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Department of Agricultural Economics & Farm Management
Agro-Economic Research Centre for Madhya Pradesh & Chhattisgarh
Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur

Dr. P.K. Mishra
Prof.& Head

No.AERC/2003-04/Report/ 114 Dated : 26.06.2004

To,

Dr. R.C. Ray,
Adviser,
Directorate of Economics & Statistics,
Department of Agriculture & Cooperation,
Ministry of Agriculture, Government of India,
AER Division, C-1, Hutments, Dalhousie Road,
NEW DELHI- 110 011

Dear sir,

Kindly find enclosed herewith 10 copies each of the research report and executive summary titled "Agricultural Input Subsidies in India : Quantum of Subsidies to SC/ ST Farmers in Madhya Pradesh & Chhattisgarh".

Kindly acknowledge the receipt.

Prefessor & Head

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No.AERC/2003-04/Report/ 115 Dated : 26.06.2004

To,

Dr. P.S. Vashishtha,
Director,
Agricultural Economic Research Centre,
University of Delhi,
DELHI – 110 007

Dear sir,

Kindly find enclosed herewith a copy each of the research report and executive summary titled "Agricultural Input Subsidies in India : Quantum of Subsidies to SC/ ST Farmers in Madhya Pradesh & Chhattisgarh".

Kindly acknowledge the receipt.

Prefessor & Head

Study No. 90

AGRICULTURAL INPUT SUBSIDIES IN INDIA :
Quantum of Subsidies to SC/ ST Farmers In Madhya Pradesh & Chhattisgarh

K. G. SHARMA

AGRO - ECONOMIC RESEARCH CENTRE FOR
MADHYA PRADESH AND CHHATTISGARH
J.N.K.V.V., JABALPUR (M.P.)

June, 2004

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SIKANDAR KHAN

PREFACE

The present study has been assigned by the Directorate of Economics and Statistics, Ministry of Agriculture, Government of India to all the Agro-Economic Research Centres of the country under the coordinationship of Agricultural Economic Research Centre Delhi. This Centre took up this study for the States of Madhya Pradesh and Chhattisgarh.

Study based on field data collected from selected 200 farmers following significant observations were recorded.

The indirect subsidy amount in irrigated districts was more than the rainfed districts. In case of indirect subsidies the amount was more on the farms of other castes than the farms of SC/ST. This was observed in both irrigated and dry districts. It was also observed that the farms of other castes enjoyed higher amount of subsidy than the farms of SC/ST in all the size groups of farms.

In the dry districts the amount of subsidy was about half the amount of irrigated districts. It was also observed that the amount increased with the size of farms in both irrigated and dry districts and both irrigated and dry districts considering together. Per farm subsidy on fertilizers, power and irrigation was more in irrigated districts than the dry districts.

When direct and indirect subsidies were combined together, it was noticed that, in irrigated districts the amount per hectare of gross cropped area was quite higher for indirect subsidy than the direct subsidy. This was also true for dry districts. The subsidy amount increased with the size of farms in the case of other castes farmers. However, there was no such phenomenon in the case of farms of SC/ST. The amount of subsidy on other castes was more than double than that of farms of SC/ST.

The present study was conducted by Mr. K.G. Sharma, Research Officer of this Centre who planned the study design, conducted field investigation, tabulation and analysis and drafted the report.

I wish to express my deep sense of gratitude to the officials of the Directorate of Economics and Statistics, Department of Agriculture & Cooperation, Ministry of Agriculture, Government of India, New Delhi.

On behalf of the Centre, I express my deep sense of gratitude to Hon'ble Vice-Chancellor, Dr.D.P.Singh, Director Research Services, Dr.V.S. Tomar, Dean, Faculty of Agriculture, Dr. R. K. Gupta, Director Extension Services, Dr. R. A. Khan, Dean, College of Agriculture, Dr. C. B. Singh and other officials of J.N. Krishi Vishwa Vidyalaya, Jabalpur for providing all facilities and help at various stages in successful completion of this study of high importance.

I extend my heartfelt thanks to the coordinator of this study Dr. Usha Tuteja, Agricultural Economics Research Centre, Delhi who provided necessary guidelines for conducting this study.

I also express my gratitude to Prof. M.C. Athavale, Ex- Professor and Head of Agro-Economic Research Centre, Jabalpur for providing valuable guidance in completion of the study.

I am very thankful to the states and districts level and other staff of the departments of Agriculture, Horticulture, Animal Husbandry and Fishery of both the states of Madhya Pradesh and Chhattisgarh for providing not only secondary data but also helping in collection of field data from the selected farmers.

All the scientists and supporting staff members of Agro-Economic Research Centre and Department of Agricultural Economics deserve to be complemented for their untiring efforts in bringing this innovative study to its perfect shape.

I would also offer my thanks to Mr. Sikandar Khan who took painstaking job of doing the computer typing of the report.

I hope the findings and suggestions made in the study would be useful to policy makers of the States and Govt. of India.

(P.K. Mishra)
Professor & Head

C O N T E N T S

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CHAPTER-I
INTRODUCTION

1.1 Introductory

Subsidies are a created, administered device intended for use only until such a time the basic set up of the programme of activity can take up its own protection through its required competitiveness. If it fails to happen there is no reason to protect it. The trend that the beneficiaries of subsidies expect them for every new programme and hope continuance of subsidies is noteworthy. Economists advocate that subsidies should be selective, limited and specially targetted for weaker sections only.

Subsidies alter relative prices and budget constraints and thereby affect decisions concerning production, consumption and allocation of resources. Like many other countries, subsidies in Indian economy are pervasive. These are explicit or hidden and include the areas such as education, health, environment and variety of economic activities including agriculture and transport.

Nearly 66 per cent of the people in India are still dependent on agriculture. The subsidies to agricultural sector provided by the government have recorded phenomenal rise during the past two decades. In 1993-94, the agricultural subsidies amounted to Rs.14,069 crores. The amount of subsidies increased from year to year and stood at Rs.34,784 crores in 2000-2001. If we take base year as 1993-94, it was noted that the subsidies in 2000-2001 were 247.24 per cent, an increase of about 2½ times within a span of seven years. The subsidies were provided on inputs like fertilisers, electricity and irrigation. Subsidies were also provided on "other" items. Among the subsidies provided the maximum amount was for fertilisers and shared 39.67 per cent of the total agricultural subsidies. This was followed by irrigation and contributed 39.33 per cent to the total agricultural subsidies. Subsidy provided for electricity contributed 18.54 per cent of the total agricultural subsidies. "Others" shared 2.41 per cent (Table 1.1.).

Table 1.1 Agricultural subsidies in India during 1993-94 to 2000-01

Year	Agricultural Subsidies (Rs. Crores)					Index (Base year 1993-94)
	Fertilisers	Electricity	Irrigation*	Others	Total	
1993-94	4,562	2,400	5,872	1,235	14,069	100.00
1994-95	5,769	2,338	6,772	1,246	16,125	114.61
1995-96	6,735	1,977	7,931	1,034	17,677	125.65
1996-97	7,578	8,356	9,221	895	26,050	185.16
1997-98	9,918	4,937	10,318	983	26,156	185.91
1998-99	11,596	3,819	11,827	1,182	28,424	202.03
1999 -2000	13,244	4,276	11,487	1,937	30,944	219.94
2000 -2001	13,800	6,449	13,681	854	34,784	247.24
Percentage to total	39.67	18.54	39.33	2.46	100.00	

*Includes imputed subsidies of irrigation,
Source : Central Statistical Organisation, New Delhi.

The agricultural subsidies act as an incentive to promote agricultural development. These act as instrument of stimulating agricultural production and in attaining self-sufficiency. In order to attain the goal of self-sufficiency in food, government adopts short term policies such as support prices of products and input subsidy to stimulate the products to increase the food production. It is expected that subsidies contribute to better cropping pattern, employment and income of the beneficiaries. But in most development programmes, subsidies are one among the many developmental inputs being provided. Thus the observable changes in cropping pattern, employment level and overall incomes are because of the joint effect of all the efforts going on. Therefore, these changes cannot be attributed solely to subsidies.

1.2 Subsidy : Meaning and Definition

Subsidy is one of the powerful fiscal instruments, besides taxes and others, by which the objective of growth and social justice may be achieved.

"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"[1].

"Subsidy is the right instrument to maximize risk taking. The reduction in input prices is found to be the most appropriate form of subsidy"[2].

"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 interests of farmers and weaker sections of consumers"[3].

"Subsidies are negative taxes, they are instruments to transfer resources in favour of those who receive them"[4].

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 reducing inter personal income inequalities and inter- regional development imbalances"[5]. The justification gets strengthened if the subsidies promote agricultural development besides equitable distribution of income.

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1. 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.

2. Mohan, T.C. et.al.(1982) 'The role of subsidy in risk taking by farmers – A study in a South Arcot Village', Indian Journal of Agricultural Economics, Vol.37 (3), pp.247-252.

3. 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.

4. Shah, C. H. (1986) 'Taxation and subsidies on Agriculture- A search for policy options' Indian Journal of Agricultural Economics, Vol.41 (3) pp.367.

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

1.3 Types of Agricultural Subsidies

Subsidies in Indian agriculture are of four types :

1.3.1 Explicit Input Subsidies

Explicit input subsidies are payments made to the farmers to meet a part of the cost of an input. These are in the nature of explicit payments made to the farmer. For example, subsidy on improved or high yielding variety seeds, plant protection chemicals and equipments, improved agricultural implements and supply of minikits containing seeds, fertilizers and plant protection chemicals for certain crops are the explicit subsidies. These are usually made available to small and marginal farmers and those belonging to scheduled castes and tribes. The objective of such subsidies is to induce the farmers to adopt yield increasing inputs so that they are able to realize the benefits of new technology. The coverage of these subsidies in terms of crops, inputs, regions and target groups has been changing from time to time. Explicit subsidies have formed only a small fraction of the development expenditure of Central/ State Governments.

1.3.2 Implicit Input Subsidies

While there is transparency in explicit input subsidies, implicit input subsidies are hidden in nature. The latter arise on account of the mechanics of pricing of inputs. If inputs whose prices are administratively determined are priced low as compared to their economic cost, it becomes a case of implicit subsidization. As far as the farmer is concerned, he does not receive any direct payment but somebody in the economy accounts for the difference.

1.3.3 Output Subsidies

Subsidization of agricultural sector through output pricing means that by a restrictive trade policy, the product prices in the domestic market are maintained at levels higher than those that would have prevailed in the absence of restrictions on trade. On the other hand, if the trade policies have resulted in keeping the domestic prices lower than the corresponding border reference price, the policies have taxed the agricultural sector. The border reference price is the free on board prices in the case of exportables and cost, insurance and freight price in the case of importables.

1.3.4 Food Subsidies

This apart, there is an important subsidy linked to the agricultural sector and that is the food subsidy. The twin policy of providing market support to the foodgrains producers and supplying atleast a part of the requirement to consumers at reasonable prices, along with the policy of maintaining a buffer- stock of required quantity for national food security, involved cost in the form of meeting the differences between the economic cost and issue prices of foodgrains. This is what is called the food subsidy and appears explicitly in the Union Budget.

1.4 Review of Literature

Acharya, S.S., Director, Institute of Development Studies, Jaipur observed that for achieving the twin objective of assuring remunerative prices to the farmers and making available foodgrains to the consumers at affordable prices, the instrument of food and input subsidies must be retained as an essential component of policy of growth with equity. It is important to examine whether we have invested adequately in agriculture, primary education, primary health care and social security. These sectors, which should have received priority in resource allocation for broad based development are perhaps receiving even less allocations after the new economic policies were launched in the country in 1991. While the subsidies now being given to farmers and for food are being questioned, the outgo on non-merit subsidies and revenues foregone in the form of concessions, duty exemptions and leakages are many times more. The subsidies enjoyed by non-poor be phased out first to release more resources for agricultural and social development. ("Subsidies in Indian Agriculture and Their Beneficiaries, Agricultural Situation in India, Vol. LVII (5), August, 2000").

Dr. R.S. Paroda, Secretary, Department of Agricultural Research and Education and Director General, ICAR, New Delhi in his article observed that farm subsidies are reported to be crowding out the public investment and are not sustainable beyond a limit and time period. The other serious problems due to continued subsidies are reported degradation of land and water resources and their impact on the sustainability of agricultural growth. For instance, power subsidy to private tubewells have led to over- exploitation of surface and

groundwater. Similarly, owing to fertilizer subsidy the quantity of various fertilizers used per hectare have been higher among some sections of the farmers and in few parts of the country. The proportion of different fertilizer use has also been different than recommended. "Input Subsidies in Agriculture : Needed Reforms, Agricultural Situation in India, Vol. LVII (7), October, 2000"

Though, subsidies as incentives are effective in pushing agricultural growth to a certain extent, it is important to make sure that they do not become a permanent feature of the Indian economy. There is growing criticism against the continuance of agricultural input subsidies particularly on fertilizer, irrigation, power and credit for some reasons. First, these subsidies are fiscally not sustainable. Second, they also encourage misuse of resources leading to land degradation, water logging, depletion of ground water resources, soil salinity etc. Third, they crowd out public investment resources adversely affecting the overall agricultural growth. Further, most of the subsidies given as incentives and support in the name of the poor, rarely reach the poor and small farmers and are usually cornered by the rich farmers. The time has therefore come to take a fresh look at the issue of input subsidies.

An analysis of reasons for increase in subsidy shows that both expansion of input use and rise in the rate of subsidy have contributed to the increase in total amount of subsidies. While in the case of fertilizers, the increase in rate of subsidy contributed to bulk of the incremental subsidy burden, in electricity it is the increase in the use of electricity. In the case of implicit subsidy on canal irrigation, both the expansion in irrigation and increase in rate of subsidy contributed to an increase in subsidy burden. In real terms, the increase in per unit subsidies has been the maximum for canal irrigation followed by electricity and fertilizers.

To sum up, during the initial stages of adoption of new technology in agriculture some of these subsidies were justified as front up costs. However, over time it was found that the rich States and irrigated areas, certain crops, and sometimes well-to-do farmers, captured a disproportionately high share of the major input subsidy programmes. Part of on going reforms involve reducing/ removal of these subsidies with a view to lessen fiscal imbalance and also to remove the distortion in farm input prices to promote efficient use of inputs.

1.5 Need of the Study

Macro and micro studies focussed on a particular subsidy do not give an idea about the overall impact of important agricultural subsidies on different categories of farmers. The SC/ST farmers are by and large ignored and their problems are overlooked. This is also important from the point of view of resource inadequacy of the small, marginal and SC/ST farmers. This underlines the urgency of ensuring subsidies for the intended groups and making adequate cost recoveries from those with higher purchasing power so that the prevailing levels of social and economic services which are abysmally low can be expanded to satisfactory levels.

Against the backdrop of growing budgetary allocation of providing subsidies to agriculture, an analysis of their implications for different classes of farmers is of crucial importance in order to assess the extent to which they are consistent with the attainment of set objective of attaining equity and stimulating growth. For this, there is a need to know the quantum of subsidies used and the different effects of subsidies across different groups of households at the micro level. The adverse effect of such policy, if any, on the small, marginal and SC/ST groups could then be corrected by designing proper compensatory programmes. The non-availability of data pertaining to the pattern of agricultural subsidies used by different socio- economic groups at micro level constrains researchers and policy makers to have a clear understanding of the effect of these policies. With a view to ascertaining the ground reality in the context of agricultural subsidies and its effects on SC/ST farmers the present common study has been undertaken in the state of old Madhya Pradesh (and now the state of Madhya Pradesh and Chhattisgarh) by Agro- Economic Research Centre, Jabalpur on the initiation of Ministry of Agriculture, Government of India.

1.6 Objectives

The objectives of the study are :

(i) To examine the utilization pattern of subsidies by different categories of farmers.

(ii) To assess the share of SC/ST farmers in total amount of subsidies used.

(iii) To analyse the overall effect of differences in the levels of input subsidy used by various categories of farmers on crop pattern, cropping intensity, adoption of improved technology, input use, crop productivity and returns.

1.7 Methodology

Since the State of old Madhya Pradesh was bifurcated on 1st November, 2000 into Madhya Pradesh and Chhattisgarh, and since the reference year of the study was to be the year 2000-2001, the old Madhya Pradesh was treated as a State for the study. The old Madhya Pradesh had following 3 agro-climatic zones.

S.No.	Name	Agro-Climatic Zone No.
1.	Eastern Plateau and Hills Region	07
2.	Central Plateau and Hills Region	08
3.	Western Plateau and Hills Region	09

Of the three zones, 2, namely 7 and 9 were selected for the study. In agro-climatic zone 7, on the basis of two criteria of highest and lowest percentage of irrigation and higher percentage of SC/ST population, following districts were selected in consultation with State Government Officials.

1. Raipur district - Irrigated district (above 30% irrigation)
2. Raigarh district- Dry district

It may be mentioned that in the process or reorganisation of districts, erstwhile Raipur and Raigarh districts were recently bifurcated. However, we selected both the undivided districts for the reason of secondary data on all aspects of agriculture being not available for the newly carved districts.

In agro- climatic zone 9 on the basis of same criteria mentioned above following two districts were selected.

1. Dhar district - Irrigated district (above 30% irrigation)
2. Jhabua district - Dry district

The percentage of gross irrigated area (GIA) to gross sown area (GSA) was highest in Raipur district. It was 42.5 in Raipur district and 31.8 in Dhar district. Raigarh district had the lowest percentage (13.1) of GIA to GSA. Jhabua, which is the tribal dominant district, had the highest percentage of Scheduled Castes and Scheduled Tribes (SC/ST) taken together. It was 88.73 and was 87.46 in Dhar district. The percentage number of holdings owned by SC and ST taken together was highest (94.37) in Jhabua district. It was second highest (60.36) in Dhar district. In view of the much larger percentage of Scheduled Tribes

population and a smaller percentage of Scheduled Castes population not enough number of Scheduled Castes population could be sampled. Therefore the Scheduled Castes and Scheduled Tribes farmers were combined to draw a sample (Table 1.2).

Table 1.2 Percentage of irrigated area and SC/ST population, operational holdings by SC/ST classes in selected districts

Selected district	Percentage of G IA to GSA	Percentage of (SC/ST) population			Percentage of (SC/ST) operational holdings to total operational holdings		
		SC	ST	Total SC+ ST	SC	ST	Total SC+ ST
Zone 7 Eastern Plateau and Hills Region							
1. Raipur	42.5	14.42	18.27	32.69	16.47	18.77	35.24
2. Raigarh	13.1	11.37	47.69	59.06	9.86	49.88	59.74
Zone - 9 Western Plateau and Hills Region							
1. Dhar	31.8	06.94	80.52	87.46	03.82	56.54	60.36
2. Jhabua	17.03	03.06	85.67	88.73	01.47	92.90	94.37

From each district 2 blocks were selected.

S.No.	District	Block
1.	Raipur district	Dharsiwa , Abhanpur
2.	Raigarh district	Raigarh, Tamnar
3.	Dhar district	Dharampuri, Nisarpur
4.	Jhabua district	Jhabua, Rama

In 8 blocks, 52 villages were chosen in consultation with the Deputy Directors of Agriculture and Senior Agriculture Extension Officers on the basis of availability of different categories of SC/ST and other farmers and coverage of input subsidy programmes. The beneficiary farmers were selected randomly representing marginal, small, medium + large size groups roughly in the proportion of number of operational holdings of SC/ST and other farmers in Madhya Pradesh. In Agricultural Census, there were five size groups in the State. For this study we have merged semi- medium (2 hectares to 4 hectares) and medium (4 hectares to 10 hectares) and large (10 hectares and above) size groups in one group i.e. above 2 hectares as medium + large group because in selected blocks and villages the number of farmers belonging to semi medium, medium and large size group was very small and not enough number could be sampled in each category. Since we had the percentage of number of Scheduled Castes and Scheduled Tribes (SC/ST) holdings taken together on one hand and other castes holdings on the other, and since we had to select 200 holdings in this proportion

we got the sample number by doubling the percentage number of holdings of these two groups. Thus from the category of marginal farmers, 30 SC/ST and 50 other castes farmers were selected. From the small size group, the number of SC/ST farmers and other farmers were 18 and 30 respectively. From the category of medium + large farmers 26 were SC/ST and 46 were other castes farmers (Table 1.3).

Table 1.3 Size group wise proportionate distribution of number of operational holdings of SC, ST and other castes in Madhya Pradesh

Size group	Scheduled Caste	Scheduled Tribe	Total SC + ST	Other Castes	Total
Marginal (Below 1.00 hect.)	6.31	8.82	15.13	25.25	40.38
Small (1.00 – 2.00 hect.)	3.16	5.98	9.14	14.94	24.08
Medium + Large (Above 2.00 hect.)	2.97	9.60	12.57	22.97	35.54
Total	**12.44**	**24.40**	**36.84**	**63.16**	**100.00**

1.8 The Data

This study was based on micro and macro level data. It covered both direct and indirect subsidies granted to agriculture by the Government. The schedules to be canvassed among farmers were framed by the coordinating Agro Economic Research Centre, Delhi. Tabulation and analysis plans were also supplied by the coordinating AER Centre, Delhi. The macro level data were collected from various departments of the State Governments.

1.9 Reference Year

The reference year of the study was the year 2000-2001.

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CHAPTER-II
AGRICULTURAL SUBSIDIES IN MADHYA PRADESH - AN OVERVIEW

The agricultural sector in Madhya Pradesh enjoys both input and output subsidies. This chapter provides an overview of agricultural input subsidies in the state, based on secondary data. It is presented in four sections. The first section gives the kinds of subsidies admissible in the year 2000-2001 under different agricultural programmes of State Agricultural Department. The second section gives an account of direct subsidies made available by the Departments of Agriculture, Horticulture, Animal Husbandry and Fisheries. The third section gives details of estimation of the indirect subsidies viz. fertilisers, power and irrigation and in the fourth section the total agricultural subsidies both direct and indirect are analysed.

2.1 Agricultural Subsidies Under Different Programmes

The following kinds of subsidies were admissible in the year 2000-2001 to the farmers under different programmes of State Agricultural Department.

2.1.1 Integrated Cereals Development Programme

This centrally sponsored programme envisaging maximisation of rice production in sixteen (16) selected rice producing districts of the state covering 235 blocks was implemented on 75:25 sharing pattern between Government of India and State Government. The districts included were : Bastar, Surguja, Sidhi, Seoni, Jabalpur, Panna, Mandla, Rewa, Bilaspur, Raigarh, Raipur, Durg, Rajnandgaon, Balaghat, Satna and Shahdol. Subsidy provision was made on the components viz. certified seed distribution, demonstrations (Production and IPM) and agricultural implements etc. (Table 2.1).

Table 2.1 Agricultural input subsidies under Integrated Cereals Development Programme

S. No	Item	Rate of subsidy
1	Certified seed distribution	1. Paddy, wheat and barley- Rs.200 per quintal 2. Jowar, bajra and other millets- Rs.400 per quintal 3. Hybrid paddy- Rs.500 per quintal
2	Demonstrations	a) Production technique demonstrations - 0.4 hectare double/ single crop demonstrations Rs. 2,000 / Rs.1,000 respectively b) IPM demonstrations - (40 hectare or entire village) – Rs.6,000/- per demonstration with training
3	Agricultural implements	50% of the cost of implements or a maximum of Rs.1,500
4	Power tiller	50% of the cost of tiller or a maximum of Rs.30,000
5	Sprinkler	a) 75% of the cost approved by NABARD or Rs.15,000 whichever is less for farmers belonging to scheduled castes, scheduled tribes and women b) 50% of the cost approved by NABARD or Rs.10,000 whichever is less for farmers belonging to general castes
6	Farmers' training	Rs.50 per farmer per day for two days for 50 farmers or Rs.5000 per training

2.1.2 National Pulses Development Programme

This centrally sponsored scheme with 25 per cent state's share is under operation in all the 45 districts of the state. All the 45 districts covering major pulses like arhar, moong, urd, lentil and pea were selected for maximising production. Subsidy was provided on different components including seed minikits, certified seed distribution, block demonstrations, seed village programme, micro nutrients, IPM demonstrations, rhizobium culture distribution, PSB distribution, etc. (Table 2.2).

Table 2.2 Agricultural input subsidies under National Pulses Development Programme

S. No.	Item	Rate of subsidy
1	Seed minikits	100 per cent subsidy on the value for 0.2 hectare area
2	Certified seed distribution	Rs. 300 per quintal subsidy to institutions distributing the seed
3	Block demonstrations	In every development block seed demonstrations will be conducted on 10 hectares or 5 hectares Subsidy rates will be - Gram and pea- Rs.1,400 per hectare Arhar, moong and urad Rs.900 per hectare Lentil Rs.1,000 per hectare
4	Seed village plan	Institutions would be allowed subsidy @ Rs.200 per quintal. Out of this Rs.150 per quintal would be admissible to the farmers
5	Micro nutrients	50 per cent of the cost or maximum of Rs.100 per hectare
6	IPM demonstrations	For IPM demonstrations on pulses on 10 hectare plot subsidy @ Rs.1,500 per hectare
7	Rhizobium culture P.S.B. distribution	Subsidy @ Rs. 2 per packet or maximum of Rs.25 per hectare Subsidy @ Rs. 4 per packet or maximum of Rs.25 per hectare
8	Seed treatment- Plant protection chemicals/ weedicides	a) Seed and soil borne diseases - 50 per cent of the price of medicine or maximum of Rs.100 per hectare b) Plant protection chemicals/ weedicides - 50 per cent of the value of chemicals / weedicides whichever is less or Rs.100 per hectare per spray for 2 sprays
9	Improved agricultural implements	Hand / Bullock drawn- Subsidy @ 50 per cent of the cost or maximum of Rs.1,500 Power driven- Subsidy @ 30 per cent of the cost or maximum of Rs.10,000 per implement per farmer or whichever is less
10	Farmers training	Rs.10,000 per training for 50 farmers
11	Gypsum / Pyrite distribution	50 per cent of material cost including transportation charges to the maximum of Rs.500 per hectare
12	Nuclear Polyhydral Virus Culture distribution	50 per cent of the price or maximum of Rs.250 per hectare which ever is less

2.1.3 Oilseeds Production Programme

This centrally sponsored scheme in operation in all the 45 districts of the state and includes soybean, groundnut, sesamum, niger, sunflower and summer groundnut for increasing production and productivity. Cost sharing pattern by Government of India and State Government is 75:25 respectively. The components of the scheme include seed treatment, seed minikits, rhizobium culture, PSB distribution, certified seed distribution, gypsum/ pyrite distribution, IPM demonstrations etc. (Table 2.3).

