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A Suggested Visualization of Extension Service Quality for Vegetable Farmers from Their Viewpoint in the Governorate of Baghdad

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Abstract :
The research aimed to prepare a proposed perception of the quality of extension service for vegetable farmers from their point of view in the governorate of Baghdad, and in order to achieve the aim of the research, a scheme was prepared consisting of (45) criteria distributed into (10) fields, which are : Sources of service provision , Objective of extension service, Targeted ,The basis for preparing the advisory service,The timing of providing the service, The subjects and content of the extension service, The method and methods of the extension service, The service providers, Interaction, coordination and joint work, Monitoring, evaluation and continuous improvement. Data were collected from a random sample of 108 respondents from vegetable farmers 30% of the agricultural divisions in each district in Baghdad governorate amounted to three agricultural divisions, namely Mahmoudiya, Yusufiya, and Al-Madaen, as well as reviewing documents and reports, and personal interviews with the directors of the concerned agricultural divisions, and getting acquainted with the approval of vegetable farmers towards the proposed perception scheme for the quality of service. The indicative method is by means of a questionnaire that included a quadruple scale of approval, consisting of : strongly agree, agree, disagree, completely disagree, with a garde of 1,2,3 and 4 respectively. The data were collected during the last two months of the year 2020, and the results of the research were concluded that each of the fields and Standards of the proposal obtained a weighted mean between (3.01-3.38), which are greater than the hypothesis of (2.5) degrees,and coupled with all the above-mentioned fields and standards achieved their final form. It was concluded from this that the respondents are aware of the importance of standards that should be met in the agricultural extension service, and that vegetable growers are able to determine the characteristics of this service that is provided to them, and this confirms their need for an extension service that is described with quality in all its components. Accordingly, the two researchers recommended that the extension organization and its local organizations work to achieve quality in the extension service provided to farmers with continuous improvement and the importance of adopting and adopting the fields and standards of this study in order to apply them in activities, projects and extension programs to provide a quality extension service that meets the needs of farmers and help them manage their activities. Properly and sustainably agricultural .

Key words : Visualization, Quality, Vegetable farmers

Introduction

Vegetables are one of the basic components of agricultural production in the world. Besides, it represents an agricultural and economic activity in which millions of farmers and their families work and it is an important source of their income and the main source for food and in achieving sustainable food security, its products are basic inputs in many food industries. This activity has witnessed an expansion of cultivated

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areas, where the area planted with vegetables was estimated at 1.1% of the total agriculture in the world (12), with an increase in its production amounted to 1.13 billion tons in the world in 2019 (18). Therefore, this agricultural activity receives great and continuous attention in the field of developing it in terms of quantity and quality and improving its productivity and production, including the development of various services that vegetable growers need because they are the basic elements of this agricultural activity. The National Development Plan (2018-2022) emphasizes the development of cultivating vegetable crops in quantity and quality(19).The vegetable cultivation activity in Iraq ranks sixth in the group of Arab countries producing vegetable crops, as its productivity increased during the year 2019, with an increase of 24.1% (11). This agricultural activity is a basis for thousands of farmers, their families, and their main source of income, where the agricultural activity is widespread in most, if not all, of Iraq's governorates. Despite this, vegetable farmers face various challenges, foremost of which is the sustainability of increasing productivity and agricultural production, improving its quality. Coupled with, reducing losses during the production stages from harvesting to post-harvest, reducing costs and improving their lives while preserving the resources available in their fields and reducing the effects of climate change. Moreover, improving economic returns and increasing the capacity for excellence and competitiveness, especially in the flow of agricultural commodities, primarily vegetables from outside the country, and their impact on farmers and their production. Then, improving the national economy by making a clear contribution to recovering and increasing agricultural sector production in GDP (1). Facing the challenges of agriculture in general and the challenges of vegetable farmers, in particular, require leaving the traditional work and upgrading the extension service, as traditional work is no longer an appropriate option (13). Thus, it requires achieving a qualitative leap in meeting the needs of farmers and applying one or more of the appropriate modern extension approaches that have proven their importance in many countries (7). Since countries that have very advanced agriculture, such as the United States and the Netherlands, are those that have a strong and effective extensions (22). In practice, this strategy is reflected in meeting their needs, and at the forefront of which are the knowledge, skill, and technical needs in various fields (3). Therefore, agricultural extension is witnessing a transitional phase on the global scale, in improving its effectiveness to make it more responsive to farmers' needs and the level of their challenges (10). An extension is a system to facilitate farmers and their organizations' access to knowledge, information, and technologies, and their interaction with the relevant parties. This system aims to develop their administrative, organizational, and technical skills and practices and develop them in managing their agricultural activities in the best possible way and increase their productivity, production, and economic return (26). Along with, teaching farmers how to make appropriate decisions to address, resolve and overcome problems (5). Effective extension service is that which responds to the needs of farmers in meeting their needs and achieving their satisfaction. However, providing effective agricultural extension services is the key to increasing agricultural production and productivity for farmers in general and vegetable farmers in particular (16). The extension service provides information and services that are needed and requested by farmers to help them in developing their technical, organizational, and managerial skills and practices in order to improve their livelihoods and well-being (24). There are many approaches to improve the extension service's response to the farmer’s needs, and there is no one suitable entrance that is applied and the choice of the entrance remains in light of various considerations. Quality is one of the applied

