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Performance of Dariyapur primary agricultural society: A study of farmers' perception

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Abstract
The present paper explores the farmer's perceptions with regards to the performance of a Primary Agricultural Society in the villages in Haryana. Based on the data collected from 60 persons each in two villages which are selected using multistage purposive sampling technique, the paper found that paddy has given prominent importance by all farmers in respect of using different inputs as it has been recognized as the crop in which maximum percentage change has been noticed in most of the inputs cases. But a negative trend has been emerged in respect of using NPK in case of same crop. It was concluded that PACS has proved beneficial for paddy and wheat crop as results shown that the cropping pattern has gone against cotton and mustard crops, owing to the facilities made available by credit agency.

Keywords: primary agricultural society, Haryana, farmers perception

1. Introduction

Co-operatives play an important role in the socio-economic development of rural masses. Cooperatives have ideological base, economic objects with social outlook and approach. Ortmann and King (2007) [2] have provided historical perspective, theoretical significance and problems associated with Agriculture Cooperatives. The cooperative covers almost all villages in India. The cooperative form of organization is the ideal organization for economically weaker sections in the country. A small beginning was made with the enactment of first Cooperative Credit Societies Act in 1904 and now it has got important place in credit delivery system of the country. Cooperatives as self-help organization have been contributing significantly to economic growth and development in terms of empowering poor people and creates enabling environment to participate actively in economic process in the areas of providing job opportunities, increasing accessibility to credit facilities and providing social protection. The primary agriculture credit cooperative societies are considered to be pillars of the entire cooperative edifice. The PACS continue to be the main source of agriculture credit to the farmers in rural areas. Farmers can get the credit from the primary agricultural credit to the farmers in rural areas. Farmers can get the credit from the primary agriculture credit cooperative society. These societies are working for farmer, by the farmer. The country has witnessed tremendous growth in the cooperative sector.

Various studies has been undertaken to evaluate the performance of PACs Vidya and Kadam, 2016 [8]; Thirupathi, 2013 [6]; Tanrivermis and Bayaner, 2006 [5]; Danes and Solheim, 1993 [4]; Ramananda and Jayaprakash, 2012 [3]; Goudappa, Reddy and Chandrashekhar, 2012 [1];

Empirical analysis results show that the increase in the level of agricultural loans granted by the cooperative banks positively influence development of agriculture in India. So keeping in view the above facts the present study has been taken up. The study aimed at evaluating the performance of Dariyapur Primary Agriculture Cooperative Society, impact of the institution on agriculture development.

2. Specific Objectives of the Study

1) To examine the Impact of primary agriculture cooperative society an input-use.
2) To examine the Impact of primary agriculture cooperative society on cropping pattern.
3) To examine the Impact of primary agriculture cooperative society of Productivity.

3. Methodology

For to this purpose of study, multistage purposive sampling technique has been used to select the primary sampling units' viz. sample households, in order to achieve the specific objectives. The study is pertained to the Dariyapur Primary Agricultural Cooperative Society, Fatehabad, and district of Haryana. The Study has been conducted in two Villages. Village-1 (Dariyapur) and Village-2 (Ahlisadar) of the district named Fatehabad have been selected randomly fro evaluating the specific objectives of the study. Total 120 respondents from which 60 respondents from each village have been selected once again randomly. Further, the selected farmers have been divided into three categories viz. small, medium and large according to their land holding. To collecting the primary data, the time period has been selected from 2015 to 2016 throughout scheduled questionnaire and interview and high sampling procedure. For the purpose of analysis, logical tool and techniques such as percentage, average and other required method tools has been used.

4. Result and Discussion

The results related to change in input use, cropping pattern productivity are discussed through following heads.