Table 2.3 Agricultural input subsidies under Oilseeds Production Programme

S. No.	Item	Rate of subsidy
1	Seed treatment	50 per cent of the cost of medicines
2	Seed minikits	100 per cent subsidy on the value for 0.1 hectare area for groundnut (kharif and rabi), soybean, linseed, niger, sunflower, safflower and for til, rapeseed and mustard and toria for 0.2 hectare area for marginal and small farmers specially belonging to scheduled castes and scheduled tribes
3	Rhizobium culture	Subsidy @ Rs.2 per packet or maximum of Rs.25 per hectare for soybean and groundnut
4	P.S.B. distribution	Subsidy @Rs.4 per packet or maximum of Rs.25 per hectare for soybean and groundnut
5	Certified seed distribution	Rs.300 per quintal subsidy to Seed Corporation/ OILFED for soybean and groundnut crops so that farmers received certified seed at cheaper rates
6	Gypsum/ Pyrite distribution	Rs.200 per hectare subsidy on the use of Gypsum/ Pyrite for groundnut, soybean, rapeseed and mustard for all farmers
7	IPM demonstrations	Subsidy @ Rs.1,500 per hectare on farmers' fields including pheromone traps and rat control
8	Improved agricultural implements	For marginal and small farmers hand drawn/ bullock drawn/ power driven implements like seed drill, groundnut dibbler, manual weeder, cultivator etc. 50 per cent on the value of implement or Rs.1,500 per implement whichever is less
9	Crop demonstrations	a) Preference will be given to marginal, small farmers and farmers belonging to scheduled castes and scheduled tribes b) Use will be made of certified variety or hybrid variety of seed. Subsidy is admissible per demonstration as follows : **S. No — Name of crop — Area (in hect.) — Amount (in Rs.)** 1. Groundnut (kharif) — 10 — 17,500 2. Groundnut (rabi) — 10 — 17,500 3. Til — 10 — 4,750 4. Soybean — 10 — 15,000 5. Linseed a) Irrigated — 10 — 7,250 b) Unirrigated — 10 — 5,250 6. Rapeseed/ Mustard /Toria a) Irrigated — 10 — 7,500 b) Unirrigated — 10 — 6,200 7. Niger — 05 — 1,940 8. Sunflower — 05 — 3,100 9. Safflower — 05 — 3,000 Demonstration will be laid on one hectare each of the farmer
10	Farmers' training	Assistance of Rs.10,000 per batch of 50 farmers with the objective of providing new technology training will be arranged at the place of demonstration and place of seed village yojana
11	Plant protection implements	Subsidy of 50 per cent of cost of the hand operated plant protection implements or Rs.650 whichever is less. Subsidy of 50 per cent of cost of the power operated implement or Rs.1,500 whichever is less
12	Seed village yojana	Subsidy for the production of certified seed of oilseed @ Rs.200 per quintal. Subsidy will be given through seed producing institutions. For this Rs.150 per farmer plus Rs.50 amounting to Rs.200 per quintal will be provided (This is meant for maintenance, technology, grading, transportation and storage etc.)
13	Weedicide/Insecticide/ Plant protection medicine	Subsidy @ 50 per cent of cost of medicines or Rs.200 for two sprayings (Rs.100 per spraying)
14	Micro-nutrients	Subsidy @ Rs.100 per hectare

2.1.4 Modified Cotton Development Programme

This scheme is in operation as a centrally sponsored scheme with 75:25 cost sharing pattern of Government of India and State Government respectively in 13 districts. The districts are Dhar, Jhabua, Khandwa, Khargone, Indore, Shajapur, Ratlam, Mandsaur, Betul, Sehore, Chhindwara, Dewas and Hoshangabad. Subsidy is proposed on certified seeds of high yielding/hybrid varieties including 10 years old stock of such seed from the date of notification. Subsidy is also provided for field demonstrations on production technology, IPM-cum-training, plant protection equipment distribution and farmers' training programmes (Table 2.4).

Table 2.4 Agricultural input subsidies under Modified Cotton Development Programme

S. No.	Item	Rates of subsidy
1	Distribution of certified seed	50 per cent of sale price or Rs.1,000 per quintal whichever is less
2	Field demonstrations	Maximum Rs 2,500 per hectare for critical input material
3	IPM demonstrations with associated trainings	Every demonstration has to be of 50 hectares or for whole village. Rs.85,000 subsidy for one demonstration with associated trainings
4	Distribution of plant protection implements	a) Hand drawn- Subsidy @ 50 per cent of cost or maximum of Rs.700 per implement b) Power driven- Subsidy @ 50 per cent of cost or maximum of Rs.1,500 per implement c) Tractor mounted - Subsidy @ 25 per cent of cost or maximum of Rs.4,000 per tractor operated unit
5	Distribution of bio-agent	Subsidy @ 50 per cent of cost or maximum of Rs.300 per hectare
6	Farmers training	Rs.10,000 per training for 2 days for 50 farmers

2.1.5 Integrated Cereals (Coarse) Development Programme

The centrally sponsored scheme is meant for enhancement of production and productivity of maize, jowar and other coarse cereals and is operative in 29 selected districts of the state. The districts are Chhindwara, Narsinghpur, Sagar, Damoh, Chhatarpur, Tikamgarh, Indore, Dhar, Jhabua, Khargone, Khandwa, Ujjain, Ratlam, Mandsaur, Dewas, Shajapur, Gwalior, Shivpuri, Guna, Datia, Bhind, Morena, Bhopal, Sehore, Raisen, Vidisha, Betul, Rajgarh and Hoshangabad. Cost sharing pattern is 75:25 by Government of India and State Government respectively. Components of the scheme are field demonstrations (technology and IPM demonstrations) and farmers' training. Subsidy on quality seeds and implements is provided in all the 45 districts (Table 2.5).

Table 2.5 Agricultural input subsidies under Integrated Cereals (Coarse) Development Programme

S. No.	Item	Rate of subsidy
1	Field demonstrations	a) Technology demonstration - Subsidy @ Rs.2,000 per acre per demonstration for kharif and rabi, Rs.1,000 for kharif or rabi demonstration individually b) IPM demonstration - Subsidy @ Rs.6,000 for one demonstration of 40 hectares with associated training
2	Farmers' training	Maximum of Rs.5,000 per training for 2 days for 50 farmers @ Rs.50 per farmer per day
3	Distribution of improved seed	1) Rs. 200 per quintal for improved seed of paddy, wheat and barley 2) Rs. 400 per quintal for improved seed of jowar and bajra 3) Rs.1,000 per quintal for hybrid seed of jowar and bajra. This is applicable only for seed of varieties less than 10 years old
4	Agricultural implements	1) 50 per cent of the cost or maximum of Rs.1,500 per hand or bullock drawn implement per farmer 2) 25 per cent of the cost or maximum of Rs.5,000 per power driven implement per farmer
5	Distribution of sprinkler sets	1) 75 per cent of the cost or Rs.15,000 whichever is less for small, marginal, scheduled castes, scheduled tribes & women farmers 2) 50 per cent of the cost or Rs.10,000 whichever is less for farmers belonging to general categories

2.1.6 Accelerated Maize Development Programme

The programme aims to increase per hectare productivity of maize in the state. This programme is in operation in 22 districts. These districts are Bastar, Bilaspur, Surguja, Raigarh, Rajnandgaon, Chhindwara, Mandla, Sidhi, Shahdol, Dewas, Indore, Dhar, Jhabua, Khargone, Ujjain, Mandsaur, Ratlam, Shajapur, Shivpuri, Guna, Betul and Rajgarh. The components under this programme are : field demonstrations (improved technology & IPM), farmers' trainings and distribution of improved agricultural implements (Table 2.6). This is a centrally sponsored scheme with 75:25 cost share of Government of India and State Government respectively.

Table 2.6 Agricultural input subsidies under Accelerated Maize Development Programme

S. No.	Item	Rate of subsidy
1	Demonstrations	a) Improved technology demonstration - Subsidy @ Rs.1,000 for kharif and Rs.1,000 for rabi crop per acre b) Integrated pest management - Rs.6,000 per demonstration of 40 hectares with associated training
2	Farmers' training	Maximum of Rs.5,000 per training for 2 days for 50 farmers @ Rs.50 per farmer per day
3	Improved agricultural implements	Subsidy @ 50 per cent of the cost or maximum of Rs.1,500 per hand drawn and bullock drawn implement. Subsidy @ 25 per cent of the cost or maximum of Rs.5,000 per power driven implement

2.1.7 Sustainable Development of Sugarcane Programme

This programme is in operation with the object to increase the area, production and productivity of sugarcane crop in the state through introduction of new varieties and popularising the latest technology. It is a centrally sponsored scheme with 75:25 cost share of Government of India and State Government respectively. This programme is in operation in 13 districts. The districts are: Dhar, Jhabua, Khandwa, Khargone, Indore, Shajapur, Ratlam, Mandsaur, Betul, Sehore, Chhindwara, Dewas and Bastar. Subsidy is provided for field demonstrations, farmers trainings, distribution of improved implements and drip irrigation units (Table 2.7).

Table 2.7 Agricultural input subsidies under Sustainable Development of Sugarcane Programme

S. No.	Item	Rate of subsidy
1	Field demonstrations	Subsidy for 0.5 hectare of land @ Rs.5,000 per demonstration
2	Farmers' trainings	Subsidy @ Rs.5,000 per training for 35 farmers for two days
3	Distribution of improved agricultural implements	a) Subsidy @ 50 per cent or maximum Rs.1,500 which -ever is less for bullock drawn implements b) Subsidy @ 25 per cent or Rs.10,000 whichever is less for power operated implements
4	Seed multiplication of sugarcane	Subsidy @ 10 per cent of total cost or a maximum Rs.2,000 per hectare whichever is less
5	Drip irrigation units	Subsidy @ 50 per cent of the total cost per hectare or Rs.25,000 per farmer whichever is less

2.1.8 Sugarcane Development Programme

The main objective of this programme is production of foundation seed on the government farms and research farms of Agriculture Universities. The total expenditure on this programme was incurred entirely by State Government. This programme is in operation in selected 22 districts. The districts are Bhopal, Sehore, Betul, Rajgarh, Hoshangabad, Morena, Gwalior, Shivpuri, Guna, Datia, Ujjain, Ratlam, Dewas, Shajapur, Indore, Dhar, Khandwa, Khargone, Balaghat, Chhindwara, Narsinghpur and Bilaspur. Subsidy is provided for foundation sugarcane seed production, farmers' visits, transportation of improved sugarcane seed and subsidy on improved sugarcane seed (Table 2.8).

Table 2.8 Agricultural input subsidies under Sugarcane Development Programme

S.No.	Item	Rate of subsidy
1	Foundation sugarcane seed production	Foundation sugarcane seed production is to be done on government farms and agriculture universities research farms
2	Farmers' visits	Assistance of Rs.1,000 per farmer (including fare and meals) for a period of 7 to 10 days outside the state for higher technical knowledge
3	Subsidy on transportation of improved sugarcane seed	Subsidy of Re.0.60 per quintal per km. for transportation of sugarcane seed within the district. Subsidy of Rs.30 per quintal for purchase of sugarcane seed from outside the district but within the state and Rs.70 per quintal for purchase of sugarcane seed from outside the state
4	Subsidy on improved sugarcane seed	Subsidy @ 25 per cent or Rs.2500 whichever is less for purchase of sugarcane seed from government farms/ research farms for one hectare per farmer

2.1.9 Surajdhara Programme

The programme of exchange of seed to make the farmers self reliant is to be implemented for scheduled tribes and scheduled castes farmers belonging to small and marginal size of holdings of all the 45 districts of the state. Seed production programme will be implemented for small and marginal farmers belonging to scheduled castes and scheduled tribes within the radius of 10 kms. of the selected 46 government farms. Subsidy is provided in the form of difference in price of farmers seed and improved seed of the same crop. If the farmer desires seed of other crop he has to pay 25 per cent of the price of certified seed of that crop (Table 2.9).

Table 2.9 Agricultural input subsidies under Surajdhara Programme

S.No.	Item	Rate of subsidy
1	Exchange of seed	In this programme improved seeds of pulses and oilseeds for 1 hectare are to be provided in exchange of seed of uneconomic crops given by the farmers. Farmers will be able to take equal quantity of seed of the same crop. If the farmer wants to take seed of other crop he has to pay 25 per cent of the price of the certified seed. The difference between the value of improved seed to be used on 1 hectare and the seed given by the farmer will be treated as subsidy. The limit of subsidy is Rs.1,500
2	Self reliance of seed	The farmer will be provided foundation or certified seed for 1/10 of his holding at the rate of 75 per cent subsidy
3	Seed production	In pulses and oilseeds crops for the production of improved varieties scheduled castes/ scheduled tribes/ marginal farmers within the radius of 10 kms. of 46 selected government farms will be chosen. These farmers will be provided foundation/ certified seed of grade I at the rate of 75 per cent subsidy. The expenses incurred on certification of the seed are borne by the state government as subsidy. The seed thus provided will be distributed to the scheduled castes and scheduled tribes farmers at the prescribed prices next year

2.1.10 Annapurna Yojana

This scheme which was earlier known as seed exchange programme of paddy is now in operation for all the crops including paddy. Under this programme improved seed of all the crops is distributed to small and marginal farmers of scheduled tribes and scheduled castes.

Seed exchange programme and self reliance of seed programme will be implemented for small and marginal farmers of scheduled tribes and scheduled castes in all the 45 districts of the state.

Seed production programme will be implemented for small and marginal farmers of scheduled castes and scheduled tribes within 10 kms. radius of selected 46 state government farms. Under seed exchange programme improved seed will be provided @ 75 per cent subsidy. Similarly under self reliance of seed programme certified seed will be supplied @ 75 per cent subsidy (Table 2.10).

Table 2.10 Agricultural input subsidies under Annapurna Yojana

S. No.	Item	Rate of subsidy
1	Seed exchange programme	The farmers will be provided improved seed of paddy and other crops in exchange of seed of uneconomic crops to the extent of 1 hectare of crop. This will be done at 75 per cent subsidy or the maximum of Rs. 1,500 to small and marginal farmers belonging to scheduled tribes and scheduled castes
2	Self reliance of seed	The small and marginal farmers belonging to scheduled tribes and scheduled castes will be provided foundation and certified seed sufficient for 1/10 of the area. The certified seed will be supplied at 75 per cent subsidy
3	Seed production	Seed production programme will be taken up for small and marginal farmers (for minimum of 1/2 acre) belonging to scheduled tribes and scheduled castes farmers within the radius of 10 kms. from the selected 46 government farms. Farmers will be supplied foundation/ certified seed of grade I at 75 per cent subsidy. The maximum limit of subsidy will be for 1 hectare of land. The cost incurred on seed certification will be treated as government subsidy. The seed so produced will be supplied to the farmers of scheduled tribes and scheduled castes in the next year at the prescribed prices

2.1.11 National Fertiliser Minikit Programme

Under this programme small and marginal farmers belonging to scheduled tribes are to be supplied 10 Kg. of urea and 10 Kg. of super phosphate in the packaging of minikits at 10 per cent of the price in selected 38 districts of the state.

2.1.12 National Biogas Development Programme

The area of operation of this programme is entire Madhya Pradesh. Under this programme the beneficiaries are to be provided subsidy at following rates for 1 to 10 cubic metre capacity of the biogas plants.

a) Rs.2,300 per plant for schedule castes, scheduled tribes, small and marginal farmers and landless labourers.

b) For others the subsidy available is Rs. 1,800 per plant.

2.1.13 Training Programme

The area of operation of this programme is entire Madhya Pradesh. Under farmers' exchange programme a farmer will get Rs.400 towards rail fare and Rs.30 per day of D.A., for a maximum of 15 days. For visit within the state every farmer will be provided Rs.250 as bus/ rail fare and maximum of Rs.200 as D.A. For going out of state the farmer will be paid Rs.375 as fare and maximum of Rs.500 as D.A. (Table 2.11).

Table 2.11 Agricultural input subsidies under Training Programme

S.No.	Item	Rate of subsidy
1	Farmers' exchange programme	Under this centrally sponsored scheme every farmer will get Rs. 400 towards rail fare and Rs.30 per day of daily allowance for a maximum of 15 days to travel within the country
2	Visit within the state	Under the tribal sub plan for travel within the state a farmer will be provided rail/bus fare or a maximum of Rs. 250 per farmer and Rs.20 per day daily allowance for a maximum of 10 days
3	Farmers' inter regional exchange programme	Under the tribal sub plan for farmers inter regional exchange programme going out of state the farmers will be provided to and fro fare of a maximum of Rs. 375 per farmer and daily allowance of Rs.25 per day for a maximum of 20 days
4	Farmers' trainings	On farmers' training centres during the training sessions of 5 days for farmers and 3 days for organisers of discussion circles to and fro bus fare or a maximum of Rs. 10 per farmer and Rs. 10 towards food per day will be paid
5	Training, of tribal farmers' couples	Under the tribal sub plan a tribal couple will be provided one acre of land for training. On this area out of the total production value, cost of production and 10 per cent supervision charges will be deducted and the net amount will be paid to the couple. In addition a scholarship of Rs. 300 per month per couple will be paid

2.1.14 Programme of Preparation of Farm Yard Manure/ Compost by NADEP System

The area of this programme is entire Madhya Pradesh. Under this system subsidy will be provided at following rates :

a) 75 per cent subsidy or a maximum of Rs.1,200 per tank for all the small and marginal farmers

b) For farmers having land of 2 hectares or above belonging to scheduled castes and scheduled tribes 50 per cent subsidy or a maximum of Rs.800 per tank

c) For general category farmers having land of 2 hectares and above 25 per cent of subsidy or a maximum of Rs.400 per tank

2.1.15 Small Tanks and Percolation Tanks Construction

The area of operation of this scheme is whole of Madhya Pradesh. For this programme government will undertake construction of irrigation facilities for 40 hectares by constructing small tanks on government land at government expenditure.

2.1.16 Tubewells Construction

The area of operation of this scheme is whole of Madhya Pradesh. Subsidy is payable as follows :

For tubewell construction- On successful / infructuous well 50 per cent of the cost or a maximum of Rs.8,000 whichever is less is payable.

For pump fitting- On the successful tubewell for pump fitting 50 per cent of the cost or Rs.10,000 whichever is less is payable.

2.1.17 River Valley Project and Planning for Flood Prone Rivers

This scheme is in operation in 6 catchment areas of the state. The objectives of this scheme are :

i) to stop the removal of the soil from rivers and setting of it in the tanks.

ii) to increase the water holding capacity to the maximum of these tanks.

iii) to increase the productivity of the soils for both agricultural and non-agricultural land under the watershed.

2.1.18 Development Scheme for Rainfed National Watershed Area

Under this scheme a watershed having an area between 500 to 5,000 hectares in each of the development block has been selected. The treatment of the entire agricultural, non-agricultural land and drainage system is being done by botanical measures with the help and cooperation of local farmers and beneficiaries. Entire work for the selected watershed development is being done from government expenditure. For the works on the land of selected farmers in the selected watershed area the beneficiaries are being given financial assistance.

2.1.19 Agricultural Extension Scheme (Education and Advisory Programme)

The entire Madhya Pradesh is covered under the scheme. All the regional employees/officers of the agriculture department go to the villages/ farms on fixed dates and contact the farmers. They are taught about the improved techniques developed by research institutions to the farmers and encourage them to follow them. Simultaneously they give solutions for the problems raised by the farmers. This scheme of education and advisement is done free of charge.

2.1.20 National Agricultural Insurance Scheme

The area of operation of this programme is entire Madhya Pradesh.

Insured Farmer - He is one who is growing notified crop whether or not he is a borrower. The scheme is compulsory for all those farmers who borrow loan for the notified crop.

Insured Crops - Paddy, jowar, maize, bajra, kodo-kutki, wheat, arhar, soybean, groundnut, til, rapeseed & mustard, cotton and potato.

Subsidy on Premium- 50 per cent of the premium has been subsidised for small and marginal farmers.

2.2 Direct Subsidies

Direct subsidies are money transfers by the government that reach the ultimate beneficiary through a formal predetermined route. In the agriculture and allied sectors, subsidies are given for crop husbandry, agricultural implements, minor irrigation, soil conservation, horticulture, animal husbandry, pisciculture, sericulture and also for loss in agriculture during natural calamities like droughts or floods. The various subsidy schemes in agriculture and allied sectors are routed through the departments of Agriculture, Horticulture, Animal Husbandry and Fisheries.

2.2.1 Agriculture

Subsidies are provided through various schemes to agricultural sector by the central and state governments in order to promote the adoption of certain inputs/ machinery etc. in crop cultivation.

2.2.1.1 Centrally Sponsored Schemes (central and state government share in the ratio of 75:25)

Under these schemes the most important one was oilseeds production programme claiming 16.49 per cent of the total expenditure. The second important programme was national pulses development programme claiming 6.59 per cent of the total expenditure.

2.2.1.2 Central Sector Schemes (funded totally by central government)

The most important programme under these schemes was national watershed development programme for rainfed areas claiming 17.71 per cent of the total expenditure. The second important programme was soil conservation in river valley project having a share of 10.25 per cent of the total expenditure.

2.2.1.3 Macro Management Schemes (central and state government share in the ratio of 90:10)

These schemes have been initiated w.e.f. 01.01.2001. The expenditure for the macro management schemes was 14.35 per cent of the total expenditure.

2.2.1.4 State Sector Schemes (funded totally by state government)

Although the various components of the schemes did not contribute very significantly to the total expenditure, the more worth mentioning schemes were micro- minor irrigation (7.95 per cent), boring of tube wells on cultivators' fields (5.61 per cent) and national crop insurance programme (5.17 per cent).

The per farmer amount of expenditure came to Rs. 59.45 and per hectare expenditure came to Rs. 43.21 . The comparative importance of per farmer and per hectare expenditure were related to the percentage of expenditure in different schemes. Thus among the centrally sponsored schemes the figures were highest for oilseeds production programme. Among the central sector schemes the per farmer and per hectare expenditure were highest for NWDPRA. This was noticed in the remaining schemes also (Table 2.12).

Table 2.12 Direct subsidies in agricultural sector, Madhya Pradesh

S. No.	Name of the Scheme	Expenditure (Rs.in lakhs)			Percentage to total	Expenditure (Rs.)	
		Central	State	Total		Per farmer	Per hectare
	A. Centrally Sponsored Schemes (Central 75% State 25%)						
1.	Integrated Cereal Development Programme	48.95	16.32	65.27	0.74	0.44	0.32
2.	National Pulses Development Programme	436.12	145.37	581.49	6.59	3.92	2.85
3.	Oilseeds Production Programme	1,091.17	363.73	1,454.90	16.49	9.80	7.13
4.	Intensive Cereals (Coarse) Development Programme	86.39	28.80	115.19	1.30	0.78	0.56
5.	Modified Cotton Development Programme	203.34	67.80	271.14	3.07	1.83	1.33
6.	Accelerated Maize Development Programme	26.43	8.81	35.24	0.40	0.24	0.17
7.	Sustainable Development of Sugarcane Programme	9.82	3.27	13.09	0.15	0.09	0.06
	Sub total	1,902.22	634.10	2,536.32	28.74	17.10	12.42
	B. Central Sector Schemes (Central 100%)						
8	Special Millet Demonstration	7.30	---	7.30	0.08	0.05	0.04
9	Integrated Balance Use of Fertiliser	7.14	---	7.14	0.08	0.05	0.03
10	Promotion of Agricultural Mechanisation through Small Tractors	30.30	---	30.30	0.34	0.20	0.15
11	Surajdhara Programme	76.19	---	76.19	0.86	0.51	0.37
12	Annapurna Yojana	93.44	---	93.44	1.06	0.63	0.46
13	Farmers Training and Visit Programme	29.48	---	29.48	0.34	0.20	0.14
14	National Watershed Development Programme for Rainfed Areas	1,563.03	---	1,563.03	17.71	10.53	7.66
15	Soil Conservation in River Valley Project	904.01	---	904.01	10.25	6.09	4.43
	Sub total	2,710.89	---	2,710.89	30.72	18.26	13.28
	C. New Plan w.e.f. 1.1.2001 (Central 90% State 10%)						
16	Macro Management Schemes	1,139.17	126.57	1,265.74	14.35	8.53	6.20
	D. State Sector Schemes (State 100%)						
17.	Integrated Cotton Development Programme	---	25.06	25.06	0.28	0.17	0.12
18.	Sugarcane Development Programme	---	47.06	47.06	0.53	0.32	0.23
19.	Surajdhara Programme	---	97.51	97.51	1.11	0.66	0.48
20.	Annapurna Yojana	---	64.79	64.79	0.73	0.44	0.32
21.	National Biogas Development Project	---	37.01	37.01	0.42	0.25	0.18
22.	NADEP (Farm Yard Manure)	---	14.35	14.35	0.16	0.10	0.07
23.	Compehensive Crop Insurance Scheme	---	200.31	200.31	2.27	1.35	0.98
24.	National Crop Insurance Programme	---	455.80	455.80	5.17	3.07	2.23
25.	Training Programme	---	92.70	92.70	1.05	0.62	0.45
26.	Development of Minor Irrigation Resources (Construction of new wells)	---	7.51	7.51	0.09	0.05	0.04
27.	Boring of Tubewells on cultivators fields	---	495.19	495.19	5.61	3.34	2.43
28.	Micro- Minor Irrigation (Augmentation of Groundwater)	---	700.96	700.96	7.95	4.72	3.43
29.	National Resources Management Project	---	72.35	72.35	0.82	0.49	0.35
	Sub total	---	2,310.60	2,310.60	26.19	15.57	11.32
	Grand total	**5,752.28**	**3,071.27**	**8,823.55**	**100.00**	**59.45**	**43.21**

2.2.2 Horticulture

The expenditure on horticulture sector was Rs. 654.48 lakhs. Of this amount the contribution of the central government was 52.71 per cent and that of the state government, 47.29 per cent. In the horticulture sector also the schemes were either centrally sponsored ones or state government schemes. While of the total expenditure centrally sponsored schemes shared 57.63 per cent, the state government schemes shared 42.37 per cent. Among the centrally sponsored schemes horticulture development through plasticulture was most important and shared 31.46 per cent. Another scheme, namely, integrated development of

horticulture shared 9.95 per cent. Among other schemes integrated programme for spices (5.57 per cent) and production and supply of vegetable seeds (4.97 per cent) were important. Among the state government schemes major expenditure (22.89 per cent) was for fruit plantation scheme. Among other schemes vegetables development around big cities accounted for 6.82 per cent and kitchen garden programme, 5.95 per cent. In this sector, like agriculture, the total expenditure incurred equals subsidy. This means that the expenditure on horticulture sector per farmer was Rs. 4.41 and that per hectare, Rs 3.21. These figures for centrally sponsored schemes came to Rs.2.54 and Rs. 1.85 respectively and that for state government schemes Rs 1.87 and Rs.1.36 respectively (Table 2.13).

