

## Farmers' Outlook on Agricultural Subsidies in Punjab

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### ABSTRACT

Agriculture subsidies are given by centre as well as state governments to the farmers. There are two motives behind providing the agricultural subsidies to farmers; firstly to encourage the use of new technology among the farmers and secondly to reduce the cost of production. This study was conducted in order to get an insight into the farmers' perspective on agricultural subsidies in Punjab. Ninety beneficiary and ninety non-beneficiary farmers were selected from the three agro-climatic zones of Punjab. Majority of the farmers agreed that subsidies help to increase production but at the same time were making the farmers more dependent on the government. The non-beneficiary farmers perceived that subsidies are biased towards large farmers. A significant difference was found in the variables viz. operational land holding, annual income and mass media exposure of the beneficiary and non-beneficiary farmers. Tobit regression analysis showed that farmers' operational holding, lack of awareness of time of availability of subsidy, delay in release of subsidies and misallocation of the subsidies significantly affected the receipt of subsidy by a farmer. The idea of farm subsidies being counterproductive finds a strong basis in case of Punjab, where these have started posing a threat not only to the exchequer but also to the sustainability of agricultural operations. Thus, a reorientation in the grant of subsidies is clearly the need of the hour, so that its distorting effects are corrected.

**Keywords:** Agricultural subsidies, farmers' opinion, tobit regression

### INTRODUCTION

Agriculture subsidies in India were introduced to ensure equitable utilization of the resources for the people. Agricultural subsidies that encourage production and productivity have been widely criticized because of the cost of subsidies and that they are perceived to be far from uniformly distributed. There is a general view in academic, policy and political circles that agricultural subsidies are concentrated geographically, on relatively few crops and few producers and in many cases do not reach the targeted group(s) (Sharma and Thaker, 2009). It is also alleged that subsidies have a crowding-out effect on the farm investment, increasing fiscal deficits

(Kaur, 2012) and misuse of financial resources (Mahadeva, 2004). Widespread evidence show that the more affluent farmers are able to garner a disproportionately larger part of the subsidies (Swaminathan *et al*, 2013). Subsidies are very important for growth of the farmers in India. Farmers in India are small and marginal in majority and they depend on government support for cultivation of crops. The central and state governments are providing subsidies to farmers on fertilizers, irrigation (canal water), electricity and miscellaneous agricultural subsidies and to farmers' cooperative societies in the form of seeds, development of oil seeds, pulses, cotton, rice, maize and crop insurance schemes and

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price support schemes, *etc.* (Kaur and Sharma, 2012). Howes and Murgai, (2003) stated that most of India's agricultural subsidies are both inefficient and regressive. While the power subsidy to agriculture has been increasing over time (Anonymous, 2004), the trends in other input subsidies on fertilizer and irrigation have shown an increase over the eighties but a decrease in the nineties. The annual subsidy disbursement of the Government of India has increased dramatically in recent years (Gulati and Narayanan, 2003). With large amounts being spent on subsidies, the Government is examining ways to ensure that this spending is carried out in ways that maximize positive outcomes, and lead to significant poverty reductions. Direct transfer of subsidies to address inefficiencies in present system of subsidy disbursement (whether as cash or otherwise) has dominated the debate in the public policy space for a considerable time (Anonymous, 2011). The main reason why public investment in agriculture has declined is the deterioration in the fiscal position of the state governments and the tendency of politically popular but inefficient and even iniquitous subsidies to crowd out more productive investment. For example, the direct benefit of subsidizing fertilizer and under-pricing water and power goes mainly to fertilizer producers and high income farmers while deploying negative effects on the environment, production, and even income of small farmers (Singh, 2011). The major question before the policymakers today is whether it will be beneficial to continue with agricultural subsidies or not? For this, it is imperative to know the perception of different stakeholders especially farmers who are the ultimate beneficiaries regarding different aspects of subsidies. The perspective of economists, who are contributing in the policy making decisions of the government is equally significant and the extension personnel who are tasked with the most important job of the implementation and dissemination of these subsidies at grass root level also holds an important perception. There are different school of thoughts on this issue. Some experts believe that providing minimum consumption entitlement to the farmers by subsidizing the items consumed by them is extremely

important while others are of the view that farmers become dependent on the subsidies. Issues to be addressed include over-subsidization of certain goods, kinds of goods to be subsidized, misallocation of subsidies, *etc.* The literature has very little to say about the opinion of the farmers regarding various aspects of the subsidies. Keeping this in view, this study has tried to present the farmers' opinion in this regard.