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entrances adopted by many international organizations, including the World Organization for Economic Development (9), in addition to what Al-Taiy mentioned about the importance of studying quality in agricultural extension (6). Quality is a contemporary administrative approach that has contributed to the development of organizations, programs, and projects in the fields of productivity and service. Similarly, it emphasizes conformity and means the application of standards that should be available, and suitability and means meeting the need and achieving satisfaction (21). The French Association for Standardization defined quality as "the ability of a product to satisfy the desires of targeted, define their needs and translate them into a set of characteristics upon which the design process is based" the International Organization for Standards defined it as "the total characteristics of an activity or process, a product, a system, an individual , Or a combination of them " and the American Standards Institute defined it as " the totality of the characteristics and features of the product or service that make it capable of meeting the needs of the target population "(14). The quality of extension services can be measured from two perspectives, the first focuses on measuring the quality of the service organization and its workers, the second perspective focuses on the actual beneficiaries, who are vegetable growers. Achieving quality is an appropriate strategy to improve the extension service. Therefore, attention to the issue of quality for agricultural extension service is considered a fundamental requirement in achieving sustainable agricultural and rural development, achieving food security, and addressing the serious challenges facing the country (6). The quality of extension service is one of the basic objectives of service organizations, including the agricultural extension organization and its ability to provide promising services. Accordingly, the great challenges in the current stage impose the necessity of improving agricultural extension services, including the extension service provided to the vegetable grower, which is consistent with the vision of the agricultural extension and training department in the country to provide excellent extension services to upgrade. Further, developing the agricultural sector and the services provided to farmers and improve their effectiveness to achieve better results in the field of vegetable cultivation activity, which is widely spread in most governorates, including Baghdad. In order to achieve the quality of extension service from the farmers' point of view, the following question arises:

The standards that must be available in the extension service to describe quality from the farmers' point of view?

Accordingly, the general research objective is to prepare a proposed vision for the quality of extension service for vegetable growers from their point of view, and it includes the following sub-objectives:

1.A general description of the respondents and the activity of growing vegetables and participating in extension activities

2.To see if vegetable growers agree to the proposed scenario

3.Finalize the proposed scenario.

Materials and research method:

This research classified within the framework of descriptive research that is concerned with describing the event or phenomenon in a scientific and accurate description and trying to explore solutions and interpretations based on the results of data and information (2), where the governorate of Baghdad was chosen as an area to research because it is described by the wide range of vegetable growing activity in it.

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Research community:

All the agricultural divisions in which there is a clear and significant agricultural activity in the field of vegetable cultivation, which is ten agricultural divisions. They are distributed by 6 divisions in the Baghdad Agriculture Directorate / Al-Karkh * (Al-Latifiyah, Yusufiyah, Mahmudiyah, Al-Nasr Wal Salam, Al-Kadhimiya, Al-Radwaniyah Al-Sharqiya), where the total number of vegetable growers in it is 3651 farmers. Besides, 4 agricultural divisions in the Baghdad Agriculture Directorate / Al-Rusafa * are (Al-Nahrawan Al-Jisr, Al-Rashidiya, Al- Madain), with a total number of vegetable growers reached 1034 farmers.