Table 2.13 Direct subsidies in horticultural sector, Madhya Pradesh

S. No	Name of the scheme	Expenditure (Rs. in lakhs)			Percentage to total	Expenditure (Rs)	
		Central	State	Total		Per farmer	Per hectare
	A. Centrally Sponsored Schemes						
1.	Commercial Floriculture	15.76	1.54	17.30	2.64	0.12	0.09
2.	Development of Medicinal & Aromatic Plants Farming	9.50	0.99	10.49	1.60	0.07	0.05
3.	Horticulture Development through Plasticulture	185.28	20.59	205.87	31.46	1.39	1.01
4.	Integrated Programme for Spices	34.50	1.93	36.43	5.57	0.25	0.18
5.	Mushroom Cultivation	2.00	0.22	2.22	0.34	0.01	0.01
6.	Production and Supply of Vegetables Seed	30.19	2.36	32.55	4.97	0.22	0.16
7.	Development of Root and Tuber Crops	5.40	0.35	5.75	0.88	0.04	0.03
8.	Integrated Development of Horticulture	60.90	4.20	65.10	9.95	0.44	0.32
9.	Cashewnut Development	1.47	--	1.47	0.22	Neg	Neg
	Sub-total	**345.00 (91.47)**	**32.18 (8.53)**	**377.18 (100.00)**	**57.63**	**2.54**	**1.85**
	B. State Schemes						
10.	Fruit Plantation	--	149.84	149.84	22.89	1.01	0.74
11.	Banana Development	--	4.92	4.92	0.75	0.03	0.02
12.	Grape Cultivation	--	4.03	4.03	0.62	0.03	0.02
13.	Spices Development	--	8.16	8.16	1.25	0.06	0.04
14.	Medicinal and Aromatic Crops	--	3.62	3.62	0.55	0.02	0.02
15.	Floriculture	--	6.60	6.60	1.01	0.05	0.03
16.	Vegetables Development around big cities	--	44.64	44.64	6.82	0.30	0.22
17.	Kitchen Garden Programme	--	38.94	38.94	5.95	0.26	0.19
18.	Potato Demonstrations	--	16.55	16.55	2.53	0.11	0.08
	Sub-total	**--**	**277.30**	**277.30**	**42.37**	**1.87**	**1.36**
	Grand total	**345.00 (52.71)**	**309.48 (47.29)**	**654.48 (100.00)**	**100.00**	**4.41**	**3.21**

It may be mentioned that the data on volume of subsidy by castes was not available for centrally sponsored schemes. In the state government schemes the proportion of amount of subsidy was 73.98 per cent for other castes. It was 17.66 per cent for scheduled tribes and 8.36 per cent for scheduled castes. In terms of number of beneficiaries benefitted by the subsidy in the state schemes it was noted that of the total number 49.49 per cent were other castes beneficiaries. The scheduled tribes beneficiaries were 35.59 per cent and the scheduled castes beneficiaries were 14.92 per cent. It may also be noted that in some of the programmes subsidy could not be enjoyed by both scheduled castes and scheduled tribes farmers and only other castes beneficiaries claimed the subsidy. This may be due to the fact that the scheduled castes and scheduled tribes farmers in the state are generally marginal and small size farmers. Moreover, their holdings do not generally have irrigation facilities. Due to these two reasons these categories grew only staple food crops and not horticultural crops (Table 2.14).

Table 2.14 Volume of subsidy on state schemes under horticulture sector by castes

S. No	Name of the scheme	Expenditure (Rs. in lakhs)				No. of beneficiaries			
		Scheduled Castes	Scheduled Tribes	Others	Total	Scheduled Castes	Scheduled Tribes	Others	Total
1.	Fruit Plantation	2.42	7.92	139.50	149.84	144	359	3,670	4,173
2.	Banana Development	---	---	4.92	4.92	---	---	50	50
3.	Grape Cultivation	---	---	4.03	4.03	---	---	42	42
4.	Spices Development	1.07	5.61	1.48	8.16	440	4,000	1,060	5,500
5.	Medicinal and Aromatic Crops	---	---	3.62	3.62	---	---	2,054	2,054
6.	Floriculture	---	---	6.60	6.60	---	---	257	257
7.	Vegetables Development around big cities	5.28	16.66	22.70	44.64	444	829	1,425	2,698
8.	Kitchen Garden Programme	5.59	14.18	19.17	38.94	17,499	42,869	58,112	1,18,480
9.	Potato Demonstrations	8.83	4.61	3.11	16.55	1,795	419	745	2,959
	Total	23.19 (8.36)	48.98 (17.66)	205.13 (73.98)	277.30 (100.00)	20322 (14.92)	48476 (35.59)	67,415 (49.49	1,36,213 (100.00)

2.2.3 Animal Husbandry

The total expenditure in the animal husbandry sector was Rs.357.80 lakhs. Nearly entire expenditure (98.56 per cent) was met by the state government and only 1.44 per cent came from government of India. Among the programmes the special livestock breeding

programme was most important and claimed 46.66 per cent of the total expenditure. The second important programme was distribution of poultry units and constituted 34.56 per cent. Incidentally, both these important programmes were run from the funds provided by the state government. The only programme funded by government of India was foot and mouth diseases vaccination programme which has only 2.87 per cent of the total expenditure. In this sector unlike the other two sectors the amount of subsidy given was mentioned separately. While the total expenditure on these programmes was Rs 357.80 lakhs, the subsidy part was Rs. 91.89 lakhs or 25.68 per cent. It may be added that subsidy portion was quite small as compared to expenditure in two programmes of special livestock breeding programme (6.94 per cent) and distribution of poultry units (10.60 per cent). In the case of all other programmes the subsidy equalled the expenditure. Since the expenditure and subsidy amounts under the animal husbandry sector were very small the amounts of subsidy per farmer and per hectare were quite small. The respective figures for subsidy per farmer and per hectare were Rs. 0.62 and Rs. 0.45 (Table 2.15).

Table 2.15 Direct subsidies in animal husbandry sector, Madhya Pradesh

S. No	Name of the Scheme	Expenditure (Rs. in lakhs)			Percen-tage to Total	Subsidy (Rs. in lakhs)	Subsidy	
		Central	State	Total			Per farmer	Per hectare
	A. Centrally Sponsored Schemes (Central 50% State 50%)							
1.	Foot and Mouth Diseases Vaccination Programme	5.14	5.14	10.28	2.87	10.28	0.07	0.05
	B. State Schemes (State 100%)							
2.	Special Livestock Breeding Programme	---	166.94	166.94	46.66	11.58	0.08	0.06
3.	Distribution of Poultry Units under Back Yard Poultry	---	123.66	123.66	34.56	13.11	0.09	0.06
4.	Distribution of Pig Trio	---	5.33	5.33	1.49	5.33	0.03	0.03
5.	Distribution of Pig Units	---	26.78	26.78	7.48	26.78	0.18	0.13
6.	Distribution of Bucks	---	24.81	24.81	6.93	24.81	0.17	0.12
	Sub-total	---	347.52	347.52	97.13	81.61	0.55	0.40
	Grand total	5.14	352.66	357.80	100.00	91.89	0.62	0.45

2.2.4 Fishery

The total expenditure on this sector was Rs. 270.46 lakhs. Among the programmes the most important one was centrally sponsored scheme of development of fresh water aquaculture. This shared as high as 94.45 per cent of the total expenditure of the sector. The

other two state schemes of fisheries extension and fisherman cooperatives had a share of 2.15 per cent and 3.40 per cent respectively. The amount of subsidy in the total fisheries sector was Rs 65.83 lakhs or 24.34 per cent of the total expenditure. While the subsidy amounts in the state schemes equalled the total expenditure, the subsidy given in the centrally sponsored scheme was about one fifth (19.89 per cent) of the total expenditure. Since the expenditure on fishery sector was only 2.67 per cent of the total expenditure on the total agricultural and allied sector. The per farmer and per hectare subsidy on this sector was very small (Rs.0.44 and Rs. 0.32) respectively (Table 2.16).

Table 2.16 Direct subsidies in fisheries sector, Madhya Pradesh

S. No	Name of the Scheme	Expenditure (Rs. in lakhs)			Per cent-age to total	Subsidy (Rs in lakhs)	Percent-age	Subsidy	
		Central	State	Total				Per farmer	Per hectare
	A. Centrally Sponsored Schemes								
1.	Development of fresh water aquaculture	37.16	218.29	255.45	94.45	50.82	77.20	0.34	0.25
	B. State Schemes								
2.	Fisheries Extension	---	5.82	5.82	2.15	5.82	8.84	0.04	0.03
3.	Fisherman Cooperatives	---	9.19	9.19	3.40	9.19	13.96	0.06	0.04
	Sub-total	---	15.01	15.01	5.55	15.01	22.80	0.10	0.07
	Grand total	37.16	233.30	270.46	100.00	65.83	100.00	0.44	0.32

2.2.5 Agriculture and Allied Sectors

During the year 2000-2001 the total expenditure in the four sectors of agriculture, horticulture, animal husbandry and fishery amounted to Rs. 10,106.29 lakhs. Of this, the share of the central government was 60.74 per cent and that of state government 39.26 per cent. This sharing of expenditure differed in the four sectors. While in agriculture sector the share of the central government was 65.19 per cent, it was less (52.71 per cent) in horticulture sector. In the fishery sector the share got reduced to 13.74 per cent and in animal husbandry it was meagre 1.44 per cent. Among all the four sectors the percentage of expenditure in agriculture was as high as 87.30 per cent. Horticulture claimed only 6.49 per cent and animal husbandry and fishery 3.54 and 2.67 per cent respectively.

It may be noted that the expenditure incurred in the two sectors of agriculture and horticulture equals the subsidy granted. This is because in these sectors no separate figures of subsidy are available and the figures mentioned here exclude expenditure on administration. In the other two sectors of animal husbandry and fishery figures for subsidy were available over and above the expenditure. Thus the total subsidy for the four sectors

comes to Rs.9,636.75 lakhs. Agriculture sector predominated sharing 91.56 per cent of the total subsidy. Horticulture sector had also significant share of 6.80 per cent of the total subsidy. The two remaining sectors of animal husbandry and fishery contributed less than 1.00 per cent each. This is also reflected in the subsidy given per farmer and per hectare. While the per farmer subsidy in agriculture and horticulture sectors was Rs. 59.45 and Rs. 4.42 respectively that under animal husbandry and fishery came to only Rs. 0.62 and Rs. 0.44 respectively. The subsidy per hectare in the four sectors was Rs. 43.21, Rs. 3.21, Rs. 0.48 and Rs. 0.32 respectively (Table 2.17).

Table 2.17 Direct subsidies in agriculture and allied sectors, Madhya Pradesh

S. No	Sector	Expenditure (Rs. in lakhs)			Percentage to total	Subsidy (Rs.in lakhs)	Percentage to total	Subsidy (Rs)	
		Central	State	Total				Per farmer	Per hectare
1.	Agriculture	5752.28 (65.19)	3071.27 (34.81)	8,823.55 (100.00)	87.30	8,823.55	91.56	59.45	43.21
2.	Horticulture	345.00 (52.71)	309.48 (47.29)	654.48 (100.00)	6.49	654.48	6.80	4.42	3.21
3.	Animal Husbandry	5.14 (1.44)	352.66 (98.56)	357.80 (100.00)	3.54	91.89	0.96	0.62	0.48
4.	Fishery	37.16 (13.74)	233.30 (86.26)	270.46 (100.00)	2.67	65.83	0.68	0.44	0.32
Total		6,139.58 (60.74)	3,966.71 (39.26)	10,106.29 (100.00)	100.00	9,636.75	100.00	64.92	47.20

2.3 Indirect Subsidies

Indirect subsidies are the ones that reach the farmers along with the use of inputs. Therefore, these are highly correlated with the amount of use of inputs by farmers. Generally, those farmers who use more inputs would naturally enjoy higher subsidies. The indirect agricultural subsidies viz. fertilisers, power and canal irrigation in the state for the years 1980-81 to 2000-01 are discussed below.

2.3.1 Fertilisers

Fertiliser subsidy to farmers represents the difference between the fertiliser prices which farmers pay under the administered price system and the prices which they would have otherwise paid to purchase fertilisers in the open market environment (Hanumantha Rao Committee Report,1998). Using this conceptual frame work, Gulati and Narayanan have worked out the subsidy on urea, DAP and MOP for the farmers for the year 1999-2000. First, they have estimated the import parity price of the above mentioned three constituents.

Then the difference between the farm gate cost of imported fertilisers and farm gate prices paid by the farmers are multiplied by the quantity of fertilisers consumed.

Comparing this estimated subsidy with what is given in central government budget, they have found the share of farmer in budgeted subsidy. During 1999-2000 it was 45.85 per cent of the total subsidy. The per tonne subsidy going to the farmers on import parity basis during 1999-2000 was Rs.1165.80 per tonne on urea, Rs.2403.70 per tonne on DAP and Rs.3806.63 per tonne on MOP and the concession on the others was 45.85 per cent.

The nutrients (N,P,K) of the fertilisers (urea, DAP, MOP etc.) have been worked out by the proportion of the nutrients in different fertilisers. The per kg. subsidy on each nutrient is calculated. It comes to Rs.2.54 for N, Rs. 4.23 for P and Rs. 6.35 for K.

Subsidy for imported fertilizers is generally calculated "as the difference between c.i.f. prices plus pool handling charges and the prices charged by the farmers net of dealers' margin and sales tax. The subsidy on domestic fertilizers, based on the 'retention price scheme', is estimated as the difference between the prices obtained by farmers and the normative cost of the respective fertilizers" (Acharya, 2001).

For India as a whole, the amount of subsidy provided for fertilizers using the above estimate has increased from Rs.505 crores in 1980-81 to Rs.7,089 crores in 2000-01, an increase of 14.56 per cent per annum[1]. During the same period, the total subsidy on fertilizers in Madhya Pradesh increased from Rs.18 crores to Rs.423 crores, an increase of 18.22 per cent per annum. Per hectare subsidy on fertilizers, which indicates the real picture of subsidy provided to farmers, also increased from Rs.8.41 in 1980-81 to Rs.161.41 in 2000-01 in Madhya Pradesh (Table 2.18).

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1 Data on subsidy provided on fertilizer, power and canal irrigation are not available from 1996-97 to 2000-01. The figures reported here are estimates based on the growth rate of subsidy during the period from 1990-91 to 1995-96

Table 2.18 Total and per hectare subsidy on fertiliser : Madhya Pradesh and India

Year	Total subsidy (Rs. in crores)		Gross cropped area ('000 ha.)		Per hectare subsidy (Rs.)	
	Madhya Pradesh	India	Madhya Pradesh	India	Madhya Pradesh	India
1980-81	18	505	21,402	1,72,638	8.41	29.25
1981-82	8	375	21,757	1,77,101	3.68	21.17
1982-83	22	600	22,215	1,73,772	9.90	34.53
1983-84	43	1,042	22,628	1,80,768	19.00	57.64
1984-85	87	1,927	22,407	1,76,414	38.83	109.23
1985-86	96	1,924	23,016	1,77,619	41.71	108.32
1986-87	130	1,897	22,214	1,76,405	58.52	107.54
1987-88	125	2,164	22,694	1,70,120	55.08	127.20
1988-89	198	3,201	22,823	1,81,116	86.75	176.74
1989-90	265	4,542	22,564	1,80,758	117.44	251.28
1990-91	284	4,389	23,995	1,85,742	118.36	236.30
1991-92	305	4,800	23,204	1,82,242	131.44	263.39
1992-93	400	6,136	23,922	1,85,487	167.21	330.80
1993-94	275	4,400	24,944	1,86,420	110.25	236.03
1994-95	346	5,241	24,804	1,88,053	139.49	278.70
1995-96	371	6,235	25,155	1,86,561	147.49	334.21
1996-97*	374	6,082	25,587	1,89,592	146.17	320.79
1997-98	386	6,334	26,071	1,90,762	148.06	332.04
1998-99	399	6,586	26,126	1,92,600	152.72	341.95
1999-2000	411	6,837	26,207	1,94,000	156.83	352.42
2000-2001	423	7,089	26,207	1,94,000	161.41	365.41
ACGR (1980-81 to 2000-01)	18.22	14.56	--	--	16.99	13.90

Note : ACGR- Annual Compound Growth Rate (in per cent)

* Data on subsidy from 1996-97 to 2000-2001 are estimated based on growth rate of subsidy from 1990-91 to 1995-96

Source : Computed using data from Acharya (2001)

Similar to the amount of subsidy, the Madhya Pradesh's share on fertilizers subsidy to the India's total subsidy on fertilizers also increased from 3.57 per cent in 1980-81 to 5.95 per cent in 1995-96. A significant increase in fertilizer consumption, which increased from 201.25 thousand tonnes to 826.28 thousand tonnes in 1995-96 is the main reason for the substantial increase of subsidy on fertilizers in the state. Since the state has large gross cropped area (over 13 per cent of India's GCA), the share of fertilizer subsidy of the state is relatively higher than states like Gujarat, Haryana and Tamil Nadu and lower than states like Uttar Pradesh, Andhra Pradesh, Maharashtra, Punjab and West Bengal (Table 2.19).

2.3.2 Power

Subsidy on power supplied to agriculture (irrigation) accounts significantly in the subsidy to agriculture. This has been increasing at a faster rate mainly because of two reasons. Firstly, majority of the states supplying power to farmers either followed flat rate tariff system or supply it totally free, both of which have increased the subsidy. Secondly, the significant growth of ground water irrigation which took place in Indian agriculture is also responsible for the substantial increase of subsidy on power. While many methods are followed for estimating the total subsidy on power, generally "the difference between the unit cost of generation and supply and the average user charges (tariff) multiplied by the total supplied to agricultural sector provides an estimate of the power subsidy to this sector" (Acharya, 2001).

As expected, subsidy on power has increased significantly over the years both in Madhya Pradesh and India. While the total subsidy on power increased from Rs.8 crores in 1980-81 to Rs.2,541 crores in 2000-01 in Madhya Pradesh, an increase of 36 per cent per annum, the same increased from Rs.334 crores to Rs.21,797 crores in India, an increase of 24.15 per cent per annum. The per hectare subsidy on power is estimated to be Rs.6,589.73 in 2000-01 in Madhya Pradesh, whereas, the same for India was Rs.6,585.99 almost equal to Madhya Pradesh (Table 2.20).

The Madhya Pradesh's share of power subsidy to the India's total subsidy on power significantly increased from 2.38 per cent to 10.41 per cent in 1995-96. The total subsidy on power was found to be higher in Madhya Pradesh as compared to many states (Table 2.21).

2.3.3 Canal Irrigation

Irrigation subsidy is defined as the difference between operating and maintenance cost of irrigation infrastructure in the state and irrigation charges recovered from farmers (Ranade and Mahendra Dev, 1997). Subsidy on canal irrigation is one of the major subsidies, which have been increasing alongwith the growth of canal irrigation mainly due to low water rates that are prevailing in different states. While subsidies on canal irrigation can be estimated using different methodologies, the Central Water Commission (CWC) has been estimating subsidy as the difference between working expenses plus interest on capital outlays and gross receipts from the supply of irrigation water (Acharya, 2001, CWC, 1998).

Table 2. 20 Total and per hectare subsidy on power : Madhya Pradesh and India

Year	Total subsidy (Rs. in crores)		Well net area ('000 hectare)		Per hectare subsidy (Rs.)	
	Madhya Pradesh	India	Madhya Pradesh	India	Madhya Pradesh	India
1980-81	8	334.	986	17,695	81.14	188.75
1981-82	10	401	1,000	18,737	100.00	214.02
1982-83	21	630	1,123	19,347	187.00	325.63
1983-84	23	753	1,146	19,392	200.70	388.30
1984-85	32	973	1,285	20,394	249.03	477.10
1985-86	43	1,322	1,233	20,418	348.74	647.47
1986-87	65	1,845	1,311	20,822	495.80	886.08
1987-88	83	2,608	1,334	21,796	622.19	1,196.55
1988-89	98	2,935	1,469	23,214	667.12	1,264.32
1989-90	90	3,761	1,429	23,886	629.81	1,574.56
1990-91	231	4,605	1,798	24,694	1,284.76	1,864.83
1991-92	343	5,889	1,829	26,037	1,875.34	2,261.78
1992-93	421	7,335	1,840	26,920	2,288.04	2,724.74
1993-94	756	8,966	2,703	27,762	2,796.89	3,229.59
1994-95	1,104	10,941	3,043	28,912	3,628.00	3,784.24
1995-96	1,416	13,606	3,140	29,697	4,509.55	4,581.61
1996-97*	1,565	14,735	3,442	30,818	4,546.78	4,781.30
1997-98	1,809	16,501	3,503	31,585	5,164.15	5,224.32
1998-99	2,053	18,266	3,699	33,096	5,550.15	5,519.10
1999-2000	2,297	20,031	3,856	33,096	5,956.95	6,052.39
2000-2001	2,541	21,797	3,856	33,096	6,589.73	6,585.99
ACGR (1980-81 to 2000-01)	36.00	24.15	--	--	25.82	20.05

Source : Same as in Table ***2.18***

The subsidy on canal irrigation increased from Rs.598 crores in 1980-81 to Rs.7,716 crores in 2000-01 in India, while the same increased from Rs.40 crores to Rs.854 crores in Madhya Pradesh during the same period. The annual compound growth rate was 14.50 per cent for India and 17.42 per cent for Madhya Pradesh. The per hectare subsidy on canal irrigation is relatively higher in Madhya Pradesh (Rs.4,733.92) as compared to India (Rs.4,349.25) (Table 2.22).

Table 2.22 Total and per hectare subsidy on canal irrigation : Madhya Pradesh and India

Year	Total subsidy (Rs. in crores)		Canal (net) area ('000 hectare)		Per hectare subsidy (Rs.)	
	Madhya Pradesh	India	Madhya Pradesh	India	Madhya Pradesh	India
1980-81	40	598	1,035	15,292	386.47	391.05
1981-82	46	654	1,130	15,946	407.08	410.13
1982-83	57	759	1,200	16,185	475.00	468.95
1983-84	61	808	1,212	16,764	503.30	481.99
1984-85	86	1,076	1,267	16,275	678.77	661.14
1985-86	94	1,146	1,296	16,180	725.31	708.28
1986-87	130	1,520	1,394	16,495	932.57	921.49
1987-88	140	1,628	1,368	15,746	1,023.39	1,033.91
1988-89	193	2,230	1,437	17,102	1,343.08	1,303.94
1989-90	205	2,422	1,401	17,124	1,463.24	1,414.39
1990-91	228	2,505	1,536	17,453	1,484.38	1,435.28
1991-92	299	3,109	1,665	17,301	1,795.80	1,797.01
1992-93	338	3,420	1,686	16,986	2,004.74	2,013.42
1993-94	400	3,880	1,768	17,111	2,262.44	2,267.55
1994-95	475	4,502	1,825	17,280	2,602.74	2,605.32
1995-96	551	5,253	1,796	17,120	3,067.93	3,068.34
1996-97*	602	5,616	1,805	17,262	3,335.18	3,253.39
1997-98	665	6,141	1,782	17,612	3,731.76	3,486.83
1998-99	728	6,666	1,753	17,741	4,152.88	3,757.40
1999-2000	791	7,191	1,804	17,741	4,384.70	4,053.32
2000-2001	854	7,716	1,804	17,741	4,733.92	4,349.25
ACGR (1980-81 to 2000-01)	17.42	14.50	--	--	14.17	13.83

Source ; Same as in Table 2.18

As a result of higher subsidy given to farmers in the state, the share of the Madhya Pradesh in the total subsidy of India on canal irrigation was second highest (10.48 per cent) next to Uttar Pradesh (17.94 per cent) during 1995-96 (Table 2.23).

2.3.4 Quantum of Indirect Subsidies

The total subsidies on three major inputs viz. fertilizer, power and canal irrigation increased from Rs.66 crores in 1980-81 to Rs.3,818 crores in 2000-01 in Madhya Pradesh, at a growth rate of 24.11 per cent per annum. The growth rate of total subsidies in Madhya Pradesh was higher as compared to India, where it increased by 18.40 per cent per annum. The same trend was noted in the growth rate of per hectare subsidy as well. However, per hectare subsidy in Madhya Pradesh is relatively lower as compared to India in all the 21 years considered for the analysis, though the gap between the two narrowed down over the years. For instance, per hectare total subsidy was only Rs. 30.84 in Madhya Pradesh as against the all India average of Rs.83.24 during 1980-81. Similarly, during 2000-01, the per hectare subsidy in Madhya Pradesh was Rs.1,456.86 but the same was Rs.1,886.70 for India (Table 2.24).

The relatively lower amount of per hectare total subsidy in Madhya Pradesh was due to lower amount of subsidy provided to fertilizers (low consumption of fertilizers in Madhya Pradesh). Though the per hectare of subsidies were lower in Madhya Pradesh, the state accounted for 9.32 per cent of the India's total subsidies on three major inputs which is the fourth largest among the major states in India (Table 2.25).

2.4 Share of Direct and Indirect Subsidy

We have thus observed that the quantum of direct subsidies in agriculture and allied sectors totalled Rs.96.36 crores. The indirect subsidies on the three items of fertilizers, power and irrigation totalled Rs. 3,818 crores. The total of direct and indirect subsidies came to Rs.3,914.36 crores. The item wise distribution of the subsidies indicated that the subsidy

on power shared 64.91 per cent, canal irrigation 21.82 per cent and that on fertilizers 10.81 per cent. The direct subsidies on all the agriculture and allied sectors shared only 2.46 per cent (Table 2.26).

Table 2.26 Share of direct and indirect subsidies in total agricultural subsidies in Madhya Pradesh

Items	Quantum (Crores Rs.)	Percentage share
A. Direct subsidies		
Agriculture	88.24	2.25
Horticulture	6.54	0.17
Animal Husbandry	0.92	0.02
Fishery	0.66	0.02
Sub total	96.36	2.46
B. Indirect subsidies		
Fertiliser	423.00	10.81
Power	2,541.00	64.91
Irrigation	854.00	21.82
Sub total	**3,818.00**	**97.54**
Grand Total	**3,936.36**	**100.00**

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CHAPTER III

AGRO- ECONOMIC PROFILE OF THE SELECTED DISTRICTS AND SAMPLE FARMERS

This chapter is presented in two sections. Section I deals in profiling the selected districts based on secondary data while section II provides the profile of selected farmers based on primary data.

3.1 Agro-Economic Profile of the Selected Districts

This section gives an account of the main features regarding topography, climate, demography and the economy particularly agricultural economy of the selected districts. The selected districts comprise of two irrigated districts having more than 30 per cent of irrigated area to gross cropped area viz. Raipur and Dhar and two dry districts having less than 30 per cent of irrigated area to gross cropped area viz. Raigarh and Jhabua. These four districts belong to two agro-climatic zones of the state.

3.1.1 Physical Features

Raipur district is located in the south east corner between latitudes $19^{o}50'$ N and $21^{o}53'$ N and longitudes $81^{o}25'$ E and $83^{o}38'$ E in the agro-climatic zone 7 (Eastern Plateau and Hills Region). It may be mentioned that in the process of reorganisation of districts erstwhile Raipur district was recently bifurcated into three districts : Raipur, Mahasamund and Dhamtari. However, the present description of Raipur district pertains to erstwhile undivided Raipur district for the reason that secondary data on all aspects of agriculture is not available for the newly carved three districts. The area of the district was 21,274 sq.km. The district was bounded on the north by Bilaspur and Raigarh districts of Madhya Pradesh, in the east by Kalahandi and Sambalpur districts of Orissa state, in the south by Koraput district of Orissa state and by Bastar district of Madhya Pradesh and in the west by Durg district of Madhya Pradesh. The district was divided into two more or less distinctly marked tracts by the river Mahanadi which flowed through the district from south west to north east. The country to the west of the Mahanadi comprising about half of Baloda bazar tahsil, the whole of Raipur and a small area of Dhamtari tahsil, constituted a part of the

open Chhattisgarh plain, thickly populated and closely cultivated. The character of the open country lying to the east of river Mahanadi was different. This trans Mahanadi area was hilly. Black soil was rare and yellow and red soils prevailed.