## METHODOLOGY

The study was conducted in three agro-climatic zones of Punjab *viz.* Central Plain zone, Western zone and Sub-Mountain Undulating zone. A multistage sampling design was followed to select the study area and the respondents for the study. At the first stage, one district was selected from each of the three agro-climatic zones of Punjab. The three districts *viz.* Amritsar, Bathinda and Hoshiarpur were selected from central plain zone, western zone and sub-mountain undulating zone respectively on the basis that all the three districts had common agricultural schemes which provide subsidies on different inputs to the farmers. The selected agricultural schemes under which subsidies were provided to the farmers in Punjab are *Rashtriya Krishi Vikas Yojana* (RKVY), National Food Security Mission-Pulses (NFSM-Pulses), National Horticulture Mission (NHM), National Mission on Oilseeds and Oil Palm (NMOOP) and National Mission on Agricultural Extension and Technology (NMAET).

### Selection of the respondents

The study consisted of beneficiary farmers who were availing subsidies under any of the selected five schemes and the non-beneficiary farmers who did not avail any subsidy under these schemes. A list of farmers availing subsidies under these five schemes was obtained from the office of Chief Agriculture Officer (CAO) of the three selected districts. From this list, two farmers availing subsidies from each scheme were selected randomly, thus making a sample of 10 farmers from each block and a total sample of 90 beneficiary farmers from the three districts. A block in a district is

the representative of the villages it comprises. To select the non-beneficiary farmers, one village was selected from each block randomly making a sample of nine villages for this study. Further, ten farmers were selected from each village based on probability proportional to the size of the landholding in that village, thus making a total of 90 non-beneficiary farmers. Thus, a total of 180 farmers were selected for this study. The data using appropriate statistical tools were analysed taking the support of the package SPSS (Ver. 23). The empirical model employed to assess the factors affecting the receipt of subsidy by a farmer is specified as:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + u_i$$

Where,

$Y_i$  = receipt of subsidy (1 if received and 0 if otherwise)

$b_0$  = Intercept

$b_1$ - $b_{12}$  = regression coefficient of the respective explanatory variables in the model

$X_1$  = Age

$X_2$  = Education

$X_3$  = Operational landholding

$X_4$  = Annual income

$X_5$  = Mass media exposure

$X_6$  = Lack of awareness

$X_7$  = No fixed place of sale

$X_8$  = Delay in release

$X_9$  = Lengthy documentation procedure

$X_{10}$  = Less quantity

$X_{11}$  = Poor quality

$X_{12}$  = Misallocation

$u_i$  = error term

## RESULTS AND DISCUSSION

### Socio-personal profile of the beneficiary and non-beneficiary farmers

The information regarding socio-personal profile of the beneficiary and non-beneficiary farmers which included age, education, operational land holding, annual income and mass media exposure has been presented in Table 1. The age of the farmers varied from 27-60 years. The data indicated that in case of the beneficiary farmers, a little less than half of the farmers (48.89%) belonged to an age group of 38-49 years while in case of non-beneficiary farmers, 57.78 per cent of them belonged to the age group of 38-49 years. The data pertaining to education of the farmers varied from primary to graduate level. The data showed that among the beneficiary farmers, maximum farmers, i.e. 38.89 per cent were educated up to senior secondary whereas among the non-beneficiary farmers 34.44 per cent of them had senior secondary level of education. The farmers were categorized into five groups according to their operational land holding on the basis of Statistical Abstract of Punjab (2015) as shown in the Table. The data clearly revealed that among the beneficiary farmers, 38.89 per cent of the farmers had a medium i.e. 10-25 acres of land holding while amongst the non-beneficiary farmers, 30 per cent of them had semi-medium operational land holdings. On an overall basis, maximum beneficiary and non-beneficiary farmers were having semi-medium to medium operational land holdings. A perusal of the data in Table 1 showed that a little more than 50 per cent of the beneficiary farmers had medium annual income while on the other hand, 52.22 per cent of the non-beneficiary farmers had a low annual income. Regarding the mass media exposure, the farmers were placed into three categories on the basis of their score by using range method. The data revealed that nearly 60 per cent of the beneficiary farmers had a medium mass media exposure while among the non-beneficiary farmers, 46.67 per cent of the farmers were found to have a medium level of mass media exposure. Although critical observation of the data indicated that a good percentage of non-beneficiary farmers were having low mass media exposure.

