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Utilisation of Agricultural Input Subsidies by Scheduled Caste vis-à-vis Non-Scheduled Caste Farmers in Haryana

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I

INTRODUCTION

Recently, a large number of studies on agricultural subsidies in India (Gulati and Narayanan, 2002; Chopra and Kapuria, 2001; Gulati and Sharma, 1992; Gulati and Kalra, 1992; Alagh, 2000; Vaidyanathan, 2000; Acharya, 2000; Prasad Kamta, 2000; Paroda, 2000; Chand and Philip, 2000; Subbarao, 1985; Srivastava and Sen, 1997) have been undertaken. These are mostly based on secondary data and focus attention on issues related to the growing magnitude of agricultural subsidies and relate their findings to economic liberalisation. Since India signed the World Trade Organisation's agreement in 1995, the question of aggregate support to agriculture has also occupied the minds of some scholars (Gulati and Kelly, 1999). But, the analyses of subsidies presented in these studies constrain to address a number of subsidy-related issues which come into focus only when detailed data are analysed at the farm level. So far, most (Joshi and Agnihotri, 1982; Mohan *et al.*, 1982; Pawar and Sutar, 1982; Singh and Sikka, 1982; Gupta, 2000) of the micro studies focus attention on a particular subsidy and hence, do not give an idea about the overall impact of important agricultural subsidies on different categories of farmers, particularly, small, marginal and scheduled caste and scheduled tribe (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 these farmers.

Thus, the distributive aspects of agricultural subsidies across different farm sizes has received scant attention, despite being a major unanswered question in the minds of policy makers. In this context, the most important question to be asked is who benefits from them. The answer to this question depends on the evidence relating to the utilisation of subsidies across farm sizes. This paper aims to provide the current evidence for scheduled caste vis-à-vis non-scheduled caste farmers in Haryana.

Specifically, it addresses the following broad issues: (i) What is the magnitude of per farm and per hectare direct and indirect subsidies across different farm sizes of scheduled caste and non-scheduled caste farmers, (ii) What is the share of scheduled caste farmers in total utilisation of agricultural subsidies? and (iii) What is the impact of withdrawing subsidies on cost and returns (income) of scheduled caste vis-à-vis non-scheduled caste farmers. The paper is divided into four sections. Section II deal

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with data and methodology and highlights the main features of the sample households, while Section III presents the results and discussion. Section III is divided into two sub-sections. The first sub-section examines the quantum of direct and indirect subsidies utilised by the farmers during the reference year 1999-2000. In addition, it also highlights the share of scheduled caste farmers in agricultural subsidies used by both groups of farmers. The second sub-section deals with the impact of withdrawing subsidies on the cost and returns for the two categories. Finally Section IV outlines the conclusions and policy implications.

II

DATA AND METHODOLOGY

The study is based on micro level data. A survey of selected farm households was conducted in order to collect the required information during the year 2000. The sample of the study is spread over four agro-climatic zones of Haryana. One district from each zone was chosen for in-depth study on the basis of percentage of scheduled caste cultivators to total cultivators. The districts of Ambala, Jind, Faridabad and Bhiwani fall in this criterion. Further, blocks and villages from these districts were selected on the basis of the availability of different categories of scheduled caste cultivators. In all, 50 farm households including 25 scheduled caste and 25 non-scheduled caste were interviewed in each of the surveyed districts. Since, the selected districts are four, total sample became 200 farm households. This included 100 scheduled caste and 100 non-scheduled caste households. An effort was made to cover all categories of farmers in both the social groups. We have stratified the farmers into four categories as marginal (below 1 ha), small (1-2 ha), medium (2-4 ha) and large (above 4 ha) according to the size of operational holdings.

The conceptual framework of the study covers both direct and indirect farm subsidies. Among direct subsidies, crop-specific, machinery-specific and other input subsidies in cash and kind were included, while indirect subsidies were restricted to three major subsidies, namely, fertiliser, irrigation and power subsidies. We have worked out these subsidies for the selected farmers. The methodology for calculating subsidies is different for each component. (i) For direct subsidies, their value was accounted. When subsidy was in kind, it was converted into value. (ii) The methodology for computing fertiliser, power and irrigation subsidies at the farm level was different. The rates of subsidy on fertilisers were taken from Gulati and Narayanan (2000). They have estimated the shares of farmers and manufactures in subsidised amount through import parity price route. We have used their estimated rates for urea, MOP and other fertilisers for calculating the amount of fertiliser subsidy availed by the sampled farmers. For this purpose, the quantity of different fertilisers consumed by the farmers during the reference year was multiplied by the rate of subsidy for each type of fertiliser and then added together to arrive at the total fertiliser subsidy availed by the farmer. (iii) We have limited irrigation subsidy to

canals only. The canal irrigation is heavily subsidised in Haryana. The irrigation subsidy is accrued to the farmers because the charges for canal water are significantly lower than the cost of supply. This subsidy at the state level was worked out by deducting the amount recovered from the cost of supply based on working expenses. The canal subsidy availed by the farmers was computed through multiplying per hectare subsidy by the number of hectares irrigated by the canal during the reference year. (iv) The power subsidy for the state was calculated like irrigation subsidy. In the case of farmers, power subsidy per unit was defined as the difference between the unit cost of power to the state and the average tariff charged from the farmers. Accordingly, first, we have computed the total units of electricity consumed by the farmer for agricultural purposes during the reference year and then multiplied obtained units by per unit rate of subsidy.

Main Features of Selected Sample Households

Among the four selected districts, Ambala and Jind are agriculturally developed districts. These are well endowed with favourable natural resource base. The remaining two districts, i.e., Bhiwani and Faridabad are agriculturally less developed, due to inadequate irrigation and other facilities. Since we intend to study the quantum of agricultural subsidies at the micro level, it would be useful to provide the background information about family size, number of workers, land operated and irrigated and value of farm assets in the case of sample farmers which are presented in Table 1.

TABLE 1. MAIN CHARACTERISTICS OF SAMPLE FARMERS IN THE SELECTED DISTRICTS - 1999-2000

Item	Scheduled caste	Non-scheduled caste	Scheduled + Non-scheduled caste
(1)	(2)	(3)	(4)
Average size of family	7.57	7.17	7.17
Number of workers per family	3.43	2.87	3.15
Percentage of educated heads of households	45.04	73.00	66.00
Average size of holdings (ha)	1.84	3.52	2.58
Percentage of land irrigated	80.07	84.27	83.25
Value of farm assets (Rs.)	60,680	1,35,188	99,931

Soruce: Survey results.

The average size of family was 7.37 persons for the selected households. It was higher among the scheduled caste households in comparison to non-scheduled caste households. Similarly, the number of workers per family was also higher than others in these households. It could be due to low income, which forces more number of family members to earn for sustenance of livelihood. As expected, the percentage of educated heads of households was low among the scheduled caste families. Although land is the key asset for farm households, scheduled caste households on an average operated 1.84 hectares against 3.52 hectares by non-scheduled caste households. Fortunately, irrigation status of land holdings was commendable. The availability of appropriate farm assets enhances the effective use of land. The wide disparities were

noticed in farm assets between scheduled caste and non-scheduled caste farmers. These results are indicative of the fact that scheduled caste farmers are economically weaker than the other farmers.