Dhar district is situated in south-west corner of Madhya Pradesh and lies between latitudes 22°01' N and 23°10' N and longitudes 74°28' E and 75°42' E. It forms part of zone-9 (Western Plateau and Hills Region). The area of the district was 8,153 sq.km. The district is bounded on the east by Indore, on the south by Khargone (West Nimar), on the west by Jhabua and on the north by Ratlam and Ujjain districts. The district has two clearly marked natural divisions : (i) The Malwa Plateau Tract and (ii) The Nimar Tract. These two natural divisions are separated by the great Vindhyan scrap. To the north of this range lies the fertile Malwa Plateau. In the south the country is rugged and falls abruptly to the level of Narmada valley. The Malwa tract opens out to wide rolling plains of rich black soil and luxuriant crops, rich flat topped hills which are interspersed. In Nimar tract the scene changes, hills succeed one another, but these have little vegetation on them and appear denuded.

Raigarh district is situated in easternmost part of Madhya Pradesh and lies between 21°24' N and 23°15' N latitudes and 82°55' E and 82°24' E longitudes of the state in the agro-climatic zone-7 (Eastern Plateau and Hills Region). It may be mentioned that in the process of reorganisation of districts erstwhile Raigarh district was recently bifurcated into two districts : Raigarh and Jashpur. However, the present description of Raigarh district pertains to erstwhile undivided Raigarh district for the reason that secondary data on all aspects of agriculture is not available for the newly carved two districts. The area of the district was 12,924 sq.km. The district is bounded on the north, by Ranchi district of Bihar, Sundergarh and Sambalpur districts of Orissa on the east, Raipur district on the south and Bilaspur district on the west. The latitude 22°15' N divides the district into two broad divisions. The northern being predominantly hilly region and the southern predominantly plain country. Mahanadi river can also be taken to be dividing the district into two regions. The northern region having a general slope towards the south and the southern region having a general slope towards the north. The Patthalgaon- Lailunga plateau occupies the central and west central part of the district. This is the widest part of hilly range which runs along the west

bank of the Mahanadi river in the north, and further along the east bank of Kurket nala in the south. The general elevation of the plain in Raigarh district is about 1,248 metres. The area comprises one of the most fertile tract and thickly populated region of the district.

Jhabua district is situated in the extreme western part of Madhya Pradesh and lies between 22°0' N and 23°3' N latitudes and 73°0' E and 75°0' E longitudes. It forms part of zone-9 (Western Plateau and Hills region). The area of the district was 6,782 sq.kms. Its boundaries meet the border of Gujarat, Maharashtra and Rajasthan states. The district is bounded by Banswara district of Rajasthan in the north-west, Panch Mahal and Vadodara districts of Gujarat in the west, Dhulia district of Maharashtra and Khargone (West Nimar) district of Madhya Pradesh in the south, Dhar district in the east and Ratlam district in the north. The Narmada river also forms the boundary of the district in the south. The fields are undulating, sloppy, light and stoney in most parts. The soils are poor and not well suited for cultivation. The water retention capacity of the soils is very poor. The two main rivers are Mahi and Anas.

3.1.2 Rainfall

Rainfall in the state varies from less than 600 mm. to more than 1,900 mm. The rainfall is generally high in the south-eastern region and decreases in the north-west. About 90 per cent of the rainfall occurs between June to September. Timely and wide spread adequate rains result in good harvest and yield while scanty and inadequate rains bring distress in the economy. The normal rainfall of the selected irrigated districts of Raipur and Dhar was 1,393.2 mm. and 833.8 mm. respectively. The dry districts of Raigarh and Jhabua received 1,570.8 mm. and 828.0 mm. rainfall respectively. During the triennium ending 1999- 2000 the average annual rainfall of the selected irrigated districts of Raipur and Dhar was 1,041.7 mm. and 826.4 mm. respectively. The dry districts of Raigarh and Jhabua received 1,403.4 and 808.9 mm. of rainfall respectively (Table 3.1).

Table 3.1 Annual rainfall (in mm.) of the selected districts

Year	Irrigated districts		Dry districts	
	Raipur	Dhar	Raigarh	Jhabua
1997-98	1,166.8	840.7	1,387.8	1,177.7
1998-99	867.0	916.5	1,515.0	799.0
1999-2000	1,091.4	722.2	1,307.6	450.0
Average	1,041.7	826.4	1,403.4	808.9
Normal rainfall	1,393.2	833.8	1,570.8	828.0

3.1.3 Population and Workers

The population of the state as per 1991 census was 661.35 lakhs or 7.82 per cent of the country's population. In this respect the state ranks sixth among the states of the country. The rural population constitutes 76.79 per cent of the total population as against 74.29 per cent of the country. Scheduled castes and Scheduled Tribes (SC/ST) population formed 37.82 per cent of the total population as compared to 24.49 per cent of the country. With 149 persons per square kilometre (257 for the country as a whole) the state takes twenty second place in the ranking according to density of population. The workers formed 42.85 per cent of the total population. Male workers formed 52.32 per cent and female workers 32.69 per cent of the respective category of population for females. The corresponding percentage in rural areas was 46.82, 53.96 and 39.26 respectively. Agricultural workers formed 76.98 per cent in total rural workers. Among the total agricultural rural workers 68.38 per cent were cultivators and 30.28 per cent were agricultural labourers.

The selected districts data indicates that the percentage of rural population in total population was higher than the state average in all the selected (irrigated and dry) districts. Dry district of Jhabua had the highest percentage rural population of 91.35 followed by another dry district of Raigarh (90.41 per cent). The other two irrigated districts of Raipur and Dhar had rural population of 86.86 per cent and 80.25 per cent respectively. Regarding the proportion of SC/ST population in total population, Jhabua district recorded the highest proportion with 88.73 per cent followed by Dhar district and Raigarh district, which had 60.42 per cent and 59.08 per cent of SC/ST population. The state average is 37.82 per cent and Raipur district had SC/ST population proportion below the state average i.e. 32.69 per cent.

The percentage of workers in the four districts of Raipur, Dhar, Raigarh and Jhabua was 47.10, 46.78, 49.07 and 54.03 respectively. It showed that the percentage was higher than the state (42.85) for all the selected districts. It also showed that the percentage was higher in dry districts as compared to irrigated districts. The percentage of cultivators among rural workers was 68.38 per cent of the state as a whole. It was 62.47 in Raipur, 71.48 in Dhar, 71.08 in Raigarh and 93.40 in Jhabua district. The percentage of agricultural labourers

to rural workers was 30.28 for the state. The variations between the selected districts was such that it was 35.64 in Raipur, 27.67 in Dhar, 28.05 in Raigarh and 6.34 in Jhabua district (Table 3.2).

Table 3.2 Population and agricultural workers in selected districts - 1991

S. No	Item	Irrigated districts		Dry districts		Madhya Pradesh
		Raipur	Dhar	Raigarh	Jhabua	
1.	Population (in lakhs)					
	Total	39.02	13.66	17.24	11.29	661.35
	Male	19.57	7.00	8.63	5.71	342.32
	Female	19.45	6.66	8.61	5.58	319.03
2.	Rural population (in lakhs)					
	Total	31.36	11.87	15.59	10.31	508.42
	Male	15.63	6.06	7.76	5.20	261.64
	Female	15.73	5.81	7.83	5.11	246.78
3.	% of urban population in total population	19.75	13.14	9.59	8.65	23.21
4.	% of SC/ST population in total population	32.69	60.42	59.08	88.73	37.82
5.	Workers (in lakhs)					
	Total	18.42	6.39	8.46	6.10	283.40
	Male	10.46	3.70	4.97	3.21	179.10
	Female	7.96	2.69	3.49	2.89	104.30
6.	% of workers to total population					
	Total	47.10	46.78	49.07	54.03	42.85
	Male	53.45	52.86	57.59	56.22	52.32
	Female	40.92	40.39	40.53	51.79	32.69
7.	% of rural workers to rural population					
	Total	50.89	48.78	51.05	56.16	46.82
	Male	54.74	53.30	58.89	57.11	53.96
	Female	47.23	44.06	43.30	55.18	39.26
8.	% of agricultural workers to total rural workers					
	Total	83.14	79.27	72.11	68.05	76.98
	Male	84.52	85.45	87.53	89.22	85.31
	Female	81.56	71.48	51.33	45.74	64.86
9.	% of cultivators in rural workers					
	Total	62.47	71.48	71.08	93.40	68.38
	Male	66.02	76.09	75.75	95.09	73.78
	Female	58.25	64.48	59.77	89.92	58.03
10.	% of agricultural labourers to total rural workers					
	Total	35.64	27.67	28.05	6.34	30.28
	Male	30.93	22.83	22.75	4.53	24.42
	Female	41.25	34.97	40.23	10.08	41.51

3.1.4 Operated Area

The average size of holdings in Madhya Pradesh was 2.28 hectares. While the size of holdings was lower than the state average in three districts of Raipur, Raigarh and Jhabua, it was higher in Dhar district. As regards the distribution of percentage of number of holdings in different size groups and the relative percentage of area operated in different size groups, it was noted that while in the marginal and small size groups the percentages of number of holdings were higher than the percentages of area operated in those size groups, in the semi-medium, medium and large size groups the percentages of number of holdings were smaller than the percentages of the area operated. This clearly indicates that the distribution of holdings and area were unequal and to the disadvantage of the marginal and small size holdings. In the selected districts also the picture regarding the proportion of number of holdings and the proportion of area operated in different size groups was similar with only nominal variations (Table 3.3).

Table 3.3 Percentage distribution of holdings and area operated in selected districts, 1995-96

Size of holdings	Irrigated districts				Dry districts				Madhya Pradesh	
	Raipur		Dhar		Raigarh		Jhabua			
	Holdings	Area operated	Holdings	Area operated	Holdings	Area operated	Holdings	Area operated	Holdings	Area operated
Marginal (Below 1 hect.)	57.78	16.46	25.12	4.39	44.92	9.30	30.09	7.54	40.38	8.20
Small (1-2 hectares)	22.34	20.26	26.28	12.66	20.81	14.06	29.91	19.65	24.07	15.24
Semi-Medium (2-4 hectares)	11.67	25.94	24.92	22.54	19.34	24.97	25.75	32.33	19.97	24.16
Medium (4-10 hectares)	7.14	26.02	19.11	37.54	12.62	35.17	13.16	34.00	12.91	33.64
Large (Above 10 hect.)	1.07	11.32	4.57	22.87	2.31	16.50	1.09	6.48	2.67	18.76
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Average size of holdings (hect.)	---	1.52	---	3.07	---	2.17	---	2.23	---	2.28

3.1.5 Land Utilisation

Of the total geographical area of the state the net sown area formed 49.01 per cent. The percentage of net sown area was highest (61.76) in Dhar district. This was followed by 53.03 in Jhabua district and 43.25 in Raigarh district. The percentage was lowest (41.11) in Raipur district. Forest formed 28.01 per cent of the geographical area of the state. Among the selected districts the percentage of forest area was highest (39.11) in Raipur district

followed by Raigarh district (31.91). Thus the Chhattisgarh districts had higher percentages of forest area as compared to other two districts of Dhar (14.62) and Jhabua (19.38) respectively (Table 3.4).

Table 3.4 Land utilisation pattern in percentages to geographical area in selected districts, 1999-2000

S. No	Particulars	Irrigated districts		Dry districts		Madhya Pradesh
		Raipur	Dhar	Raigarh	Jhabua	
1.	Forests	39.11	14.62	31.91	19.38	28.01
2.	Barren and uncultivable land	0.73	8.16	2.19	8.63	4.44
3.	Land put to non-agricultural uses	6.47	5.97	6.91	8.03	5.97
4.	Culturable waste	2.35	2.26	1.51	3.88	3.80
5.	Permanent pastures and other grazing lands	7.07	6.41	9.79	5.30	5.39
6.	Land under miscellaneous tree crops and groves (not included in NSA)	0.01	---	---	---	0.05
7.	Current fallows	1.21	0.41	2.22	0.98	1.58
8.	Other fallows	1.94	0.41	2.22	0.77	1.75
9.	Net sown area	41.11	61.76	43.25	53.03	49.01
10.	Geographical area	100.00	100.00	100.00	100.00	100.00

3.1.6 Sources of Irrigation

Among the sources of irrigation other wells were most important and contributed 44.27 per cent of the net irrigated area for the state. The second important sources were tubewells and contributed 21.28 per cent. Canals were the third important sources contributing 17.70 per cent. However, among the selected districts the percentage contribution of different sources varied considerably. Thus in Raipur district canals were most important forming 83.48 per cent of the total net irrigated area. In Dhar district tubewells were most important and contributed 47.83 per cent and other wells, 34.54 per cent. In Raigarh district as in Raipur district canals contributed largest percentage. Tubewells were the second important sources contributing 29.31 per cent and other sources contributing 21.56 per cent. In Jhabua district while other wells contributed 39.67 per cent other sources contributed 38.20 per cent (Table 3.5).

Table 3.5 Proportion of net irrigated area by sources in selected districts, 1999-2000

S. No	Sources of irrigation	Irrigated districts		Dry districts		Madhya Pradesh
		Raipur	Dhar	Raigarh	Jhabua	
1.	Canals	83.48	2.85	36.88	9.31	17.70
2.	Tanks	5.12	2.13	9.04	8.63	2.34
3.	Tubewells	5.05	47.83	29.31	4.19	21.28
4.	Other wells	2.54	34.54	3.21	39.67	44.27
5.	Other sources	3.81	12.65	21.56	38.20	14.41
6.	Total NIA	100.00	100.00	100.00	100.00	100.00

3.1.7 Irrigated Area and Intensity of Irrigation

The percentage of net irrigated area to net sown area shows the extent of irrigation. For the state as a whole the percentage was 37.57. In the irrigated districts of Raipur and Dhar the percentage was 51.81 and 41.60 respectively. This was higher than the dry districts of Raigarh (12.41) and Jhabua (8.38). Another way of studying the extent of irrigation is to know the percentage of gross irrigated area to gross cropped area. This was 28.54 per cent for the state as a whole. It was naturally higher for irrigated districts of Raipur (44.70) and Dhar (29.19). For dry districts of Raigarh and Jhabua the percentage was 13.47 and 7.52 respectively. The third aspect of irrigation is the intensity of irrigation. This gives us the extent of irrigation of land more than once. For the state as a whole it was 102.94 per cent. In Raipur districts it was 106.83 and in Dhar it was 100.00. In Raigarh districts the intensity was 116.42 per cent and in Jhabua districts it was 103.66 per cent. This showed that intensity of cropping was slightly higher in Chhattisgarh districts than the rest of the region of the state (Table 3.6).

Table 3.6 Percentage of irrigated area and intensity of irrigation in selected districts, 1999-2000

S .No	Item	Irrigated districts		Dry districts		Madhya Pradesh
		Raipur	Dhar	Raigarh	Jhabua	
1.	% of NIA to NSA	51.81	41.60	12.41	8.38	37.57
2.	% of GIA to GCA	44.70	29.19	13.47	7.52	28.54
3.	Intensity of irrigation	106.83	100.00	116.42	103.66	102.94

3.1.8 Cropping Pattern

The types of crops grown vary from region to region with varying types of soil, climate and irrigation potential. The cropping pattern of the state is food crops oriented as food crops occupied nearly three fourth (75.60 per cent) of the gross cropped area. Among food crops again food grains were dominant. The food grains were constituted of cereals and millets and pulses. While cereals and millets formed 41.94 per cent, pulses formed 20.75 per cent. Among the non food crops oilseeds group of crops formed 28.43 per cent and that too mainly by soybean (21.74 per cent). The percentage of different crops to gross cropped area was quite different for Chhattisgarh districts than the two districts of other region. It was observed that more than 95 per cent of the cropped area was occupied by food crops in Chhattisgarh districts. Again, among the food crops, food grains occupied more than 90 per cent. This was constituted by cereals and millets (more than 80 per cent) and pulses (more than 10 per cent). Among non food crops only oilseeds were worth mentioning. And among oilseeds only groundnut and sesamum made some mark. Among the non Chhattisgarh districts also food crops predominated but to a lower extent. Among food crops while wheat, maize and gram were important in Dhar district maize, other pulses (mainly urad) and gram were important Jhabua district. Among the non food crops while soybean and fibres (mainly cotton) were important in Dhar district, soybean, groundnut and fibres (mainly cotton) were important in Jhabua district. Fodder crops had some importance in both the districts of Dhar and Jhabua.

The percentage of net sown area to gross cropped area for the state was 73.80. In Raipur districts this was 80.76, in Dhar 70.17, in Raigarh 93.24 and in Jhabua it was 86.64. The intensity of cropping was inversely related to the percentage of net sown area to gross cropped area. This, in Dhar district, where the percentage NSA to GCA was lowest, the intensity of cropping was highest. Inversely in Raigarh district where the percentage of NSA to GCA was highest, the intensity of cropping was lowest (Table 3.7).

Table 3.7 Percentage of area under different crops to gross cropped area in selected districts, 1999-2000

S. No	Crop	Irrigated districts		Dry districts		Madhya Pradesh
		Raipur	Dhar	Raigarh	Jhabua	
1.	Paddy	78.57	0.41	58.67	6.09	8.33
2.	Jowar	0.02	3.21	---	4.29	3.30
3.	Bajra	---	0.66	---	3.55	0.67
4.	Maize	0.08	9.66	0.30	24.84	3.93
5.	Wheat	1.39	20.62	0.32	3.35	22.83
6.	Other cereals and millets	1.37	0.03	22.56	1.64	2.89
7.	Total cereals and millets	81.43	34.61	81.86	46.76	41.94
8.	Gram	1.33	7.22	0.17	7.35	12.60
9.	Arhar	0.41	0.66	0.32	1.09	1.51
10.	Other pulses	12.98	4.36	10.39	24.93	6.64
11.	Total pulses	14.72	12.24	10.88	38.38	20.75
12.	Total food grains	96.15	48.85	92.74	85.14	62.69
13.	Sugarcane	0.02	0.09	0.21	---	0.37
14.	Total spices	0.20	0.16	0.34	0.03	1.44
15.	Total fruits	0.26	0.17	0.28	0.01	0.26
16.	Total vegetables	1.47	0.81	1.58	0.36	0.84
17.	Total fruits and vegetables	1.73	0.98	1.86	0.37	1.10
18.	Total food crops	98.10	49.52	95.15	77.79	75.60
19.	Groundnut	0.18	0.79	2.83	3.72	1.09
20.	Castorseed	Neg.	0.12	0.01	0.32	0.01
21.	Sesamum	0.54	0.02	0.89	0.02	0.67
22.	Soybean	0.12	35.41	---	9.87	21.74
23.	Other oilseeds	0.83	0.15	0.87	---	4.92
24.	Total oil seeds	1.67	36.49	4.60	13.93	28.43
25.	Fodder crops	0.02	3.66	---	3.79	3.42
26.	Total fibres	0.07	10.32	0.24	4.48	2.41
27.	Other non-food crops	0.14	0.12	---	---	0.13
28.	Total non-food crops	1.90	50.48	4.84	22.21	34.40
29.	Gross cropped area	100.00	100.00	100.00	100.00	100.00
1.	% of NSA to GCA	80.76	70.17	93.24	86.64	73.80
2.	Intensity of cropping	123.82	142.50	107.25	115.41	135.49

3.1.9 Irrigated Crops

In Madhya Pradesh the most important irrigated crop was wheat and was irrigated to the extent of 72.91 per cent. Another irrigated crop was gram and was irrigated to the extent of 36.58 per cent. Sugarcane, spices, fruits and vegetables are the three crops / crop groups which necessarily need irrigation and therefore, the extent of irrigation of these crops / crop groups was 99.61, 79.65 and 82.91 per cent respectively. Cotton was irrigated to the extent of 39.31 per cent.

Like difference between the crops grown in Chhattisgarh and non Chhattisgarh districts the percentage of irrigated area also varied between these two categories of districts. While wheat was important irrigated crop in all the four districts, in Raipur district paddy was also irrigated to a significant percentage of 53.95. Gram was more important irrigated crop in non Chhattisgarh districts of Dhar and Jhabua. Groundnut was more important irrigated crop in Chhattisgarh districts whereas cotton was more important in non Chhattisgarh districts. The position as regards sugarcane, spices and fruits and vegetables was more or less similar to that found in the state as a whole (Table 3.8)

Table 3.8 Percentage of irrigated area to cropped area in selected districts, 1999-2000

Crop	Irrigated districts		Dry districts		Madhya Pradesh
	Raipur	Dhar	Raigarh	Jhabua	
Paddy	53.95	---	17.97	0.09	14.32
Jowar	3.97	0.01	---	0.17	0.13
Maize	25.36	1.82	---	5.15	1.37
Wheat	55.01	92.41	95.37	95.73	72.91
Other cereals & millets	---	16.00	---	1.15	4.98
Total cereals	53.02	55.58	13.25	10.40	43.01
Gram	10.58	21.62	9.92	22.61	36.58
Other pulses	0.46	0.57	2.48	0.10	8.26
Total pulses	1.38	12.99	2.59	5.06	25.45
Sugarcane	99.31	100.00	100.00	100.00	99.61
Total spices	71.68	86.59	64.21	86.59	79.65
Total fruits & vegetables	53.44	96.28	53.71	73.10	82.91
Total food crops	45.33	46.94	13.20	84.72	39.24
Groundnut	29.20	1.26	28.38	0.24	6.99
Soybean	0.12	0.07	----	0.26	1.14
Other oilseeds	4.92	4.41	6.11	0.05	22.39
Total oilseeds	7.24	0.13	19.80	0.27	5.55
Total fibres	---	54.84	---	19.51	39.31
Fodder crops	37.60	6.34	20.69	0.61	5.59
Other non-food crops	75.45	51.14	----	29.63	62.78
Total non-food crops	12.24	11.78	18.82	4.22	8.13
All crops	44.70	29.19	13.46	7.53	28.54

3.1.10 Productivity of Crops

The yield per hectare of paddy for the state was 1,271 kg. In the paddy growing Chhattisgarh region the yield per hectare of paddy was higher (Raipur district – 1,496 kg and Raigarh district – 1,282 kg) as compared to non paddy growing districts of Dhar and Jhabua. Similar is the case with wheat. The yield for the state for this crop was 1,922 kg. In the wheat growing districts of Dhar and Jhabua the yield was higher (1,899 kg and 1,877 kg respectively) as compared to paddy growing districts of Raipur and Raigarh. In the case of arhar, gram, groundnut and sesamum the yields were higher in paddy growing districts than the non paddy districts (Table 3.9).

Table 3.9 Productivity of important crops in selected districts, 1999-2000

Crop	Irrigated districts		Dry districts		Madhya Pradesh
	Raipur	Dhar	Raigarh	Jhabua	
Paddy	1496	601	1,282	732	1,271
Jowar	669	428	824	515	782
Maize	1,130	1,200	1,678	1,269	1,588
Kodo- kutki	139	100	344	200	276
Wheat	1,146	1,899	1,440	1,877	1,922
Arhar	722	520	1,170	465	904
Gram	716	577	599	563	965
Groundnut	818	588	996	817	999
Sesamum	228	146	244	141	230
Linseed	235	322	274	---	356
Rapeseed & mustard	579	536	939	360	1,002
Soybean	903	1,003	1,000	697	1,067
Sunflower	390	---	209	---	395
Cotton	----	534	-----	194	442

3.1.11 Implements and Machinery

In the Madhya Pradesh the area under the command of wooden plough was 4.47 hectares. Among the selected districts the area commanded per plough was smaller than the state average in three of the four districts of Raipur, Raigarh and Jhabua. In the state an iron

plough commanded 32.65 hectares. The area commanded was highest in Raipur (177.98 hectares) and lowest in Dhar district (20.84 hectares), indicating thereby the popularity of iron plough in Dhar district. As regards mechanisation it was observed that a tractor commended 80.84 hectares in the state. The area commanded was smallest (83.95 hectares in Dhar) and highest (369.71 hectares in Jhabua) This shows that the Dhar was advanced district as regards tractorisation and Jhabua was the most backward district. As regards area commanded by an irrigation pump it was 11.00 hectares for the state as a whole. It was lowest (7.58 hectares in Dhar districts) and highest (97.32 hectares in Raigarh district). This shows that pumps were profusely used in Dhar district and sparsely used in Raigarh district (Table 3.10)

Table 3.10 Net sown area in hectares per implement / machinery in selected districts, 1999-2000

Item	Irrigated districts		Dry districts		Madhya Pradesh
	Raipur	Dhar	Raigarh	Jhabua	
Wooden plough	2.55	5.00	1.48	1.72	4.47
Iron plough	177.98	20.84	86.55	60.92	32.65
Tractor	150.50	83.95	150.18	369.71	80.84
Electric pump	94.29	7.86	430.41	18.21	12.81
Diesel pump	101.65	216.12	125.76	44.08	77.41
Total pump	48.92	7.58	97.32	12.88	11.00

3.2 Profile of the Sample Farm Households

The preceding section provides the profile of the selected districts. This section profiles the basic features of the selected farm households covering aspects like population, workers, literacy of the heads of the households, size of holding, land tenure, cropping pattern and assets owned by the households.

3.2.1 Population and Workers

The number of households selected from scheduled castes and scheduled tribes (SC/ST) was 74 and that from other castes, 126 making the total of 200 sample households. The number representing irrigated districts and dry districts for both the castes groups was

same so that there were 37 SC/ST households and 63 other castes households. The population of the SC/ST of both irrigated and dry districts came to 620 or the average size of family of 8.38 members. Of the total male population workers formed 78.06 per cent. Of the total female population, female workers formed 72.28 per cent and children 20.16 per cent. Of the total workers the percentage of agricultural workers in the category of male members was 79.08. The percentage of female agricultural workers was 90.98. The percentage for children was 100.00 indicating thereby that child workers were engaged as agricultural workers only. As regards literacy level it was observed that 31.08 per cent were illiterate, 37.84 per cent had education up to primary level, 18.92 per cent had education up to middle level, 5.40 per cent had education up to secondary level and remaining 6.76 per cent were graduates or still highly educated. In the case of other castes population the average size of family was of 7.46 members. As regards proportion of workers to population it was observed that among adult males the percentage was 78.59. Among female adults it was 71.94 and among children it was 16.51. The percentage of agricultural workers to total workers for adult males was 81.32. For adult females it was 97.25 and for children it was 100.00 per cent. About literacy level it was noted that 11.11 per cent were illiterate, 27.78 per cent were literate up to primary level, 18.25 per cent were literate up to middle level, 19.84 per cent were literate up to secondary level and remaining 23.02 per cent were either graduate level literates or higher than that. The tables indicated that the literacy level was higher among other castes population than the SC/ST population. The percentage of illiterate was higher among SC/ST but the percentage of literate up to secondary level, graduate level and above was higher among other castes people (Table 3.11, 3.12 and 3.13).