### Opinion of the beneficiary and non-beneficiary farmers regarding different aspects of agricultural subsidies

**Table 1: Distribution of farmers according to their socio-personal profile**

Socio-personal profile	Category	Beneficiary (n=90)		Non-Beneficiary (n=90)	
		F	(%)	F	(%)
Age (years)	27-38	33	36.66	29	32.22
	38-49	44	48.89	52	57.78
	49-60	13	14.44	9	10
Education	Primary	8	8.89	12	13.33
	Middle	14	15.56	19	21.11
	Matric	22	24.44	21	23.33
	Senior Secondary	35	38.89	31	34.44
	Graduate	11	12.22	7	7.78
Operational Land Holding (acres)	Marginal (< 2.5)	4	4.44	19	21.11
	Small (2.5-5)	12	13.33	18	20
	Semi-medium (5-10)	32	35.56	27	30
	Medium (10-25)	35	38.89	22	24.44
	Large (>25)	7	7.78	4	4.44
Annual Income (rupees)	Low (60,000-480,000)	28	31.11	47	52.22
	Medium (480,000-1,020,000)	46	51.11	38	42.22
	High (1,020,000-1,500,000)	16	17.78	5	5.56
Mass Media Exposure	Low (8-11)	9	10	29	32.22
	Medium (11-14)	53	58.89	42	46.67
	High (14-17)	28	31.11	19	21.11

f=frequency, %=percentage

The data in Table 2 showed that all the beneficiary and non-beneficiary farmers agreed that the subsidies facilitated the adoption of new technologies/practices and are necessary to boost the farmers to remain in agriculture sector. Majority of the beneficiary (95.56%) and non-beneficiary (94.44%) farmers agreed that maximum percentage of allocated funds for subsidies were given on agricultural machinery rather than seeds, fertilisers, plant protection materials and micro-irrigation units but, at the same time 84.44 per cent of beneficiary farmers and more than 90 per cent of non-beneficiary farmers (93.33%) felt that subsidies on big machines were more beneficial for the large farmers rather than the small and marginal farmers. This again supported the issue that subsidies are more beneficial to large farmers. About two-third of beneficiary farmers (63.33%) and 76.67 per cent of non-beneficiary farmers disagreed that the subsidies on the purchase of a machinery was a better option for the farmer as compared to the custom hiring of these machines. The in-depth probing on this issue

revealed that small and marginal farmers have no capacity to invest in purchasing big machineries even after getting the subsidies, so it is better that they custom hire the machines required instead of purchasing them. This would also save their maintenance costs on the machines.

More than 90 per cent of beneficiary farmers and 86.67 per cent of non-beneficiary farmers reported that subsidies were responsible for making producers dependent on the government. On the highly debatable issue of power subsidy in Punjab, majority of the farmers in both categories i.e. 87.78 per cent of beneficiary farmers and 70 per cent of the non-beneficiary farmers opined that the farmers were ready to pay the bills for electricity if uninterrupted and timely supply of electricity was provided by the government for the farming purposes. Majority of the farmers in both beneficiary (75.55%) and non-beneficiary (87.78%) category agreed that large farmers with capacity to pay the electricity charges

