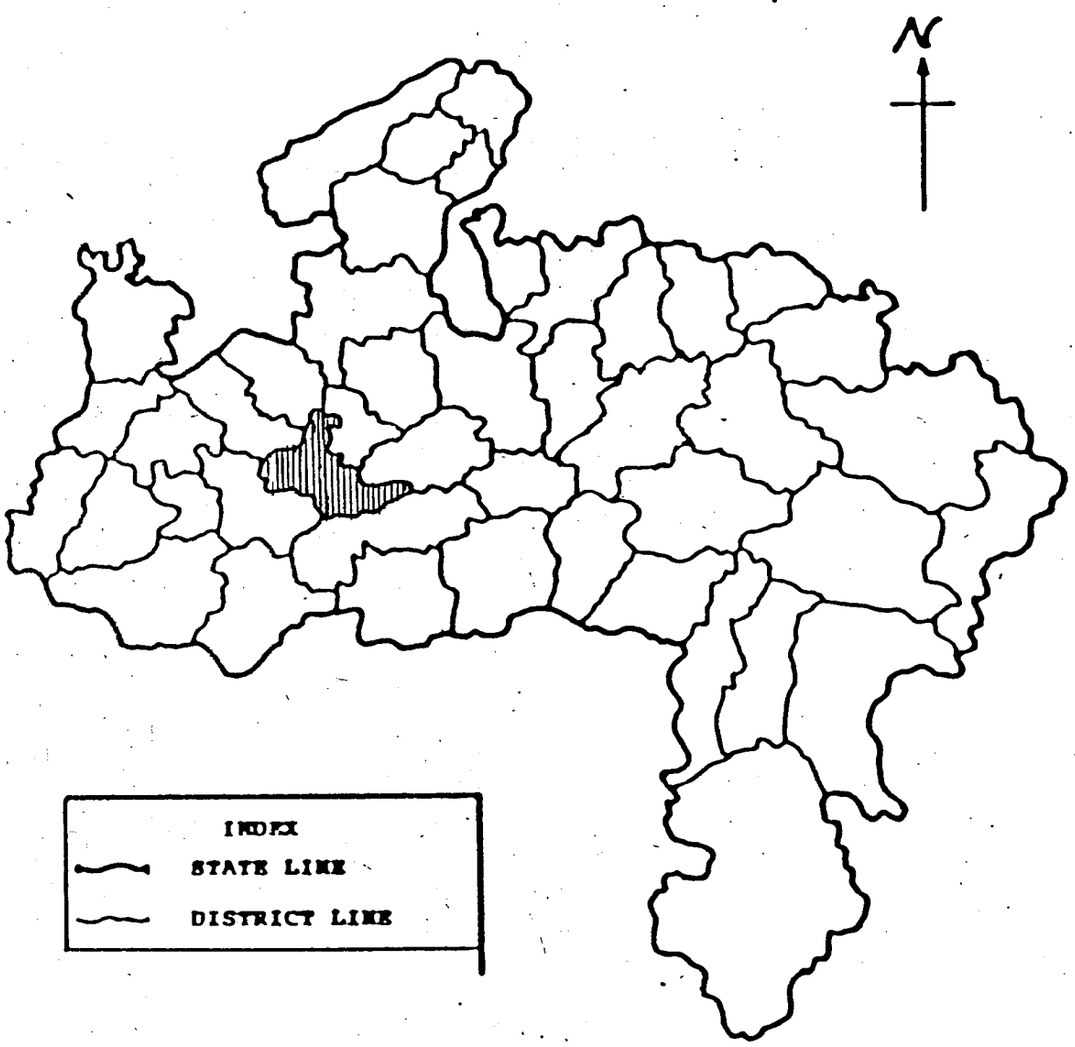
Table 2.15 Main features of population, Sehore district, 1981 Census

Characteristic	No.of persons	%
1. Total population	6,57,381	100.00
i) a) Rural	5,69,899	86.69
b) Urban	87,482	13.31
ii) a) Scheduled castes	1,33,679	20.34
b) Scheduled tribes	59,890	9.11
c) Other castes	4,63,812	70.55
2. Total workers	2,30,436	35.05
a) Cultivators	1,12,740	17.15
b) Agril.labourer	71,159	10.82
c) Other workers	46,537	7.08
3 Literate persons	1,52,692	23.23
i) Rural	1,10,896	19.46
ii) Urban	41,796	47.78

2.3.4 Operational Holdings

An area of 4,09,465 hectares was operated by 85,369 farmers. Nearly 7.30 per cent area was operated by 36.57 per cent marginal and small farmers. On the other hand 79.37 per cent land was operated by 40.42 per cent larger group of farmers (medium &large farmers). (Table 2.16)

LOCATION OF SEHORE DISTRICT IN
MADHYA PRADESH



AREA UNDER SEHORE DISTRICT

Table 2.16 Classification of holdings by size of Farms, Sehore district

Size of holdings	No.of holdings	(Area) hect.
Marginal (below 1 hect.)	15,115	6,159
(%)	(17.71)	(1.50)
Small (1-2)	16,097	23,747
(%)	(18.86)	(5.80)
Semi Medium (2-4)	19,646	54,583
(%)	(23.01)	(13.33)
Medium (4-10)	24,692	1,55,028
(%)	(28.92)	(37.86)
Large (10 & above)	9,819	1,69,948
(%)	(11.50)	(41.51)
Total	85,369	4,09,465
(%)	(100.00)	(100.00)

Source :- Agril. Census 1985-86

2.3.5 Land Use

The geographical area of Sehore district was 656.4 thousand hectares, Of this 56.19 per cent was net area sown. Forest covered 26.17 per cent, land not available for cultivation, 6.05 per cent, other un-cultivated land excluding fallow, 8.82 per cent and culturable waste land 2.04 per cent. The gross cropped area of this district was 479.6 thousand hectares with a cropping intensity of 130.04 per cent. (Table 2.17)

Table 2.17 Land Utilization of Sehore district

(Area-thousand hect.)

Particulars	Thousand Hectares	%
1. Forest	171.8	26.17
2. Not available for cultivation	39.7	6.05
a) Land put to non agril.uses	33.9	5.16
b) Barren and un-cultivable land	5.8	0.89
3. Other un-cultivated land excluding fallow land	57.9	8.82
a) Permanent pasture & grazing land	57.9	8.82
b) Land under Misc tree crops & groves	-	-
4. Culturable waste land	13.4	2.04
5. Fallow land	4.8	0.73
a) Current Fallow	1.7	0.26
b) Old Fallow	3.1	0.47
6. Net area sown	368.8	56.19
Total Geographical Area	656.4	100.00
Gross cropped area	479.6	-
Cropping Intensity (%)	130.04	-

2.3.6 Sources of Irrigation

An area of 89.8 thousand hectares was under irrigation. It formed 18.72 per cent of the gross cropped area. Wells (61.80 per cent) were the main sources of irrigation. Canals irrigated 11.25 per cent, tube wells (7.13 per cent) and tanks (2.67 per cent) were other sources. (Table 2.18)

Table 2.18 Area Irrigated by different sources, Sehore district,
(Area- thousand Hect.)

Sources	Area	%
Canals	10.1	11.25
Tanks	2.4	2.67
Tubewells	6.4	7.13
Wells	55.5	61.80
Others	15.4	17.15
All Sources	89.8	100.00

2.3.7 Cropping Pattern

Sehore district largely depended on rabi crops which occupied 55.61 per cent of the gross cropped area of 479.6 thousand hectares. The area under food and non-food crops was 52.79 and 47.21 per cent respectively.

Oilseeds and cereals dominated the cropping pattern. Oilseeds covered the largest area (35.11 per cent) followed by cereals & millets (31.86 per cent) and pulses (19.10 per cent). The other food crops like fruits, vegetables, spices and sugarcane also occupied considerable area (8.8 thousand hectares of the gross cropped area).

Among oilseeds soybean was the major crop and occupied 31.98 per cent area of the gross cropped area. Wheat was the second most largely cultivated crop of the district contributing 24.81 per cent of the cropped area. The other important crops were gram (13.49 per cent) and jowar (5.13 per cent). "Other crops" including fruits vegetables, spices, sugarcane and fibre crops covered 13.93 per cent of the gross cropped area. (Table 2.19)

Table 2.19 Area under important crops in Schore district ,

(Area in '000 hect.)

Crop	Area under crop	% to total Area
Paddy	3.1	0.65
Wheat	119.0	24.81
Jowar	24.6	5.13
Bajra	-	-
Barley	-	-
Maize	5.9	1.23
Other cereals & Millets	0.2	0.04
Total Cereals & Millets	152.8	31.86
Gram	64.7	13.49
Tur	13.9	2.90
Moong-moth	1.2	0.25
Urad	0.7	0.15
Kulthi	-	-
Teora	3.2	0.67
Pea	0.7	0.15
Lentil (Masoor)	5.7	1.19
Other Pulses	1.5	0.30
Total Pulses	91.6	19.10
Groundnut	0.9	0.19
Sesamum	4.2	0.88
Rape & Mustard	0.1	0.02
Linseed	9.4	1.96
Soybean	153.4	31.98
Other Oil Seeds	0.4	0.08
Total oil seeds	168.4	35.11
Other crops	66.8	13.93
Gross cropped area	479.6	100.00
Kharif crops	212.9	44.39
Rabi Crops	266.7	55.61
Food Crops	253.2	52.79
Non-food crops	226.4	47.21

2.3.8 Productivity of important crops

Except moong moth, urad, pea, lentil, sugarcane and castor, the yieldsof other crops were higher than the normal yield. (Table 2.20)

Table 2.20 Yield per hectare of important crops in Sehore district

Crops	(Yield-(Kg./hect.) Average	obtained
Paddy	620	879
Wheat	1,000	1,761
Jowar	950	1,286
Bajra	900	-
Barley	1,000	1,458
Maize	990	1,158
Kodon-Kutki	320	455
Gram	620	1,002
Arhar	780	908
Moong-moth	399	375
Urad	350	276
Kulthi	400	400
Teora	500	567
Pea	450	433
Lentil	800	771
Sugarcane	4500	4337
Groundnut	915	928
Ramtil	300	-
Til	180	218
Soybean	560	1,146
Linseed	400	513
Rape & Mustard	460	785
Safflower	500	500
Castor	750	714

Source : Agricultural Statistics, Directorate of Agriculture, Govt.of M.P., Bhopal

2.3.9 Irrigated Crops

In Sehore district irrigated area was mainly occupied by wheat which covered 64.36 per cent of the gross irrigated area. Gram and sugarcane were other important irrigated crops and covered 25.50 and 6.23 per cent of the gross irrigated area. Oilseeds covered the largest area under cultivation (168.4 thousand hectares) but the area under irrigation was negligable.

Of the gross cropped area of 479.6 thousand hectares 89.8 thousand hectares or 18.72 per cent was irrigated. Wheat, gram, sugarcane, spices and fruits & vegetables were the crops irrigated to a large extent. Wheat was irrigated to the extent of 48.57 per cent followed by gram (35.39 per cent). (Table 2.21)

Table 2.21 Irrigated crops, Sehore district

(Area in '000 hect.)

Crops	Irrigated area	% to total	croped area	% of irrigated area to area under crops
Rice	-	-	3.1	-
Wheat	57.8	64.36	119.0	48.57
Jowar	-	-	24.6	-
Bajra	-	-	-	-
Maize	-	-	5.9	-
Barley	-	-	-	-
Other Cereals & Millets	-	-	0.2	-
Total Cereals	57.8	64.36	152.8	37.83
Gram	22.9	25.50	64.7	35.39
Tur	-	-	13.9	-
Others Pulses	0.6	0.67	13.0	4.61
Total Pulses	23.5	26.17	91.6	25.65
Groundnut	-	-	0.9	-
Sesamum	-	-	4.2	-
Soybean	-	-	153.4	-
Sunflower	-	-	-	-
Rape & Mustard	-	-	0.1	-
Linseed	0.1	0.11	9.4	1.06
Other Oil seeds	-	-	0.4	-
Total Oil seeds	0.1	0.11	168.4	0.06
Sugarcane	5.6	6.23	5.6	100.00
Spices	1.2	1.33	1.7	70.59
Fruits & Vegetables	0.6	0.67	1.5	40.00
Fodder crops	0.5	0.56	-	-
Cotton	-	-	8.2	-
Other crops + (Fodder)	0.5	0.56	49.8	1.00
Total	89.8	100.00	479.6	18.72

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CHAPTER III

SUBSIDIES PROVIDED BY THE GOVERNMENT OF MADHYA PRADESH

Following kinds of subsidies were provided by the Government of Madhya Pradesh for various agricultural development programmes.