4.1 Inputs use by farmers of village 1 before and after membership of the PACS:

The inputs use by farmers of village 1 during pre and post conditions of membership of PACS depicted through table 1 shown that in case of small farmer, the use of urea, DAP has increased in case of Rabi and Kharif crops as the use of urea has increased form 500 kg to 900 kg in the production of

cotton crop while It has increased from 750kg to 1000 kg in case of paddy crops. Wheat has been the crop in which production; the farmers have been using more quantity of urea after availing facilities owing to the membership of PACS. However, NPK has been the input which had been using in the quantity of 20 kg in the case of cotton. But has fully lessened to zero after getting the membership of the PACS. However, in case of medium farmers, no change has taken place of urea regarding cultivation of cotton but an depressive picture has emerged in case of the concerned item has increased to 2300 kg. The use of the same input has also increase in case of wheat crop but one thing also felt from the results is that the use of various inputs has come down to zero in case of mustard. A comparative analysis of different categories of farmers reflects that large farmers had been using the inputs in more quantity pre and post condition of membership and they have benefited more in comparison to small and medium farmers as in case of cotton and paddy, the use of urea has increased from 2400 kg to 2900 kg and 5800 kg respectively.

Table 1: Total Inputs Use by farmers of village 1 before and after Membership of the PACS

Farmer Category		Small farmers					Medium farmers					Large farmers				
Inputs		UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Phosphate UREA (Kg)	Zinc (Kg)	UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Phosphate UREA (Kg)	Zinc (Kg)	UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Phosphate UREA (Kg)	Zinc (Kg)
Kharif crops	Before															
	Cotton	500	200	20	-	20	1000	500	180	500	60	2400	1100	330	1700	160
	Paddy	750	500	-	-		-	-	-	-	-	2200	1200	180	1300	140
	After															
	Cotton	900	400	-	200	30	1000	50	-	300	70	2900	1400	-	1300	170
	Paddy	1000	500	-	200	30	2300	1150	-	400	100	5800	2900	-	2200	300
Rabi crops	Before															
	Wheat	600	300	-	-	10	1300	700	180	500	60	2800	1450	280	1600	240
	Mustard	-	-	-	-	-	100	50	70	200	20	300	100	-	300	120
	After															
	Wheat	1000	500	-	-	10	2300	1100	-	400	100	4600	2250	-	1500	250
	Mustard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

***Source*:** Furnished results based on primary survey.

4.2 Input use by Farmers of village 2 before and after the membership of the PACS

The furnished results related to the input use by the farmers of village 2 are depicted through table 2 In case of cotton crop, small farmers have increased the use of urea, medium farmers have decreased its use marginally and large farmers have shown almost same trend in its use. Regarding DAP, large farmers have started using it after getting membership of PACS in both of the Kharif crops but in case of medium farmers, same does not hold good for cotton crop but the small farmers have increased its use in both of the crops of kharif season. Regarding rabi crop, PACS has succeeded in motivating farmers for larger use of different inputs in most of the cases but mustard crop has been identified as the crop in which facilities provided through PACS have affected it negatively.

Table 2: Total Inputs Use by farmers of village 2 before and after Membership of the PACS

Farmer category		Small farmers (9)					Medium farmers (12)					Large farmers (39)				
Inputs		UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Phosphate UREA (Kg)	Zinc (Kg)	UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Phosphate UREA (Kg)	Zinc (Kg)	UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Phosphate UREA (Kg)	Zinc (Kg)
Kharif crops	Before															
	Cotton	900	450	-	450	90	1150	600	40	550	100	3750	1900	360	1950	280
	Paddy	1000	500	-	450	90	900	500	-	350	80	2350	1200	170	1100	175
	After															
	Cotton	1000	500	-	450	130	1100	550	-	450	110	3700	1950	-	1750	295
	Paddy	1500	600	-	450	120	1650	800	-	550	115	6400	3450	-	2100	350
Rabi crops	Before															
	Wheat	1150	500	-	450	90	1300	600	30	450	85	4800	2500	420	1950	285
	Mustard	350	225	-	450	70	350	250	-	400	70	1950	1050	80	1550	225
	After															
	Wheat	1100	450	-	500	100	1600	800	-	550	120	6100	3200	-	1800	350
	Mustard	350	200	-	250	85	400	250	-	250	105	850	500	-	350	140

***Source*:** Furnished results based on primary survey.

4.3 Inputs use by Farmers of village 1 and village 2 in term of percentage change:

Inputs use by farmers of both the villages in percentage terms is presented through table 3 In case of village 1 maximum, change has been made by small farmers in case of kharif crops. As far as rabi crops are concerned, small farmers have been succeeded in respect of using urea and DAP increase with 66.67 percent each in case of wheat where as it has been increased at the rate of 76.92 percent and 57.14 percent in case of medium farmers but the change has been minimum in case of large famers regarding rabi crops. Regarding village 2 maximum change has taken place in case of DAP in paddy crop which has been estimated as 187.5 in case of large farmers followed by urea in the same crop as reflected by the kharif crops performance regarding use of inputs. But in case of rabi crops, the use of urea and DAP has decreased in case of small farmers indicate the negative impact of joining PACS by small farmers.

