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The role of agricultural extension in confronting agricultural risks from point of view the farmers in the Nimrud district/Nineveh governorate

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Abstract

The research was conducted in the Nimrud district of Nineveh Governorate, and the research aimed to identify the role of agricultural extension in facing agricultural risks from the point of view of farmers in Nimrud district / Nineveh Governorate, and to identify the correlation between the role of agricultural extension in facing agricultural risks from the point of view of farmers and the following independent variables (level of education, age, number of years of work in agriculture, area of cultivated land, agricultural information sources) in addition to identifying the most important problems facing agricultural extension workers in Facing agricultural risks. The number of farmers in the district is about (600) farmers, of whom a random sample was taken by 20%, thus the percentage of the sample is (120) farmers. For the purpose of collecting data from the respondents, a tool must be prepared for data collection, which is the questionnaire form, which consisted of three parts, the first part, which included the data of independent variables. The second part is a measure of the role of agricultural extension in facing agricultural risks, while the third part included the most important problems facing extension workers from agricultural risks. The findings revealed that agricultural extension has a weak role and the findings indicated that the predictors (education, age, and cultivated land area) were better correlated with the extension role in confronting agricultural risks, while the other variables did not show any significant impact on the extension roles. The researcher also recommended increasing the interest of the Central Administration for Agricultural Extension in the field of agricultural risks, in particular, focusing on increasing agricultural extension services to prepare for the potential agricultural risks in the research area.

Keywords: Agricultural risks, role, agriculture extension

Introduction

Concerns over the agricultural environment being exposed to crises has been one of the most significant concerns as it relates to food shortages, water, inefficient use of energy-producing resources, environmental contamination Many countries have faced, in the past few years, various crises, including torrents, hurricanes, earthquakes, drought, frost and severe heat waves, and these are all natural and have nothing to do with humans, while the problems of environmental pollution of various types of water, air, soil and other pollution are man-made and cause great damage to it and threaten its health and resources, (Abd Halim *et al*., 2015: 210) [3]. Countries, regardless of their level of development, are starting to pay more attention to environmental crises in agriculture and the damage they cause to agriculture, the environment and the national economy (Awad *et al*., 2022: 280) [8]. Many conferences and international organizations have been held for it in order to find solutions to it in a global framework, and the agricultural environment and its problems have not been as important over the past years as they are at the present time. The issue of protecting the environment and protecting humans from these crises has never been raised in the intensity with which it is being raised now, perhaps due to the relationship of man with his environment (Abdel Hamid, 2012). In the present era, it has reached the point of danger due to the increase in the degrees of damage, to the point that it threatens the life and survival of all living things on the surface of the globe, especially humans (Abdel Halim, 2005) [7]. There are many diverse and overlapping environmental risks that must be considered and classified well and appropriately, and there is a vicious circle of environmental risks in these rural environments as an open system, and there are still questions that have not been answered accurately related to the degree of awareness of agricultural extension workers about these risks and the extent of the damage caused by them and the affected groups**,**In addition to identifying proposals for a solution to these risks, which necessitated the need to conduct this research on the role of extension in confronting rural environmental risks, especially farms, in an attempt to identify this role from the point of view of agricultural extension workers and farmers exposed to these risks. The role of agricultural extension after crises can be identified in: analyzing seasonal and non-seasonal risks and how to manage them, aiding farmers in their choice of management decisions for their farms, crops, water and land resources to mitigate risks and optimize their agricultural resource use efficiency, and applying the respective agricultural technologies and practices to sudden environmental changes, in each region, according to anticipated or unanticipated crises for certain conditions, where it is

