

The Role of New Technology Intervention of Crop Maximization Project in Increase in Crop Production of Small Farmers of District Charsadda

Muhammad Kaleem* Bahader Sher Khattak† Syed Rashid Ali‡

Abstract

This research paper demonstrates the role of new technology intervention of crop maximization project in increasing crop production of small farmers of district Charsadda. The core objective of this study was to know the significance of new technology adoption at small scale agriculture and its effect on productivity enhancement of small farmers of district Charsadda. The research was conducted in two union councils i.e. Rajjar-II and Sarki Tetara of Tehsil and district Charsadda. For data collection Pre-tested interview schedule was used. The data were collected from 150 targeted small farmers which were purposively selected through random sampling method. The findings of the study revealed that new technology intervention of the project converted the small scale subsistence agriculture in commercial one by increasing their crop production. The collected and analyzed data indicates that a major portion (83.3%) of the respondents increased their farm production through the new technology interventions while 16.3% of them got no benefits from the new technology intervention of the project. The findings of the study further demonstrate that there is significant association and direct relation between new technology intervention of the project and the increase in farm production of small farmers.

Key Terms: New Technology Intervention, Crop Maximization, Small Farmer, Charsadda.

Introduction

Technology is the formation of newest goods and practices that are invented to make advance human survival, comfort, and quality of life (Miller, 2000).Egwu, (2003) demonstrated that since long the function of agriculture sector even in great and ancient civilizations was similar. Around 10 thousand years before technology transformation happened in agriculture sector when the first ever cultivated wild plant grown in different environment; though in about the middle

*Assistant Professor, Department of Sociology, Bacha Khan University, Charsadda, KP, Pakistan
Email: mkaleem82@yahoo.com

†MPhil Scholar, Rural Development Allama Iqbal Open University, Islamabad, Pakistan

‡Associate Professor, Department of Sociology, Abdul Wali Khan University Mardan, KP, Pakistan

of the nineteenth century the introduction of modern technology took place in Europe and North America. Later on considerable progress has been observed in agriculture technology and practices, by and large in improved quality of grains. Mehta, (2009) revealed that new technology intervention in small scale agriculture is inevitable for getting the sufficient and excess farm production and also to control the pre and post-harvest losses. Khan, (2012) also demonstrated that after the introduction of new technology in agriculture sector in green revolution era between 1960 and 1979 a notable increase has been seen in agriculture production in Pakistan. But regrettably the small farmers of the country are still unable to access the modern agriculture technology. Since green revolution era majority of the small farmers are practicing major agricultural activities i.e. seed plantation, crop harvesting and maize shelling through hand and conventional methods. In addition the wheat, rice and maize crops are threshed manually apart from few big irrigated fields, where the modern technology is used for crop harvesting. Even though for agricultural production loading, unloading and shifting substandard transportation is still used, this is below par with the modern standard of safety. That's why they are dependent on the subsistence nature of agriculture and their farm production is very low. Resultantly their socio-economic conditions are vulnerable. Khan, (2004) exposed that new technology intervention has very significant importance in increasing the crop production but in case of Pakistan, new technology intervention is not easy to acquire the desired results. The first obstruction is the small size of the farm land, in addition the modern technology is by no means easy to afford and maintain by small farmers because of their low socio-economic conditions. The FAO report, (2011) revealed that the meager rural infrastructure is also a major obstacle in the utilization of modern technology at small scale farms. These entire barriers badly affect the overall production of agriculture in the country especially at small level farming. It was studied by Pereira, (1994) that in the 1990 through modern varieties (MVS) and modern technology interventions incredible increase has been shown in crop productivity i.e. about 75% of increase occurred in Rice production, 70% in wheat and 57% of maize production increased in third world countries. Furthermore, Sahibzada, (1997) also admitted that new technology intervention at small scale agriculture is the only remedy to increase the crop production of small farmers and to ensure the food security of the world. Majumdar, (2011) find out that through modern agriculture technology the crop production of small farmers could be increased. He further explained that government should make sure the availability of affordable and accessible modern technology to small farmers by providing them subsidies and the small farmers should be trained especially the rural youth to make them capable of operation and maintenance of the modern technology to convert their small scale agriculture into commercial enterprise by increasing their farm productivity. Crop Maximization Project new technology intervention

was also intended to convert the subsistence level of small scale farming in to commercial one by increasing the crop production of small farmers of the targeted areas. This paper will highlight the role of new technology intervention in increasing the crop production of the small farmers of district Charsadda.