Research sample:

A proportional random sample of 30% of the agricultural divisions was chosen in each district, they are three divisions distributed by two divisions: Mahmudiya and Yusufiya in the Baghdad Agriculture Directorate / Al-Karkh and Al-Madain Agriculture Division within the Baghdad Agricultural Directorate of Rusafa. Then, A disproportionate stratified random sample of two districts was selected from each agricultural division. They are a total of 6 districts are distributed in 4 districts in the Baghdad Agriculture Directorate / Al-Karkh which are (5 / Beer Al-Hamam and 18 /Al-Harkawi Northern) in the Yusufiya Agricultural Division and (36/Abu shama and 22/Al-Mahmudiya) in the Mahmudiya agricultural Division. Moreover, two districts in the Baghdad Agriculture Directorate / Rusafa, are (5/Al-Safi and 9/Al-Ja`ara) in Al-Madain Agriculture Division. Finally, a disproportionate stratified random sample of vegetable growers was selected, which amounted to 18 farmers from each district, totaling 108 farmers distributed among 72 farmers in Baghdad Agriculture Directorate / Al-Karkh and 36 in Baghdad Agriculture Directorate / Rusafa.

Research scheme:

Generally, the research plan was prepared in light of the literature and related studies and field interviews that included some extension staff in the agricultural extension and training department, the extension center, and the extension department in the two directorates of agriculture in the governorate. Also, some farmers and agricultural leaders in order to benefit from their opinions and observations on enhancing the topic importance and the need for it and what is possible to focus on it from fields and paragraphs. The scheme may consist of 45 standards, distributed into ten fields: the sources of service provision, the objective of service, the targeted, the basis for preparing the service the timing of providing the service. Besides, the topics and content of service, the method and modalities, the service providers, interaction, coordination, and joint work, monitoring, evaluation, and continuous improvement. The research scheme was presented in its initial form to 10 experts in the field of agricultural extension and horticulture who are members of the faculty at the College of the Agriculture / University of Baghdad, using a questionnaire. It included the fields and standards of the scheme in order to indicate their approval for each field and standard in light of the Likert scale consisting of three statements (Agree, agree with modification, disagree). A cut-off point of 75% of the experts 'approval degree for each component of the scheme (fields, standards) has been set in its initial form. Then, a numerical value was specified for each statement in the experts 'approval scale, as follows: two degrees for agreeing, one degree for agree with modification, and zero for disagree. Average approval degrees were calculated for each field in the scheme, and all fields and paragraphs obtained approval percentages ranged between 80-100%. Thus, in all of them, the proposed standard was achieved its the final form.

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In order to verify the reliability of the questionnaire, a random sample was selected from Al-Madain Agriculture Division, District 6/ Bowie. The data were collected from them using a questionnaire and the interviewing method (preliminary testing of the questionnaires to verify their suitability and conducting the necessary adjustments) consisting of 10 respondents from vegetable growers. The reliability coefficient was calculated using the Cronbach's alpha coefficient and the values of the reliability coefficient ranged between (86_100%) degrees, all of which express scientifically acceptable coefficients that meet the research purposes. Thus, the respondents 'questionnaires, in their final form, became applicable.

Results and discussion

The general objective is to prepare a proposal for the quality of extension service for vegetable growers from their point of view, which includes:

The first objective: a general description of the respondents and the activity of growing vegetables and participating in the extension activities