III

RESULTS AND DISCUSSION

III (A) *Direct Subsidies*

The estimates of agricultural subsidies in value terms in Haryana (Tuteja, 2003) indicate that direct subsidies formed a very small fraction of total agricultural subsidies during 1999-2000. These are implemented through various schemes by the State Government for the agricultural sector. The direct subsidies available to the farmers are classified as (a) crop-specific, (b) machinery-specific and (c) for land improvement, which include land reclamation, binding, leveling and construction of irrigation channels, boring and tree planting. A fraction of these subsidies is specifically earmarked for target groups such as small and marginal farmers and scheduled caste farmers. The computed values of these subsidies utilised by sampled farm households during the reference year are presented in Table 2.

TABLE 2. UTILISATION OF DIRECT SUBSIDIES ON SAMPLED FARMS IN SELECTED DISTRICTS (1999-2000)

(Rs.)

	Scheduled caste			Non-scheduled caste			Scheduled caste + Non-scheduled caste		
District/ farm size	Per farm	Per hectare	Percentage of farmers subsidised	Per farm	Per hectare	Percentage of farmers subsidised	Per farm	Per hectare	Percentage of farmers subsidised
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
				Ambala + Jind					
Marginal	16.13	15.71	21.74	17.78	16.47	11.11	16.59	15.93	18.75
Small	36.00	14.42	25.00	26.67	10.00	11.11	32.00	12.45	19.05
Medium	639.08	129.72	25.00	17.14	3.33	7.14	304.19	60.56	15.38
Large	-	-	0.00	84.50	6.99	27.78	72.43	6.25	23.81
All	169.44	61.35	22.00	43.22	6.67	16.00	106.33	23.02	19.00
				Faridabad + Bhiwani					
Marginal	19.57	16.00	42.86	20.00	24.70	12.50	19.73	18.40	31.82
Small	50.59	19.78	47.06	15.00	5.43	10.00	37.41	14.23	33.33
Medium	898.92	197.35	41.67	84.83	18.33	41.67	508.16	110.68	41.67
Large	-	-	0.00	50.95	4.35	35.00	39.19	3.68	25.92
All	256.40	79.41	38.00	46.94	7.24	28.00	151.67	31.22	33.00
				Ambala + Jind + Faridabad + Bhiwani (Aggregate)					
Marginal	17.43	15.83	29.73	18.82	19.76	11.76	17.87	16.94	24.07
Small	44.55	17.61	37.93	20.53	7.56	10.53	35.04	13.46	27.08
Medium	774.20	163.59	33.33	48.38	9.85	23.08	404.18	83.88	28.00
Large	-	-	0.00	66.84	5.61	31.58	54.04	4.89	25.00
All	212.92	71.09	30.00	45.08	6.96	22.00	129.00	27.24	26.00

Source: Survey results.

The information on direct subsidies utilised by the sample farmers indicates that scheduled caste farmers on an average utilised direct subsidies worth Rs. 169.44 in Ambala and Jind districts, Rs. 256.4 in Faridabad and Bhiwani districts and Rs. 212.92 at the aggregate level during 1999-2000. The medium scheduled caste farm households received higher benefits in comparison to other categories. Most of the subsidies were availed of for wheat, moong and bajra production under the demonstration trials. However, one scheduled caste farmer in the medium category in the first group of districts received a subsidy for the installation of a tubewell and another in the second group of districts to buy a sprinkler set. There were others who received subsidies to buy pesticides for cotton crop in Ambala.

The per hectare use of direct subsidies by scheduled caste farmers in the selected districts was very low except for medium farmers who utilised direct subsidy worth Rs. 163.59 as against Rs. 15.83 and Rs. 17.61 by marginal and small scheduled caste categories. This could be the result of a failure of either the demand side or the supply side or both.

The utilisation of direct subsidies by non-scheduled caste farmers in the selected districts was found to be very low and lesser than scheduled caste farmers and was valued at merely Rs. 43.22 in Ambala and Jind districts and Rs. 46.94 in Faridabad and Bhiwani districts. The per hectare use of direct subsidies by these farmers fell to a negligible amount at Rs. 6.67 and Rs. 7.24 in the first and second group of districts. The large non-scheduled caste farmers in Ambala and Jind districts and medium farmers in Faridabad and Bhiwani districts availed higher direct subsidies than the other farmers.

The results regarding the utilisation of direct subsidies by all farmers also reflect the same position. Significantly, farmers in Faridabad and Bhiwani districts utilised higher direct subsidies (Rs. 151.67) than their counterparts in Ambala and Jind districts (Rs. 106.33). The medium farm households reaped higher benefits than the other categories. The per hectare use of direct subsidies amounted to merely Rs. 27.24 at the aggregate level. Surprisingly, per hectare value of direct subsidies availed by the large farmers was only Rs. 4.89 during the reference year.

The experiences of the farmers across districts and farm size groups were different. They reported that their access to direct subsidies was limited. In fact, direct subsidies were utilised by less than half of the farmers. Around 19 per cent of the farmers in Ambala and Jind districts, 33 per cent in Faridabad and Bhiwani districts utilised direct subsidies. Of them, 57.69 per cent were scheduled caste farmers.

The following points emerge from the analysis of farm level data on direct subsidies: (i) The absolute value of direct subsidies availed by the farm households was very meager. This holds true even for scheduled caste farmers who are poor and starved of capital. However, two medium category scheduled caste farmers received direct subsidy for buying farm equipment. All the others availed little amount under the Production Programmes. (ii) The farmers reported during the survey that there are not adequate direct subsidies to address the two major risks faced by the farming

community, i.e., the yield risk and the price risk. This affects the demand for direct subsidies. (iii) The percentage of farmers receiving direct subsidies was only 30 among scheduled caste and 22 among non-scheduled caste farmers. The overall percentage was around 26 per cent. It may be highlighted that the amount received as direct subsidy was Rs. 212.92 by scheduled caste farmers and Rs. 45.08 by others. (iv) The farmers experienced difficulties in access to direct subsidies due to cumbersome procedures. The state government should remove these bottlenecks to ensure the smooth flow of direct subsidies.

Indirect Subsidies

The main objective of indirect subsidies is to make available essential inputs to the farmers at affordable prices by lowering their cost through administered prices. The nature of indirect subsidies is such that they benefit the farmers across all sections depending on the usage of these inputs. Now, we present survey results about fertiliser, power and irrigation (canal) subsidies.

(A) Fertiliser

Fertiliser is one of the important inputs subsidised by the Government. The Central Government has been providing subsidy to the manufacturers of urea since 1977. In addition, government provides concession on decontrolled phosphatic and potassic fertilisers. In case of imported fertilisers, the Government directs importers to sell them at a pre-determined price that is invariably lower than the cost and the difference between the cost and sale price is paid by the Government as subsidy. The basic objective of these subsidies is to insulate farmers from rising trend in the prices of fertilisers.

The data presented on the amount of fertiliser subsidy availed of by the sampled farmers in Table 3 reveal that the scheduled caste farmers on an average utilised fertiliser subsidy worth Rs. 1,992.26 in Ambala and Jind districts, Rs. 1,018.12 in Faridabad and Bhiwani districts and Rs. 1,255.16 at the overall level during 1999-2000. Wide disparities were observed across farm sizes. As expected, large scheduled caste farmers availed higher fertiliser subsidy than other scheduled caste farmers. The findings regarding per hectare fertiliser subsidy used by scheduled caste farmers indicated lower variations because all the farmers in Haryana use fertilisers. The large category of scheduled caste farmers in Faridabad and Bhiwani disricts utilised the highest subsidy while marginal category of the same group in these districts availed lowest subsidy.