Hypothesis/ assumption of the study

There is no significant association between the new technology intervention of Crop Maximization Project and increase in crop production of small farmer.

Objectives of the Study

To know the role of new technology intervention of crop maximization project in increasing crop production of small farmers of district Charsadda.

Materials and Methods used

The universe of the research was the two union councils of district and Tehsil Charsadda i.e. Rajjar-II and Sarki Tetara. The present study was conducted to investigate the role of new technology interventions of crop maximization project in the increase in crop production of small farmers of district Charsadda. The data were collected through pre-tested interview schedule from 150 respondents, who were purposively selected from the above mentioned union councils. The collected data were tabulate and analyzed through SPSS. The Chi-Square and Gamma Statistics were used to know about the association and relationship between the variables.

Results and Discussion

Table No. 01 Crop Maximization Project Provided New Technology for Increase in Crop Production of Small Farmers

New Technology Provided by the Project	Frequency	Percent
Yes	142	94.67
No	8	5.33
Total	150	100.0

The data in table no.01 indicates the information about the introduction of new technology for the increase in crop production by the Crop Maximization Project for small farmers. A major portion (94.67%) of the targeted population confirmed the introduction of new technology for small farmers of the area while 5.33% of the small farmers disagreed with the with any technology intervention by the project. Pretty, (2000) find out that the impact of new technology is significant in raising the farm production of small farmers. He extended that since the green revolution era the intervention of new technology in agriculture sector especially at small scale agriculture, only in third world the agriculture sector supported 2.3 to 2.6 billion people. These facts revealed that modern technology has very significant role in increase in crop production and poverty alleviation. In third world unfortunately still about 1.9 to 2.2 billion poor small farmers has no access to new technology. Bushra, (2015) also observed that small scale agriculture production could be only increased through by providing modern agriculture technology and practice to them. She urged that women should be mainstreamed and trained to utilize the modern technology to play their active role in small scale agriculture productivity enhancement. It is therefore keeping in consideration the widespread significance of modern technology in increase in crop production and poverty alleviation from among the small farmers of the targeted area, Crop Maximization Project provided modern agriculture technology opportunities to small farmers of the targeted areas of District Charsadda.

Table No.02 Level of Technology Provided by Crop Maximization Project to Small Farmers

Level of Technology	Frequency	Percent
Small Scale Technology	142	94.67
Don't Know	8	5.33
Total	150	100.0

The information in table no.02 demonstrates the level of technology provided by the Crop Maximization Project to the small farmers of the targeted area. Most (94.67%) of the respondents verified that the project provided small scale technology to small farmers of the area while about 5.33% of the respondents were unaware about any new technology intervention of the project. The target group of the project was small farmers who has usually small piece of

land. So the use of large scale technology were not applicable, furthermore the large scale technology is very expensive and difficult to operate and maintain. That's why the project provided small scale modern agriculture technology to small farmers of the targeted area. Rao, (1995) also observed that small scale modern agriculture technology is the better option for small farmers to utilize for their agriculture developemnt and increase in farm production. According to him small scale technology is less expenisive, easy to operate and mantain. Further it is more suitable for the farm size the small farmers holds. Sensing the bimpotence of small scale modern ntechnology the policy makers of the said project also provided small scale agricultural technology to the targeted areas of district Charsadda.

Table No.03 The Project New Technology Intervention Increased the Crop Production of Small Farmers

Increase in Crop Production	Frequency	Percent
Yes	125	83.3
No	25	16.7
Total	150	100.0

Table no. 03 provides us the information about the role played by the new technology intervention of Crop Maximization Project in increase in crop production of small farmers of district Charsadda. Majority (83.3) of the small farmers agreed with the role played by the new technology of the project in increase in their crop production while 16.7% of the population disagreed with its role in increase in crop production. These facts indicate that modern technology has very key role in increasing the crop production of small farmers. it was also observed by Shepherd, (1994)that modern technology introduction brings notable increase in crop production since green revolution. He indicated that about 7% of increase occurred in the world only in food production since early 1960s. In Asia this increase is about 40%.Khattak, (2016) also studied that the rapid increase in population is the big threat to agriculture sector in near future. He urged that this threat can be overcome through the proper and suitable induction of modern technology and practices in agriculture sector. He extended his views that only through modern technology and agriculture practices the farm productin can be increased and the world food security can be secured. Likewise the new technology intervention of Crop Maximization Project also brings notable change in the crop production of majority of small farmers of the

targeted area. Though some of the respondents got no benefits from this intervention but its overall impact on crop production was very positive.