1. Age: The research results showed that the highest percentage of age is 45% for the farmers, while the lowest percentage is 17%. On the other hand, 49 farmers are between (38-62) and 18 farmers are between (63-87).
2. Academic achievement: The research results showed that the growers range from (illiterate - institute and higher), where the highest percentage of vegetable growers is 41% within the intermediate school category. Likewise, the lowest percentage is 5% for each of the two groups: illiterate and institute and higher.
3. Duration of practicing agriculture: The research results showed that the highest duration of the respondents' practice of growing vegetables for more than ten years was 84%, and 16% for less than ten years. The results also showed that the highest degree of family members practicing this activity in agriculture was 94%, and less duration 6%.
4. Agriculture system: The research results showed that the highest numerical value was for the open and plastic farming system, at a percentage of 42.5%, while the percentages were equal for each of the open and tunnels farming systems, at a percentage of 30%.
5. The importance of vegetable cultivation in agricultural income: The research results showed that the vegetable growers considered the vegetable cultivation activity as their main source of income, as the highest percentage was within an important level of 77%, and that 23% was within a somewhat important level.
6. The participation of vegetable growers in extension activities: The research results showed that the highest participation rate was within the activity (watching a TV program), which amounted to 78.7% by 85 farmers. However, the lowest participation rate was within the activity (participation in the explanatory field), at 3.7% with 4 farmers, and that the number of farmers participating in watching a TV program, and that the vegetable growers participating in the activity of the explanatory field are. Table 1 showed a clear absence of activities (attending an extension meeting and participating in a field day).

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Table (1) Distribution of the respondents' participation in agricultural extension activities

Participate in extension activities	Frequencies	%
An extension activity has been implemented in the farm	22	20.3
A visit to the extension unit	73	67.5
Attending a mentorship meeting	0	0
Participate in a seminar	61	56.4
Get a flyer or poster	19	17.5
Participate in a training course	11	`10.1
Participate in the explanatory field	4	3.7
An informational messages via mobile	36	33.3
Watch a TV extension program	85	78.7
Listen to a radio extension program	59	54.6
Participate in a field day	0	0

It can be concluded from Table (1) there are few field extension activities, most of which are theoretical, and the lack of specialized activities in the activity of vegetable cultivation. This is a negative indicator point out the insufficiency of agricultural extension services in meeting the needs of vegetable growers, and this means that the extension work is still below the required level. As a consequence, is considered a traditional work because the agent is a teacher and the farmer recipient only in his style, policies, methods of presentation, and the content of his extension messages, and does not stem from the actual needs and problems of farmers.

The second objective: identifying the agreement of vegetable growers to the proposal

The first field: the sources of service provision

The research results showed that the proposed standard in the field of service provision sources obtained a weighted mean of 3.01 degrees and a percentage weight of 75%, which is greater than the hypothetical mean for the scale of 2.5 degrees as shown in Table 2.

Table (2) Distribution of respondents according to the proposed standard in the field of service provision sources

Seq.	Proposed standard in the field of service provision sources	Weighted mean	Percentage weight %
1	It was provided by a variety of parties, the extension department, specialized agricultural companies, and other agricultural companies	3.01	75

It can be deduced from Table 2 that most vegetable growers realize the importance of the extension service being multi-source and not limited to the government sector only. Plus, it is a positive indication of the distinction of other sectors in a rapid response at the farmers' request and keeping abreast of agricultural developments, changes, and developments in the field of vegetable cultivation, which helps in increasing and improving productivity and production. These results are consistent with several studies on the importance of providing agricultural extension services from various information sources to support and develop knowledge, performance, and innovation (23).

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The second field: the agricultural extension service objective:

The research results showed that the proposed standards in the extension service objective, which amounted to 3 standards obtained a weighted mean of 3.18 degrees and a percentage weight of 79.6, which is more than the hypothetical mean for the scale of 2.5 degrees, as in listed Table 3.

Table (3) Distribution of respondents according to the proposed criteria in the field of extension service objective, according to weighted mean and percentage weight

Seq.	Seq. according to importance	Proposed criteria in the field of extension service objective	Weighted mean	Percentage weight %
1	2	It aims to facilitate access of vegetable growers and their organizations to sources of knowledge and information	3.16	79
2	1	The service objectives at helping vegetable growers develop their administrative, technical, and organizational practices in the vegetable growing activity	3,28	82
3	3	Help vegetable growers transform their systems into sustainable ones	3.12	78
Total			3.18	79.6

It can be concluded from Table 3 that most of the vegetable growers have approved the standards of the extension service objective, and this is a positive factor to achieve the access of vegetable growers and their organizations to sources of knowledge and information. Combined with. the importance of that the objective of service is to preserve the natural resources of vegetable growers and ensure their sustainability and work to reduce costs and improving economic returns to farmers.

