

## Evaluation of Vegetables Farmers Participation in Agricultural Extension Activities

Mohammad Altarawneh, Ebraheem Altahat and Ali AL-Sharafat  
Department of Agricultural Economics and Extension,  
Faculty of Agriculture, Jerash University, Jerash, 26150, Jordan

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**Abstract: Problem statement:** Farmers's participation in extension activities is one of the most important issues facing extension providers in Jordan. The determination of the reasons that prevent farmers from participation in some extension activities is another problem. This study was conducted to evaluate the level of vegetables farmers' participation in agricultural extension activities in the Dear Alla area of Jordan and to investigate the reasons that prevent farmers' participation in agricultural extension activities. **Approach:** The study investigated farmers' socioeconomic characteristics, extension activities, farmers' opinion concerning the activities and the degree of participation of farmers regarding the conducted activities. The study was conducted to cover the Dear Alla area. The dear Alla area is one of the most important vegetable production areas of the Jordan Valley. The population of this study included all the vegetable farmers in this area. **Results:** The sample obtained through the simple random sampling technique. A total number of 320 vegetable farmers were selected. A structured questionnaire was designed to obtain information from farmers. The questionnaire consisted of two main parts; the first part was related to personal and socioeconomic characteristics of the sample individuals. The second part was related to extension activities. **Conclusion/Recommendations:** High, medium and low levels of interviews farmers' participation in agricultural extension activities were noticed. Three activities resembled 43% of the total investigated activities (7 activities) were high in the degree of farmers' satisfaction indicating high levels of farmers' participants. Other three activities were with medium level and also resembled 43% of the total investigated activities. The remaining activity was low in participation and resembled 14% of the total investigated activities. The date of the activity is not suitable for farmers and the preoccupation with another concern or job resembled 60% of the reasons for farmers not to participate in agricultural extension activities. The other three reasons: (Does not know the date of activity, unwillingness to participate and activities do not meet their needs) resembled the remaining 40% of the reasons for the interviewed farmers not to participate. In the light of the findings of the study extension activities should be planned with full involvement of farmers to increase their level of participation and using local leaders as contact farmers could enhance farmer participation and will be beneficial in this regard.

**Key words:** Participation, extension, agricultural extension activities, satisfaction

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### INTRODUCTION

Agricultural extension activities represent the main element in the agricultural production process. It is the motive to develop and increase production. In Jordan, the agricultural extension activities considered to be one of the most important activities in achieving the comprehensive rural development by transferring technologies from research stations to the farmers (Khalil, 2007). Many countries established their agricultural extension systems in

order to realize their national food security goals (Swanson, 2006). Success of agricultural extension programs depends largely on the optimal selection of extension activities; methods, goals and the farmers' preference of extension methods (SeEVERS, 1997). More open employee friendly organization policy has proved to enhance employee work performance (Tella *et al.*, 2007). Agricultural extension by its nature has an important role in promoting the adoption of new technologies and innovations (Shamsudin and Yap, 2011).

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**Corresponding Author:** Mohammad Altarawneh, Department of Agricultural Economics and Extension,  
Faculty of Agriculture, Jerash University, Jerash, 26150, Jordan

Extension methods and procedures effects on results of extension programs are obvious in any agricultural extension program. The results are highly related to the procedures, which in turn affected by the socioeconomic characteristics of the farmers. It is very important to investigate these characteristics (Vergot *et al.*, 2005).

In order to deploy an appropriate technology for extension service, financial, social, human and organizational sustainability should be achieved over time and policies that provide affordable access to information need to be carefully identified and examined (Hosseini *et al.*, 2009). Performance of extension agents is expected to increase if they have program development competencies and to keep extension agents competent and to further improve their performance, these competencies must be considered and upgraded and continuous assessment of extension agents' competencies and performance is recommended (Tiraieyari *et al.*, 2010). The assessment process of the extension agents' has direct relation with measuring the attitudes of the farmers towards the provided agricultural extension services by those agents. The effectiveness of extension services is also highly dependent on the ability of extension workers who are competent as the whole extension process is dependent on them to transfer information from extension organizations to the clients.