Table No.04 Before Crop Maximization Project Any New Technology were Available for the Increase of Crop Production to Small Farmers.

Availability of Technology	Frequency	Percent
Yes	60	40.0
No	90	60.0
Total	150	100.0

In table no. 04 the data indicates the status of modern technology availability before the launching of Crop maximization Project. According to tabulated data about 40% of the small farmers confirmed it that yes before the intervention of the said project the new technology were available to them while a major portion (60%) of the respondents were the answer that they were deprived from the agricultural new technology. The figures in the above table provides the information that though a good number of the respondents were availing the new technology for their agriculture purposes but still a very huge portion of the small farmers were not access to new technology and they were only relying on conventional practices of farming. That's was the main reason that majority of the small farmers were very poor and their agricultural land were hardly full filling their kitchen requirements. Alam, (2014) also find out that only through the introduction of modern technology at small scale agriculture the crop production could be increased and the life standrad of small farmers can be improved. He indicated that conventional method of agriculture increase the chance of pre and post harvest crop damage and lose. While modern technolgy manimize the risk of crop damage and lost. The main objective of the Crop Maximization Project new technology was also that to ensure the crop safty both at pre and post harvest level. Majoroty of the small farmers of the targted area utilized the modern technology intervention of the project and maximized their crop prduction.

Table No. 05 Cross Tabulation showing association between “New Technology Intervention of Crop Maximization Project” and “Increase in Crop Production” of Small Farmers

Crop Production Increased Through New Technology Intervention	The Crop Productivity of Small Farmers Increased To				Total	Statistics
	To Some Extent	To Greater Extent	To Less Extent	No Change Occur		
Yes	76	20	17	12	125	Chi-square value 13.033 P-value 0.005 Gamma value 0.049
No	11	0	9	5	25	
Total	87	20	26	17	150	

Table no. 05 provides us the information about the cross tabulation between dependent variable “Increase in Crop Production” and independent variable “new technology intervention”. The data in the above table were analyzed through Chi-square and Gamma statistics. Chi-square shows association and Gamma statistics indicates the direct relation between two variables. After applying both the tools and analyzing the data in the table, it gives 13.033 Chi-square value while the P-value is 0.005. These values indicate that there is strong association between the dependent variable and independent variable. Therefore the null hypothesis (Ho) is rejected and alternative hypothesis (H1) is accepted. The data in the table further shows that the Gamma value is 0.049. This value revealed that there is strong direct relation between the dependent and independent variables. The above facts demonstrate that the new technology intervention of Crop Maximization Project and increase in crop production of small farmers of the targeted area has very significant association and direct relation. Ranst, (2010) also studied that the needs and demands of agriculture commodities is increasing day by day. Fulfill these needs and demands the intervention of modern technology is inevitable in agriculture sector especially at small scale agriculture. The easily available and accessible modern technology to small farmers will increase the chance of increase in crop production. Crop Maximization Project tackled this major problem of small farmers of the targeted

area and provided them small scale and better suited modern technology. Majority small farmers of the targeted area utilized this fruitful intervention properly for their agriculture development. The facts and figures of this study indicates that the modern technology intervention of the project bring notable increase in their crop production. Unfortunately some of the small farmers still remained deprive from the benefits of the modern technology of the project but its overall impact on the agriculture development and productivity enhancement was positive.

Conclusion

The aim of this study was to know the role of new technology intervention of crop maximization project in increase in crop production of small farmers. After studying the available literature and by analyzing and cross tabulated the collected data, it is therefore concluded that the new technology intervention of crop maximization project imprint visible impact on increase in crop production of the small farmers of the targeted area. By adopting the new technology the pre and post-harvest crop losses decreased to maximum level. Majority of the small farmers improved their conventional agriculture system to technological agriculture by utilizing the new technology provided by crop maximization project. While some of the respondents still remained deprive from the project new technology intervention. Nevertheless the overall impact of the new technology intervention of the crop maximization project was positive.

Recommendations

On the basis of the research findings, the present study recommended following measures for improvement in the adoption of new technology intervention in the project area.

- It is recommended to give due importance to the use of modern technology for future development.
- The new technology availability and affordability should be ensured equally for all of the poor and small farmers.
- For better results and to conserve the environment, the small farmers should be provided the skill enhancement trainings regarding the operation and management of new technology. Hence the small scale agriculture could be developed in a sustainable manner.

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