The third field: who are targeted by the extension service

The research results showed that the proposed standards in the target of the extension service, which amounted to two paragraphs obtained a weighted mean of 3.38 degrees and a total percentage weight of 84% which is greater than the hypothetical mean for the scale of 2.5 degrees, as shown in Table 4.

Table (4) Distribution of respondents according to the proposed standards in the targeted field of the extension service, according to weighted mean and percentage weight

Seq.	Seq. according to importance	Proposed standards in the targeted field of the extension service	Weighted mean	Percentage weight %
1	2	To include all categories of family members participating in the vegetable cultivation activity	3.30	82.5
2	1	To focus on the groups with the least access to extension service, they are women and rural youth	3.46	86
Total			3.38	84.5

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It can be concluded from Table 4 that most of the vegetable growers approved the standards targeted for the extension service, and this is a positive factor in achieving a broad and more comprehensive extension service to face the current situation of the agricultural sector in the country. Especially for rural women and rural youth who are considered the least able groups to access extension services, and this is consistent with the study findings of (15).

The fourth field: the basis for preparing the extension service

The research results showed the proposed standards in the basis of preparing the extension service, which amounted to 4 standards that obtained a total weighted mean of 3.21 degrees and percentage weight of 80%, which is greater than the hypothetical mean for the scale of 2.5 degrees, as in Table 5. It can be concluded from Table 5 that most of the vegetable growers approved on the standards of the basis of preparing the extension service. This is a positive indication of the importance of building the extension service based on the needs and requirements of vegetable growers and their actual problems and a reliable database to achieve an effective extension service. Since one of the most important tasks of the agricultural extension organization to achieve quality is the study of farmers' levels and their different needs and desires, and meeting them to achieve their satisfaction, which is consistent with a study finding of (8).

Table (5) Distribution of respondents according to the proposed standards in the field of the basis of preparing the extension service according to weighted mean and percentage weight

Seq.	Seq. according to importance	Proposed standards in the field of the basis of preparing the extension service	Weighted mean	Percentage weight %
1	2	Real and effective participation of farmers or their representatives in planning and preparing activities, projects, and special extension programs	3.25	81
2	3	It is built based on a reliable and extensive database of vegetable growers as a basis for preparing the needs, problems, and characteristics of the farming systems	3.20	80
3	1	The extension plans should be prepared based on the needs and problems already present for the vegetable growers	3.26	81.5
4	4	Specific and clear goals that meet the existing needs and problems of vegetable growers	3.16	79
Total			3.21	80.3

The fifth field: the timing of providing the agricultural extension service

The research results showed that the proposed standards in the timing of providing the extension service, which amounted to two standards obtained a weighted mean of 3.34 and a percentage weight of 83.5%, which is greater than the hypothetical mean for the scale of 2.5 degrees, as listed in Table 6.

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Table (6) Distribution of respondents according to the proposed standards in the timing of providing the extension service, distributed according to weighted mean and percentage weight

Seq.	Seq. according to importance	Proposed standards in the timing of providing the extension service	Weighted mean	Percentage weight %
1	1	Rapid response to the needs and requests of vegetable growers	3.40	85
2	2	It is a standard to provide service to the vegetable growers at the appropriate time	3.29	82
Total			3.34	83.6

It can be concluded from Table 6 that most of the vegetable growers approved to the standards of the timing of the extension service, and this is a positive indication of the importance of providing extension service when requesting vegetable growers at the appropriate time in order to fulfill the main objective of it.

The sixth field: topics and content of the extension service

The research results showed the proposed standards in the topics and content of the extension service, which amounted to 7 standards obtained a weighted mean of 3.21 degrees and a percentage weight of 80% which is greater than the hypothetical mean for the scale of 2.5 degrees, as shown in Table 7.