**Table 2: Distribution of farmers according to their opinion regarding agricultural subsidies**

Statements	Beneficiary (n=90)				Non-Beneficiary (n=90)				Z-value
	Af (%)	Nf (%)	Df (%)	MS	Af (%)	Nf (%)	Df (%)	MS	
Subsidies help to increase production.	72(80)	13 (14.44)	5 (5.56)	2.744	67 (74.44)	9(10)	14 (15.55)	2.589	1.587
Subsidies support the adoption of new technologies or practices.	90(100)	—	—	3	90(100)	—	—	3	0
Subsidies are not responsible for making producers more dependent on the government.	—	8(8.89)	82 (91.11)	1.133	—	12 (13.33)	78 (86.67)	1.089	0.946
Subsidy on big machinery is more beneficial for large farmers than small and marginal farmers.	76 (84.44)	14 (15.56)	—	2.844	84 (93.33)	6(6.67)	—	2.922	-1.628
Higher percentage of subsidy is for machines than inputs like seeds, fertilizers, pesticides etc.	86 (95.56)	4 (4.44)	—	2.955	85 (94.44)	5(5.56)	—	2.944	0.340
Subsidies on the purchase of machinery are a better option for the farmer as compared to their custom hiring.	21 (23.33)	12 (13.33)	57 (63.33)	1.6	13 (14.44)	8(8.89)	69 (76.67)	1.382	1.849
Large farmers with capacity to pay the electricity charges are getting more benefit from power subsidy than the small and marginal farmers.	68 (75.55)	15 (16.67)	7(7.78)	2.677	79 (87.78)	11(12.22)	—	2.877	-2.719**
Farmers are ready to pay bills for irrigation as uninterrupted and timely supply of electricity is given for farming purposes.	79 (87.78)	11 (12.22)	—	2.877	63 (70)	5(5.56)	22 (24.44)	2.455	4.335**
Reduction in agricultural input subsidies on wheat and rice will force farmers to diversify production in order to reduce risk and increase profit	11 (12.22)	9(10)	70 (77.78)	1.344	6 (6.67)	16 (17.78)	68 (75.55)	1.311	0.3477
Subsidies contribute to a greater extent in enhancing farmers' income.	77 (85.56)	13 (14.44)	—	2.856	87 (96.67)	3(3.33)	—	2.967	-2.656**
Subsidies are necessary to boost farmers to remain in agricultural sector.	90 (100)	—	—	3	90 (100)	—	—	3	0
Farmers will be affected if subsidies are discontinued in agricultural sector.	72(80)	18(20)	—	2.8	65 (72.22)	25 (27.78)	—	2.722	1.221
Subsidies are not biased towards large farmers.	57 (63.33)	12 (13.33)	21 (23.33)	2.4	—	12 (13.33)	78 (86.67)	1.133	13.178**

\*\*Significant at 0.01 level, A=Agree, N=Neutral, D=Disagree, MS=Mean Score

were getting more benefit from power subsidy than the small and marginal farmers because they had greater land holdings and free power on a large area reducing the cost of cultivation to a great extent thus increasing their profit margins.

The electricity subsidy was found to be regressive as large farmers, who have the capacity to pay the electricity charges were getting more benefit from this subsidy than the small and marginal farmers. Besides

greater land holdings, other reasons observed were more electric load, new types of pump sets and more than one electric connections. Due to the irregular supply of electricity, farmers often had to use diesel pump sets to irrigate the crops. The expenditure on diesel pump sets was very high as compared to flat rates of electricity. Therefore, farmers were ready to pay electricity bill as uninterrupted and timely supply of electricity was given to them for farming purpose. These findings were in line with the findings of Kaur

and Sharma, (2012). Highlighting the significance of subsidies, 85.56 per cent of beneficiary farmers and more than 95 per cent of non-beneficiary farmers opined that the subsidies contribute to a great extent in boosting farmers' income. Majority of the beneficiary (80%) and non-beneficiary (74.44%) farmers agreed that subsidies helped to increase production. Almost an equal percentage i.e. 80 per cent of beneficiary farmers and 72.22 per cent of non-beneficiary farmers felt that the farmers will be affected if the subsidies are discontinued in agriculture sector.

