

## **The Perception of Farm Advisors about the Role of Wheat Self Sufficiency Plan (WSP) in Reducing Wheat Waste in Iran**

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**Abstract:** Every year, >30% of agricultural production is being wasted and a major reason could be methods of cultivation and harvest which is being used by farmers. In order to reduce the waste and increase production of wheat, Ministry of Agriculture started a program to hire university graduated students in field of agriculture to work as advisors to train farmers, the methods to increase production and reduce wastes in the Wheat self Sufficiency Plan (WSP). The major purpose of this study was to examine the perception of farm advisors about the role of WSP in reducing wheat waste in Iran. The population for the study was 112 advisors in Qazvin province and data collected by using a questionnaire. The data was analyzed by using statistical methods in SPSS. The results of the study showed, there was a meaningful and positive relation between the effectiveness of farm advisors' role in informing farmers about reducing wastes in wheat production as dependent variable and number of contacts with experts in Ministry of Agriculture during cultivation and harvest period, number of contacts with extension experts, number of contacts with agricultural researchers, adaptability of training courses to improve skills of advisors, adaptability of university education, educational tools, formal methods of teaching, awareness of advisors about factors caused wastes in cultivation period, awareness of advisors about methods of reducing wastes as independent variables. It was also found out that methods of supervising the activities of farmers had positive impacts on effectiveness of farm advisors.

**Key words:** Farm advisors, wheat self sufficiency plan, waste reduction, effectiveness, Qazvin province, Iran

### **INTRODUCTION**

Wheat is the most widely grown cereal grain, occupying 17% of the total cultivated land in the world. Based on the latest report, >225 million ha of land is harvested for producing wheat and 659 million metric ton of wheat is expected to produce in 2009 (Economic Research Service, 2009).

It is the staple food for 35% of the world's population and provides more calories and protein in the world's diet than any other crops. An estimated 1 billion tons of grain will be needed annually by 2020 feed a world population that is rising by at least 100 million people every year. At the same time, the amount of farmland per capita is decreasing the world over due to soil erosion, encroaching human settlement and industrialization.

The demand for quality wheat products like bread in developing countries is increasing with the rising population and urbanization but the farming systems impose major constraints on the environment and the future capacity to produce. Wheat production prospects in Iran in the 2008/09 growing season are expected to be

the worst since the 1999-2001 period when total production fell to between 8.0-9.5 million ton. Region-wide drought was prevalent in the Middle East during these years with Iran's subsequent wheat import needs rising to record high levels of 6-7 million ton each year (USDA, 2008).

This is tragic in a world in which 840 million people remain undernourished and 6 million children under the age of 5 die of hunger and malnutrition each year. There could not be stronger ethical and humanitarian reasons for curbing food wastage. There are compelling environmental reasons as well from its production to disposal, considering the land, energy, chemical fertilizers, water, pesticides and more used to grow crops. In addition, the issue of storage, transportation, processing, packaging, refrigeration and further transportation must be considered (Mohammadi, 2006).

The amounts of wheat wastes in Iran during cultivation period are over 10%. It is estimated that the amount of wheat wastes during planting period are 22% (Mansourdehqan, 2002). Also, the amounts of wheat wastes during harvest period are 2% of whole of Iran's

wheat production (Izadi, 2004). It is important to point out that human, mechanical and physical factors contribute to wheat wastes. In Iran, the role of human factors in wheat wastes are 65-70% and physical and role of mechanical factors are 30-35% (Mohammadi, 2006).

Wheat has a special role in providing food security of Iran. Achieving independency in the production of strategic products like wheat is the key to the development of the agricultural sector and national economy.

Every year >30% of agricultural production is being wasted and a major reason could be methods of cultivation and harvest which is being used by farmers. In order to reduce the waste and increase production of wheat, Ministry of Agriculture started a program to hire university graduated students in field of agriculture to researchers as advisors to train farmers the methods to increase production and reduce wastes in the Wheat self Sufficiency Plan (WSP).

One of the main characteristics of the WSP is to emphasize on the role of private sector advisors in providing services and educating the farmers. The Ministry of Agriculture decided to downgrade its role in advisory services and with the cooperation of Agriculture Natural Resources Engineering Organization established a system in which university graduates were hired as agricultural advisors.