Table (7) Distribution of respondents according to the proposed standards in the topics and content of the extension service, distributed according to weighted mean and percentage weight

Seq.	Seq. according to importance	Proposed standards in the topics and content of the extension service	Weighted mean	Percentage weight %
1	1	To deal with the main topics in the vegetable cultivation activity, starting with preparing the land and ending with marketing	3.30	82.5
2	3.5	To focus on the most important developments and modern practices in fertilization, harvesting, marketing, and pest control	3.20	80
3	4.5	Its content is defined in light of the objectives	3.17	79
4	3.5	Suitable in achieving those goals	3.21	80
5	4	It is characterized by modernity	3.18	79.5
6	4.5	It has proven successful in the region	3.16	79
7	2	Its content matches the characteristics and capabilities of vegetable growers, their farms, and their environmental conditions	3.28	82
Total			3.21	80.3

It can be concluded from Table 7 that most of the vegetable growers have approved the standards of the topics and content of the extension service. This is a positive

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indication that the content of the service deals with the main topics in the vegetable cultivation activity, starting from preparing the land and ending with marketing, and is appropriate and identical to the needs and problems of vegetable growers. Combined with, the characteristics of their farming systems, and is appropriate in achieving their goals and is characterized by modernity, which is consistent with what was stated in the study of (20).

The seventh field: Method and modalities

The research results showed that the proposed standards in the method and modalities, which amounted to 6 standards obtained a weighted mean of 3.17 degrees and a percentage weight of 79%, which is greater than the hypothetical mean for the scale of 2.5 degrees, as in Table 8.

Table (8) Distribution of respondents according to the proposed standards in the field of method and modalities, distributed according to weighted mean and percentage weight

Seq.	Seq. according to importance	Proposed standards in the field of method and modalities	Weighted mean	Percentage weight %
1	1	Vegetable growers are encouraged to participate with each other in identifying their problems, finding appropriate solutions, and implementing them	3.33	83
2	2	Encourages them to form groups for learning and teaching away from the traditional method: the agent is a teacher and the farmer is the recipient	3.23	80.7
3	3	Diversify the methods used	3.19	79.7
4	5	Focus on methods that provide an opportunity for viewing and application	3.15	78
5	4	Using modern means to deliver extension messages, including mobile phones	3.17	77
6	6	Achieving the capacity for the participation of vegetable growers in implementing the extension activities provided to them in the region	3	75
Total			3.17	79.4

It can be deduced from Table 8 that most of the vegetable growers approved on the standards of the method and modalities of extension service, and this is a positive indication of the importance of using modern methods and modalities in agricultural extension services to face individual differences. Especially those that provide an opportunity to observe and apply because they affect the farmers 'acquisition of the skills and technologies they need in a way that suits their abilities, farming systems, efficiency, and effectiveness of the services provided.

The eighth field: agricultural extension service providers

The research results showed the proposed standards in the service providers, which amounted to standards obtained a weighted mean of 3.28 degrees and a percentage

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weight of 82%, which is greater than the hypothetical mean for the scale of 2.5 degrees, as in Table 9. It can be concluded from Table 9 that most of the vegetable growers have approved to the standards of extension service providers, and this is a positive indicator to encourage service providers to understand the actual need for vegetable growers, to understand their expectations of extension services and to fulfill promises towards the farmers, and to make the agricultural extension organization and extension management take their complaints and problems seriously, success in diagnosing their reactions about the services provided, and encouraging them to work for groups and learn. As well as achieving the adequacy of service providers for the number of vegetable growers, the presence of female extension agent in providing services to ensure that the service reaches all categories of vegetable growers, as stated in a study of (25). In addition, the qualification of extension service providers greatly affects the success of the extension process because they are responsible for delivering services to the targeted, which is consistent with the study of (4).

Table (9) Distribution of respondents according to the proposed standards in the field of extension service providers, distributed according to weighted mean and percentage weight

Seq.	Seq. according to importance	Proposed standards in the field of extension service providers	Weighted mean	Percentage weight %
1	5.5	The presence of female and male extension agents to achieve extension service for males and females	3.24	81
2	3	The sufficient number of agents for the number of vegetable growers	3.31	82.7
3	7	Experience in constructive interaction with vegetable growers and related parties	3.18	77
4	5	To possess the necessary knowledge, skills, and experience in preparing, implementing, monitoring, and evaluating the extension service	3.23	80.7
5	2	Keeping abreast of developments in the field of vegetable cultivation and modern agricultural trends	3.32	83
6	5.5	A good listener of the ideas, needs, problems, and solutions proposed by farmers, and communicating them to the relevant research extension departments	3.24	81
7	8	Respect for farmers' experience and knowledge	3.16	79
8	6	Investigating the innovations of vegetable growers, verifying their results, and disseminating them	3.20	80
9	4	Encouraging farmers to work in extension groups and cooperative societies	3.28	82
10	1	Fulfillment of obligations towards vegetable growers	3.35	83.7
Total			3.25	81.2