prudent to deploy appropriate varieties that have lesser needs for irrigation water, and to reduce the area cropped out for future consumption, and so-on. for water, growing alternative crops for the same purpose with lower water consumption, and changing some agricultural processes (Barba´s.et.al, 2025 Agricultural extension seeks, through its agricultural educational extension programs, to secure the food and clothing needs for all members of society, especially the poor, which can be accomplished by the optimal use of available agricultural production, and total agricultural production can be improved with an enhanced agricultural thesis that reduces agricultural production risks, and decreased risk in agricultural production, yields an increased possibility of agricultural expansion and quality, which increases the possibilities of self-sufficiency substantially and the contribution of the agricultural sector In attracting foreign exchange earnings (Mansour: 2000) [5], and scholars believe that one of the most important functional duties of the guidance bodies are: determining the guiding policies in the light of national considerations, organizing the relations between the guidance system and other bodies, and between it and the mentors, and adapting to situations and crises and the speed of disposing of them (Swailem: 1998)[2]. In general, the most significant roles of the extension organization, in managing agricultural risks and crises faced they are exposed to, is providing correct information and accurate statistics needed for planning, preparatory guidance directives and supports, determining enough budgets, determining priorities in relation to the objectives to be achieved, forecasting possible difficulties and obstacles, and take proactive measures to mitigate them, pre-archaining issues and crises, to be assessed or how we will respond to of situations decisively, when they arise(Al-Qarali: 2006) [4].

Research Objectives

1. Identifying the role of agricultural extension in confronting agricultural risks according to farmers in the Nimrud District/Nineveh Governorate.
2. Identify the relationship between the role of agricultural extension in confronting agricultural risk from the viewpoint of farmers and the following independent variables -- education level, education, years of work experience in the field of agriculture, area of cultivated land, sources of agricultural information.
3. Identifying the most important problems facing agricultural extension workers in facing agricultural risks.

Materials and Methods

The research was conducted in the Nimrud district of Nineveh Governorate, which is one of the districts famous for the cultivation of agricultural crops of vegetable and grain crops. The number of farmers in the district is about (600) farmers, of whom a random sample was taken by 20%, thus the percentage of the sample is (120) farmers. For the purpose of collecting data from the respondents, it is necessary to prepare a tool for data collection, which is the questionnaire form, which consisted of three parts, which is the first part, which included the data of independent variables, which is age and was measured by the number of years of the researcher's life at the time of collecting data from it, and the level of education was measured by seven levels, namely (illiterate - reads and writes - primary - intermediate - preparatory - institute - college), as for the number of years working in agriculture, the farmer's experience in agricultural work is measured by the number of years, while the land area was measured The number of dunums owned by the farmer, while the variable of agricultural information sources was measured by a scale consisting of (10) items. I have given her alternatives (expensively, sometimes, I don't call). The second part comprised a scale to assess agricultural extension's role in facing agricultural risks from the farmers' perspective, and this may include 24 items, and the following options were presented (I do it to a large degree - I do it to a medium degree - I do not) and the numerical values (3-2-1) were given respectively. The third part included the most important problems facing agricultural extension workers in facing agricultural risks. After completing the preparation of the form, it was presented to specialists in the agricultural extension specialization in order to verify the apparent truthfulness, after that it was presented to specialists in field crops and horticultural sciences to obtain the authenticity of the content. After completing the design of the form in its final form, it was distributed to the respondents on an initial sample consisting of (30) researchers to obtain stability. After collecting the data, it was unpacked, classified and analyzed using the spss program. Where statistical methods were used, the range, the weighted arithmetic mean, the Pearson and Spearman correlation coefficient, in addition to the standard deviation.

Results and Discussion

Identifying the role of agricultural extension in facing agricultural risks from the point of view of farmers in Nimrud district / Nineveh Governorate.

It is clear from Table (1) that the highest numeric score (62) and the lowest numeric score was (36), with an arithmetic mean of (170) and a standard deviation of (17) and the respondents were divided into three sections according to the actual range, where the percentage of the low category ranged (36-44) (63.34%), and the percentage of the middle category (45-53) (27.50%), while the percentage of the large category (54-62) (9.16%). As shown in Table 1.