3.1 Minor Irrigation

With a view to utilise available groundwater potential for increasing production and productivity, the State Government launched a massive dug wells programme with the assistance of Financing Institutions. Liberal rates of subsidy, matching not only Govt. of India's scale but also allowing additional subsidy as per unit costs fixed by NABARD from time to time were allowed.

3.1.1 Well & pump

Under this programme loan was provided by Cooperative/ Commercial/Rural Banks for digging of new wells, repairs of old wells and purchase of electric and diesel pumps. Subsidies were provided by the department of irrigation.

Table 3.1 Rates of subsidy for wells and pumps on cost prescribed by NABARD

(Figures-percentage)

Category of farmers	0-1 Ha.	1-2 Ha.
1. Scheduled tribes farmers	50	50
2. Scheduled castes farmers	33.33	25
3. Other farmers	33.33	25

(i) Subsidy for small and marginal farmers below poverty line was to the extent of 100 per cent

(ii) Subsidy for SC/ST farmers having 2-4 hectares was up to 50 per cent

(iii) Subsidy for other cultivators for well+pump was 33.33 per cent with a maximum of Rs. 7000.

3.1.2 Sprinklers

Marginal farmers (All categories)-33.33 per cent. Small farmers (All categories)-25 per cent, SC/ST small & marginal farmers-50 per cent

3.1.3 Tube wells

On successful tubewells 50 per cent subsidy or a maximum of Rs. 25,000 was admissible.

3.2 Integrated Programme for Rice Development

This was a Centrally Sponsored Scheme envisaging maximisation of rice production in eastern zone of the country where it has been stagnant for quite some time. In this programme 230 blocks in 15 districts of Madhya Pradesh were included with 75:25 share from Govt. of India & State Government respectively. The 15 rice producing districts of M.P. were Raipur, Durg, Rajnandgaon, Bastar, Bilaspur, Raigarh, Surguja, Balaghat, Seoni, Rewa, Satna, Sidhi, Shahdol, Mandla and Jabalpur.

The programme camprised distribution of minikits of certified seed on subsidised rates, plant protection equipments, farm implements, demonstrations and training of farmers. The subsidy was available for zinc sulphate, weedicides, plant protection chemicals and purchase of power tillers to small & marginal farmers.

Table 3.2 Subsidy admissible under Intengrated Programme for Rice Development

S.No.	Item of input	Subsidy allowed
1.	Certified seed	Rs. 140 per Qt.
2.	Zinc sulphate	50 per cent
3.	Weedicide	50 per cent
4.	Plant protection chemicals	50 per cent or maximum of Rs. 100 - per hectare
5.	Plant Protection Equipments	General farmers-50 per cent subsidy or maximum of Rs.250 Small & marginal Farmers- Maximum of Rs.400
6.	Seed treatment	100 grm packet for Rs.0.50 only.
7.	Agricultural Equipments	Distribution of Hand/ Bullock operated equipments on 50 per cent subsidy
8.	Power Tillers	Marginal Farmers-33.33 per cent subsidy or maximum of Rs.10,000/- per power tiller
9.	Demonstration	Quantity of weedicide used in one hectare is free of cost
10.	Extension demonstrations	Maximum amount Rs.1000 per hectare. Demonstration of less expensive technique in 20 hectares field

3.3 National Pulse Development Project

This Centrally Sponsored Scheme, with 25 per cent share of the State Govt. is under operation since 1986-87. It covers over 21 districts and all major pulse crops like arhar, moong, urad, gram, lentil and pea. The selected 21 pulse producing districts of the state are Durg, Rajnandgaon, Bilaspur, Jabalpur, Chhindwada, Narsinghpur, Sagar, Damoh, Rewa, Sidhi, Morena, Bhind,

Guna, Ujjain, Mandsaur, Shajapur, Raisen, Vidisha, Rajgarh, Betul and Hoshangabad.

The main components of the project are distriution of seed minikits at nominal cost, laying out of block demonstrations/adaptive trials and distribution of culture packets. (Table 3.3)

Table 3.3 Details of subsidy admissible for the pulse development programme

S.No.	Item of Input	Rate of subsidy
1.	Seed minikits	- Supply of seed minikit for 0.2 hectare at 10 per cent cost
2.	Block demonstrations	- One demonstration field of 10 hectares in each development block. Subsidy for per hectare demonstration- - For gram, pea - Rs.1400 - For arhar, moong urad - Rs. 900 - For lentil - Rs.1000
3.	Plant Protection chemicals	- 50 per cent subsidy or a maximum of Rs. 75 per hectare.
4.	Seed village	- Subsidy of Rs.200 per quintal for production of seed under block demonstration
5.	Foundation seed	- Subsidy of Rs.400 per quintal to the seed producing institutions for production of foundation seed.
6.	Certified seed	- Subsidy of Rs.300 per quintal
7.	Plant Protection Equipment	- 50 per cent subsidy on the cost of equipment or a maximum of Rs.500 per equipment.

3.4 National Oilseed Development Project

The aim of this project is to maximise the production of oilseeds. Twenty two oilseeds producing districts were included in this project. Sharing pattern of subsidy is 75:25 for Govt.of India and State Govt. respectively.

Main components of programme are production and distribution of seed, plant protection measures, subsidies on distribution of plant protection equipments and agricultural implements, demonstrations, distribution of gypsum pyrite and rhizobium culture.

Table 3.4 Details of subsidy admissible for oilseed development project

S.No.	Item	Particulars
1.	Plant Protection Equipment	For small and marginal farmers-50% of the cost of equipments or a maximum of Rs.300 per equipment.
2.	Seed cum fertilizer drill/Groundnut shelling equipment	(a) For small & marginal farmers-50 per cent of the price of equipment or a maximum of Rs.500 per equipment (b) For SC/ST farmers-sale at 10 per cent of the price of equipment worth Rs.500
3.	Gypsum/Pyrite distribution	Rs. 200 per hectare for all types of farmers
4.	Seed minikits of groundnut(kharif & summer), soybean	for 0.1 hectare For small & marginal farmers and farmers belonging to SC/ST
5.	Seed minikits of ramtil, linseed, til, rape & mustard & toria	for 0.2 hectare.- For small & marginal farmers & farmers belogning to SC & ST
6.	Crop Demonstration	

S.No.	Crop		Amount per demonstration (In Rs.)
1.	Groundnut(Kharif)	50 Ha.	50,000
2.	Groundnut(Summer)	"	60,000
3.	Til (Sesamum)	"	15,000
4.	Soybean	"	35,000
5.	Linseed	"	20,000
6.	Rape-Mustard & Toria	"	30,000
7.	Ramtil(Niger)	10 Ha.	2,000

3.5 Cotton Development Programme

This scheme was started in the year 1980-81 over an area of 20,000 hectares in Jhabua district. It was extended to other districts of Dhar, Ratlam, Dewas, Shajapur, Sehore, Hoshangabad, Chhindwada & Betul. There is a provision of subsidy for scheduled castes and small farmers for laying cotton demonstrations at the rate of Rs.500 per hectare.

Centrally Sponsored Intensive Cotton Development Programme is under implementation in Khandwa and Khargone districts with the objective of maximizing the production of quality cotton through (i) fertilizer application (ii) laying of demonstrations (iii) arrangement of hybrid and high yielding medium and long staple cotton seed for its distribution at subsidised rates.

Table 3.5 Details of subsidy admissible for cotton development programme

S.No.	Item	Particulars
1.	For long staple cotton seed	Rs. 500 per hectare
2.	Distribution of plant Protection Equipment	50 per cent of the cost or a maximum of Rs.300
3.	Plant Protection Chemicals	Subsidy of 25 per cent per hectare or a maximum of Rs.50 per spray

3.6 Sugarcane Development Programme

This programme is in operation with the object of increasing production in the sugar factory zones through laying of demonstrations and introduction of new varieties and extension of area to non sugar factory areas by laying demonstrations. Subsidy is provided on demonstrations, raising of seed nursery, soil and seed treatment and transportation of improved seed to sugar factory zone.

Table 3.6 Details of subsidy admissible for sugarcane development programme.

S.No.	Item	Particulars
I.	General Farmers	
1.	Stalk setts planting	50 per cent on demonstration expenses or a maximum of Rs.1200
2.	Ratoon	50 per cent on demonstration expenses or a maximum of Rs.645.
II.	Scheduled Caste Farmers	
1.	Stalk sett planting	50 per cent on demonstration expenses or a maximum of Rs.640
2.	Ratoon	50 per cent on demonstration expenses or a maximum of Rs.324
III	Production of improved seed	Rs.500 for laying secondary nursery
IV.	Seed Treatment Chemicals	50 per cent on cost of chemicals or a maximum of Rs.25 per hectare
V.	Soil Treatment Chemicals	50 per cent on cost of chemicals or a maximum of Rs.25 per hectare
VI.	Transportation of improved seed	Rs. 15 per quintal
VII.	Non Factory zones demonstration	50 per cent on the demonstration or a maximum of Rs.640
VIII.	For scheduled castes farmers	50 per cent on demonstration or a maximum of Rs.640

3.7 Minikits of Improved New Seeds

With a view to introducing new suitable varieties of jowar, bajra, ragi, kodo-kutki, maize and wheat, there is a scheme for distribution of seed minikits at nominal rates.

Distribution of seed minikit on 10 per cent cost

- For jowar, bajra, ragi, kodo-kutki and maize it is applicable only on 0.1 hectare field.
- For wheat it is applicable on 0.5 hectare field.

3.8 Subsidy on Improved Seeds

The Govt. has declared the subsidy on following improved seeds

1. Maize - Rs. 110 per quintal
2. Paddy - Rs. 140 per quintal

This subsidy is provided through, seed corporation.

3.9 Demonstrations of Cereal Crops

Table 3.7 Details of subsidy admissible for demonstrations of cereal Crops.

S.No.	Item	Particulars (subsidy @)
1.	Demonstration on 10 hectares field of Jowar	Rs. 450 per hectare
2.	Demonstration on 4 hectares field of Bajra	Rs. 437 per hectare
3.	Demonstration on 4 hectares field of Kodo Kutki	Rs. 140 per hectare
4.	Demonstration on 4 hectares field of Wheat	Rs. 507 per hectare

3.10 Programme For Assistance to Small and Marginal Farmers

The main aim of this programme is distribution of seed minikits to small and marginal farmers at 10 per cent cost for 0.1 hectare field of castor, soybean and groundnut and 0.2 hectare field of niger, sesamum, rape-mustard, safflower, moong, urad, tur, lobia, gram, lentil and pea.

3.11 Maize demonstration in Tribal Sub Plan Area

This scheme is applicable for scheduled castes and schedule tribes farmers. Under this scheme a subsidy of Rs.815 per hectare is given for demonstration on 0.2 to 1.0 hectare field for seed, fertilizer and plant protection chemicals.

3.12 Scheme for Pulses and Oilseed Minikits Distribution in Tribal Sub-Plan Area

With a view to introducing new suitable varieties of oilseeds and pulses in 16 tribal districts a scheme for distribution of seed minikits at 10 per cent cost is in operation since 1989-90.

3.13 Distribution of Plant Protection Equipments

This scheme is only for tribal farmers of tribal subplan area. Under this scheme subsidy is provided to tribal farmers on hand driven plant protection equipment. The subsidised amount is 75 per cent of the cost of equipment or a maximum of Rs.400

3.14 Soil Conservation

In view of about 84 per cent area under rainfed farming in the State, dry farming practices and judicious utilization of available moisture play a vital role in agricultural production. The subsidy provided under this programme is as follows (Table 3.8)

Table 3.8 Details of subsidy admissible on soil conservation -

S.No.	Item	Particulars (Rates of Subsidy)
1.	Contour bunding	75 per cent of the cost or maximum of Rs.112.50
2.	Reclamation of ravine lands	50 per cent of the cost or maximum of Rs.625 per hectare
3.	River Valley Project (Bench Terracing)	
a.	General farmers	25 per cent of the cost
b.	Scheduled Tribes farmers	50 per cent of the cost
4.	Integrated Land Development Programme	
a.	Small farmers	25 per cent of the cost
b.	Marginal farmers	33 per cent of the cost

3.15 Bio-Gas Development Project

Table 3.9 Details of subsidy admissible on biogas plants

Biogas capacity	Subsidy rates	
	SC/ST	Others
1. Cubic Metre	Rs. 1,250	Rs. 1,000
2. Cubic Metres	Rs. 2,350	Rs. 1,560
3 Cubic Metres	Rs. 2,860	Rs. 1,900
4. To 10 Cubic Metres	--	Rs. 2,140

3.16 Improved Agricultural Implements

(i) Free demonstration of improved agricultural implements on farmers fields

(ii) Scheduled tribes farmers get 50 per cent, marginal farmers get 33½ per cent and small farmers gets 25 per cent subsidy on purchase of improved agricultural implements.