3.2.2 Land Particulars

Among the SC/ST the total land cultivated for both irrigated and dry districts was 246.35 hectares. There was no fallow land in any of the size group. The leased in land was only 7.89 hectares and leasing in was done mainly by marginal and small farmers. The land leased out was 3.22 hectares and the leasing out was mainly by medium and large size groups and to some extent by small size group. The net result of land owned, land leased in and land leased out was that area of operational holding was 251.02 hectares or an average size of

3.39 hectares. Among the sources of irrigation most important was tanks and others contributing 61.79 per cent of the total irrigated area. Canals irrigated 20.05 per cent and wells and tubewells 18.16 per cent. The overall intensity of cropping was 127.70. Among the different size groups it was highest (136.47) in the marginal size group and 121.28 in the small size group. In the medium and large size group it was 127.70 or equal to the average for the whole SC/ST group.

In the other castes group the total operated area was 390.70 hectares or 3.10 hectares per households. There was no fallow land in this group also. The leased in land was 22.19 hectares and leasing in was more common among medium and large size holdings. Leasing out of land was localised in medium and large size groups. Among the sources of irrigation as in the case of SC/ST group, the most important sources were tanks and others and shared 42.70 per cent of the irrigated area. The second important sources were wells and tubewells and commanded 38.04 per cent of the irrigated area. The overall intensity of cropping was 137.28 per cent. As in the case SC/ST group the intensity of cropping was highest (155.72 per cent) in the marginal size group. This was followed by small size group where it was 144.50 per cent. In the medium and large size group it was lowest (133.09 per cent) (Table 3.14, 3.15, and 3.16)

3.2.3 Irrigation Status

The percentage of irrigated area to operated area in SC/ST group was 70.11. It was 76.66 per cent in the other castes group. The percentage was highest in the medium and large size group of both the categories of SC/ST and other castes. The difference between irrigated and dry districts was significant. In the case of SC/ST group in irrigated districts it was highest in medium and large size group. In dry districts it was highest in small size group. In the case of other castes group in irrigated districts the percentage was highest in medium and large size group. In the case of dry districts it was highest in marginal size group (Table 3.17).

Table 3.17 Percentage of irrigated area in total operated area of the sample farms

Farm Size	Irrigated districts	Dry districts	Irrigated + Dry districts
A. Scheduled Castes & Scheduled Tribes			
Marginal	84.57	51.85	68.60
Small	92.80	54.11	69.71
Medium & Large	94.95	49.57	70.30
Over All	93.78	50.30	70.11
B. Other Castes			
Marginal	82.52	59.12	71.35
Small	84.35	42.17	62.97
Medium & Large	92.76	59.03	80.14
Overall	90.74	55.96	76.66

3.2.4 Cropping Pattern

In the irrigated districts in scheduled castes and scheduled tribes group the percentage of area under paddy was highest (42.42) followed by cotton (13.77). Another important crop was wheat and shared 11.84 per cent. In the other castes group although paddy was the most important crop with 23.11 per cent the area under fruits, vegetables and spices followed closely and had 21.15 per cent of the area. The third important crop was cotton and shared 17.65 per cent. Wheat contributed 13.46 per cent. It is thus observed that other castes group farms had area under different crops more evenly distributed and also had significantly higher proportion of cash or commercial crops. The difference in the cropping pattern between the size groups was such that larger farmers had more evenly distributed area among number of crops and that too more on commercial crops. (Table 3.18).

In the dry districts among the SC/ST group cotton was the most important crop and contributed 26.78 per cent of the gross cropped area. Soybean was the second important crop and formed 18.75 per cent followed closely by maize with 15.85 per cent area. Among pulses urad (7.76 per cent) and arhar (5.06 per cent) were important. In the other castes group paddy dominated the cropping pattern with 58.32 per cent of the cropped area. Among other crops only wheat was worth mentioning and had 8.29 per cent of the cropped area. It was observed that the difference in crop pattern between the size groups on the SC/ST group was such that soybean and cotton were more predominant on small, medium and large farms than the marginal farms. In the case of other castes groups there was no noticeable difference between the size groups with regard to cropping pattern (Table 3.19).

3.2.5 Adoption of HYV Technology

The extent of adoption means the percentage area coverage of high yielding varieties as against local varieties. In irrigated districts on SC/ST group the entire area under paddy was under high yielding varieties. In the case of wheat the percentage of coverage under HYV was 90.46. It was cent per cent in the case of soybean and 95.40 per cent in the case of cotton. In the case of other castes group the percentage coverage under HYV of wheat was as high as 97.65. In the case of soybean as in the case of SC/ST group the coverage was cent per cent. In the case of cotton also the percentage of coverage was 92.79. It was also observed that in the case of maize and gram the percentage of coverage under HYV was higher on other castes group than the SC/ST group.

In the case of dry districts on SC/ST group 91.57 per cent area was under HYV. In the case of wheat entire area was under HYV and in the case of maize 72.00 per cent of the total area was under HYV. Entire soybean area was under HYV and 93.00 per cent of the cotton area was under HYV. In the case of other castes group 98.23 per cent of the paddy area was under HYV. In soybean as in the case of SC/ST group the entire area was under HYV. In the case of wheat cent per cent and in the case of maize it was 80.75 per cent area under HYV. In the case of gram and cotton the percentages were higher on other castes group than the SC/ST group (Table 3.20)

3.2.6 Productivity of Important Crops

It is common that the productivity of crops which get irrigation is above 20 per cent higher than the crops which are rainfed. This is proved to be true on our sample farms also. Generally, yields were higher in irrigated districts than dry districts for both the groups of SC/ST and other castes. There were very few examples where yields were higher in dry districts than irrigated districts but these could also be attributed to the fact that with in the irrigated districts there could be rainfed farms and with in the dry districts there could be irrigated farms. In the SC/ST group the yield of paddy in the irrigated districts was 1,765 kg. against 1,624 kg. in dry districts. In the case of wheat the yield in irrigated districts was 2,190 kg whereas in dry districts it was 2,180 kg. This small difference of 10 kg. could be

that in dry districts wheat was grown on irrigated areas only. In the case of other crops difference was quite noticeable. In the case of other castes the yields in irrigated districts were definitely higher than the dry districts without any exception (Table 3.21).

3.2.7 Farm Assets

Farm assets include farm equipments, draught animals and farm houses. Farms equipments include some mechanized implements like tractor and trolly, electric pumps, diesel pumps, sprinkler sets and threshers. Others were mainly bullock drawn implements. Draught animals included bullocks and he buffaloes.

It was observed that in irrigated districts the value per hectare of total equipments on the farms of SC/ST was Rs.13,509. The value on farms of other castes was higher and was Rs.15,131. It was noticed that the value of all equipments were higher on the farms of other castes than the farms of SC/ST. However, the value per hectare of bullocks and he buffaloes were lower on the farms of other castes than the farms of SC/ST. As regards the value of farm houses it was noticed that the value was higher on farms of other castes (Rs.6,928) than the farms of SC/ST (Rs.5,227). It is concluded that the farms of other castes were better equipped than the farms of SC/ST as far as farm equipments, draught animals and farm houses are concerned.

In the case of dry districts the value of total equipments, draught animals and farm houses were higher for farms of other castes than the farms of scheduled castes and scheduled tribes.

In the case of irrigated districts the value per hectare of tractor and trolley was higher on farms of SC/ST (Rs.10,275) than the farms of other castes (Rs.9,941). Similar observation can be made of value of diesel pumps. In the case of all other equipments and the value of total implements the farms of other castes were better equipped than the farms of SC/ST. In the case of draught animals the values were higher on farms of SC/ST than the farms of other castes. However, the value of per hectare of operational holding of farm houses of other castes (Rs.8,089) was higher than that of farms of SC/ST (Rs.5,627) (Table 3.22).

The value per farm of total equipments in the selected districts on other castes farmers (Rs.46,916) was slightly higher than the scheduled castes and scheduled tribes farmers (Rs.45,824). In the case of bullocks and he buffaloes the value per farm on scheduled castes and scheduled tribes farms was higher than the other castes farms. In the case of farm houses the value per farm was higher on other castes farms (Rs.21,484) than scheduled castes and scheduled tribes farms (Rs.17,732) (Table 3.23).

It was generally observed that the value per hectare of farm equipments, draught animals and farm houses was higher on farms of irrigated districts than the dry districts.

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CHAPTER – IV

UTILISATION OF AGRICULTURAL SUBSIDIES: AN EVIDENCE FROM FIELD SURVEY

In this chapter, using the field survey data collected from the sample farmers, we analyse the utilisation of direct subsidies, indirect subsidies, total subsidies (direct + indirect) and food subsidies. The problems in accessing subsidies especially by scheduled castes/ scheduled tribes farmers are also discussed in this chapter.

4.1 Direct Subsidies

Direct subsidies as mentioned earlier were for four sub sectors of agriculture, horticulture, animal husbandry and fishery. While in the agriculture sector, seed subsidy formed important component and could easily be separated from sprayers, sprinkler sets and implements etc. for other sub sectors all the inputs have been grouped together. The reasons are two, firstly, in these sub sectors subsidy provided were comparatively lower and secondly it was not found useful to separate these and describe.

It was observed that the amount of subsidy per hectare of gross cropped area in the case of irrigated districts was Rs. 637 and in the case of dry districts it was Rs.423. Thus the amount of subsidy in irrigated districts was about one and half times more than the dry districts. It was noted that the amount of subsidy in irrigated districts was far more on other castes farms than the farms belonging to SC/ST. In the case of dry districts, however, no such difference was observed. Another thing noticed was that the amount of subsidy on marginal and small farms was more than medium and large farms. This is because of the fact that the government wants to help poor and weaker sections particularly the small farmers in their farm business. This held true for both irrigated and dry districts and also for the combination of both (Table 4.1)

The subsidy per farm was Rs.3,236 for irrigated districts and Rs.1,476 for dry districts. Thus the subsidy on irrigated districts farms was more than double that of dry districts. As is observed, elsewhere, the subsidy per farm increased with the size of holding both in irrigated and dry districts. For the total farms as a whole (irrigated + dry) it was observed that the subsidy per farm was more on other castes farms than the farms of the SC/ST. This was also true for irrigated districts. However, no such trend could be observed in the case of dry districts (Table 4.2).

4.2 Indirect Subsidies

Indirect subsidy per hectare of gross cropped area in irrigated districts was Rs.814 and in dry districts it was Rs.589. Thus the subsidy amount in irrigated districts was far more than the dry districts. The reason is very clear. The power is mainly used for irrigation and fertilizers are used more in irrigated districts. This was clearly noticed on the sample farms. While fertilizers subsidy in irrigated districts was Rs.411 that in dry districts was Rs.340. The amount of power subsidy in irrigated districts was Rs.354. It was Rs.249 in dry districts. In the case of indirect subsidy the amount was more on the farms of other castes than the farms of SC/ST. This was observed in both irrigated and dry districts. It was also observed that the farms of other castes enjoyed higher amount of subsidy than the farms SC/ST in all the size groups of farms (Table 4.3).

Table 4.3 Indirect subsidies utilised by sample farmers

(Rs. per hectare of gross cropped area)

Farm Size	Fertilizer			Power			Irrigation			Total		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
Irrigated districts												
Marginal	403	449	435	231	267	256	98	93	95	732	809	785
Small	389	413	407	249	301	287	29	32	31	667	746	725
Medium + Large	349	441	409	367	381	376	80	28	46	796	850	831
Total	358	438	411	343	359	354	77	35	49	778	832	814
Dry districts												
Marginal	311	341	333	131	239	209	--	07	05	442	587	547
Small	324	353	344	217	289	266	--	--	--	541	642	610
Medium + Large	295	384	340	236	268	252	--	--	--	531	652	593
Total	300	371	340	225	267	249	--	01	01	525	639	589
Irrigated + dry districts												
Marginal	361	396	386	186	253	234	54	51	52	601	700	671
Small	355	385	376	232	295	277	14	17	16	601	698	669
Medium + Large	324	422	383	305	344	329	42	19	28	671	785	740
Total	330	413	382	287	325	311	40	23	29	658	761	722

The per farm amount of indirect subsidy was Rs.4,133 in the irrigated districts. In the dry districts the amount was Rs.2,058 or about half the amount of irrigated districts. It was also observed that the amount increased with the size of farms in both irrigated and dry districts and also for the farm group formed by integrating both irrigated and dry districts into one. As in the case of observations on per hectare subsidy here also per farm subsidy on fertilizers, power and irrigation was more in irrigated districts than the dry districts. This is because of the fact that power is needed for irrigation and fertilizers are applied in large quantities in irrigated areas. It was also noted that the per farm subsidy was higher on farms of other castes than the farms of SC/ST. In irrigated districts this was observed in all the size groups. In dry districts, however, the behaviour of medium and large size group was slightly deviating from other size groups. The trend was similar for the combined group of irrigated and dry districts except for the medium and large size group (Table 4.4).

Table 4.4 Indirect subsidies utilised by sample farmers

(Rs. per farm)

Farm Size	Fertilizer			Power			Irrigation			Total		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
Irrigated districts												
Marginal	412	619	542	236	368	319	100	129	118	749	1,117	979
Small	701	1,221	1,026	449	890	724	52	94	78	1,203	2,204	1,828
Medium + Large	3,678	4,990	4,516	3,867	4,311	4,151	842	317	507	8,387	9,619	9,174
Total	1,630	2,358	2,089	1,564	1,932	1,796	349	189	248	3,543	4,479	4,133
Dry districts												
Marginal	262	455	383	110	319	241	--	10	06	372	784	630
Small	647	895	802	433	732	620	--	--	--	1,080	1,627	1,422
Medium + Large	2,754	2,100	2,337	2,204	1,467	1,733	--	--	--	4,958	3,567	4,069
Total	1,231	1,161	1,187	924	836	869	--	04	02	2,156	2,001	2,058
Irrigated + Dry districts												
Marginal	337	537	462	173	344	280	50	69	62	561	950	804
Small	674	1,058	914	441	811	672	26	47	39	1,141	1,916	1,625
Medium + Large	3,216	3,545	3,426	3,035	2,889	2,942	421	158	253	6,673	6,593	6,622
Total	1,431	1,759	1,638	1,244	1,384	1,332	175	96	125	2,849	3,240	3,096

4.3 Total Agricultural Subsidies

When direct and indirect subsidies were combined together, it was noticed that in irrigated districts the amount per hectare of gross cropped area was quite higher for indirect

subsidy than the direct subsidy. This was also true for dry districts. In these districts the average amount of indirect subsidy was Rs.589 as compared to Rs.423 in the case of direct subsidy. The total picture for all the districts combined was such that the amount of indirect subsidy per hectare was Rs.722 as compared to Rs.550 for direct subsidy. Caste wise difference was such that the subsidy for farms of other castes people was Rs.1,489 as compared to Rs.909 for farms of SC/ST farmers. The total for irrigated and dry districts also confirm the fact that the subsidy amount increased with the size of farms in the case of other castes farmers. However, there was no such phenomenon in the case of farms of SC/ST (Table 4.5).

Table 4.5 Total agricultural subsidies utilised by sample farmers

(Rs. per hectare of gross cropped area)

Farm Size	Direct			Indirect			Total		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
Irrigated districts									
Marginal	56	396	291	732	809	785	788	1,205	1,076
Small	63	1,349	785	667	746	725	730	2,095	1,510
Medium + Large	38	984	658	796	850	831	834	1,834	1,489
Total	42	933	637	778	832	814	820	1,765	1,451
Dry districts									
Marginal	434	841	730	442	587	547	876	1,428	1,277
Small	2,005	432	951	541	642	610	2,546	1,074	1,561
Medium + Large	262	236	249	531	652	593	793	888	842
Total	482	376	423	525	639	589	1,007	1,015	1,012
Irrigated + Dry districts									
Marginal	227	215	502	601	700	671	828	915	1,173
Small	1,083	765	858	601	698	669	684	1,463	1,527
Medium + Large	144	741	501	671	785	740	815	1,526	1,241
Total	251	728	550	658	761	722	909	1,489	1,272

The average picture of direct and indirect subsidy per farm for irrigated districts was such that the amount of subsidy was Rs.7,369. It was Rs.3,736 for farms of SC/ST and Rs.9,501 for farms of other castes. Thus the amount of subsidy on other castes was more than double that of farms of SC/ST. This picture was different for dry districts. In these districts the average amount was Rs.3,534. However, it was found to be much higher for farms of SC/ST (Rs.4,138) than farms of other castes (Rs.3,180). In the combined picture of irrigated and dry districts the amount was one and half times in the case of farms of other castes than the farms of SC/ST (Table 4.6).

Table 4.6 Total agricultural subsidies utilised by sample farmers

(Rs. per farm)

Farm Size	Direct			Indirect			Total		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
Irrigated districts									
Marginal	58	546	363	749	1,117	979	807	1,663	1342.00
Small	113	3,102	1,981	1,203	2,204	1,828	1,316	5,306	3,809
Medium + Large	405	11,140	7,263	8,387	9,619	9,174	8,792	20,759	16,437
Total	193	5,022	3,236	3,543	4,479	4,133	3,736	9,501	7,369
Dry districts									
Marginal	366	1,124	840	372	784	630	738	1,908	1,470
Small	4,000	1,096	2,185	1,080	1,627	1,422	5,080	2,723	3,607
Medium + Large	2,449	1,292	1,710	4,958	3,567	4,069	7,407	4,859	5,779
Total	1,982	1,179	1,476	2,156	2,001	2,058	4,138	3,180	3,534
Irrigated + Dry districts									
Marginal	212	835	601	561	950	804	773	1,785	1,405
Small	2,057	2,099	2,083	1,141	1,916	1,625	3,198	4,015	3,708
Medium + Large	1,427	6,216	4,487	6,673	6,593	6,622	8,100	12,809	11,109
Total	1,087	3,101	2,356	2,849	3,240	3,096	3,936	6,341	5,452

4.4 Share of Direct and Indirect subsidy in Agricultural Subsidies

In the following paragraphs a study with regard to share of direct and indirect subsidy and share of SC/ST farmers in the total subsidy has been made. It was noted that for all castes combined together for irrigated districts, the share of indirect subsidies was 56.09 per cent and that of direct subsidies was 43.91 per cent. In the case of dry districts the share of indirect subsidy was slightly higher (58.24 per cent) as compared to share of direct subsidy (41.76 per cent). When the two categories of irrigated and dry districts were combined the picture was similar. For the total of irrigated and dry districts the percentage of indirect subsidies was 56.79 and that for direct subsidies was 43.21 (Table 4.7).

Table 4.7 Share of direct and indirect subsidies utilised by sample farmers

(Per cent)

Farm Size	Direct			Indirect			Total		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
Irrigated districts									
Marginal	7.15	92.85	100.00	32.84	67.16	100.00	27.05	72.95	100.00
Small	8.62	91.38	100.00	58.46	41.54	100.00	52.01	47.99	100.00
Medium + Large	4.60	95.40	100.00	53.66	46.34	100.00	44.19	55.81	100.00
Total	5.17	94.83	100.00	52.86	47.14	100.00	43.91	56.09	100.00
Dry districts									
Marginal	49.56	50.44	100.00	58.90	41.10	100.00	57.14	42.86	100.00
Small	78.75	21.25	100.00	40.25	59.75	100.00	60.58	39.42	100.00
Medium + Large	33.06	66.94	100.00	26.59	73.41	100.00	29.59	70.41	100.00
Total	47.90	52.10	100.00	37.07	62.93	100.00	41.76	58.24	100.00
Irrigated + Dry districts									
Marginal	27.41	72.59	100.00	46.77	53.23	100.00	42.78	57.22	100.00
Small	64.32	35.68	100.00	52.29	47.71	100.00	56.18	43.82	100.00
Medium + Large	17.61	82.39	100.00	48.53	51.47	100.00	40.39	59.61	100.00
Total	27.62	72.38	100.00	48.90	51.10	100.00	43.21	56.79	100.00

4.5 Share of SC/ST in Agricultural Subsidies

The government is interested in extending the benefits of subsidies to the weaker sections of the society and in particular to farmers of SC/ST. It will be of interest to note as to in the total subsidy given to all castes of farmers where do the farmers of SC/ST stand as compared to farmers of other castes. It was noted that in the irrigated districts the share of subsidy amount enjoyed by the farmers of other castes was 81.24 per cent as compared to 18.76 per cent by farmers of SC/ST. In the case of dry districts the situation was much better. The percentage of subsidy enjoyed by farms of SC/ST was 43.32 as compared to 56.68 by farms of other castes. For the combined picture of irrigated and dry districts the percentage share for farms of other castes was 73.28 as compared to 26.72 for farms of SC/ST. This clearly shows that farms of other castes enjoyed much higher percentage of share in the total subsidy than the farms of SC/ST. It was also noted that the difference in percentage of subsidy enjoyed by other castes farmers in irrigated districts was very significant as compared to that in dry districts (Table 4.8).

Table 4.8 Share of SC/ST farmers in utilisation of direct and indirect subsidies

(Per cent)

Farm Size	Direct			Indirect			Total		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
Irrigated districts									
Marginal	5.96	94.04	100.00	28.70	71.30	100.00	22.55	77.45	100.00
Small	2.15	97.85	100.00	24.67	75.33	100.00	12.95	87.05	100.00
Medium + Large	2.01	97.99	100.00	33.01	66.99	100.00	19.31	80.69	100.00
Total	2.21	97.79	100.00	31.72	68.28	100.00	18.76	81.24	100.00
Dry districts									
Marginal	16.34	83.66	100.00	22.18	77.82	100.00	18.84	81.16	100.00
Small	68.65	31.35	100.00	28.47	71.53	100.00	52.81	47.19	100.00
Medium + Large	51.72	48.28	100.00	44.00	56.00	100.00	46.28	53.72	100.00
Total	49.69	50.31	100.00	38.75	61.25	100.00	43.32	56.68	100.00
Irrigated + Dry districts									
Marginal	13.21	86.79	100.00	26.15	73.85	100.00	20.61	79.39	100.00
Small	37.03	62.97	100.00	26.33	73.67	100.00	32.34	67.66	100.00
Medium + Large	11.48	88.52	100.00	36.39	63.61	100.00	26.33	73.67	100.00
Total	17.08	82.92	100.00	34.06	65.94	100.00	26.72	73.28	100.00

4.6 Costs and Returns : With and Without Subsidy

In this paragraph we are studying economic benefits obtained by farmers who have enjoyed subsidies against those who have not enjoyed it. There were in all eight farmers who did not enjoy the subsidy during the year. Among the irrigated districts there were five such farmers two of whom belonged to SC/ST. Three farmers belonged to other castes. In dry districts there were three farmers who did not enjoy the subsidy. Of these one belonged to SC/ST and the remaining two belonged to other castes.

It was noted that the net return per hectare for those enjoying subsidies Rs.14,508 and for those who did not enjoy subsidies was Rs.12,032. Thus, the net return of the farmers enjoying subsidies was 37 per cent more than those not enjoying subsidies. The net return was higher in the cases of SC/ST farmers as well as other castes farmers than their compatriats without enjoying subsidies. The net return was much higher for irrigated districts than the dry districts in both the groups with subsidy and without subsidy (Table 4.9).

Table 4.9 Gross return, cost and net return on sample farms with and without subsidy

(Rs. per hectare)

Districts	Gross return			Cost			Net return		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
With subsidy									
Irrigated	25,133	29,142	27,809	9,169	11,810	10,932	15,964	17,332	16,877
Dry	16,562	19,401	18,159	6,229	7,657	7,032	10,333	11,744	11,127
Irrigated + Dry	21,021	25,525	23,833	7,759	10,268	9,325	13,262	15,257	14,508
Without subsidy									
Irrigated	16,647	18,895	18,181	4,969	6,276	5,861	11,678	12,619	12,320
Dry	14,423	16,990	16,499	4,631	5,983	5,724	9,792	11,007	10,775
Irrigated + Dry	16,377	18,488	17,868	4,928	6,213	5,836	11,449	12,275	12,032
Ratio between with and without subsidy									
Irrigated	1.51	1.54	1.53	1.85	1.88	1.87	1.37	1.37	1.37
Dry	1.15	1.14	1.10	1.35	1.28	1.23	1.06	1.07	1.03
Irrigated + Dry	1.28	1.38	1.33	1.57	1.65	1.60	1.16	1.24	1.21

It was also noticed that the net return per hectare by all the size of holding groups for those enjoying subsidies was much higher than those not enjoying subsidies (Table 4.10).

Table 4.10 Gross return, cost and net return on sample farms with and without subsidy by size of holding

(Rs per hectare)

Size group	Gross return			Cost			Net return		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
With subsidy									
Marginal	20,664	25,239	23,905	7,395	9,969	9,219	13,269	15,270	14,686
Small	20,152	25,630	24,037	7,069	10,107	9,224	13,082	15,523	14,813
Medium + Large	21,172	25,553	23,785	7,887	10,354	9,359	13,285	15,199	14,426
Total	21,021	25,525	23,833	7,759	10,268	9,325	13,262	15,257	14,508
Without Subsidy									
Marginal	15,957	16,549	16,367	4,256	4,335	4,310	11,701	12,214	12,057
Small	16,370	16,876	16,671	4,895	5,060	4,993	11,475	11,816	11,678
Medium + Large	16,489	19,199	18,480	5,115	6,826	6,373	11,374	12,373	12,108
Total	16,377	18,488	17,868	4,928	6,213	5,836	11,449	12,275	12,032
Ratio between with and without subsidy									
Marginal	1.29	1.53	1.46	1.74	2.30	2.14	1.13	1.25	1.22
Small	1.23	1.52	1.44	1.44	2.00	1.85	1.14	1.31	1.27
Medium + Large	1.28	1.33	1.29	1.54	1.52	1.47	1.17	1.23	1.19
Total	1.28	1.38	1.33	1.57	1.65	1.60	1.16	1.24	1.21

This shows that the subsidy has an important role in increasing the net return of the farmers for all the castes as well as irrigated and dry districts

The net return per farm for the farmers enjoying subsidies was Rs.63,456 as against Rs.25,733 for those not enjoying subsidies, showing that the net return was nearly two and half times (2.47) among the farmers with subsidy than those without subsidies. The net return was higher for those with subsidies among the group of farmers belonging to SC/ST and also for other castes farmers. Similarly, the net return was higher for farmers with subsidy than those without subsidy for irrigated districts as well as dry districts (Table 4.11).

Table 4.11 Gross return, cost and net return on sample farms with and without subsidy

(Rs. per farm)

Districts	Gross return			Cost			Net return		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
With subsidy									
Irrigated	1,17,874	1,60,084	1,44,533	43,005	64,874	74,869	74,869	95,210	87,716
Dry	69,641	61,920	64,785	26,191	24,439	25,089	43,450	37,481	39,696
Irrigated + Dry	93,417	1,10,597	1,04,244	34,480	44,489	40,788	58,937	66,108	63,456
Without subsidy									
Irrigated	36,790	57,834	50,617	10,982	19,874	16,317	25,808	39,960	34,300
Dry	8,798	21,917	17,544	2,825	7,718	6,087	5,973	14,199	11,457
Irrigated + Dry	27,459	44,667	38,214	8,263	15,012	12,481	19,196	29,655	25,733
Ratio between with and without subsidy									
Irrigated	3.20	2.77	2.86	3.92	3.26	4.59	2.90	2.38	2.56
Dry	7.92	2.83	3.69	9.27	3.17	4.12	7.27	2.64	3.46
Irrigated + Dry	3.40	2.48	2.73	4.17	2.96	3.27	3.07	2.23	2.47

Similar trend was notice per farm in all the size of holding groups for those enjoying subsidies than those not enjoying subsidies (Table 4.12).