The participation of farmers in extension activities means that they contribute actively and interact with the extensionists (Maunder, 1972). The emergence of participation as an issue to be addressed within extension approaches was slower in coming to the forefront, as compared to the attention participation received within research systems. One key element of participation is an emphasis on developing the capacity of local people as an end in itself, as opposed to the purely mechanistic emphasis of participation as a means within the technology development flow that has often characterized research and extension programs (Chambers *et al.*, 1989). The involvement of local groups in the planning of Agricultural extension programs, decision making and problem solving of economic and agricultural issues requires the allocation of appropriate resources for this work (Dennehy *et al.*, 2000). The increase in farmer participation in sustainable agricultural development programs and agricultural extension services, decentralizing from activities and facilitating to apply local groups are the most important approaches for Agricultural extension in future (Allahyari, 2009).

During the late 1980s and early 1990s of the past century, increasingly more field-based experiences

emerged creating more space for methodological and institutional innovations for agricultural research and extension. Within these participatory approaches-as they became commonly known-a special emphasis was placed upon participation of local people and their communities, especially working with and through groups; and building upon the traditional or indigenous knowledge that they held (Waters-Bayer, 1989; Haverkort *et al.*, 1991). Haverkort *et al.* (1991) presents a (general) typology of participation in extension which attempts to qualify levels of intensity of farmer participation as participation in extension meetings or activities, participatory diagnoses (e.g., participatory rural appraisal, problem-census) and participation through organization. Using this typology, much of what is called farmer participation in extension falls under the first two levels.

Farmer participation in extension requires putting farmers first by placing real ownership and accountability of public extension organizations into the hands of the clients -the farmers and their communities and organizations. Antholt (1994) suggests that this might be accomplished by developing mechanisms for improving public support (i.e., cost-sharing, local taxes) that would provide resources to farmers and their organizations and allow them to choose the types of extension services that are most relevant to their needs.

The main objective of this study was to evaluate the level of vegetables farmers' participation in agricultural extension activities in Dear Alla area of Jordan. The study investigated farmers' socio-economic characteristics, extension activities, farmers' opinion concerning the activities and the degree of satisfaction of farmers regarding the conducted activities.

## MATERIALS AND METHODS

**The sample:** This study was conducted to cover Dear Alla area. Dear Alla area is one of the most important vegetables production areas of the Jordan Vally. The population of this study included all the vegetable farmers in this area. The sample obtained through simple random sampling technique. A total number of 320 vegetable farmers were selected at random for this study. The sample size was determined according to the following equation:

$$n = [(p \cdot q \cdot z^2)/e^2] / [(N \cdot e^2) + (z^2 \cdot p \cdot q) / (N \cdot e^2)]$$

Where:

n = Sample size

p = The proportion that the sample will occur

Table 1: Activities used to measure farmers' satisfaction

Activity no.	Activity
1	Agricultural exhibitions
2	Workshops
3	Seminars, lectures and discussions
4	Extension fields
5	Leaflets
6	Field visits
7	Office visits

Source: Prepared by the researchers

$q$  = The proportion that the sample will not occur =  $(1 - p)$

$z$  = The standardized score

$e$  = Error term

$N$  = Population

The sample size was determined at a confidence level of 0.95; this level was an appropriated level due to the reason that the population itself was relatively small in size. The term error was 0.05 and the Z value correspondent to this level is 1.96, the proportion that the sample will occur was 0.50 and proportion that the sample will not occur was also 0.50 and the population was 1675. The sample size according to the above mentioned equation was 311. Additional 9 farmers were interviewed:

$$n = [(p \cdot q \cdot z^2) / e^2] / [(N \cdot e^2) + (z^2 \cdot p \cdot q) / (N \cdot e^2)]$$

$$n = [(0.5 \times 0.5 \times 1.96^2) / 0.05^2] / [(1675 \times 0.05^2) + (1.96^2 \times 0.5 \times 0.5) / (1675 \times 0.05^2)]$$

$$n = 311$$

**Survey and data collection:** A structured questionnaire was designed to obtain information from farmers. The questionnaire consisted of two main parts; the first part was related to personal and socio-economic characteristics of the sample individuals. The second part was related to extension activities. To measure the degree of farmers' satisfaction five point Likert-type scale was used. Ratings on a 7 item Likert-type were used to represent the activities involved. The ratings ranged from 1 (strongly not satisfied) to 5 (strongly satisfied) as follows: 1: strongly not satisfied, 2: not satisfied, 3: slightly satisfied, 4: satisfied, 5: strongly satisfied.