(iii) There are 56 farmer's service centres established under Centrally Sponsored Improved Agricultural Implements Extension Scheme. These farmers service centres provide power tillers, threshers, , power sprayers, diesel pumps to the farmers on minimum rates under hire facilities.

3.17 Training of Farmers

(i) The scheme is meant to organise visits of farmers within and outside the state for 10 and 20 days to acquaint them with modern agricultural technologies. The farmers are paid @ Rs. 15 per day for 10 days within the state and @ Rs. 20 per day for 20 days outside the state together with a sum of Rs. 150 and Rs. 275 per farmer as travelling expenses within and out side the state respectively.

(ii) Various trainings on modern technology are imparted to tribal farmers including training of tribal couples on Government Farms and organisation of Farmers. Day preceding kharif and rabi seasons. There is a provision to spend Rs. 10 per head per day on farmers day organisation. Farmers interzonal exchange at Government cost is organised to acquaint the tribal farmers with modern agriculture techniques within and outside state and also on Government farms.

3.18 Animal Husbandry Programme

(i) Special Livestock Breeding Programme

Special Livestock Breeding Programme which was earlier known as special livestock production programme is being implemented in 20 districts of the state. The main object of this scheme is to involve small farmers, marginal farmers and Agricultural labourers in raising the income through animal husbandry programmes. It also aims at increasing the production of milk, eggs and meat, which contribute greatly in bridging the nutritional gap between the actual requirement and availability.

This programme has great potential in creating productive employment and generating supplementary income among weaker sections of society.

The rate of subsidy for Jersey production, poultry, piggery and sheep production is as follows.

Table 3.10 Details of rates of subsidy admissible for animal husbandry programmes

S.No.	Item	Rates of subsidy admissible
1.	Jersey breeding	66 per cent for marginal and small farmers
2.	Poultry	25 per cent for small farmers 33 per cent for marginal farmers 50 per cent for scheduled tribes farmers
3.	Piggery & Sheep production	25 per cent for small farmers 33 per cent for marginal farmers 50 per cent for scheduled tribes farmers
4.	Distribution of breeding bulls . — — — —	2/3 under normal plan, 100 per cent under tribal sub plan, 100 per cent under special componant plan
5.	Fodder Demonstration Plots and Chaffcutters	Rs. 50 1/4 acre plot under normal plan Rs. 100 1/4 acre plot under tribal sub subplan Rs. 75 1/4 acre plot under special componant plan

3.19 Allotment and distribution of subsidy

The total allotment of subsidy in the state was Rs. 5,547.47 lakhs. Of the allotted amount Rs. 4,654.97 lakhs was utilised. Thus the amount utilised was 83.91 per cent of the amount allotted. The largest amount distributed was for minor irrigation. It was Rs. 2,425.62 lakhs or 43.72 per cent of the allotted amount. The second important item was crop production and claimed Rs. 1,532.77 lakhs or 27.63 per cent of the allotted amount. Soil conservation was next in order and the amount allotted for it was Rs. 308.70 lakhs or 5.56 per cent.

Among the districts for crop production Raipur was allotted highest amount of Rs. 111.60 lakhs. For minor irrigation it was Vidisha which had the highest amount of Rs. 175.34 lakhs allotted. Sehore district claimed the highest amount (Rs.12.88 lakhs) of subsidy for animal husbandry programmes among all the districts. (Table 3.11)

Therefore, these three districts were selected for the respective programmes.

A block each was selected in three districts. Blockwise data indicated that Dhamtari block in Raipur district, Basoda block in Vidisha district and Ashta block in Sehore district had highest allotment of subsidy. (Table 3.12)

Table 3.12 Distribution of subsidy in selected blocks of selected districts

S.No.	Selected Districts	Selected Blocks	Programmes/ schemes	Sub-Programmes	Subsidy amount (Rs.)
1.	Raipur	Dhamtari	Crop-productivity	IRDP subsidy for improved seeds	7,50,135
2.	Vidisha	Basoda	Minor Irrigation	NODP For Wells tubewells sprinklers	30,22,860
3.	Sehore	Ashta	Animal Husbandry	For Milch Animals Cows+ Buffaloes	9,17,697

Table 3.11 Allotment and distribution of subsidy, (districtwise), M. P.

(Rs.-lakhs)

District	Total allot-ment	Amount of subsidy utilized	Distribution of utilised subsidy on				
			Minor Irri-gation	Crop Produ-ctivity	Soil Conser-vation	Other	Animal Husbandry
Raipur	266.55	241.11	127.95	111.60	--	1.56	2.802
Durg	287.11	276.62	96.70	92.21	5.01	82.70	12.912
Rajnandgaon	40.75	38.72	--	38.72	--	--	0.280
Bastar	89.86	64.36	0.32	26.42	32.44	5.18	0.500
Bilaspur	82.51	69.65	33.86	34.74	--	1.05	3.462
Surguja	131.79	83.95	23.59	46.45	4.22	9.69	0.310
Raigarh	78.07	76.23	23.43	52.41	0.06	0.33	1.022
Jabalpur	210.98	182.79	55.50	53.74	71.00	2.55	10.770
Balaghat	117.82	106.57	48.85	18.49	29.85	9.38	0.310
Chhindwara	164.76	126.32	56.50	39.90	24.29	5.63	0.476
Seoni	138.08	32.53	23.00	29.70	16.10	13.73	2.632
Mandla	98.36	78.17	20.80	28.69	--	28.69	0.30
Narsinghpur	226.89	189.79	149.72	38.54	--	2.53	0.072
Sagar	NA	--	--	--	--	--	5.100
Damoh	NA	--	--	--	--	--	0.100
Panna	55.04	54.56	46.75	1.62	0.11	6.08	0.310
Tikamgarh	73.16	73.16	46.50	5.63	21.03	--	4.200
Chhatarpur	76.96	76.94	57.09	14.51	--	5.34	5.220
Rewa	138.93	124.71	83.91	33.44	--	7.36	0.444
Sidhi	111.71	96.04	69.08	25.20	--	2.56	0.676
Satna	75.66	50.00	19.50	22.32	5.79	2.39	0.412
Shahdol	86.32	60.24	28.00	25.62	--	6.62	0.410
Indore	54.34	54.28	33.55	12.92	2.16	5.65	11.442
Dhar	229.84	82.86	29.47	53.10	--	0.29	7.806
Jhabua	142.71	135.26	67.31	35.86	19.46	12.63	0.340

Table 3.11 Cont/-

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Khargone	108.09	108.09	12.66	69.00	--	26.43	0.230
Khandwa	105.39	102.26	60.00	42.00	--	0.26	0.209
Ujjain	141.09	141.09	58.25	55.18	18.55	9.11	8.290
Mandsaur	138.99	133.91	56.76	69.71	--	7.44	11.044
Ratlam.	70.87	69.19	27.70	23.23	5.54	12.72	7.166
Dewas	86.31	83.13	61.20	13.21	3.66	5.06	9.956
Shajapur	140.53	139.94	79.00	34.22	7.66	19.06	0.210
Morena	184.43	49.58	26.59	22.99	--	--	0.274
Bhind	119.09	79.08	59.25	16.86	1.29	1.68	--
Gwalior	93.70	88.54	77.65	9.66	--	1.23	0.090
Shivpuri	129.34	126.79	84.15	26.77	7.54	8.33	0.304
Guna	249.52	247.04	132.75	36.39	22.99	54.91	0.570
Datia	NA	NA	--	--	--	--	0.100
Bhopal	108.30	49.69	39.00	9.17	--	1.52	11.81
Sehore	218.60	210.79	92.77	104.91	7.06	6.05	12.884
Raisen	95.61	91.55	59.50	32.05	--	--	8.198
Vidisha	213.57	209.80	175.34	34.46	--	--	0.258
Betul	105.03	96.20	68.00	19.71	--	8.49	0.626
Rajgarh	167.28	161.49	114.67	35.40	2.89	8.53	2.000
Hoshangabad	93.53	41.15	--	36.02	--	5.13	6.442
Total M.P.	5547.47	4654.97	2425.62	1532.77	308.70	387.88	152.95

Source 1. Deputy Directors of Agriculture of the respective districts

2. Directorate of Veterinary Services, Govt.of M.P., Bhopal

* Durg and Rajnandgaon districts to gether

-x-x-x-x-x-x-x-x-x-

CHAPTER IV

RESULTS & DISCUSSION

4.1 Crop Production-Raipur District

As mentioned in Chapter I Raipur district was selected for the study of subsidy on crop production. In Raipur district Dhamtari block was selected and 50 respondents formed the sample. These included 30 beneficiaries and 20 non-beneficiaries.

A beneficiary farmer is one who has taken the loan and availed the subsidy permissible with it. On the other hand non-participant farmer is one who has not taken loan.

4.1.1 Operated Area

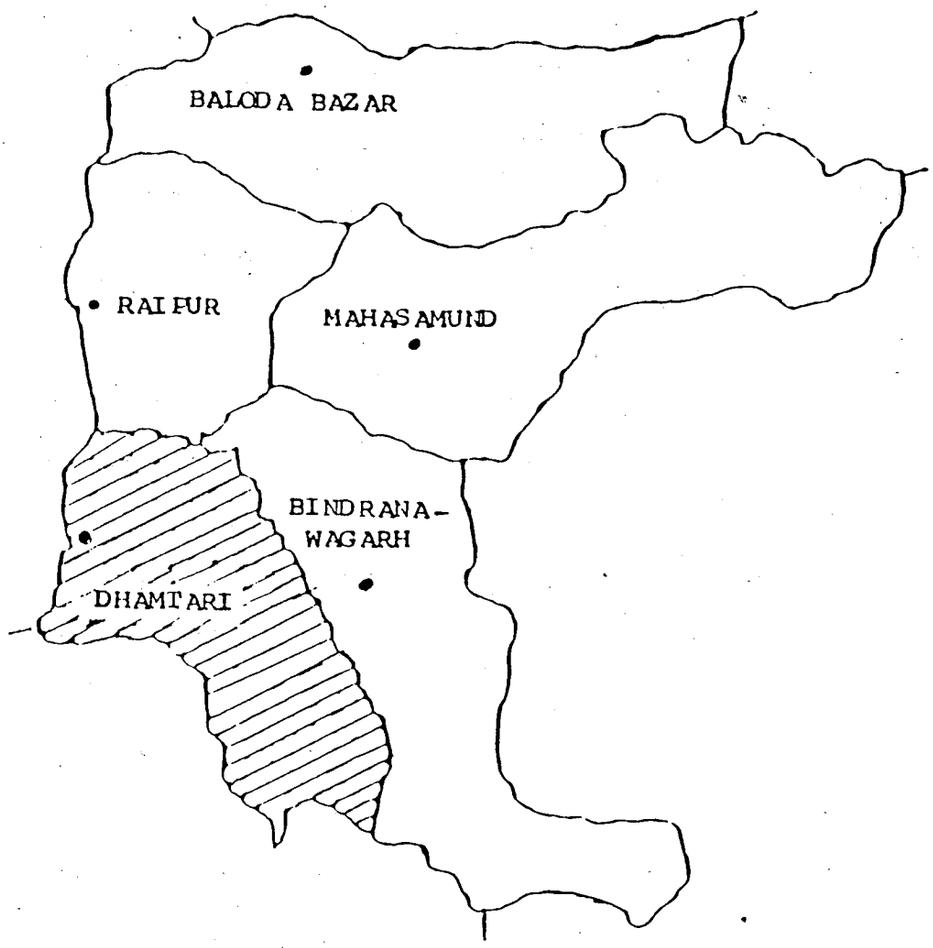
The 30 participant farmers had a total operated area of 199.83 hectares or 6.66 hectares per holding. Twenty non-participant farmers operated an area of 52.05 hectares or an average size of 2.60 hectares. Thus, the average size of holding of the participant farmers was larger by 156.15 per cent that of the non-participant farmers. While none of the participant farmers was a marginal farmer, three of the non-participant farmers belonged to that category. Again, while largest number (11) of participants belonged to medium size group, half (10) of the non-participant farmers belonged to small size group. (Table 4.1)