Table 3: Percentage Change in Inputs use by farmers of village 1 & village 2

Land category		Small farmers					Medium farmers					Large farmers				
Inputs		UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Phosphate UREA (Kg)	Zinc (Kg)	UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Phosphate UREA (Kg)	Zinc (Kg)	UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Phosphate UREA (Kg)	Zinc (Kg)
Kharif crops		**Village 1**														
	Cotton	80	100	-100		50	0	0	-100	-40	16.67	20.83	27.27	-100	-23.53	6.25
	Paddy	33.3	0	-					-	100	66.67	163.64	141.67	-100	69.23	114.29
		Village 2														
	Cotton	11.11	11.11	-	0	44.44	-4.35	-8.33	-100	-18.18	10	-1.33	2.63	-100	-10.26	5.36
	Paddy	50	20	-	0	33.33	83.33	60	-	57.14	43.75	172.34	187.5	-100	90.91	100
Rabi crops		**Village 1**														
	Wheat	66.67	66.67	-		0	76.92	57.14	-100	-20		64.29	55.17	-100	-6.25	4.17
	Mustard	-	-	-		-	-100	-100	100	-100	-100	-100	-100	-	-100	-100
		Village 2														
	Wheat	-4.35	-10	-	11.11	11.11	23.08	33.33	-100	22.22	41.18	27.08	28	-100	-7.69	22.81
	Mustard	0	-11.11	-	-44.44	-21.43	14.29	0	-	-37.5	50	-56.41	-52.38	-100	-77.42	-37.78

***Source*:** Furnished results based on primary survey

4.4 Percentage change in inputs use by the farmers of both villages before and after membership of PACS

The final results related to percentage change in inputs use by all farmers before and after situation of membership of PACS are presented though table 4 It is revealed by the results that paddy has given prominent importance by all farmers in respect of using different inputs as it has been recognized as the crop in which maximum percentage change has been noticed in most of the inputs cases. 338.89 percent change has occurred in case of urea by medium farmers while large farmers have increased its use by 168.13 per cent. As far as total change in total use of urea in paddy is considered, its use has increased by all farmers by 159.03 per cent. 141.03 per cent change has been made by farmers in case of using DAP. But a negative trend has been emerged in respect of using NPK in case of same crop. But in respect of cotton crop, the use of NPK has been decreased in case of small, medium and large farmers, along with it, the urea, DAP, NPK and Superphosphate urea has shown negative impact of the government efforts initiated to motivate the farmer to use more quantity of inputs aim at development of the agricultural output. In case of large farmers, the NPK and Superphosphate urea has disregarded by farmers by decreasing its use after getting the membership of PACS. Regarding rabi crops, wheat has been the crop in which case, the credit and other facilities advanced by government to farmers has sufficiently proved a stimulus for farmers regarding using in more quantum of some inputs i.e Urea, DAP and Zink but NPK and Superphosphate urea has started declined regarding giving preference to grow crops in their field and the situation went for worse as far as the mustard crop is taken into account. The use of urea, DAP, NPK, Superphosphate and Zink has reduced by 47.54 per cent, 43.28 percent, 100 percent, 70.69 percent, 34.65 percent respectively in the very crop after availing the facilities of primary agriculture society by the farmers comes under PACS, Dariyapur.