The activities used to measure farmers' satisfaction are shown in Table 1. A reliability estimate (Cronbach alpha) was computed for the Instrument of data collection and it was determined to be appropriate for this study (0.82).

**Data analysis:** The data collected was analyzed using descriptive statistics such as percentages, minimum, maximum, mean, ranking and correlations. A

quantitative analysis using Likert scale was used. Both analyses were employed to analyze socio-economic information of farmers' and participation level in the study area. All analyses were conducted to answer the specific objectives of the study. In the Likert scale a numerical value is assigned to each potential choice and a mean figure for all the responses is computed at the end of the evaluation or survey. The final average score represents overall level of satisfaction toward the activity assigned. The Statistical Package for Social Sciences software (SPSS) was used in the analysis process.

## RESULTS

Table 2-5 show a summary of the results obtained from the study. Table 2 shows the socio-economic characteristics of investigated sample, while Table 3 shows the degree of farmers' satisfaction about the agricultural extension activities and Table 4 shows the reasons prevent farmers from participation in extension activities.

## DISCUSSION

Table 2 shows that the most effective category in extension activities participation is the category 40-60 years of age. This category is characterized by maturity in decision making and agricultural experience. It represents 58% of the interviewed sample. Concerning the education level, it is obvious that college graduates represent the majority of the interviewed individuals. The primary level is next then the illiterate and secondary level respectively. This inequality of scientific degree requires to be taken in consideration when preparing agricultural extension programs and extension methodologies. Table 2 also shows that more than one half of the interviewed farmers (53%) consider agriculture as a main job. This implies that more attention should be paid to this category and extension programs should consider largely this category when implementing agricultural extension programs. The table also shows that the income of almost 2/3 of the interviewed farmers is less than 500 JDs/month. Extension programs and methodologies must be properly oriented to those farmers in order to enhance the contribution of their agricultural activities to their income.

Table 3 shows the mean score by activity in rank order, as well as, the overall level of satisfaction toward agricultural extension activities. The mean score of the items in the scale represent the farmers' satisfaction

towards agricultural extension activities. Results revealed that the farmers' overall mean score for satisfaction was 3.49, indicating a positive attitude and high satisfaction toward agricultural extension activities. This high level of satisfaction resembles high level of participation in the activities. This means that we can depend on the level of satisfaction to determine the level of participation of the farmers in activities. Farmers' rated field visits, office visits and extension fields with the highest degree of satisfaction with means of 4.35, 4.13 and 3.92 respectively. This indicates that the farmers were participating effectively in those three activities compared to the other extension activities. The activities which received the lowest degree of satisfaction were the first (agricultural exhibitions) and the fifth (leaflets) with mean scores of 2.78 and 2.93 respectively. The results revealed a moderate level of farmers' participation in workshops activity, seminars, lectures and discussions activities with mean scores of 3.15 and 3.19.

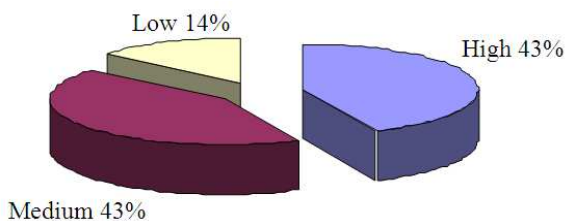


Fig. 1: Levels of interviewed farmers' participation in extension activities

Table 2: Socio-economic characteristics of investigated sample

Item	Number	(%)
<b>Age (Years)</b>		
<40	054	17
40-60	185	58
> 60	081	25
Total	320	100
<b>Education level</b>		
Illiterate	059	18
Primary	087	28
Secondary	054	17
College	120	37
Total	320	100
<b>Main job field</b>		
Agriculture	170	53
Public sector	060	19
Private sector	090	28
Total	320	100
<b>Income (JDs/ Month)</b>		
<500	220	69
500-750	070	22
> 751	030	09
Total	320	100