Table 4.1 Operated area selected farms Dhamtari Block, Raipur District, 1 9

(Area in hectares)

Size group	Participant				Non-participant			
	No.of farmers	Area operated	% to total	Average size of holding	No.of farmers	Area operated	% to total	Average size of holding
Marginal (Up to 1 ha.)	-	-	--	-	3	2.96	6.99	0.989
Small (1.01 to 2.0 ha)	6	11.92	5.97	1.986	10	16.84	32.35	1.684
Semi-medium (2.01 to 4 ha.)	6	16.45	8.23	2.741	5	16.59	31.88	3.318
Medium (4.01 to 10 ha)	11	73.24	36.65	6.658	1	4.86	9.34	4.86
Large	7	98.22	49.15	14.031	1	10.12	19.44	10.12
Total	30	199.83	100.00	6.66	20	52.05	100.00	2.60

LOCATION OF DHAMTARI IN RAIPUR DISTRICT



4.1.2 Irrigated Area

The sample block of Dhamtari and the villages selected in the block had a excellent source of irrigation by way of canals and wells. The villages were under the command area of dam across river Mahanadi. Therefore, there is a very high percentage of irrigated area on the selected farms. On the participant farms the percentage of irrigated area was 94.54 and on the non-participants, 90.58. Thus, in terms of irrigation there was only marginal difference between the two categories. (Table 4.2)

Table 4.2 Irrigated area, selected farms, Dhamtari Block, Raipur District

Size group	Participant			Non-participant		
	Operated area (ha.)	Irrigated area (ha.)	% of irrigated area to operated area	Operated area (ha.)	Irrigated area (ha.)	% of irrigated area to operated area
Marginal	-	-	-	2.96	2.96	100.00
Small	11.92	11.92	100.00	16.84	13.04	77.43
Semi-medium	16.45	16.08	97.75	16.59	15.49	93.37
Medium	73.24	68.78	93.91	4.86	4.86	100.00
Large	98.22	92.15	93.82	10.12	10.12	100.00
Total	199.83	188.93	94.54	52.05	47.15	90.60

4.1.3 Sources of Irrigation

As regards sources of irrigation tubewells were dominant commanding 38.33 per cent of the irrigated area on the participant farms. The next important source was canals commanding 34.20 per cent. In the case of non-participants canals were the most important sources having 45.75 per cent of the irrigated area under their command. Borewells other sources although important had half of the command area that of the canals. (Table 4.3)

Table 4.3 Sources of irrigation, selected farms, Dhamtari block, Raipur district ( )

Source of Irrigation	Participants		Non-participants	
	Area (Hect.)	%	Area (Hect.)	%
Well	37.34	19.76	7.85	16.65
Tube-well	72.42	38.33	7.49	15.88
Canal	64.61	34.20	21.57	45.75
Bore well/others	14.56	7.71	10.24	21.72
Total	188.93	100.00	47.15	100.00

4.1.4 Area Under Crops

Raipur district was under rice-zone. While elsewhere in the district rice was a kharif crop in the selected area rice was cultivated in rabi also. Therefore, on the selected participant farms paddy occupied as high as 85.13 per cent of the cropped area. The percentage on the non-participants was 75.35. The only other crop of importance was teora contributing 9.91 percent on the participant farms and 21.42 per cent on the non-participant farms. Thus, these two crops together occupied between 95 to 97 per cent of the cropped area on the two types of farms. (Table 4.4)

4.1.5 Intensity of Cropping

On the participant farms the cropped area was 338.86 hectares and the net sown area was 199.83 hectares giving a cropping intensity of 169.57 per cent. On the non-participant farms the intensity of cropping was 190.55 per cent. Thus, the cropping intensity on non-participant farms was higher than participant farms by about 21 per cent. This is because of the difference in the size of farms. The average size of farm of participants was 6.66 hectares and that of non-participants was 2.60

Table 4.4 Area under crops grown by selected farmers in Dhamtari block, Raipur District, (1)

Crops	Participants		Non- participants	
	Area under crops (ha.)	% to gross cropped area	Area under crops (ha.)	% to gross cropped area
Paddy	288.48	85.13	74.73	75.35
Wheat	0.40	0.12	-	-
Total Cereals	288.88	85.25	74.73	75.35
Gram	4.17	1.23	1.42	1.43
Urad	3.64	1.07	0.25	0.25
Lentil	1.62	0.48	0.62	0.63
Teora	33.59	9.91	21.25	21.42
Total pulses	43.02	12.69	23.54	23.73
Linseed	0.61	0.18	0.40	0.40
Total Oilseeds	0.61	0.18	0.40	0.40
Fruits and Vegetables	6.35	1.87	0.51	0.51
[illegible]	-			-
Total cropped area	338.86	100.00	99.18	100.00
Net area sown (Hectares)	199.83	-	52.05	-
Cropping Intensity(%)	169.57		190.55	

hectares. With about equal percentage of irrigated area on these two types of farms the non-participant farms had higher cropping intensity because of the smallness of size. It is universally recognised that with other things remaining equal the small farms are better managed and more intensively cropped.

4.1.6 Irrigated Crops

As regards irrigation it was found that paddy was irrigated to the extent of 94.15 per cent on the participant farms and 89.24 per cent on the non-participant farms. Besides paddy, fruits & vegetables were irrigated to the extent of 87.24 per cent on the participant farms and 100 per cent on non-participant farms.

It can be said that participant farms were in a more advantageous position as regards irrigation than the non-participant farms. The percentage of gross irrigated area to cropped area being 81.82 on the former category than the latter (67.75 per cent). (Table 4.5)

Table 4.5 Proportion of irrigated area to cropped area of different crops (Selected farmers)

Crop	Participants			Non-participants		
	Cropped area (ha.)	Irrigated area (ha.)	% of irrigated area to cropped area	Cropped area (ha.)	Irrigated area (ha.)	% of irrigated area to cropped area
Paddy	288.48	271.61	94.15	74.73	66.69	89.24
Wheat	0.40	--	--	--	--	--
Total Cereals	288.88	271.61	94.02	74.73	66.69	89.24
Gram	4.17	0.12	2.88	1.42	--	--
Urad	3.64	--	--	0.25	--	--
Lentil	1.62	--	--	0.62	--	--
Peora	33.59	--	--	21.25	--	--
Total Pulses	43.02	0.12	0.28	23.54	--	--
Linseed	0.61	--	--	0.40	--	--
Total Oilseeds	0.61	--	--	0.40	--	--
Fruits and Vegetables	6.35	5.54	87.24	0.51	0.51	100.00
			--	--	--	--
Total Area	338.86	277.27	81.82	99.18	67.20	67.75

4.1.7 Yields of Crops

The yield of kharif paddy was 38.94 qt/ha. On the participant farms it was higher (39.26 qt/ha.) than the non-participant farms (33.80 qt/ha.) However in the case of rabi paddy the yield of non-participants was higher (61.65 qt/ha.) than the participant farms (54.58 qt/ha.) The yield of gram was much higher (6.59 qt/ha.) on the participant farms than the non-participant farms(1.55 qt/ha.) (Table 4.6)

Table 4.6 Yield of different crops -

(Yield-Qt/ha.)

Crops	Raipur (Dhamtari Block)		
	Participant	Non-participant	[illegible]
Kharif			
Paddy	39.26	33.80	[illegible]
Rabi			
Paddy	54.58	61.65	[illegible]
Gram	6.59	1.55	[illegible]

4.1.8 Loan and Subsidy

The 30 perticipant farmers received a total amo nt of Rs. 50,206 as loan. Thus, the amount per farm came to Rs.1,673.53. and Rs. 251.24 per hectare. Of this amount the subsidy portion amounted to Rs. 10,916 or Rs. 363.86 per farm and Rs. 54.63 per hectare. The subsidy portion constituted 21.74per cent of the loan amount.

However, the proportion of subsidy varied according to the size of holdings, the castes of the beneficiary and the purpose of loan. The selected farms borrowed the loan mainly for paddy crop. The inputs included paddy seed, zink sulphate and weedicide. A few farmers took loan for banana cultivation.

The items of input were seed, fertilizers and insecticides. A farmer each borrowed loan for seed of lady's finger and gram minikit. The subsidy portion varied from 16.72 per cent to 50 per cent. The bank extending the loan was the Central Cooperative Bank. (Table 4.7)

Table 4.7 Subsidy obtained by Participant farmers of Dhamtari block, Raipur District.

Purpose	No.of House holds	Amount received (Rs.)	Subsidy (Rs.)	% of subsidy to the amount received	Financing Agency
1. For Paddy					
(i) Paddy seed	24	12,100	2,661	21.99	Coop. Bank
(ii) Zinksulphate	16	7,925	1,959	24.72	Coop. Bank
(iii) Weedicide	28	19,440	3,250	16.72	Coop. Bank
2. Gram minikit	1	96	86	89.58	Coop. Bank
3. Banana minikit					
(i) Seed	2	9,475	2,375	25.06	Coop. Bank
(ii) Fertilizer	1	286	143	50.00	Coop. Bank
(iii) Insecticides	1	184	92	50.00	Coop. Bank
4. Lady's Finger					
(1) Seed	1	700	350	50.00	Coop. Bank
Total	30	50,206	10,916	21.74	
Per farm		1673.53	363.86		
Per hectare of operated area		251.24	54.63		

4.1.9 Asset formation

Since all the cases of bank borrowings of the selected farms pertained to crop loans, no asset formation could be noticeable. Since post utilization study was confined to income generation the subsequent utilization of higher income for asset formation or otherwise was not under the perview of the study.

4.1.10 Utilization and Impact of subsidised inputs

As mentioned earlier, all the participants received crop loans. The crops included paddy, gram, banana and lady's finger. Our investigation showed that all the inputs received against loan were totally used and were used for the purposes for which drawn. Thus, the utilization was total. In addition to the loan portion the farmers used home produced inputs and inputs purchased at their own cost. Impact of any particular input at a farm level needs systematic agronomical trials. These trials are conducted to eliminate the impact of other inputs and other biases as regards soil types, fertility levels, irrigation, technology etc. by following a systematic sampling design.

Evidently, this was not done in the current study nor was feasible. The only factor presumed to be responsible was use of bank loan and thereby use of subsidised inputs. Naturally, the results should be seen with these limitations in mind. The comparison of performance of participant farmers with the non participant farmers is presumed to be due to use of bank loan and subsidy.

The net profit for paddy on the participant farms was Rs. 5,257.60 against Rs. 4,574.54 on the non-participant farms. Thus, the participant farms had a higher profit of Rs. 683.06 than the non-participant farms. Another crop was gram, and the net profit for this crop on participant farms was Rs. 2,470.05 The profit on non participant farms was only Rs. 740.15. The third group of crops for which participant borrowed the loan was fruits and vegetables. For this group the profit per hectare on participants farms was Rs. 19,492.67 as against Rs. 17,513.68 on the non-participant farms (Table 4.8)

Table 4.8 Input-output and profit per hectare, selected farms Dhamtari Block, Raipur District,

(In Rs.)

Crops	Participants			Non participants		
	Value of output	Value of Input	Profit per ha.	Value of Output	Value of Input	Profit per ha.
Paddy	11,546.86	6,289.26	5,257.60	10320.41	5745.87	4574.54
Wheat	4625.00	1150.00	3,475.00	--	--	--
Gram	4924.46	2454.41	2470.05	1,201.41	461.26	740.15
Urad	2109.89	875.00	1,234.89	(Domaged)	576.00	--
Lentil	3271.60	1064.81	2206.79	2395.16	1004.84	1390.32
Teora	1039.68	499.70	539.98	2663.43	640.80	2022.63
Linseed	600.00	245.90	354.10	1717.50	330.00	1387.50
Fruits & Vegetables	36058.26	16565.59	19492.67	51372.50	33858.82	17513.68

It is thus concluded that the participant farmers have not only utilized the loan amount and availed the related subsidy but also earned a significantly higher profit than the non-participant farms for all the crops and crop groups for which the input supply programme alongwith admissible subsidy was undertaken.