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The ninth field: interaction, coordination, and joint work

The research results showed the proposed standards in the interaction, coordination, and joint work, which amounted to 3 standards obtained a weighted mean of 3.16 and a percentage weight of 79%, which is higher than the hypothetical mean for the scale of 2.5 degrees, as shown in Table 10.

Table (10) Distribution of respondents according to the proposed standards in the interaction, coordination, and joint work, distributed according to weighted mean and percentage weight

Seq.	Seq. according to importance	Proposed standards in the interaction, coordination, and joint work	Weighted mean	Percentage weight %
1	2	There is an interaction between vegetable growers and their organizations	3.18	79.5
2	1	The existence of interaction between vegetable growers and other relevant parties, and coordination with them to benefit from their experiences and capabilities	3.23	80.7
3	3	Working within one joint team that integrates with other programs	3.07	76.7
Total			3.16	79.9

It can be concluded from Table 10 that most of the vegetable growers approved to the standards of interaction, coordination, and joint work. This is a positive indication that the interaction of vegetable growers with each other and other parties is of great importance to benefit from their experiences, capabilities, exchange information, and knowledge. Combined with, the importance of interaction within their organizations and work within one team in finding solutions and solving the problems they face in practicing vegetable cultivation activity and working on developing it.

The tenth field: monitoring, evaluation, and continuous improvement

The research results showed that the proposed standards in monitoring, evaluation, and continuous improvement, which amounted to 10 standards obtained a weighted mean of 3.29 degrees and an overall percentage weight of 82%, which is higher than the hypothetical mean for the scale of 2.5 degrees, as in Table 11. It can be concluded from Table 11 that most vegetable growers have approved the criteria of monitoring, evaluation, and continuous improvement. This is a positive indication of the importance of an effective monitoring and evaluation system to know the impact of agricultural extension services and the methods used for different farmers, to identify their reactions, and to involve vegetable growers and their representatives in evaluating the results. Besides, knowing the farmers benefit from the extension programs that have been prepared, and assisting those in charge in the standards, and improving the way of providing the service. Measuring the satisfaction of farmers about the topics, results, goals, and methods of providing the extension service and those who provide it to improve the quality of the services provided to them. Moreover, that the availability of financial allocations is among the most factors affecting the quality of services provided to vegetable growers, which is consistent with what was stated in the study of (17).

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Table (11) Distribution of respondents according to the proposed standards in monitoring, evaluation, and continuous improvement, distributed according to weighted mean and percentage weight

Seq.	Seq. according to importance	Proposed standards in monitoring, evaluation, and continuous improvement	Weighted mean	Percentage weight %
1	4	Monitoring farmers in their fields to determine their implementation of recommendations and technologies, address problems and find solutions	3.27	81.7
2	2.5	Involving vegetable growers and their representatives in evaluating the results	3.37	84.2
3	6	The necessity of conducting an evaluation of results and evaluation of extension service provided and announcing the results	3.17	79.2
4	5	Take advantage of the evaluation results	3.20	80
5	3	Receive the farmers' feedback about the extension service provided to them	3.31	82.7
6	2.5	Emphasis on measuring the satisfaction of farmers with the extension service (its topics, results, objectives, method of presentation, and the presenters)	3.36	84
7	1	The necessity to achieve adequate and continuous financial allocation for the extension service from the extension institution and local governments	3.41	85.2
Total			3.29	82.3

The third objective: achieved the proposal in its final form

After taking into account the results of previous stages, the fields and standards for the proposal of the quality of extension service from the vegetable growers' point of view were approved, because all the aforementioned fields and standards obtained a weighted mean between (3.38-3.01), which is greater than the hypothetical mean of 2.5 degrees, and the result was remaining each of the fields and standards in its final form, Table 12.