The non-scheduled caste farmers utilised more than double the amount of fertiliser subsidy availed by their scheduled caste counterparts. They utilised fertiliser subsidy worth Rs. 3,040.64 per farm against Rs. 1,255.16 by scheduled caste farmers. Like scheduled caste farmers, non-scheduled caste farmers in Ambala and Jind districts utilised higher subsidy in comparison to farmers in Faridabad and Bhiwani districts. The highest per farm subsidy among non-scheduled caste farmers was

availed by large farmers. But, per hectare fertiliser subsidy at the aggregate level was found to be higher on small farms than the other categories. It could be due to higher cropping intensity on their farms.

TABLE 3. UTILISATION OF FERTILISER SUBSIDY ON SAMPLED FARMS IN SELECTED DISTRICTS (1999-2000)

(Rs.)

	Scheduled caste		Non-scheduled caste		Schedule caste + Non-scheduled caste	
District/ farm size	Per farm	Per hectare	Per farm	Per hectare	Per farm	Per hectare
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Ambala + Jind			
Marginal	457.02	445.34	390.78	361.95	438.39	421.01
Small	1,079.58	432.42	887.89	333.18	997.43	388.28
Medium	2,077.44	421.75	2,928.46	414.68	2,194.91	417.87
Large	3,739.07	441.53	6,301.05	520.70	5,935.05	512.45
All	1,992.26	431.73	3,094.52	478.46	2,493.38	464.48
			Faridabad + Bhiwani			
Marginal	446.29	365.26	661.50	816.95	524.55	489.33
Small	959.33	375.59	1,174.20	426.52	1,038.91	395.35
Medium	1,820.27	399.65	2,488.37	537.37	2,140.96	466.34
Large	2,281.00	470.09	5,122.11	436.25	4,697.24	441.66
All	1,018.12	408.24	2,086.79	460.35	2,052.44	443.04
			Ambala + Jind + Faridabad + Bhiwani			
Marginal	452.96	411.70	518.23	544.01	473.51	449.34
Small	1,009.09	398.78	1,038.58	383.05	1,020.76	392.31
Medium	1,943.71	410.69	2,294.58	468.19	2,122.58	440.50
Large	3,433.69	460.51	5,680.55	486.91	5,250.30	474.78
All	1,255.16	419.08	3,040.64	469.39	2,147.92	453.49

Source: Survey results.

When scheduled caste and non-scheduled caste farmers were clubbed together, the results obtained are on the expected lines. First, large farm households utilised higher fertiliser subsidy per farm due to their larger size of holdings. Second, the findings on per hectare fertiliser subsidy utilisation are also similar in nature at the aggregate level and indicate higher amount of subsidy availed by the large farmers. Third, Ambala and Jind districts utilised higher subsidy than Faridabad and Bhiwani districts due to dominance of wheat/rice rotation in the farming system. Fourth, non-scheduled caste farmers are the greater beneficiaries of fertiliser subsidy in terms of per farm as well as per hectare.

(B) Power Subsidy

In the power sector, the Haryana government directs the State Electricity Board (SEB) to supply electricity to the farmers at a rate lower than the cost of generation, transmission and distribution. In the absence of any perennial river, except Yamuna, Haryana is heavily dependent on groundwater for meeting its irrigation needs for the

major crops such as wheat and paddy. Therefore, utilisation of power for the agricultural purpose is significant.

The data presented on utilisation of power subsidy in value terms by the farmers indicate that the scheduled caste farmers availed power subsidy per farm worth Rs. 4,993 in Ambala and Jind districts, Rs. 4,054 in Faridabad and Bhiwani districts and Rs. 4,723 at the aggregate level during 1999-2000 (Table 4). Evidently, the scheduled caste farmers in the first group of districts availed higher power subsidy. The gap between the farm size categories was found glaring as large scheduled caste farmers utilised power subsidy worth Rs. 13,047 against Rs. 1,530 by marginal scheduled caste farmers. A positive relationship emerged between farm size and utilisation of power subsidy. An examination of figures related to per hectare utilisation of power subsidy support the same finding, i.e., higher subsidy in Ambala and Jind districts and that too on large farms. The utilisation of power subsidy per hectare also reveals wide disparities across farm sizes and districts. But, it does not show any pattern.

TABLE 4. UTILISATION OF POWER SUBSIDY ON SAMPLED FARMS IN SELECTED DISTRICTS (1999-2000)

(Rs.)

	Scheduled caste		Non-scheduled caste		Schedule caste + Non-scheduled caste	
District/ farm size	Per farm	Per hectare	Per farm	Per hectare	Per farm	Per hectare
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Ambala + Jind			
Marginal	1,362.62	1,327.80	1,695.86	1,570.79	1,456.34	1,398.66
Small	4,506.70	1,805.12	1,951.72	1,832.37	3,411.71	1,828.17
Medium	8,140.82	1,652.70	10,301.01	2,006.92	9,304.00	1,847.04
Large	15,513.18	1,831.92	28,830.62	2,382.31	26,928.12	2,325.03
All	4,993.00	1,663.20	13,919.85	2,152.28	9,256.42	2,005.94
			Faridabad + Bhiwani			
Marginal	1,806.07	1,478.20	1,135.87	1,402.00	1,562.36	1,457.50
Small	3,347.76	1,310.70	4,202.80	1,426.95	3,664.81	1,364.61
Medium	6,892.00	1,513.17	6,512.41	1,406.39	6,709.80	1,461.47
Large	11,814.00	1,699.83	17,706.45	1,508.10	16,346.65	1,537.00
All	4,053.52	1,303.22	9,668.06	1,590.17	7,260.79	1,494.50
			Ambala + Jind + Faridabad + Bhiwani			
Marginal	1,530.41	1,390.98	1,432.34	1,503.58	1,499.54	1,423.04
Small	3,827.32	1,512.55	3,137.03	1,657.02	3,554.08	1,565.91
Medium	7,491.43	1,582.87	8,552.43	1,745.03	8,032.33	1,666.95
Large	13,047.06	1,749.85	22,975.79	1,928.89	21,074.54	1,905.78
All	4,723.26	1,576.97	11,793.95	1,820.71	8,258.61	1,743.56

Source: Survey results.

The information on per farm utilisation of power subsidy by non-scheduled caste farmers highlights that these farmers were greater beneficiaries of power subsidy in the selected districts. In comparison to scheduled caste farmers, the utilisation of power subsidy by non-scheduled farmers was much higher in most categories.

The results obtained for all the farmers in connection with the utilisation of power subsidy exhibit a similar pattern for per farm as well as for the per hectare. The farmers in Ambala and Jind districts utilised higher amount of power subsidy than their counterparts in Faridabad and Bhiwani districts. The second observation that the large farmers utilise higher power subsidy was also found to be true.

The sampled farmers reported during the survey that they did not get assured supply of power. They got electricity for some hours and often at night. To add to their woes, the fluctuating voltage burnt up their motors and whatever saved in electricity was spent on repairing motors. If power was available round the clock, the farmers would be able to sell surplus water to their neighbours after fulfilling their own demand. This may help in augmenting their income.