Table 1: Distribution of repondents according to the role of agriculture extension in facing agricultural risks from their point of view

Categories	Frequency	%	متوسط الدور
Low (36-44)	76	63.34	194.208
Medium (45-53)	33	27.50	206.979
High (54-62)	11	9.16	219.821
Total	120	100	

From the above table, it can be identified that more than three quarters of the respondents belong to the low category, and this indicates that the agricultural extension's role in regard to agricultural risk is very weak, and this may be due to the absence of the extension role through the lack of extension activities practiced in the research area related to the subject of agricultural risks and how to confront them in terms of the lack of training courses, workshops and seminars related to this topic. This study may agree with

(Hameedet.al,2024).

Identify the correlation between the role of agricultural extension in facing agricultural risks from the point of view of farmers and independent variables

Table (2) shows the correlation between the extension role in facing agricultural risks and independent variables.

Level of education: From Table (2), it is clear that the level of education of the respondents was divided into six categories, namely illiterate and was (8.33%), while the percentage of respondents who read and write was (16.66%), while the percentage of respondents who have a primary and intermediate certificate (10%) and (18.33%) respectively, while the percentage of respondents who have an institute and college certificate (25%) and (21.66%) respectively. It is clear from the table below that the majority of respondents have a relatively high level of education, and to identify the correlation between the guiding role in facing agricultural risks and the level of education, use the Spearman correlation coefficient, which amounted to (0.337), which is significant at the level of 0.01. This result may be due to the educational level of the respondents in general, It leads to increasing the information and knowledge of farmers on various agricultural topics, most of which are related to agricultural risks such as soil salinization, soil waterlogging, misuse of chemicals and lack of awareness of them.

Table 2: Identify the correlation between the role of agricultural extension in facing agricultural risks and each of the independent variables

Variables	Sig	Rs value	R value	%	Frequency
Education level					
Illiterate				8.33	10
Read & Write	*	0.337		16.66	20
Primary			10	12	
Secondary			18.33	22	
Institute			25	30	
College			21.66	26	
Age	*	0.190			
(30-39) year			62.50	75	
(40-49) year			12.50	15	
(50-59) year			25	30	
Number of years of agricultural work	n.s	0.047			
(13-19) year			67.50	81	
(20-26) year			16.66	20	
(27-33) year			15.83	19	
Area of the cultivated land	*	0.191			
Low (20-28) dunum			66.66	80	
Medium (29-37) dunum			20.84	25	
High (38-46) dunum			12.50	15	
Agricultural Information Sources	n.s	0.063			
Low (10-15)			62.50	75	
Medium (16-21)			20.84	25	
High (22-27)			16.66	20	

Age: Table (2) shows that the minimum age of the respondents is (30) years and the highest age (59) years has been divided respondents according to this variable into three categories, namely low (30-39) years and reached (62.5%), while the middle category (40-49%) year amounted to (12.5%), while the percentage of the high category (50-59) (25%). This indicates that most of the respondents are young people. The correlation between the guiding role in the face of agricultural risks and age does not find the use of Pearson's correlation coefficient, which amounted to (0.190), which is significant at the level of 0.05.

Perhaps the reason for this is due to farmers with young or young ages who have activity, sense and motivation towards learning and participating in various agricultural activities that are reflected in increasing their knowledge and information, which made them always ready to face the various agricultural risks they face in their fields and farms.

The number of years of work in agriculture: It is clear from the table that the least work service for farmers in agricultural work was (13) years and the most service was (33) years, and the respondents were divided according to this variable into three categories, where the percentage of the low category (13-19) years (67.50%), and the middle category (26-20) years was (16.66%), while the percentage of the high category (27-33) years (15.82%). This shows that most farmers did not have much agricultural experience. In order to know the correlation between the guiding role in facing agricultural risks and the number of years of work in agriculture, Pearson's correlation coefficient was used, which amounted to (0.047), which is not significant. Perhaps the reason for this is that the small number of years of work for respondents in agriculture led to a decrease in their experience, which was reflected in their lack of knowledge in facing agricultural risks.