Source: Prepared by the researchers based on the study survey

Figure 1 shows the levels of interviewed farmers' participation according to levels of satisfaction of the farmers in activities. Percentages in the figure based on considering three levels of participation according to the levels of satisfaction. Three activities were high in the degree of farmers' satisfaction indicating high level of farmers' participation. These three activities resemble 43% of the total investigated activities. Other three activities were medium in the degree of farmers' satisfaction indicating medium level of farmers' participation. These three activities resemble also 43% of the total investigated activities. The remaining activity was low in the degree of farmers' satisfaction indicating low level of farmers' participation. This activity resembles 14% of the total investigated activities. These levels (levels of participation) were determined according to average degree of satisfaction (Table 4).

From data presented in Table 4 we deduced levels of participation of interviewed farmers in agricultural extension activities. From the table we concluded that there is a variable level of farmers' participation in the activities. This variation is attributed to several reasons. These reasons should be considered when preparing agricultural extension programs. Table 5 shows the most dominant reasons for the farmers not to participate in agricultural activities. One third of the interviewed farmers (32%) attributed their low level of participation to the reason that the date of the activity is not suitable for them. The preoccupation with another concern or job is the second important reason for 28% of the farmers. The three reasons: (Does not know the date of activity, unwillingness to participate and activities do not meet their needs) are other reasons for 40% of the interviewed farmers not to participate. Again, these reasons should be considered when preparing agricultural extension programs and methodologies.

Table 3: Degree of farmers' satisfaction about the agricultural extension activities

Activity	Average degree of satisfaction	SD*	Rank
Agricultural exhibitions	2.78	1.02	7
Workshops	3.15	1.01	5
Seminars, lectures and discussions	3.19	0.78	4
Extension fields	3.92	0.70	3
Leaflets	2.93	0.84	6
Field visits	4.13	0.86	2
Office visits	4.35	0.76	1
Total	3.49	0.83	

SD\*: Standard Deviation; Source: Prepared by the researchers based on the study survey

Table 4: Levels of farmers participation according to satisfaction

Level of participation	Average degree of participation	(%)
High	4.13: [(4.13 + 4.35 + 3.92)/3]	43
Medium	3.09: [(3.19 + 3.15 + 2.92)/3]	43
Low	2.78	14
Total		100

**Source:** Prepared by the researchers based on the study survey

Table 5: Reasons prevent farmers from participation in extension activities

Reason	No. of farmers adopts the reason	(%)
Does not know the date of activity	035	11
Not suitable date of activity	102	32
Unwillingness to participate	042	13
Activities do not meet their needs	051	16
Preoccupation with another concern	090	28
Total	320	100

**Source:** Prepared by the researchers based on the study survey

## CONCLUSION

High, medium and low levels of interviewed farmers' participation in agricultural extension activities were noticed. Three activities were high in the degree of farmers' satisfaction indicating high level of farmers' participation. These three activities resembled 43% of the total investigated activities. Other three activities were medium level and also resembled 43% of the total investigated activities. The remaining activity was low in participation and resembled 14% of the total investigated activities. The farmers' overall mean score for participation was 3.49, indicating a positive attitude and high satisfaction toward agricultural extension activities. The most effective category in extension activities participation is the category 40-60 years of age.

**Recommendations:** The farmers age category of 40-60 is characterized by maturity in decision making and agricultural experience, so specific attention should be made for this category. The inequality of scientific degree of the interviewed farmers requires to be taken in consideration when preparing agricultural extension programs and extension methodologies. Also, attention is to be made to those farmers who consider agriculture as a main job. The date of the activity is not suitable for farmers and the preoccupation with another concern or job resembles 60% of the reasons for farmers not to participate in agricultural extension activities and should be considered when preparing agricultural extension programs and methodologies. The other three reasons: (Does not know the date of activity, unwillingness to participate and activities do not meet their needs) resembles 40% of the reasons for the interviewed farmers not to participate.

In the light of the findings from the study, the following recommendations among others were made:

- Extension activities should be planned with full involvement of farmers to increase their level of participation
- Using local leaders as contact farmers could enhance farmer participation
- There should be a drive by the public authorities to educate farmers fully on the objectives, function and advantages of the agricultural extension activities

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