More than 75 per cent of the beneficiary and non-beneficiary farmers disagreed that reduction in agricultural input subsidies on wheat and rice would force farmers to diversify to other crops in order to reduce risk and increase profit. It was observed while collecting data that farmers were getting very less amount of seeds of crops other than wheat-rice under the subsidies which hindered the diversification because the area of other crops was confined to a smaller area. Moreover, MSP on wheat and rice has a substantial advantage to the farmers which hinders diversification. Only 12.22 per cent of beneficiary and a mere 6.67 per cent of non-beneficiary farmers agreed with it. It was interesting to find out that where 63.33 per cent of the beneficiary farmers agreed that subsidies were not biased towards large farmers, 86.67 per cent of non-beneficiary farmers disagreed with it while 23.33 per cent of the beneficiary farmers also felt that subsidies are biased towards large farmers.

### Opinion of the beneficiary and non-beneficiary farmers on the areas where subsidy should be given or withdrawn

A perusal of data in Table 3 revealed the opinion of beneficiary and non-beneficiary regarding the areas where the subsidies should be given/withdrawn. All the beneficiary and non-beneficiary farmers opined that subsidies should be given in the areas of seeds, fertilisers, micro-irrigation, credit and price (MSP) as seeds and fertilisers are the basic unit of farming and subsidies on this help the small and marginal farmers to reduce the cost of cultivation. Credit also is the most important input as it is required for the procurement of the other inputs.

Farmers opined for full subsidies in the area of price in the form of Minimum Support Price (MSP). They expressed that MSP should be given because it acts as a security for farmers through a guarantee that if there produce is left unsold in the market, it will be procured by the government. Majority of the beneficiary (86.67%) and non-beneficiary (78.89%) farmers agreed for the removal of subsidies on plant protection materials as they reported that although subsidized but they were being provided sub-standard chemicals which had no significant effect on the pest or insect control. Instead, it promoted overuse of chemicals as the chemical had no or little effect and consequently the farmer had to spray more and more to get the desired results. More than two-thirds of

**Table 3: Distribution of farmers regarding their opinion on areas where subsidy should be given/ withdrawn**

Area of Subsidy	Beneficiary (n=90)				Non-Beneficiary (n=90)				Z-value
	Gf (%)	Wf (%)	NAf (%)	MS	Gf (%)	Wf (%)	NAf (%)	MS	
Power	21(23.33)	69(76.67)	—	2.233	33(36.67)	57(63.33)	—	2.367	-1.962*
Fertiliser	90(100)	—	—	3	90(100)	—	—	3	0
Micro-Irrigation	90(100)	—	—	3	90(100)	—	—	3	0
Seeds	90(100)	—	—	3	90(100)	—	—	3	0
Plant protection	12(13.33)	78(86.67)	—	2.133	19(21.11)	71(78.89)	—	2.211	-1.381
Machinery	27(30)	63(70)	—	2.3	42(46.67)	48(53.33)	—	2.467	-2.321*
Credit	90(100)	—	—	3	90(100)	—	—	3	0
Infrastructure	7(7.78)	—	83 (92.22)	1.156	3(3.33)	—	87(96.67)	1.067	1.301
Price (MSP)	90(100)	—	—	3	90(100)	—	—	3	0
Export	4(4.44)	—	86 (95.56)	1.089	3(3.33)	—	87(96.67)	1.067	0.383