The area of cultivated land: Table (2) clearly illustrates that the lowest area of cultivated land among the respondents is (20) dunums and the highest is (46) dunums. The respondents were then classified into three categories according to the crop cultivated area variable, where the low category of (20-28) dunums was equal to (66.66%); while the medium category of (29-37) dunums was (20.84%) and

the higher category of (38-46) dunums equaled to (12.50%). To identify the correlation between the guiding role in facing agricultural risks and the area of cultivated land, Spearman's correlation coefficient was used, which amounted to (0.191), which is significant at the level of 0.05. Perhaps the reason for this is that the larger the area of cultivated land for the respondents, which led to an increase in the motivation of farmers to search for information, modern methods and techniques that can be used and exploited in their lands to increase production, which makes them more aware of the agricultural risks they face.

Agricultural information sources: It is clear from Table (2) that the lowest numerical value is (10) and the largest value (27), and the respondents were divided according to the variable of agricultural information sources into three categories, where the percentage of the low category (10-15) (62.50%), and the percentage of the medium category (16-21) (20.84%), while the high category (22-27) (16.66%).
To identify the correlation between the guiding role in facing agricultural risks and agricultural information sources, Spearman's correlation coefficient was used, which amounted to (0.063), which is not significant. Perhaps the reason for this is that most of the respondents had few sources of information, which was reflected in their lack of awareness and awareness of how to face the various agricultural risks in their fields.

Identifying the most important problems facing agricultural extension workers in facing agricultural risks.
Table (3) shows the ranking of the most important problems facing agricultural extension workers in their face of agricultural risks, where these problems were arranged according to their relative importance by the respondents using the weighted arithmetic average. Where we note that the problem (lack of material capabilities allocated to face agricultural risks) ranked first with an arithmetic average of (3.77), and perhaps the reason for this is due to the importance of this paragraph, as the provision of material and moral capabilities is one of the most important basic principles and main steps to confront agricultural risks and environmental disasters in the fields of farmers and agricultural and rural areas, as the provision of capabilities will work on the use of agricultural technology and techniques that reduce or reduce the occurrence of crises and environmental and agricultural disasters in addition to compensating those affected by Farmers and members of the rural community.

Table 3: Ranking of the problems facing agricultural extension workers to face agricultural risks according to their relative importance

Problems	Arithmetic mean	Rank
Lack of material resources allocated to face agricultural risks	3.77	
Lack of agricultural extension workers specialized in facing agricultural disasters	3.56	
Farmers' lack of confidence in agricultural extensionists	3.33	
Lack of awareness of farmers on ways to face agricultural risks	3.21	
Lack of extension visits to farmers	3.11	
Lack of government support to address agricultural risks	2.85	
Lack of agricultural risk forecasters	2.65	
Lack of television and radio programs on agricultural risks	2.55	
Lack of participation of farmers in extension activities related to facing agricultural risks	2.11	

While the paragraph (lack of participation of farmers in extension activities related to facing agricultural risks) ranked last according to its relative importance and an arithmetic average of (2.11), perhaps due to the low importance of this paragraph, as most farmers participate in various extension activities in the research area, including training workshops, seminars and training courses that benefit farmers in several different agricultural topics in general and facing agricultural risks in particular, which made this paragraph or problem rank last according to its relative importance. by the respondents.

Conclusion

1. Based on the results of our findings, we inferred that the role of agricultural extension in the area of facing agricultural disasters was inadequate due to low levels of extension activity directly involving the topics in the study area.
2. The younger the respondents, the greater their motivation and enthusiasm in the face of agricultural risks.
3. The higher the level of education of the respondents, the more they face agricultural risks better than those with a low or low scientific level

Recommendations

1. Increasing the interest of the Central Administration for Agricultural Extension in the field of agricultural risks, especially since the impact of these risks may extend for years, which affects the agricultural sector, which is characterized by high risk in production because it is more affected by natural conditions than other sectors.
2. Planning extension programs and training agricultural extension workers to deal with potential agricultural risks.
3. Focusing on increasing agricultural extension services to prepare for potential agricultural risks in the research area.

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