1.4.5 Percentage in Cropping pattern by farmer of village 1 and village 2 before and after of PACS:

The impact of the strive made by government in the form of priority lending and other facilities made available through the very same credit agencies in cropping pattern in the regions comes under Dariyapur PACS and presented through table 5 in case of Kharif crops, it is found that farmers has shifted their farm land from cotton to paddy after getting the facilities of PACS as it has been observed that 38.46 percentage change has made by small farmer reflect the preference of the paddy over cotton in post PACS situation in case of medium farmers. 75.87 percentage change has been registered in cropping pattern which has also been dominated to paddy. In case of large farmers, the same trend has been found as 71.02 percent change has noticed in paddy crop in case of the village 1 selected for the study. Almost same hold good for the village B as priority has been given to paddy by shifting the land from cotton to paddy crop in case of kharif crops. In respect of rabi crops, wheat has proved enough strut to take land under itself from its competing crop mustard irrespective the villages selected for the study. So, it is concluded that PACs has proved beneficial for paddy and wheat crop as results shown that the cropping pattern has gone against cotton and mustard crops owing to the facilities made available by credit agency.

Table 4: Percentage Change in Inputs Use by the Farmers of both Villages before and after Membership of PAC

Farmer category		Small farmers					Medium farmers					Large farmers					Total				
Inputs		UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Ph. UREA (Kg)	Zinc (Kg)	UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Ph. UREA (Kg	Zinc (Kg)	UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Ph. UREA (Kg)	Zinc (Kg)	UREA (Kg)	DAP (Kg)	NPK (Kg)	Super Ph. UREA (Kg)	Zinc (Kg)
Kharif	Cotton	35.71	38.46	-100	44.44	45.45	-2.33	-4.55	-100	-28.57	12.50	7.32	11.67	-100	-16.44	21.59	9.28	11.58	-100	-13.59	23.24
Crops	Paddy	42.86	10.00	-	44.44	66.67	338.89	290.00	-	171.43	168.75	168.13	164.58	-100	79.17	106.35	159.03	141.03	-100	84.38	109.28
Rabi	Wheat	20.00	18.75	-	11.11	10.00	50.00	46.15	-100	0	51.72	40.79	37.97	-100	-7.04	14.29	39.75	37.19	-100	-14.14	20.78
Crops	Mustard	0	-11.11	-	-44.44	21.43	-11.11	-16.67	-100	-58.33	16.67	-62.22	-56.52	-100	-81.08	-59.42	-47.54	-43.28	-100	-70.69	-34.65

***Source*:** Furnished results based on primary survey.

Table 5: Percentage Change in Cropping Pattern of Village 1 and Village 2 before and after of PACS

Land Cat.	Village 1									Village 2								
	Small Farmers			Medium Farmers			Large Farmers			Small Farmers			Medium Farmers			Large Farmers		
	Before (%)	After (%)	%age change	Before (%)	After (%)	%age change	Before (%)	After (%)	%age change	Before (%)	After (%)	%age change	Before (%)	After (%)	%age change	Before (%)	After (%)	%age change
Kharif Crops																		
Cotton	12(92.31)	7 (53.85)	-38.46	52 (89.66)	1 (1.96)	- 75.87	292(82.95)	42(1193)	- 71.02	06(75)	02(25)	-50	33(78.57)	1022.22)	-56.35	338(80.9)	64(15.17)	-64.92
Paddy	1(7.69)	6(46.15)	38.46	0.6(10.37)	50(98.04)	75.87	50(17.05)	310(88.07)	71.02	02(25)	06(75)	50	12(26.67)	35(77.78)	51.11	84(19.91)	358(84.83)	64.92
Total	13	13	--	58	51	--	352	352	--	08	08	--	45	45	--	422	422	--
Rabi Crops																		
Wheat	13	13	0	54(93.10)	58(100)	6.9	330(93.75)	350(99.43)	5.68	05(71.43)	07(87.5)	12.5	28(62.27)	36(80)	17.78	290(68.72)	370(87.68)	18.96
Mustard	-	-	-	4 (6.90)	-	-6.9	22(6.25)	2(0.57)	-5.68	02(28.57)	01(12.5)	-12.5	17(37.78)	09(20)	-17.78	132(31.28)	52(12.32)	-18.96
Total	13	13	--	58	58	--	352	352	--	07	08	--	45	45	--	422	422	--

***Source*:** Furnished results based on primary survey.

Table 6: Percentage (Per Acre) of Village 1 and Village 2 before and after of PACS

