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THE KNOWLEDGE AND SKILL LEVEL OF AL-ABBASIYA SUB-DISTRICT FARMERS IN HOLY AL-NAJAF PROVINCE ABOUT SUSTAINABLE AGRICULTURE

Ahmed Dhahir Al-Janabi[1] and Thamer Al-Kelaby[2]
[1]Food science College, Al-Qasim Green University, Babylon, Iraq.
[2]Directorate of Agriculture in Najaf, Najaf, Iraq.
E-mail: Ahmeddhahir@fosci.uoqasim.edu.iq

Abstract

This research aimed mainly at determining the cognitive and skill level of Najaf province farmers in the field of sustainable agriculture, and the questionnaire was used in a personal interview as a means to collect study data from a simple random sample of 192 farmers representing 9% of the research population of 2135 farmers. The Arithmetic mean, standard deviation, and simple correlation coefficient (Spearman) in the study data analysis using the SPSS statistical analysis program. The most important results of the study are summarized in the presence of limited and intermediate knowledge and skill levels for farmers in sustainable agriculture, As the general average of knowledge and skills of farmers was 2.52 and 2.59, and a standard deviation of 0.34 and 0.34, respectively .It was found that the vast majority of respondents (89.6%) fall into the low and medium levels of information and 87.5% of them are located in the low and medium skill levels. Accordingly, the study recommended the necessity of building extension programs to meet the low and medium knowledge and skills needs of farmers in the field of sustainable agriculture.

Keywords : Knowledge, skill level, Al-Abbasiya sub-district farmers, sustainable agriculture

Introduction

Agricultural extension is an institutional educational system that aims directly to develop farmers and raise their productive efficiency to the available agricultural potential, increase their income, and raise their standard of living. The main aim for the agricultural extension at the national level is to accelerate the process of agricultural development, with its horizontal and vertical approaches, through organizing the investment of available natural and human productive resources, through the establishment of programs aimed at increasing productivity continuously or sustainable (Alzubi, 1997). Therefore, the primary task of the agricultural extension has become to contribute to achieving integrated rural development through its main role in agricultural development, which represents the main pillar of the rural development process. further, the policies of increasing agricultural production at the expense of the environmental balance led to negative results and the emergence of harmful environmental problems, and this is why the call for a new approach to agricultural development emerged, which is the sustainable agricultural development method, i.e., which was defined by the Food and Agriculture Organization (FAO) in 1991 as base management. Natural resources and their conservation, And directing technology and institutions to ensure the fulfilment and continued satisfaction of the human needs of present and future generations, and such sustainable development preserves land, water and plant genetic resources and does not cause environmental degradation, where it is technically appropriate, economically fit, and socially acceptable. That is, sustainable development aims to create patterns of behaviour towards integration between the environment and development that are the basis for rationally exploiting environmental resources and balance in order to achieve sustainable agricultural development centered by man and nature (Nasron, 1420 AH). Al-Zahrani and Al-Hajj (1428 AH) have shown that the conscious and wise use of natural resources led to improving the productivity and quality of agricultural crops. The behaviour and decision of a farmer to use a certain type of resources, such as chemical fertilizers or pesticides, also depends on his information or knowledge of it and his trends towards using it in an environmentally friendly way. As well as his actual practices when applying and using it. This confirms Francis and Carter, (2001) that success in increasing agricultural production without damaging natural resources depends on the development of knowledge and skill in using agricultural techniques for sustainable agriculture, which indicates the need for farmers to guide agricultural information and train them in harmless agricultural practices. In the environment, so there is a need for agricultural extension to help farmers manage their farms in a manner consistent with environmental conservation (Fridgen, 1995), (Battel and Kruger, 2005). The Food and Agriculture Organization of the United Nations (1991) added that there are many scientific conferences held regarding the conservation of natural resources, especially that the intensive use of chemicals such as chemical fertilizers and pesticides, wasteful use of water, intensive agriculture and deforestation led to the deterioration of natural and environmental resources. In Iraq, interest in the conservation of natural resources increased, so the state paid attention to the development and maintenance of rangelands and forests and set up programs for their development, maintenance and investment, and the Ministry of Agriculture issued several systems and regulations for the protection of rangelands and the organization of their exploitation. To maintain its coverage without prejudice to it or its environmental balance, believing that the relationship between development and the preservation of these resources is a solid and integrated relationship and that the balance between development requirements is the best way to raise Level of citizens' lives and maintain a clean environment. (Al-Sharif, 1420 AH), Al-Zahrani and Al-Hajj (1423 AH). The Ministry of Agriculture also adopted a comprehensive national plan to rationalize water consumption for drinking and agricultural purposes, by educating citizens and farmers on various means and methods that explain the importance of water conservation and the economy in its use and the use of

modern irrigation methods in agriculture. Therefore, interest in the relationship of agricultural production systems with natural resources in the Kingdom coincided with the global trend in increasing agricultural production without harming natural resources, which confirms the need to build extension programs in the fields of sustainable agriculture, so the problem of this research has crystallized in assessing or assessing the knowledge and skills of farmers Al-Kharj province in the fields of sustainable agriculture.