4.1.11 Role of subsidy on input use, crop pattern and production pattern

In the case of paddy crop the subsidy was provided for paddy seed, zinc sulphate and weedicides. The proportion of subsidy on these items was quite significant (21.99, 24.72 and 16.72 per cent respectively on the loan amount received). This, alongwith higher percentage of irrigation on participants farms has resulted in the higher percentage of paddy (85.13) on participant farms than the non participant farms (75.35).

The higher input per hectare on participant farms has resulted in higher value of output and thereby higher profit per hectare (Table 4.8)

Similarly distribution of gram minikit has resulted in higher value of input, output and therefore net profit per hectare.

Subsidised supply of banana seed, fertilizer and insecticides and seed of lady's finger have resulted in the higher profitability per hectare (Rs. 19,492.67 per hectare) on participant farms than non participant farms (Rs. 17,513.68 per hectare)

As far as crop pattern it was observed that paddy constituted higher percentage of gross cropped area (85.13) on the participant farms than the non participant farms (75.35). In the case of fruits & vegetables the percentage was higher (1.87) on participant farms than non participant farms (0.51) per cent)

This indicated that the subsidies have definite impact on crop pattern, input structure, and profitability. It can also be said that in the absence of subsidies the farmers would not have adopted better seed, adequate fertilizers and applied insecticides.

To the question as to who guided the participants in getting loan and subsidy all the 30 participants told that it was Rural Agriculture Extension Officer (RAEO). More over, they expressed that they did not face any difficulty in getting the benefits and were fully satisfied with the existing procedure.

It was experienced by the investigator that the present administrative structure of the Department of Agriculture, District Rural Development Agency (D R D A) and the cooperative bank was satisfactory.

Continued page-59

4.2 Minor Irrigation- Vidisha district

4.2.1 Operated Area

Vidisha district selected for subsidy on minor irrigation scheme had Basoda block with the highest subsidy among all the blocks. The sample consisted 20 participants and 15 non-participants. The total area of 20 participants was 37.10 hectares or an average size of 1.85 hectares. Non-participants, on the other hand, had an operated area of 18.02 hectares or 1.20 hectares per non-participant. While participants had no marginal farmer non-participants had 1/3 marginal farmers. Among participants 5 were semi-medium farmers, whereas, non participants had none. (Table 4.9)

Table 4.9 Operated area, selected farmers, Basoda Block Vidisha District.

(Area in hectares)

Size Group	Participant				Non-Participant			
	No.of farmers	Area Operated	% to total	Average size of holding	No.of farmers	Area operated	% to total	Average size of holding
Marginal farmers	--	--	--	--	5	3.20	17.76	0.64
Small farmers	15	23.65	63.75	1.58	10	14.82	82.24	1.48
Semimedium farmers	5	13.45	36.25	2.69	--	--	--	--
Medium farmers	--	--	--	--	--	--	--	--
Large farmers	--	--	--	--	--	--	--	--
Total	20	37.10	100.00	1.85	15	18.02	100.00	1.20

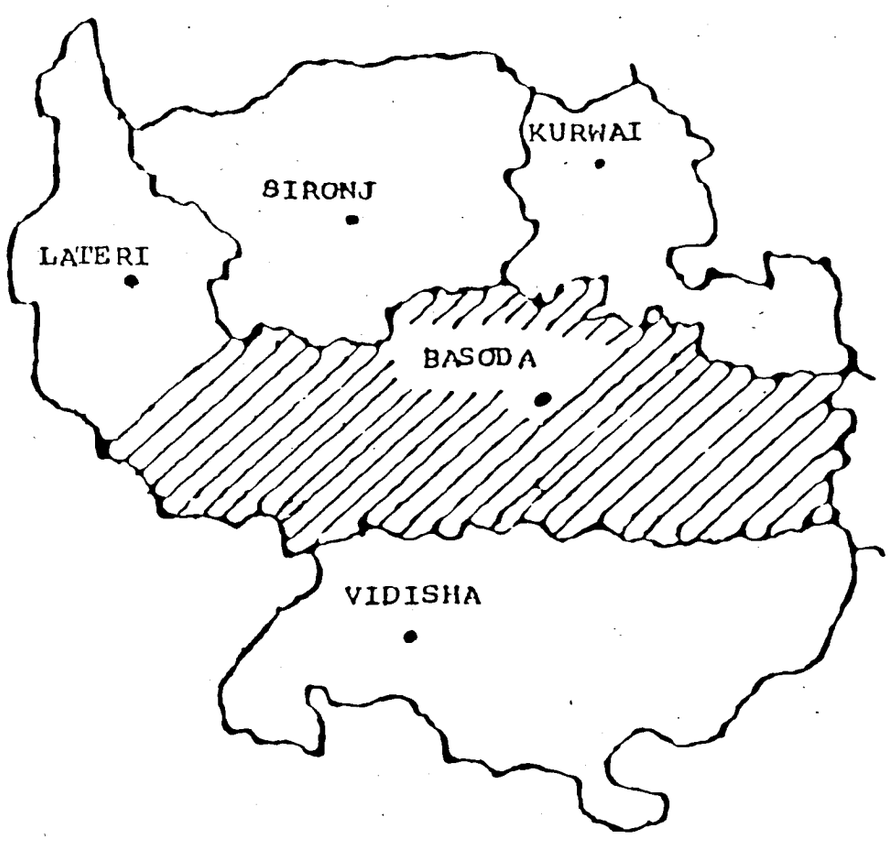
4.2.2 Irrigated Area

Since irrigation was the item of subsidy there was large difference in irrigated area between participant and non-participant farmers. While the percentage of irrigated area to operated area was 62.86 on participant farms it was only 2.38 on non-participant farms. Five marginal non-participant farms were entirely rainfed. (Table 4.10)

Table 4.10 Irrigated area, selected farms, Basoda Block, Vidisha District

Size Group	Participant			Non-Participant		
	Operated area (Hect.)	Irrigated area (Hect.)	% of irrigated area to operated area	Operated area (Hect.)	Irrigated area (Hect.)	% of irrigated area to operated area
Marginal farmers	--	--	--	3.20	--	--
Small farmers	23.65	14.39	60.84	14.82	0.43	2.90
Semimedium farmers	13.45	8.93	66.39	--	--	--
Medium farmers	--	--	--	--	--	--
Large farmers	--	--	--	--	--	--
Total	37.10	23.32	62.86	18.02	0.43	2.38

LOCATION OF BASODA IN VIDISHA DISTRICT



4.2.3 Sources of Irrigation

Wells were the predominant sources of irrigation. On the selected farms the entire irrigated area of 23.32 hectares was commanded by wells. On non-participant farms besides wells, nalahs were tapped for irrigation. (Table 4.11)

Table 4.11 Sources of Irrigation selected farms, Basoda Block, Vidisha District 199[illegible]-91

Source of Irrigation	Participants		Non-Participants	
	Area (Hect.)	%	Area (Hect.)	%
Well	23.32	100.00	0.03	6.98
Tube-well	--	--	--	--
Canal	--	--	--	--
Tank	--	--	--	--
Other (Nala)	--	--	0.40	93.02
Total	23.32	100.00	0.43	100.00

4.2.4 Area Under Crops

The availability and non availability of irrigation on the two types of farms was clearly reflected in the cropping patterns. The diversification of cropped area on participant farms was such that moong, arhar and groundnut were grown only on the participant farms. Further, the proportion of area under cash crops like gram (28.83) and soybean (35.57) was higher on participant farms than the non participant farms where it was 23.77 and 14.86 per cent respectively. Due to higher irrigation facility the intensity of cropping was much higher (148.46 per cent) on participant farms than the non-participant farms (112.04 per cent)(Table 4.12).

Table 4.12 Area under crops grown by selected farmers in Basoda block of Vidisha District 1990-91

Crops	Participants		Non Participants	
	Area under crops (Hect.)	% to Gross cropped area	Area under crops (Hect.)	% to Gross cropped area
Wheat	17.58	31.92	10.19	50.47
Total Cereals	17.58	31.92	10.19	50.47
Moong	0.45	0.82	--	--
Arhar	1.38	2.50	--	--
Gram	15.88	28.83	4.80	23.77
Lentil(Masoor)	--	--	2.20	10.90
Total Pulses	17.71	32.15	7.00	34.67
Soybean	19.59	35.57	3.00	14.86
Groundnut	0.20	0.36	--	--
Total Oilseeds	19.79	35.93	3.00	14.86
Total Cropped area (Hect.)	55.08	100.00	20.19	100.00
Net Area Sown (Hect.)	37.10	--	18.02	--
Cropping Intensity(%)	148.46	--	112.04	--

4.2.5 Irrigated Crops

Non participant farms with very negligible diversification and smaller irrigated area devoted the limited irrigation potential to wheat. Participant farms, on the other hand, had besides wheat, gram and soybean under irrigated conditions. Wheat was irrigated to the extent of 67.35 per cent and gram to the extent of 67.88 per cent. Soybean was irrigated to a very small extent. (Table 4.13)

Table 4.13 Proportion of irrigated area to cropped area of different crops selected farmers) 1990-91

Crops	Participants			Non Participants		
	Cropped area (Hect.)	Irrigated area (Hect.)	% of irrigated area to cropped area	Cropped area (Hect.)	Irrigated area (Hect.)	% of irrigated area to cropped area
Wheat	17.58	11.84	67.35	10.19	0.43	4.22
Other cereals	--	--	--	--	--	--
Total Cereals	17.58	11.84	67.35	10.19	0.43	4.22
Moong	0.45	--	--	--	--	--
Tur	1.38	--	--	--	--	--
Gram	15.88	10.78	67.88	4.80	--	--
Lentil(Masoor)	--	--	--	2.20	--	--
Total Pulses	17.71	10.78	60.87	7.00	--	--
Soybean	19.59	0.60	3.06	3.00	--	--
Groundnut	0.20	--	--	--	--	--
Total Oilseed	19.79	0.60	3.03	3.00	--	--
Fruits & Vegetables	--	--	--	--	--	--
Fodder	--	--	--	--	--	--
Total Cropped area	55.08	23.22	42.16	20.19	0.43	2.13

4.2.6 Loan and Subsidy

The selected 20 participant farms borrowed a loan amount of Rs. 5,20,650 or Rs. 26,032.50 per sample farm and Rs. 14,033.69 per hectare of operated area. Of the total loan amount 26.76 per cent was subsidy.

All the participants borrowed for digging a well and obtaining a diesel pump each. Fifteen of the 20 borrowers who belonged to the category of small farmers borrowed from the Land Development Bank. The remaining 5 participants belonging to semi medium category borrowed from Punjab National Bank (Table 4.14)

Table 4.14 Subsidy obtained by participant farmers, Basoda Block of Vidisha District.

Size/Purpose	No of House holds	Total Amount Received (Rs.)	Subsidy (Rs.)	% of subsidy to the amount Received	Financing Agency
Small farmers					
Well+ D.pump	15	3,93,850	1,06000	26.91	Land Development Bank + Punjab National Bank
Semi-medium					
Well+ D. pump	5	1,26,800	33,333	26.29	
Total (All Groups)					
Well+ D. pump	20	5,20,650	1,39,333	26.76	
Per Farm		26,032.50	6,966.65		
Per hectare of operated area	14,033.69		3,755.60		

4.2.7 Yields of Crops

As is well known irrigation is the chief factor responsible for yield differences at the farm level. This is particularly true in the case of rabi crops like wheat and gram. On the selected farms participants obtained the wheat yield of 10.01 quintals per hectare against 6.01 quintals on the non-participant farms. Gram yielded 8.38 qt/ha. on the participant farms and 7.92 qt/ha. on the non participant farms. Soybean which needed irrigation in the later stages of growth yielded 5.56 qt/ha. on the participant farms as against 4.67 qt/ha. on the non participant farms (Table 4.15)

Table 4.15 Yield of crops on selected farms

(Qt/ha.)