\*Significant at 0.05 level, G=Given, W=Withdrawn, NA=No Answer

beneficiary farmers (76.67%) and a little less than two-thirds of the non-beneficiary farmers (63.33%) were in favour of withdrawal of power subsidy owing to the poor quality of electricity supply in terms of voltage fluctuations, frequent interruptions and phase imbalances. These all problems have hit the farmers with substantial economic costs in both farm and non-farm sectors. Poor quality of electricity delivery meant that farmers must bear significant repair costs for motor burnouts. On similar lines, more than two-third of beneficiary farmers (70%) and a little more than 50 per cent of non-beneficiary farmers (53.33%) opined for the withdrawal of subsidies on agricultural machinery while only 30 per cent of the beneficiary farmers and 46.67 per cent of non-beneficiary farmers were in favour of subsidies on machines. The difference among the opinion of the beneficiary and non-beneficiary farmers was noticed in this context as the beneficiary farmers asked for the removal of this subsidy on the grounds of over-mechanization and maintenance costs. Some of the non-beneficiary farmers were in favour of subsidies in machinery so that they are also capable of owing a piece of machinery as it would be an increase in their social status. A very less percentage of both beneficiary (7.78%) and non-beneficiary (3.33%) farmers were found aware of the infrastructure and export subsidy. The farmers also mentioned that more subsidy and awareness was needed in the area of infrastructure subsidy. Similar findings were reported for the export subsidy with 4.44 per cent of beneficiary and 3.33 per

cent of non-beneficiary farmers in favour of more subsidies to be given in this area respectively. More than 90 per cent of both the beneficiary as well as the non-beneficiary farmers were not aware about infrastructure and export subsidy and the kind of assistance provided to them in this sector.

The results of the Z test revealed that there was a significant difference between the opinions of the beneficiary and non-beneficiary farmers regarding the power and machinery subsidies at 5% level of significance.

### Preferred criteria of the farmers for disbursement of agricultural subsidies

The data presented in Table 4 revealed that all the beneficiary and non-beneficiary farmers preferred crops grown by the farmers to be set as the criteria for disbursement of agriculture subsidies. On similar lines, studies by Dorward, (2009) and Smith and Urey, (2002) reported that during the early phases of the green revolution payment of subsidies on inputs contributed to rapid expansion of production of cereals.

It was interesting to find out that 93.33 per cent of the beneficiary farmers were in disagreement on time gap between one subsidy and the next to be fixed while 78.89 per cent of non-beneficiary farmers preferred this criteria. Similarly, 85.56 per cent of beneficiary farmers disagreed upon the number of

**Table 4: Distribution of farmers according to their preferred criteria for disbursement of agricultural subsidies**

Criteria/s	Beneficiary (n=90)			Non-Beneficiary (n=90)			Z – value
	Af (%)	Df (%)	MS	Af (%)	Df (%)	MS	
Caste	42 (46.67)	48 (53.33)	1.467	29 (32.22)	61 (67.78)	1.322	1.993*
Land holding	55 (61.11)	35 (38.89)	1.611	76 (84.44)	14 (15.56)	1.844	-3.623**
Farmers groups	58 (64.44)	32 (35.56)	1.644	67 (74.44)	23 (25.56)	1.744	-1.457
Integrated Farming System	41 (45.56)	49 (54.44)	1.456	31 (34.44)	59 (65.56)	1.344	1.523
Crops grown	90 (100)	—	2	90(100)	—	2	0
Number of times a person can avail the subsidy to be fixed	13 (14.44)	77 (85.56)	1.144	68 (75.56)	22 (24.44)	1.756	-10.384**
Time gap between one subsidy and the next	6 (6.67)	84 (93.33)	1.067	71 (78.89)	19 (21.11)	1.789	-14.245**
One subsidy/ household/ season	14 (15.56)	76 (84.44)	1.156	57 (63.33)	33 (36.67)	1.633	-7.475**

times a person has availed subsidy to be fixed, while 75.56 per cent of the non-beneficiary farmers agreed with it. Majority of the beneficiary farmers (84.44%) disagreed with the criteria of one subsidy per household per season while 63.33 per cent of non-beneficiary farmers agreed with the criteria.

Since the non-beneficiary farmers were not getting the subsidies and they also reported that it may be because same farmers are getting subsidies since of their contacts. The non-beneficiary farmers were found to be in favour of these criteria/s because then each and every farmer especially small and marginal farmer will have higher chances of receiving the subsidies. On being questioned that these criteria/s will be applicable on them also, they replied that it would have no problem because everyone would be receiving the subsidies fairly.