Table (12) The proposal in its final form

Fields	The proposed standards in the extension service elements for vegetable growers
Service provider	❖ It was provided by a variety of parties (extension department, specialized agricultural companies, and other agricultural companies).
Targeted	❖ To include all categories of family members participating in the vegetable cultivation activity ❖ Focusing on the groups with the least access to extension service, namely women and rural youth, which covers all vegetable growing areas in the region.
The objective of extension service	❖ It aims to facilitate access of vegetable growers and their organizations to sources of knowledge and information. ❖ It helps vegetable growers develop their administrative, technical, and organizational skills and practices in the field of vegetable cultivation, ❖ Facilitate vegetable farmers transform their systems into sustainable ones.
The basis for preparing the service	❖ Real and effective participation of farmers or their representatives in planning and preparing activities, projects, and special extension programs ❖ It is built based on a reliable and extensive database of vegetable growers as a basis for preparing the needs, problems, and characteristics of the farming systems ❖ The extension plans should be prepared based on the needs and problems already present for the vegetable growers, were specific and clear goals that meet the existing needs and problems of vegetable farmers.
Timing of providing the extension service	❖ Rapid response to the needs and requests of vegetable farmers. ❖ It is a standard to provide service to the vegetable growers at the appropriate time

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Topics and content of the extension service	❖ To deal with the main topics in the vegetable cultivation activity, starting with preparing the land and ending with marketing ❖ To focus on the most important developments and modern practices in fertilization, harvesting, marketing, and pest control ❖ Its content is defined in light of the objectives, and suitable for achieving those goals ❖ It is characterized by modernity, and it has proven successful in the region ❖ Its content matches the characteristics and capabilities of vegetable farmers, their farms, and their environmental conditions
Method and modalities	❖ Vegetable farmers are encouraged to participate with each other in identifying their problems, finding appropriate solutions, and implementing them ❖ Encourages them to form groups for learning and teaching away from the traditional method: the agent is a teacher and the farmer is the recipient ❖ Focus on methods that provide an opportunity for viewing and application ❖ Using modern means to deliver extension messages, including mobile phones ❖ Achieving the capacity for the participation of vegetable farmers in implementing the extension activities provided to them in the region
Extension service providers	❖ The presence of female and male extension agents to achieve extension service for males and females ❖ The sufficient number of agents for the number of vegetable growers ❖ Experience in constructive interaction with vegetable growers and related parties ❖ To possess the necessary knowledge, skills, and experience in preparing, implementing, monitoring, and evaluating the extension service ❖ Keeping abreast of developments in the field of vegetable cultivation and modern agricultural trends ❖ A good listener of the ideas, needs, problems, and solutions proposed by farmers, and communicating them to the relevant research extension departments ❖ Respect for farmers' experience and knowledge, besides investigating the innovations of vegetable growers, verifying their results, and disseminating them ❖ Encouraging farmers to work in extension groups and cooperative societies Fulfillment of obligations towards vegetable growers
Interaction, coordination, and joint work	❖ There is an interaction between vegetable growers and their organizations ❖ The existence of interaction between vegetable growers and other relevant parties, and coordination with them to benefit from their experiences and capabilities working within one joint team that integrates with other programs
Monitoring, evaluation, and continuous improvement	❖ Monitoring farmers in their fields to determine their implementation of recommendations and technologies, address problems, and find solutions ❖ Involving vegetable growers and their representatives in evaluating the results ❖ The necessity of conducting an evaluation of results and evaluation of extension service provided and announcing the results. ❖ Receive the farmers' feedback about the extension service provided to them ❖ Emphasis on measuring the satisfaction of farmers with the extension service (its topics, results, objectives, method of presentation, and the presenters) ❖ The necessity to achieve adequate and continuous financial allocation for the extension service from the extension institution and local governments

Conclusions:

Vegetable farmers are able to determine the characteristics of the agricultural extension service provided to them, and this confirms the adoption of their approval in the preparation of extension activities and programs.

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Recommendations:

In order to achieve an extension service that meets the needs of Iraqi farmers and agriculture in facing its challenges in an effective manner, this service must rise to the level of those challenges and achieve an effective and rapid response. It is recommended to adopt the fields and standards of this study in order to be applied in the extension activities, projects and programs.

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