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Impact of Front Line Demonstration (FLD) on Area and Productivity of Wheat Growers in Jabalpur District of Madhya Pradesh, India

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A B S T R A C T

The study on wheat growers within Front line demonstration was conducted in Jabalpur district of Madhya Pradesh state during 2014-15. The number of respondents selected for the study was 100. The data was collected by personal interview method. The study reveals that beneficiaries having small area (up to 2 ha) had absolute change of 0.48 and 44.85 percent relative change in area under wheat crop, having low productivity change (up to 5 q/ha) had absolute change of 5.00 and relative change 18.86. The calculated t value for change in area and productivity under wheat between FLD beneficiaries and non-FLD beneficiaries was 8.588 and 19.269 which was found to be significant at 0.01 probability level.

Introduction

Wheat is the most important source of carbohydrate in a majority of countries. Wheat also contains a diversity of minerals, vitamins and fats (lipids). With a small amount of animal or legume protein added, a wheat-based meal is highly nutritious. Wheat is grown in India over an area of about 266.92 lakh ha. with a production of 721.40 lakh tonnes. The normal National productivity is about 2703 kg/ha. The major Wheat producing States are Uttar Pradesh, Punjab, Haryana, Madhya Pradesh, Rajasthan, Bihar, Maharashtra, Gujarat, Karnataka, West Bengal, Uttaranchal, Himachal Pradesh and Jammu & Kashmir. These States contribute about 99.5% of total Wheat production in the country. Remaining States namely, Jharkhand, Assam, Chhattisgarh, Delhi and other North Eastern States contribute only about 0.5 % of the total Wheat production in the country.

Among food grains, Wheat stands next to Rice, both in area and production. The share of Wheat in total food grain production is around 35.5% and share in area is about 21.8% of the total area under food grains.

Front Line Demonstration (FLD) was started in wheat to generate production data and feedback information to various development agencies, which are engaged in dissemination

of technological advances through researchers to the farmer's fields. For increasing the productivity and improving the economic condition of the farmers, depend upon the level of knowledge and skills of the farmers. The FLD aimed at achieving this twin objective by bringing about the change in knowledge and adoption behavior of farmers. The frontline demonstration is the important mandate of Krishi Vigyan Kendra

Materials and Methods

In Madhya Pradesh state consist of 49 Krishi Vigyan Kendra operations since 1976 under different organizations like State Agricultural Universities. Out of these, the study was conducted in the Krishi Vigyan Kendra, Jabalpur district of Madhya Pradesh state. This KVK is working under the jurisdiction of JNKVV, Jabalpur. Out of total 7 blocks in the district shahpura block were selected purposively because maximum demonstrations on wheat crop were conducted in this block as compared to other blocks.

A list of villages in which demonstrations on wheat crop were conducted under FLD has been prepared with the help of KVK centre. Out of which 3 villages have been selected for the study on the basis of maximum demonstrations conducted under wheat crop adopted by KVK under FLD.

From selected villages, farmers on whose fields FLD of wheat crops was taken up selected 50 Beneficiaries and 50 Non beneficiaries. Thus, the total 100 wheat growers were considered as respondent for this study. The data were collected personally through pre-tested interview schedule which was prepared on the basis of objectives of the study. Collected data were processed and tabulated by using appropriate statistical tools like percentage, mean, standard deviation and correlation coefficient.

Results and Discussion

Impact of FLD on area and productivity of wheat growers

Table 1 shows the absolute change and relative change in area of the beneficiaries after conducting FLD on their field. The data reveals that beneficiaries having small area (up to 2 ha) had absolute change of 0.48 and 44.85 percent relative change in area under wheat crop, while beneficiaries having medium area (2.1 to 4 ha) had 0.84 absolute change and 50.00 percent relative change and for beneficiaries having large area (above 4 ha) had absolute change of 1.1 and 35.48 percent relative change in area under wheat crop. Thus in overall there was 46.15 percent relative change in area under wheat crop through wheat production technology shown in FLD.

Table 2 shows the absolute change and relative change in productivity of the beneficiaries after conducting FLD on their field. The data reveals that beneficiaries having low productivity change (up to 5 q/ha) had absolute change of 5.00 and relative change 18.86, while beneficiaries having medium productivity change (5.1 to 10 q/ha) had absolute change of 9.08 and relative change of 18.86 percent and for beneficiaries having high productivity change (above 10 q/ha) had absolute change of 12.25 and 54.41 percent relative change. Thus in overall there was 48.09 percent relative change in productivity of wheat crop through wheat production technology shown in FLD.

Table 3 shows that the calculated t value for change in area under wheat between FLD beneficiaries and non-FLD beneficiaries was 8.588 which was found to be significant at 0.01 probability level. Thus the earlier stated null hypothesis that there is no difference between the change in area under wheat of the

FLD beneficiaries and non-FLD beneficiaries is rejected. Hence it can be concluded that there is significant difference between change in area of beneficiaries and non-beneficiaries of FLD.