Table 4.12 Gross return, cost and net return on sample farms with and without subsidy by size of holding

(Rs. per farm)

Size group	Gross return			Cost			Net return		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
With subsidy									
Marginal	19,367	34,735	28,947	6,931	13,720	11,163	12,436	21,015	17,784
Small	39,225	71,349	59,477	13,761	28,136	22,823	25,465	43,213	36,654
Medium+ Large	2,16,165	2,19,224	2,18,116	80,526	88,834	85,834	1,35,639	1,30,390	1,32,292
Total	93,417	1,10,597	1,04,244	34,480	44,489	40,788	58,937	66,108	63,456
Without subsidy									
Marginal	12,925	15,060	14,348	3,447	3,945	3,779	9,478	11,115	10,569
Small	18,007	27,339	22,673	5,384	8,197	6,791	12,623	19,142	15,882
Medium+ Large	51,446	82,938	72,440	15,958	29,487	24,977	35,488	53,451	47,463
Total	27,459	44,667	38,214	8,263	15,012	12,481	19,196	29,655	25,733
Ratio between with and without subsidy									
Marginal	1.50	2.31	2.03	2.01	3.47	2.95	1.31	1.89	1.68
Small	2.18	2.61	2.62	2.56	3.43	3.36	2.02	2.26	2.31
Medium+ Large	4.20	2.64	3.01	5.05	3.01	3.44	3.82	2.44	2.79
Total	3.40	2.48	2.73	4.17	2.96	3.27	3.07	2.23	2.47

Thus, the earlier statement that the net return was higher for all classes of farmers with subsidy as well as for irrigated and dry districts holds good on the basis of per farm net return

4.7 Food Subsidy

Besides estimating direct and indirect subsidies enjoyed by the farmers, an attempt is also made to estimate the subsidies on food items consumed by the sample farmers. The commodities considered for estimating food subsidies are wheat, rice, sugar and kerosene. The food subsidy is borne by the Central Government. The government procures the food grains from the FCI and supplies to the consumers through Public Distribution System (PDS) at lower than market price. For estimating the food subsidy availed by sample households, the households were asked to report the quantities and prices of wheat, rice, sugar and kerosene drawn from the PDS for the two months prior to the date of investigation. The difference between the open market price and PDS price per Kg./lt. of wheat/ rice/ sugar/ kerosene is the subsidy on that particular item. The total subsidy was estimated by multiplying the total quantity bought from PDS with the subsidy per Kg./ lt.

It was observed that the food subsidy amount per household was Rs.43 in irrigated districts as against Rs.38 in dry districts. Further, the amount of subsidy was also higher in irrigated districts for both SC/ST as well as other castes farmers than those in the dry districts. It was also observed that the amount of subsidy per household was higher in the case of marginal farmers in both irrigated as well as dry districts than small, medium and large farmers. This was true for the combined figures for the irrigated and dry districts. It clearly shows that the marginal farmers enjoyed more amount of subsidy than the small, medium and large farmers. It also indicated subsidy enjoyed in irrigated districts was higher than dry districts for all the castes groups (Table 4.13).

4.8 Problems in Accessing Subsidies

Subsidy schemes have been introduced from time to time by the government specially to help the weaker sections of the farming community. The subsidies specially allotted for the weaker sections (scheduled castes, scheduled tribes, marginal and small farmers) of the farming community are misused by the medium, large and resourceful farmers most of the time. Farmers have been facing number of problems in accessing subsidies due to various

reasons. Problems faced by the sample farmers in irrigated and dry districts show almost similar intensity of problems faced by them. These are :

1. Agriculture Extension Officers seldom inform the availability of subsidies to the weaker sections
2. lack of information about direct subsidies
3. a very limited availability of direct subsidies
4. farmers required to visit number of times to get subsidies
5. high prices
6. long distances
7. low capacity to buy
8. non-availability of the required type, brand and quality of inputs
9. purity
10. availability in time of need and quantity etc.
11. less accessibility to institutional credit.
12. irregular hours of power supply with frequent voltage disturbances.

All these problems were mainly reported by the marginal and small farmers belonging to scheduled castes, scheduled tribes and other castes farmers. Majority of the marginal and small farmers reported that they rarely get information about the availability of direct subsidies through Agriculture Extension Officers. Farmers belonging to weaker sections also reported that the direct subsidies are enjoyed by the large farmers most of the time, as there is close nexus between AEO's and large farmers. Since direct subsidies are provided for a limited number of farmers, there is a high demand for the same from various categories of farmers. The analysis of the problems faced by the sample farmers in irrigated and dry districts shows almost similar intensity of the problems faced by them in access to subsidies. In irrigated districts, on an average about 92.00 per cent farmers reported the problem of high prices of inputs, 79.00 per cent expressed low purchasing capacity, 75.00 per faced other problems and 34.00 per cent reported the problem of long distance. In dry districts, nearly 96.00 per cent reported high price, 82.00 per cent expressed low capacity to buy, 91.00 per cent faced other problems and 39.00 per cent reported long distance (Table 4.14).

The problems associated with food subsidies are totally different from what is seen in input subsidies. Sample farmers have reported three major problems concerning food subsidies. They are (a) quality of food grain (b) allotted quantity (quota) is not available in time (c) sugar and kerosene are not available most of the time. These problems are mainly reported by the marginal and small farmers belonging to scheduled castes, scheduled tribes and other castes farmers. Few farmers reported that since sugar and kerosene are sold in bulk in the black market by the employees working in PDS, there are not available for consumers most of the time. Lack of ration card was the problem for the some of the households. On the whole, our discussions with the sample farmers reveal that the weaker sections of the farming community have been facing problems in accessing subsidies.

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CHAPTER –V

EFFECTS OF INPUT SUBSIDIES ON AGRICULTURE

In the preceding chapter an analysis of the utilisation of agricultural subsidies was done. In this chapter the effects of input subsidies on various aspects such as cropping pattern, fertiliser consumption, power consumption, irrigation use, total input use, cost of cultivation and net return are being studied. The analysis is based on the primary data collected from the sample farmers. The sample farmers have been grouped into three categories based on per hectare use of subsidies. Low subsidy users (LSU) are those farmers who have used subsidies upto Rs.1,000 per hectare. Medium subsidy users (MSU) are the farmers who have used subsidy amount between Rs.1,000 to Rs.2,000 per hectare. High subsidy users (HSU) are those who have used subsidies amounting to Rs.2,000 per hectare and more.

5.1 Distribution of Sample Farmers by Levels of Subsidy Use

It is observed that of the 200 selected farmers 65.50 per cent are classified as (LSU) or low subsidy users. Another 25.00 per cent are those who are (MSU) or medium subsidy users and the remaining 9.50 per cent are categorised as (HSU) or high subsidy users. Among the SC/ST farmers 70.27 per cent are LSU, 17.57 per cent MSU and 12.16 per cent HSU. Among the other castes farmers the percentage of less subsidy users was bit smaller than the SC/ST farmers. On the other hand the percentage of other castes farmers in the MSU was quite higher than the SC/ST farmers. It is thus evident that among other castes farmers the percentage of LSU was less than SC/ST farmers and MSU was higher than the SC/ST farmers. However, the percentage of SC/ST farmers in HSU was higher than the other castes farmers.

It was also observed that the percentage of LSU in dry districts was higher than the irrigated districts. The percentage was lower in the case of MSU but higher in the HSU. Thus, we can conclude that the dry districts farmers have higher percentage of farmers in the LSU group and lower in MSU group (Table 5.1).

Table 5.1 Distribution of sample farmers by level of subsidy

Subsidy level	Irrigated districts			Dry districts			Irrigated + Dry districts		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
LSU (< Rs.1000/hect.)	27 (72.97)	33 (52.38)	60 (60.00)	25 (67.57)	46 (73.01)	71 (71.00)	52 (70.27)	79 (62.70)	131 (65.50)
MSU (Rs.1000-2000/hect)	08 (21.62)	25 (39.68)	33 (33.00)	05 (13.51)	12 (19.05)	17 (17.00)	13 (17.57)	37 (29.36)	50 (25.00)
HSU (> Rs.2000/hectare)	02 (5.41)	05 (7.94)	07 (7.00)	07 (18.92)	05 (7.94)	12 (12.00)	09 (12.16)	10 (7.94)	19 (9.50)
Total	37 (100.00)	63 (100.00)	100 (100.00)	37 (100.00)	63 (100.00)	100 (100.00)	74 (100.00)	126 (100.00)	200 (100.00)

5.2 Effect of Subsidy on Cropping Pattern

In the irrigated districts the crops considered were paddy, wheat, maize, gram, soybean, cotton, fruits, vegetables and spices. While paddy, wheat, maize and gram are food crops, soybean, cotton, fruits, vegetables and spices can be categorised as cash crops. The cropping pattern shows that the percentage of area under cash crops to gross cropped area (GCA) was highest on HSU group than the MSU and LSU groups. The picture was more or less similar for both SC/ST and other castes group.

In the dry districts the cash crops were soybean, groundnut and cotton and the food crops were paddy, wheat, maize and urad. In the dry districts also the percentage of cotton area to gross cropped area was highest in HSU (20.92) followed by MSU (14.81) and LSU (13.59). In soybean the percentage in HSU was highest (28.64) followed by MSU (13.01) and LSU (8.71). There was some variation in the case of groundnut. It generally followed that in the case of cash crops the percentage of area to GCA was highest in HSU followed by MSU and LSU. It is thus clear that in both the categories of districts (Irrigated and Dry districts) the percentage of area under cash crops increased with the size of subsidy. In the case of other castes groups also the trend was similar except some variation (Table 5.2).

5.3 Area under HYVs by Level of Subsidy

One of the important measures to know the extent of crop development is the percentage of area under HYVs to the area under particular crop. From the very initiation of the HYV programme it was noted that among cereals paddy and wheat had highest proportion of areas under HYV. Maize and other cereals and pulses had a comparatively lower proportion of HYVs area. After the success of green revolution farmers concentrated their attention on cash crops like soybean, cotton etc. and went for HYVs of these crops besides the improved

cultural practices. In our sample study these facts emerged. It was noted that in irrigated districts the entire area under paddy was occupied by HYVs. More than 90 per cent of the area under wheat was of HYVs. Maize had a comparatively lower percentage (71.29) of area under HYVs and gram had 39.40 per cent. Soybean had the entire area under HYVs and cotton had more than 90 per cent. In most of the crops the other castes farmers had higher percentage of area under HYVs than the SC/ST farmers. If we analyse the data by level of subsidy users it will be observed that the percentage of area under HYVs of nearly all the crops was higher on the group of HSU. It was lower on MSU and still lower on LSU.

In the dry districts paddy had 100 per cent area HYVs in the two categories of HSU and MSU. In the case of LSU the percentage was slightly lower. In the case of wheat the entire area was under HYVs. Moreover, wheat was not grown by other castes farmers. Soybean as in the case of irrigated districts had the entire area under HYVs. In the case of cotton the HSU had entire area under HYV and it was lower for MSU and still lower for LSU. Thus in the dry districts also the percentage of area under HYVs was highest on HSU followed by MSU and LSU. It goes to prove that in both categories of districts paddy, soybean and cotton had nearly entire area under HYVs and the percentage of area under HYVs on HSU was followed by MSU and lastly the LSU (Table 5.3).

5.4 Fertiliser Consumption by Level of Subsidy

As regards fertiliser consumption by level of subsidy 5 crops were selected in irrigated districts. These were paddy, wheat, cotton, soybean and crop group of fruits, vegetables and spices. In the dry districts crop group of fruits, vegetables and spices was not important but maize was important and was included. In irrigated districts largest proportion of fertilisers was consumed by paddy followed by cotton and wheat. In the case of paddy LSU group claimed highest percentage of 41.84 followed by MSU group (35.48) and HSU group (5.90). In the case of cotton not much difference existed between the proportion of fertilisers consumed in three subsidy level groups. In the crop group of fruits, vegetables and spices there was a clear trend noticeable that the proportion of fertilisers consumed in LSU group was 5.80. It increased to 19.66 for MSU and 42.25 for HSU.

In the dry districts, in paddy crop the proportion of fertiliser consumption was highest in LSU followed by MSU and HSU. There was a similar trend in the case of cotton and soybean. It shows that generally the HSU group had highest proportion of fertiliser consumption followed by MSU and LSU in the crops of cotton and soybean. It is evident that the proportion of fertilisers consumed by HSU was highest for both the commercial crops of cotton and soybean. For paddy the trend was reverse and in the case of wheat and maize no kind of trend was noticeable.

Combining irrigated and dry districts together the proportion of consumption of fertilisers was such that in the case of paddy it decreased from 45.06 per cent in LSU to 33.78 per cent in MSU and 5.37 per cent in HSU. In the case of wheat, cotton, soybean and crop group of fruits, vegetables and spices the trend was such that it increased gradually from LSU to MSU and further to HSU. The overall picture shows that except for paddy the percentage of fertilisers consumption increased from LSU to MSU and further to HSU. Comparing the fertiliser consumption between the SC/ST and other castes farmers it was observed that fertiliser consumption in Rs./ hectare was higher for other castes farmers than the SC/ST farmers. This was true for irrigated districts as well as dry districts and also for the combined picture of the irrigated and dry districts (Table 5.4).

5.5 Power Consumption by Level of Subsidy

In the irrigated districts the average power consumption per hectare was Rs.751. It was much higher than the power consumption in dry districts (Rs.623). This was obvious because power consumption here means power consumed through electricity. Since this input is used only for irrigation the power consumption mainly in irrigated districts would be higher. This was true with the both caste group where consumption was higher in the irrigated districts. Within the subsidy level groups in irrigated districts the power consumption was Rs.381 in LSU. It increased to Rs.608 in the MSU and further to Rs.1,841 in HSU. Similarly in dry districts the power consumption in LSU, MSU and HSU was Rs.470, Rs.1,254 and Rs.1,285 respectively.

Since irrigation is a costly and precious input, it is used only for the crops where net returns would be higher. In irrigated districts 43.73 per cent of the total power consumption

was utilised for fruits, vegetables and spices crop group. Another cash crop in that group was cotton and this crop shared 19.06 per cent of the total power consumption. Wheat was also important and shared 15.88 per cent of the power consumption. In the dry districts cotton shared the highest percentage of 27.25 and paddy appeared second important with 25.02 per cent share. Wheat came third with 16.78 per cent share. On the whole, the following points emerged out from the above analysis : (a) consumption of power among the farmers belonging to the category of HSU is very high as compared to the category of LSU (b) major portion of power used by the category of HSU has gone into water intensive high value crops.

When the two categories of districts were combined the picture that emerged showed consumption of power increased from Rs.425 in the LSU to Rs.774 in MSU and Rs.1,728 in HSU. This trend was noticed in both castes groups also. The highest percentage of power consumption was for the crop group of fruits, vegetables and spices (Table 5.5).

5.6 Irrigation Used by Level of Subsidy

In Madhya Pradesh the main sources of irrigation are wells, tubewells, and canals drawn from tanks etc. In the case of lift irrigation (wells and tubewells) the subsidy offered by government is in the form of power and we have dealt it in the form of power consumption. In this section on irrigation what we mean by irrigation used is the total cost on canal irrigation. We have also studied the cost incurred by LSU, MSU and HSU as well as cost incurred for different crops mentioned here in the form of proportion of the total cost to different crops.

In the irrigated districts the average cost of canal irrigation per hectare came to Rs.61. It was highest in the case of MSU followed by LSU. Among different castes the cost incurred by SC/ST farmers was more than double that of other castes farmers. Paddy was the most irrigated crop and shared 79.97 per cent of the total cost incurred on different crops. The share of SC/ST farmers was 61.51 per cent whereas other castes farmers utilised the entire canal irrigated area for paddy crop only. Wheat crop although was second important its share was only 6.07 per cent.

In the case of dry districts only one farmer used canal irrigation. He belonged to other castes group and used the entire canal irrigation area for paddy crop only. The results of the data when combined for irrigated and dry districts showed that the average value of canal irrigation as input came to Rs.18 per hectare. As in the case of irrigated districts the cost was highest for MSU followed by LSU. The most important canal irrigated crop was paddy and on other castes farmers the percentage was total (100.00 per cent). Among SC/ST farmers this percentage was 61.50 (Table 5.6).

5.7 Total Input Used by Level of Subsidy

The total value of inputs used in irrigated districts was Rs.6,268. It increased from Rs.5,145 in LSU to Rs.6,974 in MSU and further to Rs.8,440 in HSU. The trend was similar for the both castes groups. Moreover, the input value for other castes farmers was more (Rs.6,488) than the SC/ST group (Rs.5,826). Among the crops grown the highest percentage of inputs was claimed by paddy (27.32 per cent) followed by cotton (22.92 per cent) and fruits, vegetables and spices crop group (22.60 per cent). In paddy the proportion of total input shared by LSU was 36.03, by MSU 35.58 and by HSU 1.35. In wheat and fruits, vegetables and spices crop group the proportion, however, increased from LSU to MSU and further to HSU.

In dry districts the total input value per hectare was much lower (Rs.4,555) than the irrigated districts. For both the castes groups also the value was lower than the irrigated districts. However, the increasing trend of the total input value from LSU to MSU and from MSU to HSU persisted in dry districts also. As far as the proportion of total value of inputs used in paddy, it decreased as in the case of irrigated districts from LSU to MSU and further to HSU. However, in cash crop of cotton the proportion increased from 21.60 per cent in LSU to 26.50 per cent in MSU and further to 38.77 per cent in HSU. When the two kinds of districts were combined it emerged that the proportion of total input for paddy decreased from LSU to MSU and further to HSU. However, for the crops of wheat, cotton and crop group of fruits, vegetables and spices the proportions increased from LSU to MSU and further to HSU. It can be concluded that while the proportion decreased in the case of paddy it increased in commercial crops like wheat, cotton and crop group of fruits, vegetables and spices (Table 5.7).

5.8 Costs and Returns by Level of Subsidy

In the earlier chapter we have studied the gross return, cost and net return per hectare by size of farms. Here, we have studied the same by level of subsidy. It was observed that in the irrigated districts the average net return was Rs.16,741 per hectare. It was highest in the case of MSU (Rs.21,853) and in HSU Rs.18,503. Thus the difference between the two was of about Rs.3,000. In the case of dry districts the average net return was Rs.11,124 per hectare. It was highest (Rs.22,233) in the HSU followed by MSU (Rs.12,324). Thus the difference between the HSU and MSU was very significant (of about Rs.10,000). In both irrigated and dry districts the net returns were higher for other castes farmers than the SC/ST castes farmers. The results of combination of irrigated and dry districts showed that the average net return was Rs.14,452. It was highest in MSU (Rs.19,406) followed closely by HSU (Rs.19,264). However, the net returns were higher on other castes farms than the SC/ST farms in the combination of districts also (Table 5.8).

Table 5.8 Gross return, costs and net return by level of subsidy

(Rs. per hectare)

Subsidy level	**Irrigated district**								
	Gross return			**Costs**			**Net return**		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
LSU	22,536	24,361	23,506	9,021	9,825	9,448	13,515	14,536	14,058
MSU	34,258	34,974	34,818	13,266	12,882	12,965	20,992	22,092	21,853
HSU	33,291	30,277	30,572	13,060	11,961	12,069	20,231	18,316	18,503
Total	24,910	28,838	27,534	9,890	11,242	10,793	15,021	17,596	16,741
Subsidy level	**Dry district**								
	Gross return			**Costs**			**Net return**		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
LSU	14,589	16,485	15,635	4,903	6,521	5,796	9,686	9,964	9,839
MSU	27,401	23,421	24,205	13,595	11,365	11,881	13,806	12,056	12,324
HSU	25,801	47,194	34,834	12,385	12,897	12,601	13,416	34,297	22,233
Total	16,554	19,369	18,144	6,223	7,635	7,021	10,331	11,734	11,124
Subsidy level	**Irrigated + Dry district**								
	Gross return			**Costs**			**Net return**		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
LSU	18,668	20,373	19,590	7,016	8,151	7,631	11,652	12,222	11,959
MSU	32,411	32,003	32,093	13,355	12,498	12,687	19,056	19,505	19,406
HSU	28,786	32,087	31,441	12,654	12,061	12,177	16,132	20,026	19,264
Total	20,948	25,355	23,707	8,151	9,915	9,255	12,797	15,440	14,452

The net return per farm on the irrigated districts was on an average Rs.84,986. It was much higher on HSU (Rs.2,94,126) as against Rs.73,666 on MSU. The net returns were higher (Rs.94,707) on other castes farms than the SC/ST farms (Rs.68,433). The higher net return on other castes farms were also noticed in all the three categories of LSU, MSU and HSU. In the case of dry districts the average net return per farm was Rs.38,849. It was higher on HSU followed by LSU and then by MSU. Between castes groups of farmers the net return per farm was higher (Rs.42,436) for SC/ST group of farms than the other castes farms (Rs.36,742). Combining irrigated and dry districts the results which emerged were so that the net return was highest for HSU followed by MSU and LSU as was noticed in irrigated districts. It was higher on other castes farms (Rs.65,725) than the SC/ST farms (Rs.55,435) (Table 5.9).

Table 5.9 Gross return, costs and net return by level of subsidy

(Rs. Per farm)

Subsidy Level	**Irrigated district**								
	Gross return			**Costs**			**Net return**		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
LSU	1,11,443	1,11,933	1,11,713	44,607	45,141	44,901	66,836	66,792	66,812
MSU	1,03,374	1,21,849	1,17,370	40,031	44,880	43,704	63,343	76,969	73,666
HSU	1,81,600	6,07,713	4,85,966	71,242	2,40,080	1,91,840	1,10,358	3,67,633	2,94,126
Total	1,13,491	1,55,215	1,39,777	45,058	60,508	54,791	68,433	94,707	84,986
Subsidy Level	**Dry district**								
	Gross return			**Costs**			**Net return**		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
LSU	73,892	55,802	62,172	24,834	22,076	23,047	49,058	33,726	39,125
MSU	48,774	57,192	54,716	24,199	27,967	26,859	24,575	29,225	27,857
HSU	60,669	1,13,549	82,702	29,122	31,030	29,917	31,547	82,519	52,785
Total	67,996	60,650	63,368	25,560	23,908	24,519	42,436	36,742	38,849
Subsidy Level	**Irrigated + Dry district**								
	Gross return			**Costs**			**Net return**		
	SC/ST	Others	All	SC/ST	Others	All	SC/ST	Others	All
LSU	93,390	79,249	84,862	35,101	31,710	33,056	58,289	47,539	51,806
MSU	82,374	1,00,879	96,068	33,942	39,394	37,977	48,432	61,485	58,091
HSU	87,543	3,60,631	2,31,273	38,482	1,35,555	89,573	49,061	2,25,076	1,41,700
Total	90,744	1,07,933	1,01,573	35,309	42,208	39,655	55,435	65,725	61,918

As is expected the net return per hectare were higher for commercial crops like fruits, vegetables and spices and cotton. In the case of irrigated districts the net returns per hectare were highest (Rs.32,118) for the crop group of fruits, vegetables and spices. The next higher

net return per hectare earning crop was cotton (Rs.23,001). The third crop was paddy with net return per hectare of Rs.15,523 followed by wheat Rs.12,873. Generally, the net returns per hectare were higher on SC/ST farms than the other castes farms. This was so in the case of paddy, wheat, cotton and soybean. In the case of dry districts the average net return per hectare was highest for cotton (Rs.29,629) followed by paddy (Rs.11,025) and wheat (Rs.9,620). In the case of cotton the net return was higher for SC/ST farms than the other castes farms. This was true for soybean also. In other crops the net return per hectare was higher for other castes farms than the SC/ST farms. When the irrigated and dry districts were combined the picture that emerged was as follows.

The net return per hectare was highest (Rs.27,526) for fruits, vegetables and spices crop group. This was followed by cotton (Rs.25,552). For paddy the net return per hectare was Rs.13,446 and that for wheat Rs.11,841. The net return per hectare was higher for SC/ST farms than other castes farms in the case of wheat, cotton, soybean and crop group of fruits, vegetables and spices. For paddy and maize it was higher for other castes group. In the case of wheat, maize and soybean the net return per hectare was highest for HSU. In the case of paddy and crop group of fruits, vegetables and spices, it was highest for MSU. In the case of cotton the net return per hectare was highest for LSU. Higher returns realised by HSU group in the case of crops like wheat, maize, soybean shows the positive role of subsidy in increasing the net returns for these crops (Table 5.10).

CHAPTER - VI
SUMMARY & CONCLUSIONS

6.1 Introduction

Subsidy is one of the powerful fiscal instruments, besides taxes and others, by which the objective of growth and social justice may be achieved. 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. 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.

In India the amount of subsidies increased from year to year. Nearly 66 per cent of the people in India are still dependent on agriculture. The subsidies to agricultural sector provided by the government have recorded phenomenal rise during the past two decades. In 1993-94, the agricultural subsidies amounted to Rs.14,069 crores. The amount of subsidies increased from year to year and stood at Rs.34,784 crores in 2000-2001. If we take base year as 1993-94, it was noted that the subsidies in 2000-2001 were 247.24 per cent, an increase of about 2½ times within a span of seven years. The subsidies were provided on inputs like fertilisers, electricity and irrigation. Subsidies were also provided on "other" items. Among the subsidies provided the maximum amount was for fertilisers and shared 39.67 per cent of the total agricultural subsidies. This was followed by irrigation and contributed 39.33 per cent to the total agricultural subsidies. Subsidy provided for electricity contributed 18.54 per cent of the total agricultural subsidies. "Others" shared 2.41 per cent.

It is expected that subsidies contribute to better cropping pattern, employment and income of the beneficiaries. But in most development programmes, subsidies are one among the many developmental inputs being provided. Thus the observable changes in cropping pattern, employment level and overall incomes are because of the joint effect of all the efforts going on. Therefore, these changes cannot be attributed solely to subsidies.

Macro and micro studies focussed on a particular subsidy do not give an idea about the overall impact of important agricultural subsidies on different categories of farmers. The SC/ST farmers are by and large ignored and their problems are overlooked. This is also important from the point of view of resource inadequacy of the small, marginal and SC/ST farmers. Against the backdrop of growing budgetary allocation of providing subsidies to agriculture, an analysis of their implications for different classes of farmers is of crucial importance in order to assess the extent to which they are consistent with the attainment of set objective of attaining equity and stimulating growth. For this, there is a need to know the quantum of subsidies used and the different effects of subsidies across different groups of households at the micro level. With a view to ascertaining the ground reality in the context of agricultural subsidies and its effects on SC/ST farmers the present common study has been undertaken in the state of old Madhya Pradesh (and now the state of Madhya Pradesh and Chhattisgarh) by Agro- Economic Research Centre, Jabalpur on the initiation of Ministry of Agriculture, Government of India.