(C) Irrigation Subsidy

Irrigation subsidies play a key role in policies and strategy for growth and development of agriculture. The estimates on the amount of irrigation subsidy utilised by the sample farmers given in Table 5 indicates that the scheduled caste farmers on an average utilised irrigation subsidy worth Rs. 256.30 in Ambala and Jind districts, Rs. 699.56 in Faridabad and Bhiwani districts and Rs. 477.93 at the aggregate level during 1999-2000. Among different categories of scheduled caste farmers, large farmers were the greater beneficiaries. The per hectare irrigation subsidy availed by the scheduled caste farmers revealed that these farmers in the first group of districts

TABLE 5. UTILISATION OF IRRIGATION SUBSIDY ON SAMPLED FARMS IN SELECTED DISTRICTS (1999-2000)

(Rs.)

	Scheduled caste		Non-scheduled caste		Schedule caste + Non-scheduled caste	
District/farm size (1)	Per farm (2)	Per hectare (3)	Per farm (4)	Per hectare (5)	Per farm (6)	Per hectare (7)
			Ambala + Jind			
Marginal	100.74	98.60	75.44	69.87	93.65	89.91
Small	169.67	67.95	477.67	179.24	301.67	117.42
Medium	554.33	112.53	536.50	104.53	544.73	108.14
Large	603.33	71.23	367.05	30.33	400.81	34.60
All	256.30	92.80	381.90	59.05	319.10	69.16
			Faridabad + Bhiwani			
Marginal	45.27	37.05	248.94	307.44	119.33	111.32
Small	673.44	263.65	995.50	361.61	792.72	301.66
Medium	800.61	175.76	916.33	197.89	856.16	186.48
Large	2,081.50	299.49	4,323.64	368.25	3,806.22	357.88
All	699.56	216.67	2,188.28	337.28	1,443.92	297.21
			Ambala + Jind + Faridabad + Bhiwani			
Marginal	79.75	72.49	157.09	164.89	104.09	98.77
Small	464.98	183.77	750.21	276.68	577.88	222.10
Medium	682.40	144.17	711.81	145.23	697.39	144.72
Large	1,588.78	213.60	2,449.47	205.62	2,284.65	206.59
All	477.93	159.56	1,285.09	198.34	881.51	186.11

Source: Survey results.

availed lower canal subsidy per unit of land due to heavy dependence on tubewell irrigation. The supplementary reason could be the absence of canal network in selected villages of Ambala district. On the other hand, canal irrigation plays an important role in Faridabad and Bhiwani districts where rainfall is low and the number of tubewells per unit of land is also lower.

Like scheduled caste farmers, non-scheduled caste farmers also availed higher canal subsidy in Faridabad and Bhiwani districts. Although, large farmers were the greater beneficiaries at the aggregate level, the medium farmers had an advantage over the others in Ambala and Jind districts. The figures related to canal subsidy per hectare for non-scheduled caste farmers have shown that small farmers in the first group of districts, large farmers in the second group of districts and again small farmers at aggregate level had greater advantage over the other categories of farmers. The combined results of irrigation subsidy for scheduled caste plus non-scheduled caste sampled farmers are in favour of large farmers. They availed per farm irrigation subsidy worth Rs. 2,284.65 against Rs. 104.09 by marginal and Rs. 577.88 by small farmers. But, per hectare subsidy was observed to be the highest on small farms at the overall level.

The farmers during the survey reported that they faced great difficulty in access to canal water. Some of the sample farmers reported that they did not get canal water even once during the crop season. Some of them were tail-end users and hence, many times they were deprived of canal water. If there is assured supply of water, they are ready to pay even a little more.

Indirect Subsidies

The data relating to utilisation of indirect subsidies on sampled farms indicated that scheduled caste farmers consumed these subsidies worth Rs. 7,241.55 per farm in Ambala and Jind districts, Rs. 5,770.84 in Faridabad and Bhiwani districts and Rs. 6,456.38 at the overall level during 1999-2000 (Table 6). The range of utilisation varied between a minimum of Rs. 1,920.38 by marginal and a maximum of Rs. 19,855.58 by large scheduled caste farmers in the first group of districts. This gap is around Rs. 18,000 per farm. The results of per hectare utilisation of indirect subsidies also indicate disparities across farm sizes among scheduled caste farm households. The large scheduled caste farmers consumed indirect subsidies worth Rs. 2,423.44 against Rs. 1,875.15 by marginal scheduled caste farmers. The largest share of total indirect subsidies has gone to medium scheduled caste farm households followed by large scheduled caste farm households.

Evidently, the non-scheduled caste farmers utilised higher indirect subsidies per farm in the selected districts. It was more than double in each case. When judged on per hectare basis, this gap gets reduced to around 20 per cent. It may be noted that the share of large farmers was as high as 73.33 per cent of the total indirect subsidies.

The results on utilisation of indirect subsidies for the entire sample supported the above findings. First, the farmers in Ambala and Jind districts utilised higher sub-

TABLE 6. INDIRECT SUBSIDIES PER FARM AND PER HECTARE ON SAMPLED FARMS IN SELECTED DISTRICTS (1999-2000)

(Rs.)

District farm size (1)	Scheduled caste			Non-scheduled caste			Scheduled caste + Non-scheduled caste		
	Per farm (2)	Per hectare (3)	Percentage share (4)	Per farm (5)	Per hectare (6)	Percentage share (7)	Per farm (8)	Per hectare (9)	Percentage share (10)
				Ambala + Jind					
Marginal	1,920.38	1,881.74	14.62	2,162.08	2,000.61	2.24	1,988.36	1,909.61	5.43
Small	5,755.95	2,305.50	22.86	3,317.28	2,344.79	3.46	4,710.81	2,333.87	8.44
Medium	10,772.58	2,186.99	42.79	12,965.98	2,526.14	20.87	11,953.64	2,373.05	26.52
Large	19,855.58	2,344.70	19.73	35,498.72	2,933.59	73.46	33,263.99	2,872.09	59.61
All	7,241.55	2,187.53	100.00	17,396.27	2,689.80	100.00	11,718.91	2,539.58	100.00
				Faridabad + Bhiwani					
Marginal	2,297.56	1,880.46	9.36	2,046.25	2,526.39	2.20	2,206.18	2,058.08	4.47
Small	4,980.48	1,949.94	24.64	6,373.60	2,215.08	8.59	5,496.45	2,061.62	13.67
Medium	9,512.88	2,088.61	36.00	9,917.12	2,141.65	16.03	9,706.92	2,114.29	22.35
Large	17,176.50	2,471.41	30.00	27,152.19	2,312.61	73.18	24,850.11	2,336.57	59.51
All	5,770.84	1,928.13	100.00	14,843.11	2,387.80	100.00	10,857.15	2,234.75	100.00
				Ambala + Jind + Faridabad + Bhiwani					
Marginal	2,063.09	1,875.15	11.82	2,107.60	2,212.45	2.22	2,077.11	1,971.30	4.96
Small	5,301.36	2,095.15	23.81	4,925.81	2,316.78	5.81	5,152.71	2,180.32	10.96
Medium	10,117.54	2,137.76	39.18	11,558.81	2,358.48	18.64	10,852.31	2,252.19	24.52
Large	18,069.53	2,423.44	25.19	31,105.81	2,621.42	73.33	28,609.50	2,587.18	59.56
All	6,456.38	2,155.62	100.00	16,119.69	2,488.50	100.00	11,288.04	2,383.25	100.00

Source: Survey results.

sidies than their counterparts in Faridabad and Bhiwani districts. Second, the large farmers were the greater beneficiaries in all situations due to their larger size of holdings. Third, the share of large farmers in the total utilisation of indirect subsidies was around 60 per cent against 5 per cent in the case of marginal farmers and 11 per cent in the case of small farmers.