Table 4 shows that the calculated t value for change in productivity between FLD beneficiaries and non-FLD beneficiaries was 19.269 which was found to be significant at 0.01 probability level. Thus the earlier stated null hypothesis that there is no difference between the change in productivity of the FLD beneficiaries and non-FLD beneficiaries is rejected. Hence it can be concluded that there is significant difference between change in productivity of beneficiaries and non-beneficiaries of FLD.

Table.1 Absolute change and relative change in area under wheat crop of FLD beneficiaries

S. No.	Categories	Frequency	Absolute change (ha)	Relative change (%)
1.	Small (up to 2 ha)	21 (42.00)	0.48	44.85
2.	Medium (2.1 to 4 ha)	24 (48.00)	0.84	50.00
3.	Large (Above 4 ha)	5 (10.00)	1.10	35.48
	Overall average		0.72	46.15

Figures in the parentheses indicate percentage

Table.2 Absolute change and relative change in productivity of FLD beneficiaries

S. No.	Categories	Frequency	Absolute change (q/ha)	Relative change (%)
1.	Low (up to 5 q/ha)	2 (4.00)	5.00	18.86
2.	Medium(5.1 to 10 q/ha)	19 (38.00)	9.08	39.61
3.	High (above 10 q/ha)	29 (58.00)	12.25	54.41
	Overall average		10.87	48.09

Figures in the parentheses indicates percentage

Table.3 Mean, S.D. and t-value for change in area under wheat between FLD beneficiaries and non-FLD beneficiaries

S. No.	Beneficiaries	Mean	S.D.	t-value
1.	FLD	0.72	0.309	8.588**
2.	Non-FLD	0.27	0.196	

**=significant at 0.01 probability level

Table.4 Mean, S.D. and t-value for change in productivity of wheat between FLD beneficiaries and non-FLD beneficiaries

S. No.	Beneficiaries	Mean	S.D.	t-value
1.	FLD	10.87	1.963	19.269**
2.	Non-FLD	3.34	1.944	

**=significant at 0.01 probability level

Table.5 Correlation between Independent variables with area increment of FLD beneficiaries

S. No.	Independent Variables	Correlation coefficient (r)
1.	Age	0.120NS
2.	Education	0.344*
3.	Family size	0.144NS
4.	Land holding	0.535**
5.	Occupation	0.285*
6.	Area under wheat crop	0.564**
7.	Economic motivation	0.071NS
8.	Risk preference	0.342*
9.	Scientific orientation	0.078NS
10.	Extent of knowledge	0.326*
11.	Extent of adoption	0.313*
12.	Social participation	-0.176NS
13.	Extension participation	0.311*
14.	Cosmopoliteness	-0.056NS
15.	Mass media contact	0.318*

*=significant at 0.05 probability level ** = significant at 0.01 probability level
NS = Non-significant.

Table.6 Correlation between Independent variables with productivity increment of FLD beneficiaries

S. No.	Independent Variables	Correlation coefficient (r)
1.	Age	-0.146NS
2.	Education	0.340*
3.	Family size	0.050NS
4.	Land holding	0.292*
5.	Occupation	0.388**
6.	Area under wheat crop	0.303*
7.	Economic motivation	0.076NS
8.	Risk preference	0.307*
9.	Scientific orientation	-0.138NS
10.	Extent of knowledge	0.283*
11.	Extent of adoption	0.282*
12.	Social participation	0.019NS
13.	Extension participation	0.300*
14.	Cosmopoliteness	-0.238NS
15.	Mass media contact	0.342*

*=significant at 0.05 probability level ** = significant at 0.01 probability level
NS = Non-significant.

To determine the relationship between selected independent variables with the area increment of FLD beneficiaries correlation was workout and presented in Table 5. The finding revealed that out of 15 independent variables only 2 variable i.e. Land holding and area under wheat crop were found to be positive and highly significantly correlated at 0.01 level of probability and education, occupation, risk preference, extent of knowledge, extent of adoption, extension participation and mass media contact were found to be positive and significantly correlated at 0.05 level of probability with the area increment of FLD beneficiaries.

Other variables i.e. Age, family size, economic motivation, scientific orientation, social participation and cosmopoliteness did not indicate any significant relationship with the area increment of FLD beneficiaries. The finding is supported by Nagle (2011) and Verma (2013).

To determine the relationship between selected independent variables with the productivity increment of FLD beneficiaries correlation was workout and presented in Table 6. The finding revealed that out of 15 independent variables only one variable i.e.

Occupation was found to be positive and highly significantly correlated at 0.01 level of probability and education, land holding, area under wheat crop, risk preference, extent of knowledge, extent of adoption, extension participation and mass media contact were found to be positive and significantly correlated at 0.05 level of probability with the productivity increment of FLD beneficiaries.

Other variables i.e. Age, family size, economic motivation, scientific orientation, social participation and cosmopoliteness did not indicate any significant relationship with the productivity increment of FLD beneficiaries. The finding is supported by Nagle (2011) and Verma (2013).

It concluded from the study, the results shows that absolute change and relative change in area and productivity of the beneficiaries after conducting FLD on their field overall there was 46.15 and 48.09 percent relative change in area and productivity under wheat crop through wheat production technology shown in FLD. There is significant difference between change in area of beneficiaries and non-beneficiaries of FLD.

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