Crop	Besoda (Vidisha)		
	Participant	Non Participant	Average yield
Wheat	10.01	6.01	8.54
Gram	8.38	7.92	8.27
Soybean	5.56	4.67	5.44
Groundnut	3.00	--	3.00
Moong	0.33	--	0.33
Tur (Arhar)	1.45	--	1.45
Lentil	--	3.18	3.18

4.2.8 Input, Output and Profit Per Hectare

Irrigation, no doubt, is an important factor responsible for higher production and therefore, higher yields. It also acts as a catalyst encouraging the farmers to use other inputs like fertilizers and pesticides. On selected irrigated farms this has happened. The participants not only irrigated the crops but also used fertilizer in larger quantities.

This resulted in higher yields as indicated in the earlier paragraphs. Other aspect of production is the profitability. It was observed that profit per hectare for wheat on participant farms was Rs. 2,061.15. It was Rs. 1,691.75 on the non-participant farms. In the case of gram the profit on the participant farms was Rs. 3,344.46. On the non-participant farms it was Rs.3,198.54. Profit per hectare of soybean on participant and non participant farms was Rs. 2,251.25 and Rs. 1,619.00 respectively.

It can be concluded that with the adoption of new input of irrigation not only yields of the main crops increased but the profit per hectare also increased. The profit difference was most remarkable in the cases of wheat and soybean (Table 4.16).

Table 4.16 Input Output and Profit per hectare, selected farms, Basoda Block, Vidisha District

(Figures-Rupees)

Crop	Participants			Non Participants		
	Value of Output	Value of Input	Profit per Hectare	Value of Output	Value of Input	Profit per Hectare
Wheat	3,478.38	1,417.23	2,061.15	2,445.53	753.78	1,691.75
Gram	5,073.05	1,728.59	3,344.46	4,458.33	1,259.79	3,198.54
Tur	1,159.42	226.09	933.33	--	--	--
Moong	222.22	15.55	206.67	--	--	--
Lentil	--	--	--	3,068.18	583.64	2,484.54
Soybean	3,389.48	1,138.23	2,251.25	2,800.00	1,181.00	1,619.00
Groundnut	3,000.00	1,500.00	1,500.00	--	--	--

There are two ways of comparing the profitability of an improved technology on new input with the old technology or old input. One is the comparison of the performance of adopters of new technology with those of non-adopters. The other method could be that of comparing the performance of the adopter farmers at two points of time : pre-adoption and post-adoption periods. In this study both the methods were used.

The results of the second method showed that the profit per hectare of wheat was Rs. 947.86 prior to irrigation. It increased to Rs.2,061.15 in the post irrigation period. In the case of gram the pre irrigation period profit was Rs. 2,628.18 and post irrigation profit was Rs. 3,344.46. It was also observed that with the introduction of irrigation less economical crops like lentil and jowar were replaced by more economical crops like arhar, moong soybean and groundnut. (Table 4.17)

Table 4.17 Impact of Irrigation facility on the income of participant farmers

(Value in Rs.)

Crop	Prior to Irrigation			After Irrigation		
	Value of output/ ha.	Value of input/ha.	Profit per hectare	Value of output/ ha	Value of input/ha.	Profit per hectare
Wheat	1,810.89	863.03	947.86	3478.38	1,417.23	2061.15
Gram	3872.53	1,244.35	2628.18	5073.05	1728.59	3344.46
Lentil	4780.11	1173.99	3606.12	--	--	--
Jowar	1,454.55	178.18	1,276.37	--	--	--
Arhar	--	--	--	1,159.42	226.09	933.33
Moong	--	--	--	222.22	15.55	206.67
Soybean	--	--	--	3389.48	1138.23	2251.25
Groundnut	--	--	--	3000.00	1500.00	1500.00
All Crops	11,918.08	3,459.55	8,458.53	16,322.55	6,025.69	10,296.86

A study of 20 participant farmers growing different crops showed that the number of farmers growing wheat and gram increased from pre to post irrigation period. Farmers growing lentil and jowar in the pre irrigation period switched over to other crops. There were as many as 13 farmers who started growing soybean after the irrigation came to the scene. (Table 4.18)

Table 4.18 Number of participant farmers growing different crops in pre-irrigation and post-irrigation periods

(Figures-Number)

Crop	Pre-irrigation	Post-irrigation
Wheat	13	16
Gram	6	14
Lentil	2	—
Jowar	1	—
Groundnut	—	1
Soybean	—	13
Tur	—	1
Moong	—	1

4.2.9 Asset Formation

As per details given in table 4.14 two types of assets were formed viz. irrigation well and diesel pump. The total amount received by the 20 participant farmers was Rs. 5,20,650. Out of this amount 20 wells were dug and 20 diesel pumps were purchased. The total amount mentioned above is the loan amounts used for the creation of assets. The amount might be slightly more as the borrowers used their own funds to fill the gap between the actual cost of digging the well and the price of the pump on one hand and the loan amount received on the other. But that has not been taken into consideration.

4.2.10 Utilization and Impact of Subsidised Inputs

It can be safely said that the entire amount given for the purchase of diesel pumps was fully utilized as the price of the diesel pumps is paid directly to the dealer. without any leakage. In the case of digging of wells farmers narration and the opinions of the officials indicated that the actual cost of digging of wells exceeded the loan amount. Thus, it may be said that the entire amount taken as loan was fully utilized for the purpose for which it was borrowed. The impact of loan including subsidy was evident from the preceding description.

To reiterate the facts, it is mentioned that on participant farms who borrowed loan alongwith subsidy for digging wells and purchasing diesel pumps the percentage of irrigated area to operated area was 62.86. The entire irrigated area was commanded by the newly commissioned wells and the diesel pumps used on them. There was a big change in the cropping pattern as new crops of moong, arhar, soybean and groundnut were introduced and the less economical crops like lentil and jowar were eliminated.

The main impact of the loan amount including subsidy was the aquisition of asset. These were in the form of 20 dug wells and 20 diesel pumps costing together Rs. 5,20,650.

The creation of new irrigation potential resulted in the higher yields of wheat, gram and soybean and higher profit per hectare on these crops. A comparison of the pre-irrigation and post irrigation situation of the participant farmers confirmed the higher profitability of wheat and gram. Another impact was larger number of farmers cultivating crops like wheat and gram to the elimination of lentil and jowar. It was also noted that with the use of new irrigation potential as many as 13 of the 20 participants started growing soybean.

4.2.11 Problems and suggestions

Basoda block of Vidisha district has a very hard sub structure and often very hard rocks are found after a certain depth. This increases the cost of digging. At times blasting of rocks becomes necessary. Another problem is of paucity of water in the wells. With regard to diesel pump sets the problems of transporting them from the field to the residence during the night and their repairs have cropped up.

The usual procedure of getting loan from banks is quite lengthy but it is not easier to suggest elimination of some stages at this time. The only suggestion is minimising the time taken at the ADEO or RAEO levels, the block level and the bank level. The delays at all these levels and leakages and unfair practices adopted by officials can be eliminated if stricter monitoring and evaluation is done.

It is suggested that the unit cost of digging a well be increased and the cost of pumpsets and accessories should match the current market prices. The farmers should be made aware about the qualities and drawbacks of different makes of pumpsets.

For repairs of diesel pumpsets a intensive programme of TRYSEM training be adopted in the area.

4.3 Animal Husbandry-Sehore District

4.3.1 Operated Area

For the study of subsidy on animal husbandry programme Ashta block of Sehore district was selected. Thirty participants and 20 non-participants formed the sample. Of the participant farms half (15) were landless. Another eight were having upto 1 hectare of land and the remaining 7 were small farmers (between 1-2 hectares). In the case of non-participants nearly one third (7) were landless labourers. Marginal farmers numbered 4 and small farmers, 9. The total area operated by participants (12.774 hectares) and non-participants (12.734 hectares) was nearly equal. However, the average size of holding in the case of participants was 0.426 hectares and that of non-participants, 0.637 hectares (Table 4.19)

Table 4.19 Operated area, selected farmers, Ashta Block, Sehore District

(Area - Hectares)

Size Group of farmers	Participants				Non Participants			
	No. of farmers	Area operated	% to total	Average size of holding	No. of farmers	Area operated	% to total	Average size of holding
Landless labourers	15	--	--	--	7	--	--	--
Marginal farmers	8	4.078	31.92	0.509	4	2.831	22.23	0.708
Small farmers	7	8.696	68.08	1.242	9	9.903	77.77	1.100
Semi-medium farmers	--	--	--	--	--	--	--	--
Medium farmers	--	--	--	--	--	--	--	--
Large farmers	--	--	--	--	--	--	--	--
Total	30	12.774	100.00	0.426	20	12.734	100.00	0.637

4.3.2 Irrigated Area

In the matter of irrigation both the types of farms were at equal level. While the percentage of irrigated area to operated area on participant farms was 22.93, it was 19.06 on the non participant farms (Table 4.20)

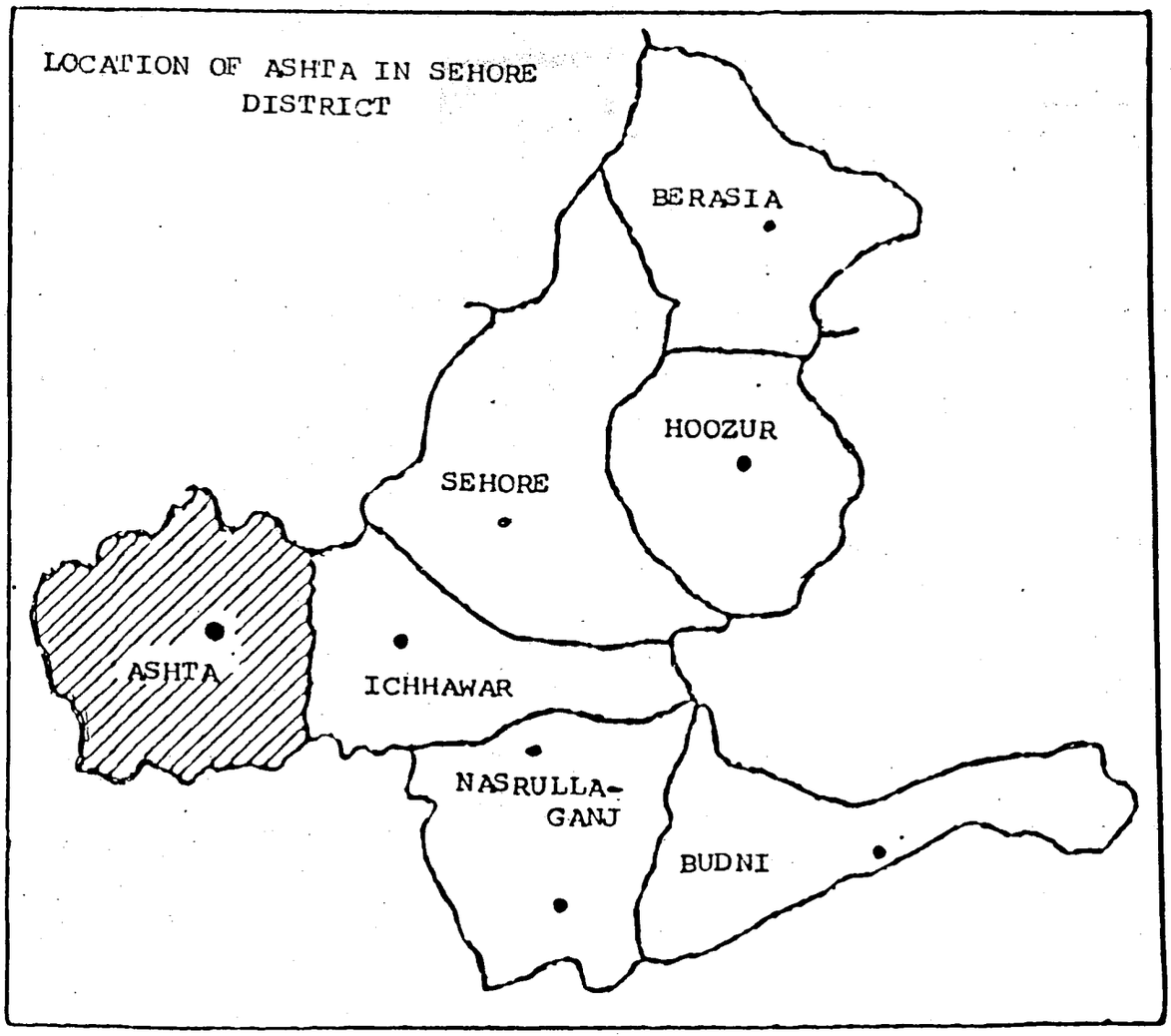
Table 4.20 Irrigated area, selected farms, Ashta Block, Sehore District

(Area - Hectares)

Size Group	Participants			Non Participants		
	Operated area	Irrigated area	% of irrigated area to operated area	Operated area	Irrigated area	% of irrigated area to operated area
Landless laboure	--	--	--	--	--	--
Marginal farmer	4.078	0.909	22.29	2.831	--	--
Small farmer	8.696	2.021	23.24	9.903	2.427	24.51
Semi-medium farmer	--	--	--	--	--	--
Medium farmer	--	--	--	--	--	--
Large farmer	--	--	--	--	--	--
Total	12.774	2.930	22.93	12.734	2.427	19.06

4.3.3 Area under crops

Since the selected participant farmers took animal husbandry programme they devoted considerable area to fodder crops. Maize for fodder occupied 13.31 per cent of the gross cropped area on participant farms. Other fodder crops were chari (1.64 per cent) and berseem (1.23 per cent). Sehore district has made tremendous progress in the cultivation of soybean because of soybean processing plants all around. This crop formed 44.19 per cent of the cropped area under participant


LOCATION OF ASHTA IN SEHORE DISTRICT
BERASIA
HOOZUR
SEHORE
ASHTA
ICHHAWAR
NASRULLA-GANJ
BUDNI

farms and 57.78 per cent on the non participant farms. Gram and wheat are the traditional crops of the area but were relegated to second and third positions because of soybean. While gram occupied 22.14 per cent on participant farms, it occupied 10.31 per cent on the non-participant farms. Wheat occupied 17.49 per cent on the participant farms and 22.66 per cent on the non-participant farms.