Research aim

(1) Determining the knowledge level of the Al-Abasyia farmers respondents in the Najaf province in the field of sustainable agriculture.

(2) Determine the skill level of the Al-Abasyia farmers respondents in the Najaf province in the field of sustainable agriculture.

Materials and Methods

Research region, community and sample

This research was conducted in Al-Abasyia in the Najaf province, which is located in the north of the province, about 30 km. The choice of this region is due to factors including the importance of the region agriculturally, with a total agricultural area of 65,000 dunums, and it produces economic quantities from various agricultural crops such as strategic crops, vegetables, dates and some fruits *. The research community consists of all 2135 farmers in the region * In view of the large size of the research community and the estranging of the farms from each other, it intends to take a simple random sample consisting of 192 farmers that make up 9% of the research community.

(* Statistics of the Directorate of Agricultural in Najaf - Statistics Division 2017.)

Data collection and analysis

This study was adopted using the respondents method through the use of a questionnaire designed for the purposes of collecting primary data through a personal interview. The questionnaire included two sections to fulfil the research aims. The first section dealt with questions related to the knowledge level of farmers in the fields of sustainable agriculture, while the second section included questions related to the skill level of farmers in the fields of sustainable agriculture, and the questionnaire was tested initially by presenting it to six specialists in the Agricultural Extension and Rural Society to ensure its sincerity, Also, the stability of the questionnaire was tested with its experience on 20 farmers not participating in the research using the Cronbach coefficient (alpha coefficient), where its value reached 0.90 for the phrases used to measure the knowledge, And 0.80 for phrases used to measure skills. Thus, the stability and validity of the questionnaire were confirmed. For statistical analysis, the percentages, Arithmetic mean, standard deviation, and simple correlation (Spearman) were used, depending on the SPSS program.

Results and Discussion

First - Determining the knowledge level of the Al-Abasyia farmers respondents in the Najaf province in the field of sustainable agriculture.

It is clear from the data presented in Table(1) that the farmer's knowledge level investigated in the field of sustainable agriculture is closer to the average, where the general average degree of farmers' knowledge was 2.52 and a standard deviation of 0.34 at the level of the quadrant knowledge scale. The Arithmetic mean for the phrases degrees for the farmer's knowledge level for respondents in the field of sustainable agriculture ranged between 1.80 degrees at a minimum and 3.20 degrees at maximum.

Table 1 : Arithmetic mean and standard deviations for the knowledge degrees of Najaf province farmers researched in sustainable agriculture.

Knowledge field	Arithmetic mean	Standard deviation
The use of organic fertilizers in agricultural production.	3.20	0.77
Methods and means to conserve water.	3.13	0.89
Methods for the safe use of pesticides	2.87	0.68
Using windbreaks in agriculture	2.80	0.73
Using agricultural cycles to improve soil fertility and pest control.	2.71	0.69
Use of tree-mixed cultivation systems.	2.62	0.77
Production methods at the lowest levels of tillage	2.44	0.73
methods and means to combat desertification	2.33	0.81
Maintenance of the soil surface layer and protection from erosion by wind.	2.23	0.75
Weed control without using pesticides.	2.21	0.74
Production methods without tillage	1.89	0.81
Pest control methods without using pesticides.	1.80	0.67

Measurement: 1 = no knowledge, 2 = limited knowledge, 3 = medium knowledge, 4 = good knowledge**.** Overall mean: 2.52
Standard Deviation: 0.34

It was clear from the data presented in the same table that the most well-known of these areas are those related to the use of organic fertilizers in agricultural production, methods and means of water conservation with an Arithmetic mean of 3.20 degrees and 3.13 degrees and standard deviation of 0.77 and 0.089, respectively, followed in the order defined by the methods of use Safe for pesticides with an Arithmetic mean of 2.87 degrees, Then knowledge of using windbreaks in agriculture with an Arithmetic mean of 2.80 degrees, followed by knowledge of using agricultural cycles to improve soil fertility and pest control with an average of 2.71 degrees. It was also found from the same table that weed control without the use of pesticides, methods of production without tillage, and methods of pest control without the use of pesticides were defined by the respondent farmers as low with an Arithmetic mean of 2.21 degrees,