6.2 Objectives

The objectives of the study are :

(i) To examine the utilization pattern of subsidies by different categories of farmers.

(ii) To assess the share of SC/ST farmers in total amount of subsidies used.

(iii) To analyse the overall effect of differences in the levels of input subsidy used by various categories of farmers on crop pattern, cropping intensity, adoption of improved technology, input use, crop productivity and returns.

6.3 Methodology

Since the State of old Madhya Pradesh was bifurcated on 1st November, 2000 into Madhya Pradesh and Chhattisgarh, and since the reference year of the study was to be the year 2000-2001, the old Madhya Pradesh was treated as a State for the study. The old Madhya Pradesh had following 3 agro-climatic zones.

S.No.	Name	Agro-Climatic Zone No.
1.	Eastern Plateau and Hills Region	07
2.	Central Plateau and Hills Region	08
3.	Western Plateau and Hills Region	09

Of the three zones, 2, namely 7 and 9 were selected for the study. In agro-climatic zone 7, on the basis of two criteria of highest and lowest percentage of irrigation and higher percentage of SC/ST population, following districts were selected in consultation with State Government Officials.

1. Raipur district - Irrigated district (above 30% irrigation)
2. Raigarh district- Dry district

It may be mentioned that in the process or reorganisation of districts, erstwhile Raipur and Raigarh districts were recently bifurcated. However, we selected both the undivided districts for the reason of secondary data on all aspects of agriculture being not available for the newly carved districts.

In agro- climatic zone 9 on the basis of same criteria mentioned above following two districts were selected.

1. Dhar district - Irrigated district (above 30% irrigation)
2. Jhabua district - Dry district

From each district 2 blocks were selected.

S.No.	District	Block
1.	Raipur district	Dharsiwa , Abhanpur
2.	Raigarh district	Raigarh, Tamnar
3.	Dhar district	Dharampuri, Nisarpur
4.	Jhabua district	Jhabua, Rama

In 8 blocks, 52 villages were chosen in consultation with the Deputy Directors of Agriculture and Senior Agriculture Extension Officers on the basis of availability of different categories of SC/ST and other farmers and coverage of input subsidy programmes. The beneficiary farmers were selected randomly representing marginal, small, medium + large size groups roughly in the proportion of number of operational holdings of SC/ST and other farmers in Madhya Pradesh. For this study we have merged semi- medium (2 hectares to 4 hectares) and medium (4 hectares to 10 hectares) and large (10 hectares and above) size groups in one group i.e. above 2 hectares as medium + large group. Thus from the category of marginal farmers, 30 SC/ST and 50 other castes farmers were selected. From the small

size group, the number of SC/ST farmers and other farmers was 18 and 30 respectively. From the category of medium + large farmers 26 were SC/ST and 46 were other castes farmers.

The schedules to be canvassed among farmers were framed by the coordinating Agro Economic Research Centre, Delhi. Tabulation and analysis plans were also supplied by the coordinating AER Centre, Delhi. The macro level data were collected from various departments of the two State Governments. The reference year of the study was the year 2000-2001.

6.4 Main Findings

1. Subsidies are provided through various schemes to agricultural sector by the central and state governments in order to promote the adoption of certain inputs/ machinery etc. in crop cultivation. Under centrally sponsored schemes (central and state government share in the ratio of 75:25) the most important one was oilseeds production programme claiming 16.49 per cent of the total expenditure. The second important programme was national pulses development programme claiming 6.59 per cent of the total expenditure.

2. The most important programme under central sector schemes (funded totally by central government) was national watershed development programme for rainfed areas claiming 17.71 per cent of the total expenditure. The second important programme was soil conservation in river valley project having a share of 10.25 per cent of the total expenditure.

3. Macro management schemes (central and state government share in the ratio of 90:10) have been initiated w.e.f. 01.01.2001. The expenditure for the macro management schemes was 14.35 per cent of the total expenditure.

3. Although the various components of the state sectors schemes (funded totally by state government) did not contribute very significantly to the total expenditure, the more worth mentioning schemes were micro- minor irrigation (7.95 per cent), boring of tube wells on cultivators' fields (5.61 per cent) and national crop insurance programme (5.17 per cent).

5. In the state government schemes the proportion of amount of subsidy was 73.98 per cent for other castes. It was 17.66 per cent for scheduled tribes and 8.36 per cent for scheduled castes. In terms of number of beneficiaries benefitted by the subsidy in the state schemes it was noted that of the total number 49.49 per cent were other castes beneficiaries. The scheduled tribes beneficiaries were 35.59 per cent and the scheduled castes beneficiaries were 14.92 per cent. It may also be noted that in some of the programmes subsidy could not be enjoyed by both scheduled castes and scheduled tribes farmers and only other castes beneficiaries claimed the subsidy. This may be due to the fact that the scheduled castes and scheduled tribes farmers in the state are generally marginal and small size farmers. Moreover, their holdings do not generally have irrigation facilities. Due to these two reasons these categories grew only staple food crops and not horticultural crops.

6. During the year 2000-2001 the total expenditure in the four sectors of agriculture, horticulture, animal husbandry and fishery amounted to Rs. 10,106.29 lakhs. Of this, the share of the central government was 60.74 per cent and that of state government 39.26 per cent. This sharing of expenditure differed in the four sectors. While in agriculture sector the share of the central government was 65.19 per cent, it was less (52.71 per cent) in horticulture sector. In the fishery sector the share got reduced to 13.74 per cent and in animal husbandry it was meagre 1.44 per cent. Among all the four sectors the percentage of expenditure in agriculture was as high as 87.30 per cent. Horticulture claimed only 6.49 per cent and animal husbandry and fishery 3.54 and 2.67 per cent respectively.

7. It may be noted that the expenditure incurred in the two sectors of agriculture and horticulture equals the subsidy granted. This is because in these sectors no separate figures of subsidy are available and the figures mentioned here exclude expenditure on administration. In the other two sectors of animal husbandry and fishery figures for subsidy were available over and above the expenditure. Thus the total subsidy for the four sectors comes to Rs. 9,636.75 lakhs. Agriculture sector predominated sharing 91.56 per cent of the total subsidy. Horticulture sector had also significant

share of 6.80 per cent of the total subsidy. The two remaining sectors of animal husbandry and fishery contributed less than 1.00 per cent each. This is also reflected in the subsidy given per farmer and per hectare. While the per farmer subsidy in agriculture and horticulture sectors was Rs. 59.45 and Rs. 4.42 respectively that under animal husbandry and fishery came to only Rs. 0.62 and Rs. 0.44 respectively. The subsidy per hectare in the four sectors was Rs. 43.21, Rs. 3.21, Rs. 0.48 and Rs. 0.32 respectively.

8. For India, the amount of subsidy estimated provided for fertilizers increased from Rs.505 crores in 1980-81 to Rs.7,089 crores in 2000-01, an increase of 14.56 per cent per annum. During the same period, the total subsidy on fertilizers in Madhya Pradesh increased from Rs.18 crores to Rs.423 crores, an increase of 18.22 per cent per annum. Per hectare subsidy on fertilizers, which indicates the real picture of subsidy provided to farmers, also increased from Rs.8.41 in 1980-81 to Rs.161.41 in 2000-01. Similar to the amount of subsidy, the Madhya Pradesh's share on fertilizers subsidy to the India's total subsidy on fertilizers increased from 3.57 per cent in 1980-81 to 5.95 per cent in 1995-96. A significant increase in fertilizer consumption, which increased from 201.25 thousand tonnes to 826.28 thousand tonnes in 1995-96 was the main reason for the substantial increase of subsidy on fertilizers in the state. Since the state has large gross cropped area (over 13 per cent of India's GCA), the share of fertilizer subsidy of the state is relatively higher than states like Gujarat, Haryana and Tamil Nadu and lower than states like Uttar Pradesh, Andhra Pradesh, Maharashtra, Punjab and West Bengal.

9. As expected, subsidy on power has increased significantly over the years both in Madhya Pradesh and India. While the total subsidy on power increased from Rs.8 crores in 1980-81 to Rs.2,541 crores in 2000-01 in Madhya Pradesh, an increase of 36 per cent per annum, the same increased from Rs.334 crores to Rs.21,797 crores in India, an increase of 24.15 per cent per annum. The per hectare subsidy on power is estimated to be Rs.6,589.73 in 2000-01 in Madhya Pradesh, whereas, the same for India was Rs.6,585.99 almost equal to Madhya Pradesh. The Madhya Pradesh's share of power subsidy to the India's total subsidy on power significantly increased

from 2.38 per cent to 10.41 per cent in 1995-96. The total subsidy on power was found to be higher in Madhya Pradesh as compared to many states.

10. The subsidy on canal irrigation increased from Rs.598 crores in 1980-81 to Rs.7,716 crores in 2000-01 in India, while the same increased from Rs.40 crores to Rs.854 crores in Madhya Pradesh during the same period. The annual compound growth rate was 14.50 per cent for India and 17.42 per cent for Madhya Pradesh. The per hectare subsidy on canal irrigation is relatively higher in Madhya Pradesh (Rs.4,733.92) as compared to India (Rs.4,349.25). As a result of higher subsidy given to farmers in the state, the share of the Madhya Pradesh in the total subsidy of India on canal irrigation was second highest (10.48 per cent) next to Uttar Pradesh (17.94 per cent) during 1995-96.

11. The total subsidies on three major inputs viz. fertilizer, power and canal irrigation increased from Rs.66 crores in 1980-81 to Rs.3,818 crores in 2000-01 in Madhya Pradesh, at a growth rate of 24.11 per cent per annum. The growth rate of total subsidies in Madhya Pradesh was higher as compared to India, where it increased by 18.40 per cent per annum. The same trend was noted in the growth rate of per hectare subsidy as well. However, per hectare subsidy in Madhya Pradesh is relatively lower as compared to India in all the 21 years considered for the analysis, though the gap between the two narrowed down over the years. For instance, per hectare total subsidy was only Rs. 30.84 in Madhya Pradesh as against the all India average of Rs.83.24 during 1980-81. Similarly, during 2000-01, the per hectare subsidy in Madhya Pradesh was Rs.1,456.86 but the same was Rs.1,886.70 for India. The relatively lower amount of per hectare total subsidy in Madhya Pradesh was due to lower amount of subsidy provided to fertilizers (low consumption of fertilizers in Madhya Pradesh). Though the per hectare of subsidies were lower in Madhya Pradesh, the state accounted for 9.32 per cent of the India's total subsidies on three major inputs which is the fourth largest among the major states in India.

12. We have thus observed that the quantum of direct subsidies in agriculture and allied sectors totalled Rs.96.36 crores. The indirect subsidies on the three items of fertilizers

power and canal irrigation totalled Rs. 3,818 crores. The total of direct and indirect subsidies came to Rs.3,914.36 crores. The item wise distribution of the subsidies indicated that the subsidy on power shared 64.91 per cent, canal irrigation 21.82 per cent and that on fertilizers 10.81 per cent. The direct subsidies on all the agriculture and allied sectors shared only 2.46 per cent.

13. Direct subsidies as mentioned earlier were for four sub sectors of agriculture, horticulture, animal husbandry and fishery. The amount of subsidy in irrigated districts was about one and half times more than the dry districts. It was noted that the amount of subsidy in irrigated districts was far more on other castes farms than the farms belonging to SC/ST. The amount of subsidy on marginal and small farms was more than medium and large farms. The subsidy on irrigated districts farms was more than double that of dry districts. The subsidy per farm increased with the size of holding both in irrigated and dry districts.

14. The indirect subsidy amount in irrigated districts was far more than the dry districts. In the case of indirect subsidies the amount was more on the farms of other castes than the farms of SC/ST. This was observed in both irrigated and dry districts. It was also observed that the farms of other castes enjoyed higher amount of subsidy than the farms of SC/ST in all the size groups of farms.

15. In the dry districts the amount was about half the amount of irrigated districts. It was also observed that the amount increased with the size of farms in both irrigated and dry districts and also for the farm group formed by integrating both irrigated and dry districts into one. Per farm subsidy on fertilizers, power and irrigation was more in irrigated districts than the dry districts.

16. When direct and indirect subsidies were combined together, it was noticed that in irrigated districts the amount per hectare of gross cropped area was quite higher for indirect subsidy than the direct subsidy. This was also true for dry districts. The subsidy amount increased with the size of farms in the case of other castes farmers. However, there was no such phenomenon in the case of farms of SC/ST. The amount of subsidy on other castes was more than double that of farms of SC/ST.

17. It was noted that for all castes combined together for irrigated districts, the share of indirect subsidies was 56.09 per cent and that of direct subsidies was 43.91 per cent. In the case of dry districts the share of indirect subsidy was slightly higher (58.24 per cent) as compared to share of direct subsidy (41.76 per cent). When the two categories of irrigated and dry districts were combined the picture was similar.

18. It was noted that in the irrigated districts the share of subsidy amount enjoyed by the farmers of other castes was 81.24 per cent as compared to 18.76 per cent by farmers of. In the case of dry districts the situation was much better. The percentage of subsidy enjoyed by farms of SC/ST was 43.32 as compared to 56.68 by farms of other castes. This clearly shows that farms of other castes enjoyed much higher percentage of share in the total subsidy than the farms of SC/ST.

19. The net return of the farmers enjoying subsidies was 37 per cent more than those not enjoying subsidies. The net return was higher in the cases of SC/ST farmers as well as other castes farmers than their compatriats without enjoying subsidies. The net return was much higher for irrigated districts than the dry districts in both the groups with subsidy and without subsidy. This shows that the subsidy has an important role in increasing the net return of the farmers for all the castes as well as irrigated and dry districts

20. The net return was nearly two and half times (2.47) among the farmers with subsidy than those without subsidies. The net return was higher for those with subsidies among the group of farmers belonging to SC/ST and also for other castes farmers. Similarly, the net return was higher for farmers with subsidy than those without subsidy for irrigated districts as well as dry districts.

21. It was observed that the food subsidy amount per household was Rs.43 in irrigated districts as against Rs.38 in dry districts. Further, the amount of subsidy was also higher in irrigated districts for both SC/ST as well as other castes farmers than those in the dry districts. The marginal farmers enjoyed more amount of subsidy than the small, medium and large farmers. Subsidy enjoyed in irrigated districts was higher than dry districts for all the castes groups.

22. The problems in accessing subsidies are following :

i) Agriculture Extension Officers seldom inform the availability of subsidies to the weaker sections
ii) lack of information about direct subsidies
iii) a very limited availability of direct subsidies
iv) farmers required to visit number of times to get subsidies
v) high prices
vi) long distances
vii) low capacity to buy
viii) non-availability of the required type, brand and quality of inputs
ix) purity
x) availability in time of need and quantity etc.
xi) less accessibility to institutional credit.
xii) irregular hours of power supply with frequent voltage disturbances.

23. Sample farmers have reported three major problems concerning food subsidies. They are (a) quality of food grain (b) allotted quantity (quota) is not available in time (c) sugar and kerosene are not available most of the time. Few farmers reported that since sugar and kerosene are sold in bulk in the black market by the employees working in PDS, there are not available for consumers most of the time.

24. The sample farmers have been grouped into three categories based on per hectare use of subsidies. Low subsidy users (LSU) are those farmers who have used subsidies upto Rs.1,000 per hectare. Medium subsidy users (MSU) are the farmers who have used subsidy amount between Rs.1,000 to Rs.2,000 per hectare. High subsidy users (HSU) are those who have used subsidies amounting to Rs.2,000 per hectare and more. It is observed that of the 200 selected farmers 65.50 per cent are classified as (LSU) or low subsidy users. Another 25.00 per cent are those who are (MSU) or medium subsidy users and the remaining 9.50 per cent are categorised as (HSU) or high subsidy users. We can conclude that the dry districts farmers have higher percentage of farmers in the LSU group and lower in MSU group.

25. In irrigated districts the cropping pattern shows that the percentage of area under cash crops to gross cropped area (GCA) was highest on HSU group than the MSU and LSU groups. The picture was more or less similar for both SC/ST and other castes group. In the dry districts also the percentage of cotton area to gross cropped area was highest in HSU (20.92) followed by MSU (14.81) and LSU (13.59). It generally followed that in the case of cash crops the percentage of area to GCA was highest in HSU followed by MSU and LSU. It is thus clear that in both the categories of districts (Irrigated and Dry districts) the percentage of area under cash crops increased with the size of subsidy.

26. It was noted that in irrigated districts the entire area under paddy was occupied by HYVs. More than 90 per cent of the area under wheat was of HYVs. Soybean had the entire area under HYVs and cotton had more than 90 per cent. In most of the crops the other castes farmers had higher percentage of area under HYVs than the SC/ST farmers. If we analyse the data by level of subsidy users it will be observed that the percentage of area under HYVs of nearly all the crops was higher on the group of HSU. It was lower on MSU and still lower on LSU. In both categories of districts paddy, soybean and cotton had nearly entire area under HYVs and the percentage of area under HYVs on HSU was followed by MSU and lastly the LSU.

27. In irrigated districts largest proportion of fertilisers was consumed by paddy followed by cotton and wheat. In the case of paddy LSU group claimed highest percentage of 41.84 followed by MSU group (35.48) and HSU group (5.90). In the crop group of fruits, vegetables and spices there was a clear trend noticeable that the proportion of fertilisers consumed in LSU group was 5.80. It increased to 19.66 for MSU and 42.25 for HSU. In the dry districts, in paddy crop the proportion of fertiliser consumption was highest in LSU followed by MSU and HSU. There was a similar trend in the case of cotton and soybean. It shows that generally the HSU group had highest proportion of fertiliser consumption followed by MSU and LSU in the crops of cotton and soybean. It is evident that the proportion of fertilisers consumed by HSU was highest for both the commercial crops of cotton and soybean. For paddy the trend was reverse and in the case of wheat and maize no kind of trend was

noticeable. The overall picture shows that except for paddy the percentage of fertilisers consumption increased from LSU to MSU and further to HSU. Comparing the fertiliser consumption between the SC/ST and other castes farmers it was observed that fertiliser consumption in Rs./ hectare was higher for other castes farmers than the SC/ST farmers.

28. In the irrigated districts the average power consumption per hectare was Rs.751. It was much higher than the power consumption in dry districts (Rs.623). This was true with the both caste group where consumption was higher in the irrigated districts. Within the subsidy level groups in irrigated districts the power consumption was Rs.381 in LSU. It increased to Rs.608 in the MSU and further to Rs.1,841 in HSU. Similarly in dry districts the power consumption in LSU, MSU and HSU was Rs.470, Rs.1,254 and Rs.1,285 respectively.

29. In irrigated districts 43.73 per cent of the total power consumption was utilised for fruits, vegetables and spices crop group. Another cash crop in that group was cotton and this crop shared 19.06 per cent of the total power consumption. Wheat was also important and shared 15.88 per cent of the power consumption. In the dry districts cotton shared the highest percentage of 27.25 and paddy appeared second important with 25.02 per cent share.

30. In the irrigated districts the average cost of canal irrigation per hectare came to Rs.61. It was highest in the case of MSU followed by LSU. Among different castes the cost incurred by SC/ST farmers was more than double that of other castes farmers. Paddy was the most irrigated crop and shared 79.97 per cent of the total cost incurred on different crops.

31. The total value of inputs used in irrigated districts was Rs.6,268. It increased from Rs.5,145 in LSU to Rs.6,974 in MSU and further to Rs.8,440 in HSU. The trend was similar for the both castes groups. Moreover, the input value for other castes farmers was more (Rs.6,488) than the SC/ST group (Rs.5,826). Among the crops grown the highest percentage of inputs was claimed by paddy (27.32 per cent) followed by cotton (22.92 per cent) and fruits, vegetables and spices crop group (22.60 per cent).

In dry districts the total input value per hectare was much lower (Rs.4,555) than the irrigated districts. For both the castes groups also the value was lower than the irrigated districts. However, the increasing trend of the total input value from LSU to MSU and from MSU to HSU persisted in dry districts also.

32. It was observed that in the irrigated districts the average net return was Rs.16,741 per hectare. It was highest in the case of MSU (Rs.21,853) and in HSU Rs.18,503. In the case of dry districts the average net return was Rs.11,124 per hectare. It was highest (Rs.22,233) in the HSU followed by MSU (Rs.12,324). In both irrigated and dry districts the net returns were higher for other castes farmers than the SC/ST castes farmers.

33. The net return per farm on the irrigated districts was on an average Rs.84,986. It was much higher on HSU (Rs.2,94,126) as against Rs.73,666 on MSU. The net returns were higher (Rs.94,707) on other castes farms than the SC/ST farms (Rs.68,433). The higher net return on other castes farms were also noticed in all the three categories of LSU, MSU and HSU. In the case of dry districts the average net return per farm was Rs.38,849. It was higher on HSU followed by LSU and then by MSU. Between castes groups of farmers the net return per farm was higher (Rs.42,436) for SC/ST group of farms than the other castes farms (Rs.36,742). Combining irrigated and dry districts the results which emerged were so that the net return was highest for HSU followed by MSU and LSU as was noticed in irrigated districts. It was higher on other castes farms (Rs.65,725) than the SC/ST farms (Rs.55,435).

34. As is expected the net return per hectare higher for commercial crops like fruits, vegetables and spices and cotton. In the case of irrigated districts the net returns per hectare were highest (Rs.32,118) for the crop group of fruits, vegetables and spices. The next higher net return per hectare earning crop was cotton (Rs.23,001). The third crop was paddy with net return per hectare of Rs.15,523 followed by wheat Rs.12,873. Generally, the net returns per hectare were higher on SC/ST farms than the other castes farms. The net return per hectare was highest (Rs.27,526) for fruits, vegetables and spices crop group. This was followed by cotton (Rs.25,552). For paddy the net return per hectare was Rs.13,446 and that for wheat Rs.11,841. The net return per hectare was higher for SC/ST farms than other castes farms.

6.5 Policy Implications & Suggestions

1. Subsidies in agriculture are meant to help the small and marginal farmers and weaker sections of the society like the Scheduled Castes and Scheduled Tribes farmers. For these classes of farmers the use of improved inputs and resources such as irrigation and power become burdensome and out of their reach. Due to paucity of financial backing they are deprived of improved and costly inputs. It is for this reason that government subsidises inputs like seed, fertilizers, irrigation and power. This gives them the opportunity to use the modern inputs to be in line with the other classes of better off farmers. This basically needs the knowledge on the part of the weaker sections of the society, the will to use the inputs and also zeal among the field workers to help the farmers of weaker sections to have an excess to knowledge of subsidies, supply of inputs and know how to use the inputs. On the basis of the available field data it was observed that the work done so far on all these aspects has not been satisfactory. The farmers are poor, devoid of knowledge of subsidies and the overall disinterest among the officials to help them through financial institutions is evident.

It is therefore, suggested that the poor farmers should be educated with regard to knowledge about recent advances in agriculture, the various subsidies in operation for different purposes and necessary funding that could be provided to them.

2. The use of indirect subsidies on the farms of small, marginal and SC/ST farmers was far less than the other castes farmers and farmers having larger size of holdings. It is a well known fact that purchase and use of improved of HYV seed was more common on larger farm sizes. This is because of the fact that the improved and HYV seed also need higher doses of fertilisers and irrigation. Resources do not allow the farmers to use these inputs of their own. They need help of the institutional credit on easier terms. Then only they will be able to use the inputs and avail the subsidies.

3. Timely supply of inputs is of crucial importance not only for small, marginal and SC/ST farmers but for the farmers at large.

4. Irrigation is of crucial importance for the adoption of modern recommended practices of inputs. Steps should, therefore, be immediately taken to increase the irrigation potential of the small and marginal farms and until they are provided with irrigation facilities they should be brought in the gamut of schemes such as watershed development for rainfed areas. Here also subsidies play an important role in the adoption of watershed development programmes.

5. Tremendous progress needs to be made in the crop groups of pulses, oilseeds and fibres so that their productivity is increased and the only way to do this is to implement rigorously the production programmes of these crop groups. These, of course, will need direct subsidy schemes with quite a higher allotment of funds.

6. The field survey shows that low subsidy users (less than Rs. 1,000) are small and marginal farmers and belonging to SC/ST classes go in for cultivation of food grain crops to satisfy the houlsehold requirements and also because of the small size of holdings do not offer them much scope for diversification of crops specially to commercial crops. If the policy makers decide to reduce the subsidy level on these farms these classes will face the danger of providing food security to themselves.

7. As regards food subsidies lot of complaints were narrated regarding pilferation of the scarce and valuable food resources to the disadvantage of SC/ST farmers and the weaker sections of the society. It is suggested that the ration shops in the predominant SC/ST and weaker sections of the communities should be allowed to be operated by SC/ST educated youth.

8. Efforts should be made for the formation of SHG groups among the SC/ST and weaker sections of the society so that they gradually become self reliant and self sufficient with regards to important and costly inputs. A study conducted by this Centre showed that with the formation of the SHGs, inputs were easily available to the members of the SHG and moreover it was easier for the financial institutions in group lending.

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Annexure – I

Comments received from the Agricultural Economics Research Centre, University of Delhi, Delhi- 110 007

1.	Title of the draft report examined	:	As given in the study proposal
2.	Date of receipt of the draft report	:	02.04.2004
3.	Date of dispatch of the comments	:	05.05.2005
4.	Comments on the objectives of the study	:	The study has covered all the objectives of the study. However, a few points may be added in the analysis.

Chapter – I Adequate coverage but author should provide justification for combining (i) SC and ST categories (ii) medium and large farmers. As per coordinated study design, these should be treated as separate categories.

Chapter – II Coverage is adequate but a time series analysis of fertilizer, power and irrigation subsidies in the state of Madhya Pradesh along with growth rates during eighties and nineties may be added.

Chapter – III Analysis of secondary and primary data is sufficient, but present per farm value of farm assets for different categories of SC, St and other farmers in dry and irrigated, dry + irrigated districts.

Chapter – IV Satisfactory coverage but results on gross returns, cost and net returns with and without subsidies by farm size may be presented. In addition, important problems faced by farmers in access to subsidies may be given in the tabular form.

Chapter – V Satisfactory

5.	Comments on the presentation and get up	:	Presentation is satisfactory.
6.	Comments on the methodology	:	The author has followed the indicated methodology given in the coordinated study design.
7.	Overall views on the acceptability of the report	:	The report is recommended to be accepted after incorporating the above points.

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Annexure – II

Action taken by the author based on the comments received from the coordinator of the study

Chapter – I	:	Justification incorporated
Chapter –II	:	This has been added
Chapter – III	:	Incorporated
Chapter – IV	:	Incorporated

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Study No. 90

EXECUTIVE SUMMARY

AGRICULTURAL INPUT SUBSIDIES IN INDIA :
Quantum of Subsidies to SC/ ST Farmers In Madhya Pradesh & Chhattisgarh

K. G. SHARMA

AGRO - ECONOMIC RESEARCH CENTRE FOR
MADHYA PRADESH AND CHHATTISGARH
J.N.K.V.V., JABALPUR (M.P.)

May, 2004

EXECUTIVE SUMMARY

AGRICULTURAL INPUT SUBSIDIES IN INDIA :
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1. Introduction

Subsidy is one of the powerful fiscal instruments, besides taxes and others, by which the objective of growth and social justice may be achieved. 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. 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.