Total Agricultural Subsidies

Table 7 presents information on per farm and per hectare utilisation of direct plus indirect subsidies in value terms across farm sizes in the selected districts. It may be observed that the scheduled caste farmers utilised on an average agricultural subsidies worth Rs. 7,410.99 in Ambala and Jind districts, Rs. 6,022.24 in Faridabad and Bhiwani districts, and Rs. 6,669.30 at the aggregate level during 1999-2000. The large scheduled caste farmers in the first group of districts availed the highest subsidy (Rs. 19,855.58). The non-scheduled caste farmers were the greater beneficiaries of subsidies as they utilised input subsidies worth Rs. 17,439.53 in Ambala and Jind districts, Rs. 14,890.05 in Faridabad and Bhiwani districts and Rs. 16,164.70 at the aggregate level. When we examine the utilisation of agricultural subsidies for the

TABLE 7. DIRECT PLUS INDIRECT SUBSIDIES ON SAMPLED FARMS IN SELECTED DISTRICTS (1999-2000)

(Rs.)

	Scheduled caste		Non-scheduled caste		Schedule caste + Non-scheduled caste	
	Direct + Indirect		Direct + Indirect		Direct + Indirect	
District/ farm size	Per farm	Per hectare	Per farm	Per hectare	Per farm	Per hectare
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Ambala + Jind			
Marginal	1,936.51	1,897.00	2,179.92	2,019.15	2,004.97	1,925.54
Small	5,791.95	2,319.89	3,343.94	2,354.79	4,742.81	2,346.32
Medium	11,411.67	2,316.71	12,983.12	2,529.48	12,257.84	2,433.61
Large	19,855.58	2,344.70	35,583.22	2,940.58	33,336.42	2,878.34
All	7,410.99	2,248.88	17,439.53	2,696.50	11,825.26	2,562.62
			Faridabad + Bhiwani			
Marginal	2,317.13	1,896.49	2,066.25	2,551.09	2,225.90	2,076.58
Small	5,031.07	1,969.73	6,388.60	2,220.51	5,533.86	2,075.85
Medium	10,411.81	2,285.96	10,001.96	2,159.99	10,215.08	2,224.98
Large	17,176.50	2,471.41	27,203.15	2,316.96	24,889.30	2,340.25
All	6,022.24	2,007.54	14,890.05	2,395.04	11,008.82	2,265.97
			Ambala + Jind + Faridabad + Bhiwani			
Marginal	2,080.53	1,890.98	2,126.43	2,232.21	2,095.01	1,988.10
Small	5,345.92	2,112.71	4,946.35	2,324.31	5,187.77	2,293.78
Medium	10,891.74	2,301.32	11,607.20	2,368.36	11,256.48	2,336.08
Large	18,069.53	2,423.44	31,172.66	2,627.03	28,663.55	2,502.04
All	6,669.30	2,126.70	16,164.70	2,495.46	11,417.04	2,410.50

Source: Survey results.

entire sample, it was noticed that the amount of subsidies utilised by the farmers in agriculturally developed districts of Ambala and Jind was higher than the lesser developed districts of Faridabad and Bhiwani.

The per hectare utilisation of agricultural subsidies by scheduled caste farmers was Rs. 2,248.88 in Ambala and Jind districts, Rs. 2,007.54 in Faridabad and Bhiwani districts and Rs. 2,126.70 at the aggregate level. The non-scheduled caste farmers consumed higher subsidies per unit of land in comparison to the scheduled caste farmers. The amount of subsidies availed per hectare at the overall level was found to be higher in the first group of districts. Farm size variations are significant for scheduled caste as well as for non-scheduled caste farmers. The large farmers in both the categories used the highest amount of subsidies.

To conclude, the medium and large farmers with better resource base largely enjoyed the benefits of input subsidies. However, per hectare subsidies accrued to the marginal and small farmers were also found to be substantial. But, across the social groups, the scheduled caste farmers received lower benefit as reflected from their lower per farm and per hectare value of input subsidies. Furthermore, Ambala and Jind districts turned out to be the greater beneficiaries of agricultural subsidies in comparison to Faridabad and Bhiwani districts.

Share of Scheduled Caste Farmers in Utilisation of Subsidies

We have observed in the preceding analysis that the scheduled caste farmers emerged as the greater beneficiaries of direct subsidies due to implementation of specific subsidy schemes for them. It may be observed from Table 8 that they received 79.68 per cent of direct and 82.53 per cent at the aggregate level during the reference year. However, they emerged as a disadvantaged group in the utilisation of indirect subsidies (fertiliser, power and irrigation). Although, they constituted 50 per cent of the sampled households, their share was found much below this proportion. They availed 25.78 per cent of indirect subsidies in the first group of districts, 31.64 per cent in the second group of districts and 28.60 per cent at the aggregate level. This was primarily due to their small size of holdings, which required lower quantities of these inputs. Sometimes, less than the recommended use is also responsible for lower consumption. When direct and indirect subsidies are added together, the share of scheduled caste farmers worked out to 26.26 per cent in Ambala and Jind districts, 32.37 per cent in Faridabad and Bhiwani districts, and 29.21 per cent at the aggregate level. The remaining two-third share of the agricultural subsidies is utilised by non-scheduled caste farmers.

TABLE 8. SHARE OF SCHEDULED CASTE FARMERS IN DIRECT, INDIRECT AND TOTAL AGRICULTURAL SUBSIDIES UTILISED BY SAMPLE FARMERS (1999-2000)

(*per cent*)

Farm size	Direct subsidies	Indirect subsidies (fertilisers + irrigation + power)	Direct + Indirect
(1)	(2)	(3)	(4)
		Ambala + Jind	
Marginal	69.87	69.42	69.49
Small	64.28	69.82	69.78
Medium	96.96	41.59	42.97
Large	0.00	8.53	8.52
All	79.68	25.78	26.26
		Faridabad + Bhiwani	
Marginal	63.13	66.27	66.24
Small	85.15	57.05	57.24
Medium	91.98	50.97	53.00
Large	0.00	15.95	15.92
All	84.52	31.64	32.37
		Ambala + Jind + Faridabad + Bhiwani	
Marginal	66.84	68.06	68.04
Small	76.81	62.16	62.26
Medium	93.89	45.70	47.43
Large	0.00	12.09	12.07
All	82.53	28.60	29.21

Source: Survey results.

III (B) *Impact of Withdrawal of Input Subsidies on Cost and Returns*

India signed the WTO Agreement on Agriculture in 1995. It required that subsidies should be removed or reduced within the agreed limits and if need be, replaced by the bound tariffs with commitments to lower these gradually. As a result, agricultural policies in India have undergone major changes during the past few years. The implications of these policies are that cost of production has risen due to increase in input prices and hit many of the farmers especially small and marginal farmers adversely (Bhupal, 2002). Realising this, the proponents of farm subsidies often argue that more input subsidies should be given to small/marginal farmers because provision of subsidies by the Government enhances their welfare by increasing incomes through reducing cost of production. In addition, farm subsidies encourage and help the poor farmers to apply the recommended doses of expensive inputs at lower costs, resulting in higher crop productivity.