Effective advisory committees are the cornerstone of relevant, quality extension programs. Extension advisory committees fulfill the purpose for which they are established, namely helping extension professionals plan and implement need-based education programs (Barnett *et al.*, 1999).

Governments throughout the world have been looking toward more quality based and cost effective advisory services. Chile successfully privatized advisory services in the 1980s and the new services have been of better quality (Rivera and Zijp, 2002).

Increased involvement of the private sector either in delivery, funding or management of agricultural extension broadens the focus of extension personnel and makes extension service more responsive to client needs and changing economic and social conditions (Madukwe, 2006).

Interventions to develop extension services in the private sector may focus either explicitly on developing market for services or on supporting individual organizations (Zeller, 2003).

In India, to promote better agro enterprises by making best use of the available opportunities, agricultural consultancy services started in 1988 at Bangalore. The prime objective is to offer consultancy services in

agriculture allied activities, food processing, agro-industries and non-farm sector projects (Saravanan, 2000).

In the Netherlands, the extension system was privatized in the 1990s, resulting in improved skills of agents and better needs assessment of farmers (Proost and Duijsings, 2000).

The major purpose of this study was to examine the perception of farm advisors about the role of WSP in reducing wheat waste in Qazvin province. Specific objectives of the study were:

- To examine the role of the farm advisors' in reducing wheat waste
- To study the factor affecting the effectiveness of the farm advisors' performance in reducing wheat waste
- To identify the personal characteristics of advisors

## MATERIALS AND METHODS

The research type was applied, descriptive and correlation method. The population for the study was 112 advisors in Qazvin province. The validity of the questionnaire was examined by experts of Agricultural Extension and Education Department at Islamic Azad University and managers in Jihad Agricultural organization. The reliability of the questionnaire was measured by using Pilot test and Cronbach alpha method and the reliability for the overall instruments was estimated 0.89 and data collected by using a questionnaire. The data was analyzed by using statistical methods in SPSS.

## RESULTS

Findings of research showed that average age of farm advisors was 28 years. About >88% had Bachelor degree and 0.9% had Master degree. About 60% of farm advisors had studied Agronomy and only 4.5% had studied Agricultural Extension and Education. About >50% of farm advisors used one by one method for supervising the activities of farmers and only 2.7% of them supervised the activities of farmers by cooperative. The average number of farm advisors contacts with experts in Ministry of Agriculture during cultivation period and also harvest period was more than twice a week.

The results of study showed that there was relation between number of farm advisors contacts with experts in Ministry of Agriculture during cultivation period as independent variable and the effectiveness of farm advisors' role in informing farmers about reducing wastes in wheat production as dependent variable with 99%

confidence interval ( $r = 0.251$ ,  $p = 0.009$ ). Also, there was relation between number of farm advisors contacts with experts in Ministry of Agriculture during harvest period as independent variable and the effectiveness of farm advisors' role in informing farmers about reducing wastes in wheat production as dependent variable ( $r = 0.274$ ,  $p = 0.004$ ). The results of study showed that there was relation between using educational tools by farm advisors and the effectiveness of their role in reducing wheat wastes ( $r = 0.529$ ,  $p = 0.000$ ). The findings of study showed that there was relation between number of farm advisors contacts with extension experts and the effectiveness of their role in reducing wheat wastes ( $r = 0.329$ ,  $p = 0.000$ ).

The results of study also showed that there was relation between number of farm advisors contacts with agricultural researchers and the effectiveness of their role in reducing wheat wastes ( $r = 0.349$ ,  $p = 0.000$ ).

The results of study indicated that there was relation between using formal methods of teaching by farm advisors and the effectiveness of their role in reducing wheat wastes ( $r = 0.342$ ,  $p = 0.002$ ) (Table 1).

The findings of study showed that there was relation between adaptability of training courses to improve skills of supervisors and the effectiveness of their role in reducing wheat wastes with 95% confidence interval ( $r = 0.223$ ,  $p = 0.019$ ).

There was relation between adaptability of university education of farm advisors and the effectiveness of their role in reducing wheat wastes with 95% confidence interval ( $r = 0.207$ ,  $p = 0.029$ ).

The results of study also showed that there was relation between awareness of supervisors about factors caused wastes in cultivation period and the effectiveness of their role in reducing wheat wastes ( $r = 0.216$ ,  $p = 0.024$ ). There was relation between awareness of advisors about methods of reducing wheat wastes in cultivation period and the effectiveness of their role in reducing wheat wastes ( $r = 0.212$ ,  $p = 0.026$ ).