Land Cat.	Village 1									Village 2								
	Small Farmers			Medium Farmers			Large Farmers			Small Farmers			Medium Farmers			Large Farmers		
	Before (%)	After (%)	%age change	Before (%)	After (%)	%age change	Before (%)	After (%)	%age change	Before (%)	After (%)	%age change	Before (%)	After (%)	%age change	Before (%)	After (%)	%age change
Kharif Crops																		
Cotton	44(37.93)	76(42.70)	4.77	102(63.75)	82(23.16)	-40.59	206(56.28)	242(26.95)	-29.33	27(25.33)	56(25.69)	0.46	46(33.58)	75(30.86)	-2.72	196(58.51)	303(35.61)	-22.9
Paddy	72(62.07)	102(57.30)	-4.77	58(36.25)	272(76.84)	40.59	160(43.72)	656(73.05)	29.33	80(74.77)	162(74.31)	-0.46	91(66.42)	168(69.14)	2.72	139(41.49)	548(64.39)	22.9
Total	116	178	--	160	354	--	366	898	--	107	218	--	137	243	--	335	851	--
Rabi Crops																		
Wheat	74(100)	152(100)	0	192(85.71)	252(100)	14.29	506(100)	672(98.25)	6.91	93(82.30)	190(80.51)	-1.79	116(74.84)	229(88.42)	13.58	436(63.56)	750(83.33)	19.77
Mustard	-	-	-	32(14.29)	-	-14.29	48(8.66)	12(1.75)	-6.91	20(17.70)	46(19.50)	1.8	39 (25.16)	30(11.58)	-13.58	250(36.44)	15.(16.67)	-1977
Total	74	152	--	224	252	--	554	684	--	113	236	--	155	259	--	686	900	--

***Source*:** Furnished results based on primary survey.

1.4.6 Productivity (Per acre) of village 1 and village 2 before and after of PACS:

The results related to the productivity in village 1 and village 2 before and after becoming the member are presented in table 6. It is revealed that percentage share of cotton has increased by 4.77 per cent in case of small farmers while it has decreased 40.59 per cent and 29.33 per cent in case of medium and large farmers in village 1. There has been 0.46 per cent increase in case of small farmers while the share of cotton's productivity in case of medium and large famers has been decreased in village 2. In case of paddy, the percentage share has increased in case of medium and large farmers in both of villages. Regarding Rabi crops, the percentage share of Wheat has increased while it has become the reason to decrease the share of productivity of Mustard in terms of percentage share although in absolute terms, there has always been positive impact on productivity barring only few cases.

5. Summary and Conclusions

On the basis of the results, it can be concluded that paddy has given prominent importance by all farmers in respect of using different inputs as it has been recognized as the crop in which maximum percentage change has been noticed in most of the inputs cases. But a negative trend has been emerged in respect of using NPK in case of same crop. It was concluded that PACS has proved beneficial for paddy and wheat crop as results shown that the cropping pattern has gone against cotton and mustard crops, owing to the facilities made available by credit agency. It is revealed that the percentage share of cotton has increased by 4.77 percent in case of small farmers while it has decreased 40.59 per cent and 29.33 percent in case of medium and large farmers in village 1. There has been 0.46 percent increase in case of small farmers while the share of cotton's productivity in case of medium and large farmers has been decreased in village 2. So, the findings suggested that Cooperatives Society has positive impact to some extent on the input use, productivity and cropping pattern but it has affected in positive way only on the selected crops. So to extract generalize impact of the credit incentive, some concrete steps should be taken up by the decision making authority. Some suggestions in this regard can be put forward in the following manner.

6. Suggestions

- It is needed to motivate the farmers to get membership of PACS.
- Farmers should be motivated to grow the crop in a rotate manner so that fertility of the land could be motivated.
- There should be enactment of the law so that loans should be repaid by the farmers.
- There should be steps to motivate the farmers for the more use of bio-fertilizers.
- The fertility of the soil should be checked and the identified shortcomings should be removed.
- More use of technology should be in the field activities. Farmers fair can be option for it.
- There should be direct connection between agricultural department and Meteorological department.
- To get more returns, subsidy should be provided.

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