For understanding the impact of farm subsidies, we have calculated cost of cultivation and net returns per farm and per hectare with and without subsidies for our sample farmers during the reference year. These data are presented in Tables 9 and 10.

TABLE 9. GROSS RETURNS, COST AND NET RETURNS PER FARM WITH AND WITHOUT SUBSIDIES ON SAMPLED FARMS IN SELECTED DISTRICTS (1999-2000)

(Rs.)

	With subsidies			Without subsidies			Percentage change	
District/ Farm size	Gross returns	Cost	Net returns	Gross returns	Cost	Net returns	Cost	Net returns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
				Scheduled caste				
				Ambala + Jind				
Marginal	17,205	7,129	10,076	17,205	9,848	7,357	38.14	-26.98
Small	47,436	17,573	29,863	47,436	25,365	22,071	44.34	-26.09
Medium	111,882	41,345	70,537	111,882	52,757	59,125	27.60	-16.18
Large	185,917	66,218	119,699	185,917	86,074	99,843	29.58	-16.59
All	57,306	21,393	35,913	57,306	28,444	28,862	34.91	-19.62
				Faridabad + Bhiwani				
Marginal	17,122	6,569	10,553	17,122	8,887	8,235	35.29	-21.96
Small	39,350	15,450	24,000	39,350	20,410	18,940	32.10	-20.96
Medium	72,674	31,367	41,307	72,674	41,772	30,902	33.17	-25.19
Large	144,961	50,687	94,274	144,961	67,864	77,097	33.89	-18.22
All	44,464	21,296	23,168	44,464	28,432	16,032	33.51	-20.80
				Ambala + Jind + Faridabad + Bhiwani				
Marginal	17,173	6,917	10,256	17,173	9,484	7,689	37.11	-23.03
Small	42,696	16,270	26,426	42,696	22,460	20,236	38.04	-23.36
Medium	91,494	36,157	55,337	91,494	47,044	44,450	30.11	-19.67
Large	158,613	55,864	102,749	158,613	73,934	84,679	32.35	-17.59
All	51,884	21,344	30,540	51,884	28,437	23,447	33.23	-20.21
				Non-scheduled caste				
				Ambala + Jind				
Marginal	18,009	7,171	10,838	18,009	9,351	8,658	30.40	-20.11
Small	41,200	12,207	28,993	41,200	15,551	25,649	27.39	-11.53
Medium	94,836	42,066	52,770	94,836	55,050	39,786	30.86	-24.60
Large	277,646	102,658	174,988	277,647	138,242	139,405	34.66	-20.33
All	167,165	52,224	114,941	167,165	69,663	97,502	33.39	-20.33
				Faridabad + Bhiwani				
Marginal	11,938	4,064	7,874	11,938	6,131	5,807	50.86	-26.25
Small	40,705	15,647	25,058	40,705	22,035	18,670	40.82	-25.49
Medium	91,781	32,683	59,098	91,781	42,685	49,096	30.60	-16.92
Large	246,879	82,201	164,678	246,879	109,404	137,475	33.09	-16.52
All	130,830	44,504	86,326	130,830	59,394	71,436	33.46	-17.25
				Ambala + Jind + Faridabad + Bhiwani				
Marginal	15,152	5,709	9,443	15,152	7,835	7,317	37.24	-22.51
Small	40,939	14,017	26,922	40,939	18,963	21,976	35.28	-18.37
Medium	93,426	37,736	55,690	93,426	49,343	44,083	30.76	20.84
Large	261,435	91,891	169,544	261,453	123,064	138,389	33.92	-18.38
All	133,997	48,333	85,633	133,997	64,529	69,468	33.42	-18.88
				Scheduled caste + Non-scheduled caste				
				Ambala + Jind				
Marginal	17,431	7,141	10,290	17,431	9,708	7,723	35.95	-24.96
Small	44,763	15,273	29,490	44,763	21,159	23,604	38.54	-10.96
Medium	102,703	41,733	60,970	102,703	53,991	48,712	29.37	-20.10
Large	264,542	97,452	167,090	264,542	130,789	133,753	34.21	-19.95
All	97,235	36,808	60,427	97,235	49,053	48,182	33.27	-20.26

(Contd.)

TABLE 9 *(Concld.)*

District/ Farm size	With subsidies			Without subsidies			Percentage change	
	Gross returns	Cost	Net returns	Gross returns	Cost	Net returns	Cost	Net returns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
				Faridabad + Bhiwani				
Marginal	15,237	5,658	9,579	15,237	7,884	7,353	39.34	-23.24
Small	39,852	15,459	24,393	39,852	21,012	18,840	35.92	-22.69
Medium	81,846	31,999	49,847	81,846	42,210	39,636	31.91	-20.48
Large	223,359	74,929	148,430	223,359	99,818	123,541	33.22	-16.77
All	72,647	32,900	39,747	72,647	43,913	28,734	33.47	-18.51
				Ambala + Jind + Faridabad + Bhiwani				
Marginal	16,537	6,537	10,000	16,537	8,965	7,572	37.14	-24.28
Small	42,001	15,378	26,623	42,001	21,076	20,925	37.05	-21.36
Medium	92,479	36,962	55,517	92,479	48,216	44,263	30.45	-20.27
Large	241,760	84,992	156,768	241,760	113,656	128,104	33.72	-18.28
All	84,941	34,854	50,087	84,941	46,483	38,458	33.36	-19.35

Source: Survey results.

TABLE 10. GROSS RETURNS, COST AND NET RETURNS PER HECTARE WITH AND WITHOUT SUBSIDIES ON SAMPLED FARMS IN SELECTED DISTRICTS (1999-2000)

(Rs.)

District/ farm size	With subsidies			Without subsidies		
	Gross returns	Cost	Net returns	Gross returns	Cost	Net returns
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Scheduled caste			
			Ambala + Jind			
Marginal	16,765	6,947	9,818	16,765	9,596	7,169
Small	19,000	7,039	11,961	19,000	10,160	8,840
Medium	22,714	8,394	14,320	22,714	10,710	8,496
Large	21,954	7,820	14,134	21,954	10,164	11,790
All	20,051	7,747	12,304	20,051	10,300	9,751
			Faridabad + Bhiwani			
Marginal	14,014	5,377	8,637	14,014	7,273	6,741
Small	15,406	6,010	9,396	15,406	7,991	7,415
Medium	15,956	6,887	9,069	15,956	9,171	6,785
Large	20,857	7,293	13,564	20,857	9,764	11,093
All	16,868	6,596	10,272	16,868	8,805	8,063
			Ambala + Jind + Faridabad + Bhiwani			
Marginal	15,609	6,287	9,322	15,609	8,620	6,989
Small	16,873	6,430	10,443	16,873	8,876	7,997
Medium	19,332	7,640	11,692	19,332	9,940	9,392
Large	21,273	7,492	13,781	21,273	9,916	11,357
All	18,658	7,126	11,532	18,658	9,495	9,163
			Non-scheduled caste			
			Ambala + Jind			
Marginal	16,681	6,642	10,039	16,681	8,661	8,020
Small	15,460	4,581	10,879	15,460	5,836	9,624
Medium	18,477	8,196	10,281	18,477	10,725	7,752
Large	22,945	8,484	14,461	22,945	11,424	11,521
All	21,208	8,075	13,133	21,208	10,771	10,437

(Contd.)