In India the amount of subsidies increased from year to year. Nearly 66 per cent of the people in India are still dependent on agriculture. The subsidies to agricultural sector provided by the government have recorded phenomenal rise during the past two decades. In 1993-94, the agricultural subsidies amounted to Rs.14,069 crores. The amount of subsidies increased from year to year and stood at Rs.34,784 crores in 2000-2001. If we take base year as 1993-94, it was noted that the subsidies in 2000-2001 were 247.24 per cent, an increase of about 2½ times within a span of seven years. The subsidies were provided on inputs like fertilisers, electricity and irrigation. Subsidies were also provided on "other" items. Among the subsidies provided the maximum amount was for fertilisers and shared 39.67 per cent of the total agricultural subsidies. This was followed by irrigation and contributed 39.33 per cent to the total agricultural subsidies. Subsidy provided for electricity contributed 18.54 per cent of the total agricultural subsidies. "Others" shared 2.41 per cent.

It is expected that subsidies contribute to better cropping pattern, employment and income of the beneficiaries. But in most development programmes, subsidies are one among the many developmental inputs being provided. Thus the observable changes in cropping pattern, employment level and overall incomes are because of the joint effect of all the efforts going on. Therefore, these changes cannot be attributed solely to subsidies.

Macro and micro studies focussed on a particular subsidy do not give an idea about the overall impact of important agricultural subsidies on different categories of farmers. The SC/ST farmers are by and large ignored and their problems are overlooked. This is also important from the point of view of resource inadequacy of the small, marginal and SC/ST farmers. Against the backdrop of growing budgetary allocation of providing subsidies to agriculture, an analysis of their implications for different classes of farmers is of crucial importance in order to assess the extent to which they are consistent with the attainment of set objective of attaining equity and stimulating growth. For this, there is a need to know the quantum of subsidies used and the different effects of subsidies across different groups of households at the micro level. With a view to ascertaining the ground reality in the context of agricultural subsidies and its effects on SC/ST farmers the present common study has been undertaken in the state of old Madhya Pradesh (and now the state of Madhya Pradesh and Chhattisgarh) by Agro- Economic Research Centre, Jabalpur on the initiation of Ministry of Agriculture, Government of India.

2. Objectives

The objectives of the study are :

(iv) To examine the utilization pattern of subsidies by different categories of farmers.

(v) To assess the share of SC/ST farmers in total amount of subsidies used.

(vi) To analyse the overall effect of differences in the levels of input subsidy used by various categories of farmers on crop pattern, cropping intensity, adoption of improved technology, input use, crop productivity and returns.

3. Methodology

Since the State of old Madhya Pradesh was bifurcated on 1st November, 2000 into Madhya Pradesh and Chhattisgarh, and since the reference year of the study was to be the year 2000-2001, the old Madhya Pradesh was treated as a State for the study. The old Madhya Pradesh had following 3 agro-climatic zones.

S.No.	Name	Agro-Climatic Zone No.
1.	Eastern Plateau and Hills Region	07
2.	Central Plateau and Hills Region	08
3.	Western Plateau and Hills Region	09

Of the three zones, 2, namely 7 and 9 were selected for the study. In agro-climatic zone 7, on the basis of two criteria of highest and lowest percentage of irrigation and higher percentage of SC/ST population, following districts were selected in consultation with State Government Officials.

1. Raipur district - Irrigated district (above 30% irrigation)
2. Raigarh district- Dry district

It may be mentioned that in the process or reorganisation of districts, erstwhile Raipur and Raigarh districts were recently bifurcated. However, we selected both the undivided districts for the reason of secondary data on all aspects of agriculture being not available for the newly carved districts.

In agro- climatic zone 9 on the basis of same criteria mentioned above following two districts were selected.

1. Dhar district - Irrigated district (above 30% irrigation)
2. Jhabua district - Dry district

From each district 2 blocks were selected.

S.No.	District	Block
1.	Raipur district	Dharsiwa , Abhanpur
2.	Raigarh district	Raigarh, Tamnar
3.	Dhar district	Dharampuri, Nisarpur
4.	Jhabua district	Jhabua, Rama

In 8 blocks, 52 villages were chosen in consultation with the Deputy Directors of Agriculture and Senior Agriculture Extension Officers on the basis of availability of different categories of SC/ST and other farmers and coverage of input subsidy programmes. The beneficiary farmers were selected randomly representing marginal, small, medium + large size groups roughly in the proportion of number of operational holdings of SC/ST and other farmers in Madhya Pradesh. For this study we have merged semi- medium (2 hectares to 4 hectares) and medium (4 hectares to 10 hectares) and large (10 hectares and above) size groups in one group i.e. above 2 hectares as medium + large group. Thus from the category of marginal farmers, 30 SC/ST and 50 other castes farmers were selected. From the small

size group, the number of SC/ST farmers and other farmers was 18 and 30 respectively. From the category of medium + large farmers 26 were SC/ST and 46 were other castes farmers.

The schedules to be canvassed among farmers were framed by the coordinating Agro Economic Research Centre, Delhi. Tabulation and analysis plans were also supplied by the coordinating AER Centre, Delhi. The macro level data were collected from various departments of the two State Governments. The reference year of the study was the year 2000-2001.

4. Main Findings

1. Subsidies are provided through various schemes to agricultural sector by the central and state governments in order to promote the adoption of certain inputs/ machinery etc. in crop cultivation. Under centrally sponsored schemes (central and state government share in the ratio of 75:25) the most important one was oilseeds production programme claiming 16.49 per cent of the total expenditure. The second important programme was national pulses development programme claiming 6.59 per cent of the total expenditure.

2. The most important programme under central sector schemes (funded totally by central government) was national watershed development programme for rainfed areas claiming 17.71 per cent of the total expenditure. The second important programme was soil conservation in river valley project having a share of 10.25 per cent of the total expenditure.

3. Macro management schemes (central and state government share in the ratio of 90:10) have been initiated w.e.f. 01.01.2001. The expenditure for the macro management schemes was 14.35 per cent of the total expenditure.

4. Although the various components of the state sectors schemes (funded totally by state government) did not contribute very significantly to the total expenditure, the more worth mentioning schemes were micro- minor irrigation (7.95 per cent), boring of tube wells on cultivators' fields (5.61 per cent) and national crop insurance programme (5.17 per cent).

5. In the state government schemes the proportion of amount of subsidy was 73.98 per cent for other castes. It was 17.66 per cent for scheduled tribes and 8.36 per cent for scheduled castes. In terms of number of beneficiaries benefitted by the subsidy in the state schemes it was noted that of the total number 49.49 per cent were other castes beneficiaries. The scheduled tribes beneficiaries were 35.59 per cent and the scheduled castes beneficiaries were 14.92 per cent. It may also be noted that in some of the programmes subsidy could not be enjoyed by both scheduled castes and scheduled tribes farmers and only other castes beneficiaries claimed the subsidy. This may be due to the fact that the scheduled castes and scheduled tribes farmers in the state are generally marginal and small size farmers. Moreover, their holdings do not generally have irrigation facilities. Due to these two reasons these categories grew only staple food crops and not horticultural crops.

6. During the year 2000-2001 the total expenditure in the four sectors of agriculture, horticulture, animal husbandry and fishery amounted to Rs. 10,106.29 lakhs. Of this, the share of the central government was 60.74 per cent and that of state government 39.26 per cent. This sharing of expenditure differed in the four sectors. While in agriculture sector the share of the central government was 65.19 per cent, it was less (52.71 per cent) in horticulture sector. In the fishery sector the share got reduced to 13.74 per cent and in animal husbandry it was meagre 1.44 per cent. Among all the four sectors the percentage of expenditure in agriculture was as high as 87.30 per cent. Horticulture claimed only 6.49 per cent and animal husbandry and fishery 3.54 and 2.67 per cent respectively.

7. It may be noted that the expenditure incurred in the two sectors of agriculture and horticulture equals the subsidy granted. This is because in these sectors no separate figures of subsidy are available and the figures mentioned here exclude expenditure on administration. In the other two sectors of animal husbandry and fishery figures for subsidy were available over and above the expenditure. Thus the total subsidy for the four sectors comes to Rs. 9,636.75 lakhs. Agriculture sector predominated sharing 91.56 per cent of the total subsidy. Horticulture sector had also significant

share of 6.80 per cent of the total subsidy. The two remaining sectors of animal husbandry and fishery contributed less than 1.00 per cent each. This is also reflected in the subsidy given per farmer and per hectare. While the per farmer subsidy in agriculture and horticulture sectors was Rs. 59.45 and Rs. 4.42 respectively that under animal husbandry and fishery came to only Rs. 0.62 and Rs. 0.44 respectively. The subsidy per hectare in the four sectors was Rs. 43.21, Rs. 3.21, Rs. 0.48 and Rs. 0.32 respectively.

8. For India, the amount of subsidy estimated provided for fertilizers increased from Rs.505 crores in 1980-81 to Rs.7,089 crores in 2000-01, an increase of 14.56 per cent per annum. During the same period, the total subsidy on fertilizers in Madhya Pradesh increased from Rs.18 crores to Rs.423 crores, an increase of 18.22 per cent per annum. Per hectare subsidy on fertilizers, which indicates the real picture of subsidy provided to farmers, also increased from Rs.8.41 in 1980-81 to Rs.161.41 in 2000-01. Similar to the amount of subsidy, the Madhya Pradesh's share on fertilizers subsidy to the India's total subsidy on fertilizers increased from 3.57 per cent in 1980-81 to 5.95 per cent in 1995-96. A significant increase in fertilizer consumption, which increased from 201.25 thousand tonnes to 826.28 thousand tonnes in 1995-96 was the main reason for the substantial increase of subsidy on fertilizers in the state. Since the state has large gross cropped area (over 13 per cent of India's GCA), the share of fertilizer subsidy of the state is relatively higher than states like Gujarat, Haryana and Tamil Nadu and lower than states like Uttar Pradesh, Andhra Pradesh, Maharashtra, Punjab and West Bengal.

9. As expected, subsidy on power has increased significantly over the years both in Madhya Pradesh and India. While the total subsidy on power increased from Rs.8 crores in 1980-81 to Rs.2,541 crores in 2000-01 in Madhya Pradesh, an increase of 36 per cent per annum, the same increased from Rs.334 crores to Rs.21,797 crores in India, an increase of 24.15 per cent per annum. The per hectare subsidy on power is estimated to be Rs.6,589.73 in 2000-01 in Madhya Pradesh, whereas, the same for India was Rs.6,585.99 almost equal to Madhya Pradesh. The Madhya Pradesh's share of power subsidy to the India's total subsidy on power significantly increased

from 2.38 per cent to 10.41 per cent in 1995-96. The total subsidy on power was found to be higher in Madhya Pradesh as compared to many states.

10. The subsidy on canal irrigation increased from Rs.598 crores in 1980-81 to Rs.7,716 crores in 2000-01 in India, while the same increased from Rs.40 crores to Rs.854 crores in Madhya Pradesh during the same period. The annual compound growth rate was 14.50 per cent for India and 17.42 per cent for Madhya Pradesh. The per hectare subsidy on canal irrigation is relatively higher in Madhya Pradesh (Rs.4,733.92) as compared to India (Rs.4,349.25). As a result of higher subsidy given to farmers in the state, the share of the Madhya Pradesh in the total subsidy of India on canal irrigation was second highest (10.48 per cent) next to Uttar Pradesh (17.94 per cent) during 1995-96.

11. The total subsidies on three major inputs viz. fertilizer, power and canal irrigation increased from Rs.66 crores in 1980-81 to Rs.3,818 crores in 2000-01 in Madhya Pradesh, at a growth rate of 24.11 per cent per annum. The growth rate of total subsidies in Madhya Pradesh was higher as compared to India, where it increased by 18.40 per cent per annum. The same trend was noted in the growth rate of per hectare subsidy as well. However, per hectare subsidy in Madhya Pradesh is relatively lower as compared to India in all the 21 years considered for the analysis, though the gap between the two narrowed down over the years. For instance, per hectare total subsidy was only Rs. 30.84 in Madhya Pradesh as against the all India average of Rs.83.24 during 1980-81. Similarly, during 2000-01, the per hectare subsidy in Madhya Pradesh was Rs.1,456.86 but the same was Rs.1,886.70 for India. The relatively lower amount of per hectare total subsidy in Madhya Pradesh was due to lower amount of subsidy provided to fertilizers (low consumption of fertilizers in Madhya Pradesh). Though the per hectare of subsidies were lower in Madhya Pradesh, the state accounted for 9.32 per cent of the India's total subsidies on three major inputs which is the fourth largest among the major states in India.

12. We have thus observed that the quantum of direct subsidies in agriculture and allied sectors totalled Rs.96.36 crores. The indirect subsidies on the three items of fertilizers

power and canal irrigation totalled Rs. 3,818 crores. The total of direct and indirect subsidies came to Rs.3,914.36 crores. The item wise distribution of the subsidies indicated that the subsidy on power shared 64.91 per cent, canal irrigation 21.82 per cent and that on fertilizers 10.81 per cent. The direct subsidies on all the agriculture and allied sectors shared only 2.46 per cent.

13. Direct subsidies as mentioned earlier were for four sub sectors of agriculture, horticulture, animal husbandry and fishery. The amount of subsidy in irrigated districts was about one and half times more than the dry districts. It was noted that the amount of subsidy in irrigated districts was far more on other castes farms than the farms belonging to SC/ST. The amount of subsidy on marginal and small farms was more than medium and large farms. The subsidy on irrigated districts farms was more than double that of dry districts. The subsidy per farm increased with the size of holding both in irrigated and dry districts.

14. The indirect subsidy amount in irrigated districts was far more than the dry districts. In the case of indirect subsidies the amount was more on the farms of other castes than the farms of SC/ST. This was observed in both irrigated and dry districts. It was also observed that the farms of other castes enjoyed higher amount of subsidy than the farms of SC/ST in all the size groups of farms.

15. In the dry districts the amount was about half the amount of irrigated districts. It was also observed that the amount increased with the size of farms in both irrigated and dry districts and also for the farm group formed by integrating both irrigated and dry districts into one. Per farm subsidy on fertilizers, power and irrigation was more in irrigated districts than the dry districts.

16. When direct and indirect subsidies were combined together, it was noticed that in irrigated districts the amount per hectare of gross cropped area was quite higher for indirect subsidy than the direct subsidy. This was also true for dry districts. The subsidy amount increased with the size of farms in the case of other castes farmers. However, there was no such phenomenon in the case of farms of SC/ST. The amount of subsidy on other castes was more than double that of farms of SC/ST.

17. It was noted that for all castes combined together for irrigated districts, the share of indirect subsidies was 56.09 per cent and that of direct subsidies was 43.91 per cent. In the case of dry districts the share of indirect subsidy was slightly higher (58.24 per cent) as compared to share of direct subsidy (41.76 per cent). When the two categories of irrigated and dry districts were combined the picture was similar.

18. It was noted that in the irrigated districts the share of subsidy amount enjoyed by the farmers of other castes was 81.24 per cent as compared to 18.76 per cent by farmers of. In the case of dry districts the situation was much better. The percentage of subsidy enjoyed by farms of SC/ST was 43.32 as compared to 56.68 by farms of other castes. This clearly shows that farms of other castes enjoyed much higher percentage of share in the total subsidy than the farms of SC/ST.

19. The net return of the farmers enjoying subsidies was 37 per cent more than those not enjoying subsidies. The net return was higher in the cases of SC/ST farmers as well as other castes farmers than their compatriats without enjoying subsidies. The net return was much higher for irrigated districts than the dry districts in both the groups with subsidy and without subsidy. This shows that the subsidy has an important role in increasing the net return of the farmers for all the castes as well as irrigated and dry districts

20. The net return was nearly two and half times (2.47) among the farmers with subsidy than those without subsidies. The net return was higher for those with subsidies among the group of farmers belonging to SC/ST and also for other castes farmers. Similarly, the net return was higher for farmers with subsidy than those without subsidy for irrigated districts as well as dry districts.

21. It was observed that the food subsidy amount per household was Rs.43 in irrigated districts as against Rs.38 in dry districts. Further, the amount of subsidy was also higher in irrigated districts for both SC/ST as well as other castes farmers than those in the dry districts. The marginal farmers enjoyed more amount of subsidy than the small, medium and large farmers. Subsidy enjoyed in irrigated districts was higher than dry districts for all the castes groups.

22. The problems in accessing subsidies are following :

i) Agriculture Extension Officers seldom inform the availability of subsidies to the weaker sections
ii) lack of information about direct subsidies
iii) a very limited availability of direct subsidies
iv) farmers required to visit number of times to get subsidies
v) high prices
vi) long distances
vii) low capacity to buy
viii) non-availability of the required type, brand and quality of inputs
ix) purity
x) availability in time of need and quantity etc.
xi) less accessibility to institutional credit.
xiii) irregular hours of power supply with frequent voltage disturbances.

23. Sample farmers have reported three major problems concerning food subsidies. They are (a) quality of food grain (b) allotted quantity (quota) is not available in time (c) sugar and kerosene are not available most of the time. Few farmers reported that since sugar and kerosene are sold in bulk in the black market by the employees working in PDS, there are not available for consumers most of the time.

24. The sample farmers have been grouped into three categories based on per hectare use of subsidies. Low subsidy users (LSU) are those farmers who have used subsidies upto Rs.1,000 per hectare. Medium subsidy users (MSU) are the farmers who have used subsidy amount between Rs.1,000 to Rs.2,000 per hectare. High subsidy users (HSU) are those who have used subsidies amounting to Rs.2,000 per hectare and more. It is observed that of the 200 selected farmers 65.50 per cent are classified as (LSU) or low subsidy users. Another 25.00 per cent are those who are (MSU) or medium subsidy users and the remaining 9.50 per cent are categorised as (HSU) or high subsidy users. We can conclude that the dry districts farmers have higher percentage of farmers in the LSU group and lower in MSU group.

25. In irrigated districts the cropping pattern shows that the percentage of area under cash crops to gross cropped area (GCA) was highest on HSU group than the MSU and LSU groups. The picture was more or less similar for both SC/ST and other castes group. In the dry districts also the percentage of cotton area to gross cropped area was highest in HSU (20.92) followed by MSU (14.81) and LSU (13.59). It generally followed that in the case of cash crops the percentage of area to GCA was highest in HSU followed by MSU and LSU. It is thus clear that in both the categories of districts (Irrigated and Dry districts) the percentage of area under cash crops increased with the size of subsidy.

26. It was noted that in irrigated districts the entire area under paddy was occupied by HYVs. More than 90 per cent of the area under wheat was of HYVs. Soybean had the entire area under HYVs and cotton had more than 90 per cent. In most of the crops the other castes farmers had higher percentage of area under HYVs than the SC/ST farmers. If we analyse the data by level of subsidy users it will be observed that the percentage of area under HYVs of nearly all the crops was higher on the group of HSU. It was lower on MSU and still lower on LSU. In both categories of districts paddy, soybean and cotton had nearly entire area under HYVs and the percentage of area under HYVs on HSU was followed by MSU and lastly the LSU.

27. In irrigated districts largest proportion of fertilisers was consumed by paddy followed by cotton and wheat. In the case of paddy LSU group claimed highest percentage of 41.84 followed by MSU group (35.48) and HSU group (5.90). In the crop group of fruits, vegetables and spices there was a clear trend noticeable that the proportion of fertilisers consumed in LSU group was 5.80. It increased to 19.66 for MSU and 42.25 for HSU. In the dry districts, in paddy crop the proportion of fertiliser consumption was highest in LSU followed by MSU and HSU. There was a similar trend in the case of cotton and soybean. It shows that generally the HSU group had highest proportion of fertiliser consumption followed by MSU and LSU in the crops of cotton and soybean. It is evident that the proportion of fertilisers consumed by HSU was highest for both the commercial crops of cotton and soybean. For paddy the trend was reverse and in the case of wheat and maize no kind of trend was

noticeable. The overall picture shows that except for paddy the percentage of fertilisers consumption increased from LSU to MSU and further to HSU. Comparing the fertiliser consumption between the SC/ST and other castes farmers it was observed that fertiliser consumption in Rs./ hectare was higher for other castes farmers than the SC/ST farmers.

28. In the irrigated districts the average power consumption per hectare was Rs.751. It was much higher than the power consumption in dry districts (Rs.623). This was true with the both caste group where consumption was higher in the irrigated districts. Within the subsidy level groups in irrigated districts the power consumption was Rs.381 in LSU. It increased to Rs.608 in the MSU and further to Rs.1,841 in HSU. Similarly in dry districts the power consumption in LSU, MSU and HSU was Rs.470, Rs.1,254 and Rs.1,285 respectively.

29. In irrigated districts 43.73 per cent of the total power consumption was utilised for fruits, vegetables and spices crop group. Another cash crop in that group was cotton and this crop shared 19.06 per cent of the total power consumption. Wheat was also important and shared 15.88 per cent of the power consumption. In the dry districts cotton shared the highest percentage of 27.25 and paddy appeared second important with 25.02 per cent share.

30. In the irrigated districts the average cost of canal irrigation per hectare came to Rs.61. It was highest in the case of MSU followed by LSU. Among different castes the cost incurred by SC/ST farmers was more than double that of other castes farmers. Paddy was the most irrigated crop and shared 79.97 per cent of the total cost incurred on different crops.

31. The total value of inputs used in irrigated districts was Rs.6,268. It increased from Rs.5,145 in LSU to Rs.6,974 in MSU and further to Rs.8,440 in HSU. The trend was similar for the both castes groups. Moreover, the input value for other castes farmers was more (Rs.6,488) than the SC/ST group (Rs.5,826). Among the crops grown the highest percentage of inputs was claimed by paddy (27.32 per cent) followed by cotton (22.92 per cent) and fruits, vegetables and spices crop group (22.60 per cent).

In dry districts the total input value per hectare was much lower (Rs.4,555) than the irrigated districts. For both the castes groups also the value was lower than the irrigated districts. However, the increasing trend of the total input value from LSU to MSU and from MSU to HSU persisted in dry districts also.

32. It was observed that in the irrigated districts the average net return was Rs.16,741 per hectare. It was highest in the case of MSU (Rs.21,853) and in HSU Rs.18,503. In the case of dry districts the average net return was Rs.11,124 per hectare. It was highest (Rs.22,233) in the HSU followed by MSU (Rs.12,324). In both irrigated and dry districts the net returns were higher for other castes farmers than the SC/ST castes farmers.

33. The net return per farm on the irrigated districts was on an average Rs.84,986. It was much higher on HSU (Rs.2,94,126) as against Rs.73,666 on MSU. The net returns were higher (Rs.94,707) on other castes farms than the SC/ST farms (Rs.68,433). The higher net return on other castes farms were also noticed in all the three categories of LSU, MSU and HSU. In the case of dry districts the average net return per farm was Rs.38,849. It was higher on HSU followed by LSU and then by MSU. Between castes groups of farmers the net return per farm was higher (Rs.42,436) for SC/ST group of farms than the other castes farms (Rs.36,742). Combining irrigated and dry districts the results which emerged were so that the net return was highest for HSU followed by MSU and LSU as was noticed in irrigated districts. It was higher on other castes farms (Rs.65,725) than the SC/ST farms (Rs.55,435).

34. As is expected the net return per hectare higher for commercial crops like fruits, vegetables and spices and cotton. In the case of irrigated districts the net returns per hectare were highest (Rs.32,118) for the crop group of fruits, vegetables and spices. The next higher net return per hectare earning crop was cotton (Rs.23,001). The third crop was paddy with net return per hectare of Rs.15,523 followed by wheat Rs.12,873. Generally, the net returns per hectare were higher on SC/ST farms than the other castes farms. The net return per hectare was highest (Rs.27,526) for fruits, vegetables and spices crop group. This was followed by cotton (Rs.25,552). For paddy the net return per hectare was Rs.13,446 and that for wheat Rs.11,841. The net return per hectare was higher for SC/ST farms than other castes farms.

5. Policy Implications & Suggestions

1. Subsidies in agriculture are meant to help the small and marginal farmers and weaker sections of the society like the Scheduled Castes and Scheduled Tribes farmers. For these classes of farmers the use of improved inputs and resources such as irrigation and power become burdensome and out of their reach. Due to paucity of financial backing they are deprived of improved and costly inputs. It is for this reason that government subsidises inputs like seed, fertilizers, irrigation and power. This gives them the opportunity to use the modern inputs to be in line with the other classes of better off farmers. This basically needs the knowledge on the part of the weaker sections of the society, the will to use the inputs and also zeal among the field workers to help the farmers of weaker sections to have an excess to knowledge of subsidies, supply of inputs and know how to use the inputs. On the basis of the available field data it was observed that the work done so far on all these aspects has not been satisfactory. The farmers are poor, devoid of knowledge of subsidies and the overall disinterest among the officials to help them through financial institutions is evident.

It is therefore, suggested that the poor farmers should be educated with regard to knowledge about recent advances in agriculture, the various subsidies in operation for different purposes and necessary funding that could be provided to them.

2. The use of indirect subsidies on the farms of small, marginal and SC/ST farmers was far less than the other castes farmers and farmers having larger size of holdings. It is a well known fact that purchase and use of improved of HYV seed was more common on larger farm sizes. This is because of the fact that the improved and HYV seed also need higher doses of fertilisers and irrigation. Resources do not allow the farmers to use these inputs of their own. They need help of the institutional credit on easier terms. Then only they will be able to use the inputs and avail the subsidies.

3. Timely supply of inputs is of crucial importance not only for small, marginal and SC/ST farmers but for the farmers at large.

4. Irrigation is of crucial importance for the adoption of modern recommended practices of inputs. Steps should, therefore, be immediately taken to increase the irrigation potential of the small and marginal farms and until they are provided with irrigation facilities they should be brought in the gamut of schemes such as watershed development for rainfed areas. Here also subsidies play an important role in the adoption of watershed development programmes.

5. Tremendous progress needs to be made in the crop groups of pulses, oilseeds and fibres so that their productivity is increased and the only way to do this is to implement rigorously the production programmes of these crop groups. These, of course, will need direct subsidy schemes with quite a higher allotment of funds.

6. The field survey shows that low subsidy users (less than Rs. 1,000) are small and marginal farmers and belonging to SC/ST classes go in for cultivation of food grain crops to satisfy the houlsehold requirements and also because of the small size of holdings do not offer them much scope for diversification of crops specially to commercial crops. If the policy makers decide to reduce the subsidy level on these farms these classes will face the danger of providing food security to themselves.

7. As regards food subsidies lot of complaints were narrated regarding pilferation of the scarce and valuable food resources to the disadvantage of SC/ST farmers and the weaker sections of the society. It is suggested that the ration shops in the predominant SC/ST and weaker sections of the communities should be allowed to be operated by SC/ST educated youth.

8. Efforts should be made for the formation of SHG groups among the SC/ST and weaker sections of the society so that they gradually become self reliant and self sufficient with regards to important and costly inputs. A study conducted by this Centre showed that with the formation of the SHGs, inputs were easily available to the members of the SHG and moreover it was easier for the financial institutions in group lending.

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