To test for statistically significant differences in effectiveness of farm advisors' role in reducing wastes in wheat production by their methods of supervising the activities of farmers, it was found out that methods of supervising the activities of farmers had positive impacts at the 0.05 level on effectiveness of farm advisors' role in reducing wastes in wheat production (Table 2). Independent variables with interval data or were coded by interval data included using educational tools by farm advisors, adaptability of training courses to improve skills of farm advisors, awareness of farm advisors about methods of reducing wastes in cultivation period were used for a multivariate linear regression analysis (Table 3). The regression analysis showed that

Table 1: Correlation between independent variables and dependent variable

Independent variables	Correlation coefficient	Significant
Number of contacts with experts in cultivation period	0.251**	0.009
Number of contacts with experts in harvest period	0.274**	0.004
Using educational tools	0.529**	0.000
Using formal methods of teaching	0.342**	0.002
Number of contacts with extension experts	0.329**	0.000
Number of contacts with agricultural researchers	0.349**	0.000
Adaptability of university education	0.207*	0.029
Adaptability of training courses to improve skills	0.223*	0.019
Awareness about factors caused wastes in cultivation	0.216*	0.024
Awareness about methods of reducing wastes in cultivation	0.212*	0.026

\*\*Correlation is significant at the 0.01 level. \*Correlation is significant at the 0.05 level

Table 2: Differences among effectiveness of farm advisors' role and their methods of supervision

Independent variable	$\chi^2$ KWT	df	Sig.
Methods of supervision	5.977	2	0.050

Table 3: Multivariate Regression Analysis (the effectiveness of farm advisors' role in reducing wastes in wheat production as dependent variable)

Variables	B	$R^2_{Ad}$	F
Using educational tools	0.169	0.261	21.813**
Using educational tools	0.155	0.381	19.137**
Adaptability of training courses to improve skills of supervisors	0.902	-	-
Using educational tools	0.136	0.450	17.066**
Adaptability of training courses to improve skills of supervisors	1.159	-	-
Awareness about methods of reducing wastes in cultivation	0.145	-	-

\*\*Significant at the 0.01 level

variables were statistically significant. The result indicated that 45.0% ( $R^2_{Ad} = 0.450$ ) of the variance in the effectiveness of farm advisors' role in reducing wastes in wheat production could be explained by the before mentioned variables.

## DISCUSSION

The results of the study showed that farm advisors have been effective in offering advisory services to the wheat farmers for reducing wheat wastes. The findings in a study done by Hosseini *et al.* (2008) showed that there was relation between number of farm advisors contacts with agricultural researchers and the effectiveness of performance of the agricultural advisors in reducing wheat production.

The findings in this study is in accordance with studies by Motamed (2004) and Hosseini *et al.* (2008) which showed there was relation between using educational tools by farm advisors and the effectiveness of performance of the advisors. The findings in a study

by Keneshlou (2002) and Hosseini *et al.* (2008) showed that there was relation between using formal methods of teaching by farm advisors and the effectiveness of performance of the advisors.

The findings in this study is in accordance with studies by Molaei (2001) and Tavasol (2004) which showed there was relation between number of farm advisors contacts with farmers and the effectiveness of performance of the advisors.

According to the findings of this study, it is suggested that farm advisors supervise the activities of farmers for reducing wastes in wheat production by cooperatives. Also, it's suggested that farm advisors use educational tools like poster and magazine for informing wheat farmers about reducing wheat. It is suggested that farm advisors meet extension experts in Jihad Agriculture for getting last information about methods of reducing wheat.

## CONCLUSION

The results of the study showed there was a meaningful and positive relation between the effectiveness of farm advisors' role in informing farmers about reducing wastes in wheat production as dependent variable and number of contacts with experts in Ministry of Agriculture during cultivation and harvest period, number of contacts with extension experts, number of contacts with agricultural researchers, adaptability of training courses to improve skills of advisors, adaptability of university education, educational tools, formal methods of teaching, awareness of advisors about factors caused wastes in cultivation period, awareness of advisors about methods of reducing wastes as independent variables. It was also found out that methods of supervising the activities of farmers had positive impacts on effectiveness of farm advisors.

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