TABLE 10. *(Concld.)*

District/ farm size (1)	With subsidies: Gross returns (2)	With subsidies: Cost (3)	With subsidies: Net returns (4)	Without subsidies: Gross returns (5)	Without subsidies: Cost (6)	Without subsidies: Net returns (7)
			Faridabad + Bhiwani			
Marginal	14,744	5,020	9,724	14,744	7,571	7,173
Small	14,785	5,683	9,102	14,785	7,510	7,275
Medium	19,821	7,058	12,763	19,821	9,218	10,603
Large	21,027	7,001	14,026	21,027	9,318	11,709
All	20,165	6,860	13,305	20,165	9,155	11,010
			Ambala + Jind + Faridabad + Bhiwani			
Marginal	15,906	5,993	9,913	15,906	8,225	7,681
Small	15,100	5,170	9,930	15,100	6,994	8,106
Medium	19,063	7,700	11,363	19,063	10,068	8,995
Large	21,950	7,715	14,235	21,950	10,332	11,618
All	20,686	7,466	13,220	20,686	9,962	10,724
			Scheduled caste + Non-scheduled caste Ambala + Jind			
Marginal	16,740	6,858	9,883	16,740	9,324	7,417
Small	17,426	5,946	11,480	17,426	8,237	9,189
Medium	20,389	8,285	12,104	20,389	10,718	9,670
Large	22,841	8,414	14,427	22,841	11,292	11,548
All	21,072	7,977	13,050	21,072	9,441	11,631
			Faridabad + Bhiwani			
Marginal	14,214	5,279	8,935	14,214	7,355	6,859
Small	15,165	5,883	9,282	15,165	8,243	7,176
Medium	17,827	6,969	10,857	17,827	9,194	8,633
Large	21,002	7,045	13,956	21,002	9,385	11,616
All	19,069	6,772	12,298	19,069	9,039	10,022
			Ambala + Jind + Faridabad + Bhiwani			
Marginal	15,699	6,206	9,493	15,699	8,511	7,188
Small	16,142	5,910	10,232	16,142	8,100	8,046
Medium	19,192	7,671	11,522	19,192	10,006	9,186
Large	21,862	7,686	14,176	21,862	10,278	11,584
All	20,045	7,359	11,679	20,045	9,814	10,226

Source: Survey results.

Here, gross returns refer to value of output and by product of all crops grown by the farmer during the reference year. The paid out costs include cost of human labour, bullock labour, machine labour, seeds, fertiliser, irrigation, pesticides and miscellaneous items. The net returns are calculated by deducting cost from gross returns.

An examination of the data revealed that gross returns per farm in case of scheduled caste farmers were Rs. 57,306 in Ambala and Jind districts, Rs. 44,464 in Faridabad and Bhiwani districts and Rs. 51,884 at the aggregate level during 1999-2000. The highest gross returns were realised by large scheduled caste farmers in the first group of districts. The corresponding cost of cultivation with farm subsidies was Rs. 21,393, Rs. 21,296 and Rs. 21,344 respectively. After deducting cost from gross

returns, scheduled caste farmers received Rs. 35,913 in the first group of districts, Rs. 23,168 in the second group and Rs. 30,540 as net returns at the overall level. If farm subsidies were non-existent, the cost of cultivation of scheduled caste farmers in the above mentioned group of districts would have increased by 34.91 per cent, 33.51 per cent and 33.23 per cent respectively. The escalated cost of cultivation without subsidies would have reduced returns by 19.62 per cent in Ambala and Jind districts, 20.80 per cent in Faridabad and Bhiwani districts and 20.21 per cent at the aggregate level. The worst affected groups by withdrawal of farm subsidies had been the marginal and small scheduled caste farmers in the first group of districts. The findings about the per hectare cost of cultivation and net returns in case of scheduled caste farmers are of the same nature.

The non-scheduled caste farmers indicated higher gross returns per farm than scheduled caste farmers. The gross returns per farm on these farms were Rs. 1,67,165 in Ambala and Jind districts, Rs. 1,30,830 in Faridabad and Bhiwani districts and Rs. 1,33,997 at the aggregate level. With subsidies, the corresponding cost of cultivation was Rs. 52,224, Rs. 44,504 and Rs. 48,333 respectively. If there were no subsidies, the cost of cultivation on non-scheduled caste farms would have increased by 33.39 per cent in the first group of districts, 33.46 per cent in the second group of districts and 33.42 per cent at the overall level. The escalated cost as a result of removal of farm subsidies in turn would have reduced net returns per farm by 20.33 per cent, 17.25 per cent and 18.88 per cent in the corresponding group of districts. The worst affected non-scheduled caste farmers would have been the marginal and small farmers in Faridabad and Bhiwani districts. The scenario is more or less the same when we calculate these indicators at per hectare level.

For the entire sample, withdrawal of subsidies would have increased cost and reduced net returns per farm as well as per hectare. The net returns of farmers will come down by 20.26 per cent in Ambala and Jind districts and by 18.51 per cent in Faridabad and Bhiwani districts and by 19.35 per cent at the aggregate level. The above results make it amply clear that utilisation of input subsidies by farmers has reduced their cost of production in Haryana. Without subsidies, the input prices would have been the market prices and therefore, would have been higher than the subsidised prices. In fact, farm subsidies helped in keeping the input prices low, which in turn enabled the farmers to grow crops at lower cost.

As far as the equity effects of input subsidies were concerned, the benefits of input subsidies went largely to large and medium farmers, however, these subsidies affected the incomes of the lower rung marginal and small scheduled caste and non-scheduled caste farmers positively by reducing the cost of cultivation. In a nutshell, the benefits of input subsidies on sampled farms accrued disproportionately to the affluent farmers with large size of holdings but the small and marginal poor farmers also had been at an advantage by raising their meager income from cultivation.

Problems in Access to Subsidies

We have observed that the farmers utilise direct and indirect input subsidies in Haryana. It was reported that they faced a number of problems in availing of subsidies provided by the Government. Their access to direct subsidies was limited but indirect subsidies particularly, fertiliser and power were used by most of them. The major problems faced by the farmers are highlighted in Table 11. These are classified as high prices of inputs, low capacity to buy, long distance and other problems which include cumbersome procedure, non-availability of required brand, poor quality of inputs and lack of required quantity at the time of need.

At the aggregate level, nearly 94 per cent of the farmers reported that the problem of high prices of inputs is very acute because market prices of output, even the main crops like wheat and paddy are fluctuating widely for the past few years and yield rates are also almost stable. In this scenario, farmers earn less from cultivation. This affects their capacity to buy expensive inputs. As a result, 95.50 per cent farmers indicated lower capacity to buy the key inputs required for cultivation. The problem of long distance was relatively minor in Haryana because road transport is well developed and linking of villages to main roads has further reduced the problem of long distance in procuring of inputs by the farmers. However, other problems such as time consuming procedures, etc., were found severe and were indicated by 88.50 per cent of the sample farmers.