Less than two-third of the beneficiary farmers (61.11%) and 84.44 per cent of the non-beneficiary farmers agreed that land holding should be the criteria for disbursement of the subsidies. The fact that large farm holders were found to be dominating the receipt of subsidy and getting benefits from subsidy as opposed to smallholders as evident from the field data meant that the programme was dominated by big and rich farmers thus defeating the core objective of targeting resource poor farmers.

More than 50 per cent of the beneficiary farmers (i.e. 53.33%) and more than two-third of the non-beneficiary farmers (67.78%) were in disagreement with caste being as the criteria for disbursement of subsidies because according to them caste should not be the criteria because a small farmer can belong to an upper caste and thus be deprived of the benefits of the subsidy program. Some of the farmers in both categories rooted for caste being as one of the criteria because the non-beneficiary farmers were already missing out the receipt of subsidies due to small land holdings and thought that they could at least get the subsidies on the basis of their caste. The beneficiary farmers supporting the caste criteria indicated that may be some of them got the subsidies based on their caste and not their land holding. A little less than two-thirds

of the beneficiary farmers (64.44%) and more than two-thirds of non-beneficiary farmers (74.44%) were in favour of farmer groups being the criteria for disbursement of subsidies because by the formation of farmers groups the cost of availing any subsidy per person will be less and everyone can be the beneficiary of the subsidy program. A little less than 50 per cent of beneficiary and 34.44 per cent of non-beneficiary farmers were in favour of integrated farming system practised by farmer to be the criteria of disbursement of agriculture subsidies. The farmers asserted that the farmer already practising integrated farming system would be self-sufficient, so the subsidies should be given to that farmer who is involved in a single agriculture enterprise such as farming or dairying or poultry etc.

### **Preference of the farmers for alternatives to agricultural subsidies**

The data in Table 5 revealed that all the beneficiary and non-beneficiary farmers gave their first preference to raising the Minimum Support Prices (MSP) as an alternative of subsidies. Creating a direct and forward link up of farmers with the processing industries was preferred as the second best alternative to subsidies by almost 75 per cent of beneficiary farmers and 65 per cent of non-beneficiary farmers. The farmers revealed that this would give them avenues for selling crop products other than rice and wheat. More than two-thirds of the beneficiary farmers' preferred facilitating a producer consumer linkup between cities and villages and eliminating middleman as the third best alternative while it was placed at fourth rank by the non-beneficiary farmers. On the other hand, a little less than two-thirds of the non-beneficiary farmers preferred to increase investments in building more public infrastructure for agriculture sector by the government as the third best alternative although it was placed at fourth rank by the beneficiary farmers.

### **Comparative analysis of the profile of beneficiary and non-beneficiary farmers**

The data presented in the Table 6 revealed that there was a significant difference in the variables viz.



**Table 5: Distribution of farmers according to their preference for alternatives to agricultural subsidy**

Alternatives	Beneficiary (n=90)		Non-Beneficiary (n=90)	
	f (%)	Rank	f (%)	Rank
Raise MSP	90 (100)	1	90 (100)	1
Create forward linkages of the farmers with processing industries	68 (75.56)	2	59 (65.56)	2
Increase investments in building more public infrastructure	52 (57.78)	4	56 (62.22)	3
Facilitating direct producer consumer links between villages and cities thus eliminating middlemen.	62 (68.89)	3	46 (51.11)	4

operational land holding, annual income and mass media exposure of the beneficiary and non-beneficiary farmers at 1% level of significance.

The data clearly indicated that beneficiary farmers who have availed subsidy under selected schemes had more operational land holdings, higher annual income and more mass media exposure than the non-beneficiary farmers who had not availed any subsidy.

**Table 6: Comparative analysis of profile among the beneficiary and non-beneficiary farmers**

Variable	Z value
Age	0.0186
Education	1.470
Operational Land Holding	4.585**
Annual Income	5.902**
Mass Media Exposure	2.011**

\*\* Significant at 0.01 level

This very well supports that the subsidies are not well targeted and the small and marginal farmers remain deprived of these assistance.

### Factors affecting receipt of subsidy by the farmers

The results of the Tobit regression analysis (Table 7) showed the factors affecting the receipt of subsidies by the farmers. The amount of variation explained by the model has been found to be significant at 1 per cent level of significance.