1.89 degrees and 1.81 degrees, respectively. Perhaps the high level of knowledge of farmers using organic fertilizers in agricultural production and ways and means to conserve and Water conservation for the first and second ranks is consistent with what was found by Kotile and Martin (2000) in the US state of Iowa and Al-Subaie (2006) in his research at the Dalam Center in the Kingdom of Saudi Arabia, in addition to it Familiar methods and found great interest from agricultural officials, especially in the field of water conservation methods and means. And when distributing the respondents farmers according to the numerical value that expresses their level of knowledge of sustainable agriculture, which ranged between 18 degrees at a minimum, and 41 degrees at the highest level with an average of 30.22 degrees and a standard deviation of 4.07, and as shown in Table 2, it was found that the Categories of respondents (89.6%) fall in the middle and low-level knowledge, compared to only 10.4% in the high level knowledge ,This reflects the urgent need to plan and program extension aimed at raising the level of farmer knowledge in the Al-Abasyia district in the Najaf province in all areas of sustainable agriculture.

Table 2 : The distribution of the respondent's farmers according to the numerical value expressing their knowledge level of sustainable agriculture.

Numeric value	Number	%
Less than 27 (low)	34	17.7
27 - less than 35 (average)	138	71.9
35 and over (high)	20	10.4
Total	192	100.0

Arithmetic mean: 30.22 standard deviation: 4.07

Second - Determining the skill level of Al-Abasyia respondents in the Najaf province in the field of sustainable agriculture.

It is clear from Table (3) that the Arithmetic means of the degrees expressing the skills of farmers in sustainable agriculture ranged between 1.85 degrees at the minimum, and 3.23 degrees at the maximum. The skill level of farmers in the field of sustainable agriculture is average, with a general average of 2.59 degrees and a standard deviation of 0.34 degrees at the quadrant skill level. The skill related to the use of organic fertilizers in agricultural production came first with an Arithmetic mean of 3.23 degrees, followed by skills related to water conservation methods and Arithmetic mean, and the use of tree windbreaks in agriculture and methods of safe use of pesticides with an average of 3.20 degrees, 2.97 degrees and 2.91 degrees, which means that the skill level of farmers in these areas is medium. It was also found from the same table that the level of skills of the respondents farmers is relatively low with regard to weed control without the use of pesticides, methods of production without tillage and methods of pest control without the use of pesticides with an Arithmetic mean of 2.26 degrees, 1.90 degrees and 1.85 degrees, respectively.

Table 3 : Arithmetic mean and Standard deviations for the skills degrees of Najaf province farmers researched in sustainable agriculture

Skill field	Arithmetic mean	standard deviation
The use of organic fertilizers in agricultural production.	3.23	0.73
The method and means to conserve water.	3.20	0.81
Using windbreaks in agriculture	2.97	0.70
Safe use of pesticides.	2.91	0.68
Use of tree-mixed cultivation systems.	2.75	0.78
The methods and means to combat desertification.	2.75	0.64
Production methods at the lowest levels of tillage.	2.46	0.80
Maintenance of the soil surface layer and protection from erosion by wind.	2.43	0.70
Weed control without using pesticides.	2.37	0.82
Production methods without tillage.	2.26	0.79
Pest control methods without using pesticides.	1.90	0.75
The methods and means to combat desertification.	1.85	0.70

Measurement: 1 = unable, 2 = limited ability, 3 = medium ability, 4 = good ability
Overall mean : 2.59 Standard Deviation: 0.34

Moreover, it has been shown that the most knowledge fields are the most skilled, and the least knowledgeable are the least skilled, which makes the necessity of building extension programs to meet these knowledge and skill needs in the areas of sustainable agriculture. When distributing the respondent's farmers according to the numerical value expressing the level of their skills in sustainable agriculture, which ranged between 19 degrees at a minimum and 41 degrees at a higher level with an Arithmetic mean of 31.08 degrees and a standard deviation of 4.03. As shown in Table (4), it was found that the vast majority of respondents (87.5%) fall into the low and medium skill level categories, compared to 12.5% of the respondents only in the high skill level category.

Table 4 : Distribution of the study sample according to the numerical value expressing the level of their skills in sustainable agriculture.

Numeric value	%	number
Less than 28 (low)	14.6	28
28 - less than 36 (average)	72.9	140
36 and over (high)	12.5	24
Total	100.0	192

Arithmetic mean: 31.08 standard deviation: 4.03

Recommendations

Based on the results of the research, the following recommendations can be suggested:

(1) The need to build extension programs to meet the knowledge and skill needs of farmers in the areas of sustainable agriculture while giving farmers the opportunity to participate in their planning, implementation and evaluation.

(2) There is an urgent need to organize and implement extensive informational campaigns to educate farmers about the importance of sustainable agriculture and to convince them of their areas of use.

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