A comparison of scheduled caste and non-scheduled caste farmers in facing the above problems clearly indicated that the intensity of problems faced by the first group was quite severe. Each one of them felt the pinch of high prices of inputs in the selected districts. The results also reflected their low capacity to buy the expensive inputs. The distance was not a major constraint as 26 per cent of the scheduled caste farmers in Ambala and Jind districts and 30 per cent in Faridabad and Bhiwani districts experienced this problem. The group of scheduled caste farmers felt that they remained deprived of full benefits due to procedural bottlenecks. Consequently, around 83 per cent of scheduled caste farmers faced these problems. In a nutshell, a large majority of surveyed scheduled caste farmers were found victims of low capacity to buy the required inputs in time because of their tiny land holdings which generate meager income. In addition, the weaknesses in implementation of subsidies increased their deprivation.

The non-scheduled caste farmers faced the above mentioned problems like their scheduled caste counterparts but their accessibility was found to be little better. The intensity of the first three problems, namely, high prices of inputs, low capacity to buy and long distance was found lower than scheduled caste farmers. These problems were reported by 87 per cent, 91 per cent and 20 per cent of them. The percentage of non-scheduled caste farmers facing other problems was around 94 per cent, significantly, higher than the scheduled case farmers because they are bulk users of inputs due to their large size of holdings and they have to manage huge quantities of inputs which increase their managerial problems. The analysis of the problems faced

TABLE 11. PROBLEMS OF FARMERS IN ACCESS TO SUBSIDIES

(per cent of farmers)

Farm size	High price	Low capacity to buy	Long distance	Other problems	High price	Low capacity to buy	Long distance	Other problems	High price	Low capacity to buy	Long distance	Other problems
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Scheduled caste				Non-scheduled caste				Scheduled caste + Non-scheduled caste			
					Ambala + Jind							
Marginal	100.00	100.00	26.09	86.95	88.89	100.00	22.22	100.00	96.88	100.00	75.00	90.63
Small	100.00	100.00	25.00	83.33	88.89	100.00	22.22	100.00	95.24	100.00	23.81	90.48
Medium	100.00	100.00	25.00	83.33	85.71	85.71	21.42	92.85	92.31	92.30	23.08	88.46
Large	100.00	100.00	33.33	66.67	83.33	77.77	5.55	88.89	85.71	80.93	9.52	85.71
All	100.00	100.00	26.00	84.00	86.00	88.00	16.00	94.00	93.00	94.00	21.00	89.00
					Faridabad + Bhiwani							
Marginal	100.00	100.00	28.57	85.71	100.00	100.00	37.50	100.00	100.00	100.00	31.82	90.91
Small	100.00	100.00	41.18	88.23	90.00	100.00	40.00	100.00	96.29	100.00	40.74	92.59
Medium	100.00	100.00	15.58	76.92	83.33	91.66	75.00	83.33	92.00	96.00	20.00	80.00
Large	100.00	100.00	33.33	66.67	85.00	90.00	10.00	95.00	88.46	92.30	15.38	88.46
All	100.00	100.00	30.00	82.00	88.00	94.00	24.00	94.00	94.00	97.00	27.00	88.00
					Ambala + Jind + Faridabad + Bhiwani							
Marginal	100.00	100.00	27.02	86.49	94.11	100.00	29.41	100.00	98.15	100.00	27.78	90.74
Small	100.00	100.00	34.48	86.21	89.49	100.00	31.57	100.00	95.83	100.00	33.33	91.67
Medium	100.00	100.00	20.00	80.00	84.61	88.46	23.08	88.46	92.16	94.12	21.57	84.31
Large	100.00	100.00	33.33	66.67	84.21	84.21	7.89	92.11	87.23	87.23	12.77	87.23
All	100.00	100.00	28.00	83.00	87.00	91.00	20.00	94.00	93.50	95.50	24.00	88.50

Source: Survey results.

by farmers in the selected two groups of districts exhibited that long distance was not a serious problem. A comparison of different categories of scheduled caste and non-scheduled caste farmers indicated that almost every one suffered due to erratic supply of inputs arising out of the bottlenecks in the delivery system. This could be the result of demand supply gap of key inputs or the poor implementation of farm subsidies.

IV

CONCLUSIONS AND POLICY IMPLICATIONS

The main findings regarding the utilisation of input subsidies by the farmers may be summarised as: (i) the utilisation of direct subsidies was found to be low by the farmers irrespective of social group. However, the scheduled caste farmers availed higher direct subsidies per farm and per hectare in comparison to non-scheduled caste farmers due to implementation of specific subsidy schemes, (ii) all farmers utilise fertiliser, irrigation and power subsidies. However, non-scheduled caste farmers utilise higher subsidies per farm and per hectare in comparison to scheduled caste farmers, (iii) utilisation of input subsidies and farm size are found to be positively related. It was Rs. 28,664 per farm and Rs. 2,502 per hectare in the case of large farmers as against Rs. 2,095 and Rs. 1,988 in the case of marginal farmers, (iv) direct subsidies were only 0.89 per cent of total input subsidies in Ambala and Jind districts, 1.38 per cent in Faridabad and Bhiwani districts and 1.13 per cent at the aggregate level, (v) the share of scheduled caste farmers in total value of input subsidies was 29.21 per cent, rest of the 70.79 per cent was utilised by other farmers. (vi) The results regarding gross returns, cost and net returns per hectare and per farm with and without subsidies were indicative of positive impact of subsidies on the net returns/income of the farmers. The withdrawal of input subsidies would affect the income of the scheduled caste as well as non-scheduled caste farmers adversely. The benefits of input subsidies on sampled farmers accrued disproportionately to affluent farmers with large-size of holdings but the small and marginal poor farmers also had been benefited by raising their meager income from cultivation. (vii) The major problems faced by the farmers in access to subsidies were high prices and low purchasing power. The small and marginal farmers suffered the most in comparison to other categories. Across the social groups, scheduled caste farmers emerged as a disadvantaged group.

The role of input subsidies in cost reduction in the farm economy of Haryana is crucial. These help the small and marginal farmers in raising their meager income from cultivation. These are all the more essential in the present circumstances of dwindling farm incomes due to fluctuating output prices and rising input prices. However, keeping this background in mind and fiscal health of the state government under consideration, reforms in input subsidies regime are an urgent need to make them effective and meaningful. A few suggestions include (i) The share of direct subsidies, which are targeted and crucial for the poor farmers, in total input subsidies

at the micro level, was found marginal. Therefore, expenditure on these should be increased with proper identification of beneficiaries among small, marginal, scheduled caste and other farmers. In addition, introducing a monitoring mechanism with proper management system appears to be an urgent need. (ii) Utilisation of direct subsidies was found to be low among the farmers. It could be due to lack of awareness. Therefore, information regarding available subsidy programmes must be disseminated well in time through media/gram sabha. In addition, the state government in order to ensure the smooth flow of direct subsidies should remove the procedural bottlenecks. (iii) The farmers reported that seeds and other inputs supplied under the subsidy programmes are of sub-standard quality. It is therefore, suggested that government should introduce strict quality control measures. (iv) Indirect subsidies are utilised by all farmers irrespective of farm size and social group in Haryana. Given the low income of small/marginal/scheduled caste farmers, these should be provided to them with proper targeting.

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