The results of the Tobit regression analysis indicated that among the twelve independent variables included in the model, five were found to statistically affect the receipt of subsidy by the farmers. These variables were farmer's operational land holding (-2.3811\*\*), annual income (3.6988\*\*), lack of awareness regarding the time of subsidies (-4.9262\*\*), delay in release of subsidies (-2.9506\*\*) and

**Table 7: Tobit regression analysis for the factors affecting the receipt of subsidy by the farmers**

Independent Variable	Dependent Variable	B	S.E.	Z-statistics
Age	Subsidy	-0.0017	0.0066	-0.2529
Education		0.0208	0.4796	0.4331
Operational landholding		-0.0509	0.0214	-2.3811**
Annual Income		0.0000	0.0000	3.6988**
Mass media exposure		0.0389	0.0246	1.5786
Lack of awareness		-0.5758	0.1169	-4.9262**
No fixed place of sale		-0.0779	0.1630	-0.4777
Delay in release		-0.3566	0.1209	-2.9506**
Lengthy documentation		-0.0777	0.6016	-0.1292
Less quantity		-0.0001	0.1363	-0.0008
Poor quality		0.1226	0.1337	0.9166
Misallocation		-0.5275	0.1183	-4.4577**

\*\* Significant at 0.01 level, B=Regression co-efficient, S.E=Standard error

misallocation of subsidies (-4.4577\*\*). Farmer's operational land holding had negative values on the coefficient estimates, indicating that one per cent increase in the operational land holding decreases the receipt of subsidy by 0.0509 per cent. But it was interesting to find that in reality, the results were opposite, the farmers having more operational land holding received more subsidy than the farmers having small and marginal land holdings. Conversely, lack of awareness, delay in release and misallocation had negative values on the coefficient estimates indicating their negative effect on the receipt of subsidy. It meant that one per cent increase in lack of awareness decreases the receipt of subsidy by 0.5758 per cent and one per cent increase in delay of release of subsidies decreases the receipt of subsidy by 0.3566 per cent and one per cent increase in misallocation of subsidies decreases the receipt of subsidy by 0.5275 per cent. The annual income was found to have a zero positive significant value with the receipt of subsidy. The negative regression coefficients were found with age, fixed place of sale, lengthy documentation procedure and less quantity of subsidised inputs while positive regression coefficient estimates were found with the education and poor quality of subsidized inputs, but these were not statistically significant. It referred that these variables had no significant influence on the receipt of subsidy by the farmers.

### CONCLUSION

More than two-thirds of the beneficiary and non-beneficiary farmers opined that on one hand where these subsidies helped to increase production and income of farmers and adoption of newer technologies/practices. They also made producers more dependent on the government. More than two-third of the non-beneficiary farmers also opined that the maximum benefits of the subsidies were reaped by the large farmers whereas the beneficiary farmers showed disagreement to this issue. More than two-thirds of beneficiary and non-beneficiary farmers were ready to pay the electricity bills provided they got uninterrupted and timely supply of electricity for

farming purposes. The small and marginal farmers were found a little hesitant on this issue. The respondents proposed for the removal of power and plant protection subsidies because of the interrupted power supply and sub-standard quality of the plant protection chemicals. A significant difference was found between the beneficiary and non-beneficiary farmers regarding the preferred criteria(s) for disbursement of the agricultural subsidies such as caste, farmers' land holdings, fixing the number of times a person can avail a subsidy, time gap between two subsidies and one subsidy per household per season. Agriculture subsidies need to be well targeted. The criteria of disbursement of agricultural subsidies should be stringent based on the farmers' operational land holdings for ensuring maximum coverage of small and marginal farmers. Disbursement of subsidies on the basis of caste should also ensure the availability of these subsidies to the weaker sections of that caste. A "one-stop shop" for all subsidized agricultural inputs such as seeds, fertilizers, soil nutrients and pesticides need to be created for effective dissemination of inputs to all section of farmers. This would help in avoiding confusion among the farmers regarding the place of availability of subsidized inputs and save their time.

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