The cropping intensity on the participant farms was 190.68 per cent and that on non-participant farms, 153.89 per cent. (Table 4.21)

Table 4.21 Area under crops, selected farmers in Ashta block of Sehore district

Crops	Participants		Non Participant	
	Area under Crop(Hect.)	% to gross cropped area	Area under Crop(Hect.)	% to gross cropped area
Wheat	4.26	17.49	4.44	22.66
Fodder & Maize	3.24	13.31	1.01	5.16
Gram	5.39	22.14	2.02	10.31
Soybean	10.76	44.19	11.32	57.78
Chari	0.40	1.64	0.40	2.04
Berseem	0.30	1.23	0.40	2.04
Total Cropped area	24.35	100.00	19.59	100.00
Net area sown	12.77	--	12.73	--
Cropping Intensity (%)	190.68	--	153.89	--

4.3.4 Sources of Irrigation

Wells were the important sources of irrigation on both the types of farms. Tanks were other sources of irrigation. On participant farms wells irrigated as high as 82.76 per cent of the irrigated area. The percentage on non-participants was 66.67. The remaining area under irrigation was under the command of tanks. Thus, 17.24 per cent of the irrigated area on participant farms was under the command of tanks, 33.33 per cent was so on non-participant farms (Table 4.22)

Table 4.22 Sources of Irrigation, selected farms, Ashta Block, Sehore District

Source of Irrigation	Participants		Non Participants	
	Area (Hect.)	%	Area (Hect.)	%
Well	2.425	82.76	1.618	66.67
Tube-well	--	--	--	--
Canal	--	--	--	--
Tank	0.505	17.24	0.809	33.33
Total	2.930	100.00	2.427	100.00

4.3.5 Irrigated Crops

The main irrigated crops on the participant farms were wheat and berseem : Both were totally irrigated. Gram was irrigated to the extent of 15.03 per cent and soybean, 8.46 per cent. On the non-participant farms wheat was the main irrigated crop and was irrigated to the extent of 59 per cent (Table 4.23)

Table 4.23 Proportion of irrigated area to cropped area of different crops, selected farmers, Ashta block, Sehore district

Crops	Participants			Non Participants		
	Cropped area (Hect.)	Irrigated area (Hect.)	% of irrigated area to cropped area	Cropped area (Hect.)	Irrigated area (Hect.)	% of irrigated area to cropped area
Wheat	4.26	4.26	100.00	4.44	2.62	59.00
Maize	3.24	--	--	1.01	--	--
Gram	5.39	0.81	15.03	2.02	--	--
Soybean	10.76	0.91	8.46	11.32	0.81	7.16
Chari	0.40	--	--	0.40	--	--
Berseem	0.30	0.30	100.00	0.40	--	--
Total Cropped area	24.35	6.28	25.79	19.59	3.43	17.51

4.3.6 Loan and subsid

Of the 30 participants of the animal husbandry programme 13 got buffaloes and 17 got cows. In the case of buffaloes the total amount of loan and insurance admissible was Rs. 5,750. This included Rs. 5,200 as loan and Rs. 550 as premium of insurance. The subsidy admissible for scheduled castes and scheduled tribes beneficiaries was 50 per cent. For 'other castes' beneficiaries it was 33.33 per cent.

In the case of cows the total loan amount admissible was Rs. 6,140. This included Rs. 5,500 as loan and Rs. 640 as premium of insurance. The rate of subsidy for cows was same as that of buffaloes. The subsidy is admissible only on the loan portion of the amount disbursed. No subsidy is permissible on insurance part of the amount disbursed.

The total amount disbursed among 30 beneficiaries was Rs.1,79,130. This included Rs. 74,750 disbursed among 13 beneficiaries who got a buffalo each and Rs. 1,04,380 among 17 beneficiaries who got a cow each.

Of the total amount of Rs. 1,79,130 disbursed Rs.75,093 was the subsidy portion. Thus, the subsidy portion constituted 41.92 per cent of the amount disbursed.

The 30 participants included 15 landless labourers, 8 marginal farmers and 7 small farmers. (Table 4.24)

Table 4.24 Subsidy obtained by participant farmers Ashta Block, Sehore District

Size Group/ purpose of loan	No.of House hclds	Amount of loan including Insurance (Rs.)	Subsidy (Rs.)	% of subsidy to total amount
1. Landless labourer:				
Buffalo	8	46,000	19,032	41.37
Cow	7	42,980	18,315	42.61
Total	15	88,980	37,347	41.97
2. Marginal farmers				
Buffalo	2	11,500	5,200	45.22
Cow	6	36,840	15,565	42.25
Total	8	48,340	20,765	42.95
3. Small farmers				
Buffalo	3	17,250	6,916	40.09
Cow	4	24,560	10,065	40.98
Total	7	41,810	16,981	40.61
Total				
Buffalo	13	74,750	31,148	41.67
Cow	17	1,04,380	43,945	42.10
Grand Total	30	1,79,130	75,093	41.92
Per participant	--	5,971	2,503	
Per hectare of operated area	--	14,027	5,880	

The income of the selected participants and non participant farmers came from agriculture, dairy, agricultural and non-agricultural labour and petty businesses and professions. The income from agriculture is taken to be net income calculated by deducting value of input from the value of output. Similarly, income from dairy for which loan and subsidy was taken, equals to the output minus all cash and kind expenses incurred.

4.3.7 Input-Output and Profit Per Hectare

It was noted that the profit per hectare on participant farms was higher than the non participant farms in the case of all crops except gram. The profit per hectare for wheat on participant farms was Rs.2,666.81 as against Rs.2,153.29 on non-participant farms. The profit per hectare of soybean on participant farms was Rs.3,709.74 and Rs.3,369.72 on non- participant farms. In the case of gram the profit per hectare was higher (Rs.2,058.37) on non participants as compared to participants (Rs.1,083.19) (Table 4.25)

Table 4.25 Input-Output and profit per hectare, selected farms, Ashta Block, Sehore District

Crop	Participants			Non- Participants		
	Value of Out-put (Rs.)	Value of Input (Rs.)	Profit (Rs.)	Value of Output (Rs.)	Value of Input (Rs.)	Profit (Rs.)
Wheat	4,460.00	1,793.19	2,666.81	3,040.00	886.71	2,153.29
Maize	793.00	177.47	615.53	422.00	123.76	298.24
Gram	2,242.00	1,158.81	1,083.19	2,995.00	936.63	2,058.37
Soybean	5,130.00	1,420.26	3,709.74	4,532.00	1,162.28	3,369.72
Chari	3,000.00	750.00	2,250.00	1,100.00	300.00	800.00
Berseem	15,000.00	3,066.67	11,933.33	3,000.00	622.50	2,377.50

4.3.8 Asset formation

As per details given in table 4.24 the value of milch animals purchased by the participants was Rs.1,79,130. This is the net addition to the assets already owned by the participants. The value per participant was Rs.5,971 and Rs.14,027 per hectare. For landless, marginal and small farmers this was quite substantial and significant. The intention of the government in sponsoring this programme does not end with the supply of asset. The more pertinent point is of maintenance of the assets supplied and to obtain higher income.

4.3.9 Utilization and Impact of Assets Supplied

In most of the cases of supply of milch animals the supplying agency was Livestock Development Corporation of Govt. of M.P. In other cases it was the purchase committee who procured the milch animals in the open market. In very few cases the participants purchased milch animals of their choice to be ultimately certified by the concerned Veterinary Extension Offices. Thus, there are very meagre chances of the loan amount being misutilized. Actually many participants described as to how they had to pay for the animals from own sources over and above the sanctioned amount of loan. The financial aspect of the utilization showed that 30 participants earned a net profit of Rs.24,530 or Rs.818 per beneficiary participant. This is quite a considerable amount of income for a landless labour or marginal or small farmer. It was also noted that the income from the newly establised dairy business contributed to the extent of 7.94 per cent of the total income. (Table 4.26)

4.3.10 Problems and Suggestions

As mentioned earlier the objective of encouraging the landless, marginal and small farmers to take up dairy business is not achieved with the supply of milch animal through bank loan and

Table 4.26 Income of farmers from different sources, Ashta block, Sehore district

Sources of Income	Participants		Non-Participants	
	Income	% to total	Income	% to total
1. Agriculture	63,590	20.58	53,435	29.73
2. Dairy	24,530	7.94	-	-
3. Agril.& Non-Agriculture labour	2,16,430	70.03	1,19,275	66.38
4. Business & Profession	4,500	1.45	7,000	3.89
All	3,09,050	100.00	1,79,710	100.00

subsidy. The ultimate aim has to be proper maintenance of the asset given and earning higher income from the asset in the subsequent years.

In this regard the beneficiaries were interrogated and it was told that the main problem was of grazing of animals and purchasing of fodder and feed. It was also told that the quality of the animal at the time of purchase got deteriorated after some time and beneficiary felt deceived. The participants also had greivances about government officials and bankers at different levels.

The target group of the animal husbandry programme consisted of landless labourers, marginal and small farmers. They had not much experience of rearing the milch animals because of lack of availability of feed and fodder on own farms, lack of capital to carry on the business and lack of marketing experience. It is essential to give them a formal training of rearing of cattle, the risk involved and the market exposure. In the absence of proper training, infrastructure facilities and in the absence of risk bearing capacity the business has not made much progress.

This is a programme which involved the beneficiary on one side and block officials, veterinary officials, input supply agency and bank officials on the other. In the absence of zeal in these Government Officials to help the poorest of the poor person of the rural community, the programme will not succeed. All the officials and the departments concerned should work in coordination and selflessly to make the programme a success.

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CHAPTER V

SUMMARY AND CONCLUSIONS

5.1 The High Yielding Varieties Programme (HYVP) was launched in 1966-67. The objective of this programme was the use of exotic and high yielding varieties seed, package of practices including the use of fertilizers, pesticides and timely and adequate irrigation. Since the launching of this programme the inputs like fertilizers, pesticides and irrigation were in great demand.

The demand went on increasing and currently the farmers can not think of cultivating the crops without these inputs.

To encourage the farmers to use all necessary inputs prescribed by the scientists, the government provided loans through banks. The most important element of loan was the subsidy. This was necessary because not all the categories of farmers could afford to meet higher expenditure of their own. As the agricultural development progressed the volume and subsidy portion also increased. A time came when the government started thinking whether such a large proportion of subsidy was desirable or it should be contained at a fixed level and gradually decreased so that the burden on the budgetary expenditure on account of the subsidy could be reduced. Another thinking was that the subsidy was not helping those who needed it most. It was thought that subsidy was being cornered by large and influencial farmers only.

The Directorate of Economics and Statistics directed the Agro-Economic Research Centres to conduct a study on some aspects of subsidies in agriculture. The specific objectives were following

(i) To quantify level and spread of different types of subsidies in the State and districts.

(ii) To assess the quantum of subsidies availed, the extent of utilization of subsidised inputs and their impact on different kinds of farmers with respect to asset formation & income generation.

(iii) To study the role of subsidies on input use structure, crop pattern and production pattern on different categories of farms.

(iv) To study usefulness of subsidies on the adoption of modern technology for agricultural production, and,

(v) To study the administration of the disbursement of subsidies and to suggest measures for improving it.

For the selection of districts, secondary data on the amounts of subsidies distributed under various programmes for all the districts of the state was collected. Three agricultural and allied programmes were selected. These were crop production, minor irrigation and animal husbandry. Districtwise data showed that for crop production programme Raipur district got the largest amount of subsidy. Vidisha district claimed the highest subsidy in the case of minor irrigation and Sehore district in the case of animal husbandry programme. Therefore, three districts of Raipur (Crop production), Vidisha (Minor-irrigation) and Sehore (Animal husbandry) were selected. Further, a development block each in the selected districts was to be chosen having the largest subsidy distribution. Accordingly, Dhamtari block of Raipur district, Basoda block of Vidisha district and Ashta block of Sehore district were selected. List of beneficiaries were obtained for the selected blocks and 50 respondents consisting of 30 beneficiaries and 20 non beneficiaries formed the sample. In Ashta block of Sehore district,

however, only 20 beneficiaries were available and, therefore, all of them were selected. The number of non-beneficiaries was proportionately reduced to 15. Thus, the total sample comprised 135 farmers (80 beneficiaries and 55 non beneficiaries).

Both primary and secondary data were collected for the study. While secondary data for the state was collected from various departments at Bhopal, concerned districts and blocks, a farmer's schedule was framed for field data. The investigation was done with reference to agricultural year 1990-91 through field visits.

5.2 Raipur district is the south eastern most district of the state and is located in Chhattisgarh Region which is termed as "Rice bowl" of the state.

Paddy is the most important crop and formed 71.89 per cent of the gross cropped area. The only other important crop was lathyrus constituting 13.75 per cent of the cropped area. It is mainly kharif cropped area with the percentage of irrigated area to cropped area being 32.77 per cent. The irrigation is mostly for paddy and comes from canals and tanks. The yields of paddy, bajara and groundnut in the district were higher than the state averages.

Vidisha district is nearly centrally located district of the state and comes under jowar-wheat zone. The main sources of irrigation were canals (43.67 per cent) and wells (15.44 per cent). The main crops of the district were wheat (39.86 per cent) and gram (28.29 per cent). Soybean has made good progress in the district and claimed 8.76 per cent of the gross cropped area. The yields of these crops were either higher than or equal to state averages. While wheat was irrigated to the extent of 17.2

per cent gram was irrigated to the extent of 18.52 per cent.

Sehore district is also centrally located and adjoins Vidisha. It comes under jowar-wheat zone. The irrigated cropped area was 18.72 per cent of the gross cropped area. The main sources of irrigation were wells (61.80 per cent) and canals (11.25 per cent). It is a rabi crop area and wheat (24.81 per cent) and gram (13.49 per cent) were main rabi crops. Soybean has taken strides in the district and contributed 31.98 per cent of the cropped area. The combination of these three crops in the cropping pattern gave a high intensity of 130 per cent.

5.3 The Government of Madhya Pradesh, like other states, provided subsidies for nearly 20 agricultural development programmes. These included programmes like minor irrigation, minikits of improved seeds, assistance to small & marginal farmers and tribals, soil conservation, training of farmers and animal husbandry programme. It also made provision for subsidy for the crops and crop groups of rice, pulses, oilseeds, cotton and sugarcane.

5.4 The selected 50 farmers for crop production programme in Raipur district belonged to Dhantari block which had excellent source of irrigation by way of canals & wells. The villages were under the command area of dam across river Mahanadi. Therefore, there was a high percentage of irrigated area on the selected farms. It was 94.54 on the participants and 90.58 per cent on non-participants. This encouraged the farmers to grow rabi crop of paddy, unknown in the region. Because of two crops of paddy in a year the percentage under paddy was 85.13 on the participant farms and 75.35 per cent on the non-participant farms. This gave a very high cropping intensity of 169.57 per cent on participants and still higher percentage of 190.55 per cent on the non-participants. Controlled

irrigation also made it possible for the farmers to get very high yield of paddy.

The 30 participant farmers received a total amount of Rs.50,206 as loan. Thus, the amount per farm came to Rs.1,673.53. and Rs.251.24 per hectare. Of this amount the subsidy portion amounted to Rs.10,916 or Rs.363.86 per farm and Rs.54.63 per hectare. The subsidy portion constituted 21.74 per cent of the loan amount.

The selected farms borrowed the loan mainly for paddy crop. The inputs included paddy seed, zinc sulphate and weedicide. A few farmers took loan for banana cultivation. The items of input were seed, fertilizers and insecticides. A farmer each borrowed loan for seed of lady's finger and gram minikit. The subsidy portion varied from 16.72 per cent to 50 per cent. The bank extending the loan was the Central Cooperative Bank.

Our investigation showed that all the inputs received against loan were totally used and were used for the purposes for which drawn. Thus, the utilization was total. In addition to the loan portion the farmers used home produced inputs and inputs purchased at their own cost.

The net profit for paddy on the participant farms was Rs.5,257.60 against Rs.4,574.54 on the non-participant farms. Thus, the participant farms had a higher profit of Rs.683.06 than the non-participant farms. Another crop was gram, and the net profit for this crop on participant farms was Rs.2,470.05. The profit on non-participant farms was only Rs.740.15. The third group of crops for which participant borrowed the loan was fruits and vegetables. For this group the profit per hectare on participants farms was Rs.19,492.67 as against Rs.17,513.68 on the non-participant farms.

It is thus concluded that the participant farmers have not only utilized the loan amount and availed the related subsidy but also earned a significantly higher profit than the non-participant farms for all the crops and crop groups for which the input supply programme alongwith admissible subsidy was undertaken.

A good proportion of subsidy on inputs alongwith higher percentage of irrigation on participants farms has resulted in the higher percentage of paddy area (85.13) on participant farms than the non participant farms (75.35).

It was observed that the subsidies have definite impact on crop pattern, input structure, and profitability. It can also be said that in the absence of subsidies the farmers would not have adopted better seed, adequate fertilizers and applied insecticides.

All the 30 participants told that it was Rural Agriculture Extension Officer (RAEO) who guided them. They expressed that they did not face any difficulty in getting the benefits and were fully satisfied with the existing procedure.

It was experienced by the investigator that the present administrative structure of the Department of Agriculture, District Rural Development Agency (DRDA) and the cooperative bank was satisfactory.

Vidisha district which was selected for minor irrigation subsidies, had 20 participant and 15 non-participant farmers of Basoda block as sample. The irrigation subsidy was provided for sinking a well and purchasing a diesel pump for each of the 20 participants. This resulted in 62.86 per cent of the operated area under irrigation on participant farms as against only 2.38 per cent on non-participants. With the sinking of wells and fitting of diesel pumps the crop pattern on the participant farms changed considerably.

The diversification of cropped area on participant farms was such that moong, arhar and groundnut were grown only on the participant farms. Further, the proportion of area under cash crops like gram (28.83) and soybean (35.57) was higher on participant farms than the non participant farms where it was 23.77 and 14.46 per cent respectively. Due to higher irrigation facility the intensity of cropping was much higher (148.46 per cent) on participant farms than the non-participant farms (112.04 per cent).

Non participant farms with very negligible diversification and smaller irrigated area devoted the limited irrigation potential to wheat. Participant farms, on the other hand, had besides wheat, gram and soybean under irrigated conditions. Wheat was irrigated to the extent of 67.35 per cent and gram to the extent of 67.88 per cent. Soybean was irrigated to a very small extent.

The selected 20 participant farms borrowed a loan amount of Rs.5,20,650 or Rs.26,032.50 per [illegible] farm and Rs.14,033.69 per hectare of operated area. Of the total loan amount 26.76 per cent was subsidy.

On the selected farms participants obtained the wheat yield of 10.01 quintals per hectare against 6.01 quintals on the non-participant farms. Gram yielded 8.38 qt/ha. on the participant farms and 7.92 qt/ha. on the non participant farms. Soybean which needed irrigation in the later stages of growth yielded 5.56 qt/ha. on the participant farms as against 4.67 qt/ha. on the non participant farms.

The participants not only irrigated the crops but also used fertilizer in larger quantities.

It was observed that profit per hectare for wheat on participant farms was Rs.2,061.15. It was Rs.1,691.75 on the non-participant farms. In the case of gram the profit on the participant farms was Rs.3,344.46. On the non-participant farms it was Rs.3,198.54. Profit per hectare of soybean on participant and non-participant farms was Rs.2,251.25 and Rs.1,619.00 respectively.

It can be concluded that with the adoption of new input of irrigation not only yields of the main crops increased but the profit per hectare also increased. The profit difference was most remarkable in the cases of wheat and soybean.

If pre and post irrigation profit/hectare on different crops was studied on the participant farms it would be noticed that profit per hectare of wheat was Rs.947.86 prior to irrigation. It increased to Rs.2,061.15 in the post irrigation period. In the case of gram the pre irrigation period profit was Rs.2,628.18 and post irrigation profit was Rs.3,344.46. It was also observed that with the introduction of irrigation less economical crops like lentil and jowar were replaced by more economical crops like arhar, moong, soybean and groundnut.

The number of farmers growing wheat and gram increased from pre to post irrigation period. Farmers growing lentil and jowar in the pre irrigation period switched over to other crops. There were as many as 13 farmers who started growing soybean after the irrigation came to the scene.

Two types of assets were formed viz. irrigation well and diesel pump. The total amount received by the 20 participant farmers was Rs.5,20,650. Out of this amount 20 wells were dug and 20 diesel pumps were purchased.

It can be safely said that the entire amount given for the purchase of diesel pumps was fully utilized as the price of the diesel pumps is paid directly to the dealer, without any leakage. In the case of digging of wells farmers' narration and the opinions of the officials indicated that the actual cost of digging of wells exceeded the loan amount.

It is suggested that the unit cost of digging a well be increased and the cost of pumpsets and accessories should match the current market prices.

For repairs of diesel pumpsets an intensive programme of TRYSEM training be adopted in the area.

It is suggested that efforts be made for minimising the time taken at the ADEO or RAEO levels, the block level and the bank level. The delays at all these levels and leakages and unfair practices adopted by officials can be eliminated if stricter monitoring and evaluation is done.

Ashta block of Sehore district was selected for subsidy on animal husbandry programme. Thirty participants and 20 non-participants formed the sample.

Since the selected participant farmers took animal husbandry programme they devoted considerable area to fodder crops. Maize for fodder occupied 13.31 per cent of the gross cropped area on participant farms. Other fodder crops were chari (1.64 per cent) and berseem (1.23 per cent).

The main irrigated crops on the participant farms were wheat and berseem. Both were totally irrigated.

Of the 30 participants of the animal husbandry programme 13 got buffaloes and 17 got cows. In the case of buffaloes the

total amount of loan and insurance admissible was Rs.5,750. This included Rs.5,200 as loan and Rs.550 as premium of insurance. The subsidy admissible for scheduled castes and scheduled tribes beneficiaries was 50 per cent. For 'other castes' beneficiaries it was 33.33 per cent.

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Since the animals were purchased through Livestock Development Corporation or through purchase committee there were very meagre chances of the loan amount being misutilized. Actually many participants described as to how they had to pay for the animals from own sources over and above the sanctioned amount of loan. The financial aspect of the utilization showed that 30 participants earned a net profit of Rs.24,530 or Rs.818 per

beneficiary participant. This is quite a considerable amount of income for a landless labourer or marginal or small farmer. It was also noted that the income from the newly established dairy business contributed to the extent of 7.94 per cent of the total income.

The main problem was of grazing of animals and purchasing of fodder and feed. It was also told that the quality of the animal at the time of purchase got deteriorated after some time and beneficiary felt deceived. The participants also had grievances about government officials and bankers at different levels.

It is suggested that the beneficiaries be given formal training of rearing of cattle, the risk involved and the market exposure. In the absence of proper training, infrastructure facilities and in the absence of risk bearing capacity the business has not made much progress.

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