RESEARCH ARTICLE

SABRAO Journal of Breeding and Genetics
57 (1) 366-373, 2025
http://doi.org/10.54910/sabrao2025.57.1.37
http://sabraojournal.org/
pISSN 1029-7073; eISSN 2224-8978

A PROPOSED VISION FOR DEVELOPING AGRICULTURAL EXTENSION CENTERS IN CENTRAL IRAQ

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SUMMARY

The research aimed to prepare a theoretical vision, including a set of proposed standards for developing work in Agricultural Extension Centers in the Central Governorates (Baghdad, Diyala, Babylon, Al-anbar, and Salah al-Din), within seven important guiding areas. Using the descriptive approach to conduct this study, the sample community included all agricultural extension workers working in research centers of central Iraq governorates, totaling 95 respondents. The two-part questionnaire served as a tool for collecting data from the respondents. The first part represented opinions of agricultural extension agents about the extent of application and adoption of suggested standards in the work of agricultural extension centers. Meanwhile, the second part included the respondents' opinions about the degree of their approval of the proposal to develop the extension centers. The study concluded a large proportion of the respondents believe a weakness existed in the level of application of the recommended standards in the operation of the agricultural extension centers. It is evident in not adopting the principle of decentralization when formulating the goals of the extension centers.

Keywords: Agricultural Extension Centers, Central Governorates of Iraq, theoretical vision, research community, extension agents, decentralization

Key findings: A significant weakness in the coordination process and cooperation with relevant authorities exist. Similarly, a limitation occurs in the integration of many parties with common goals, with the objectives of extension programs not based on real data, surveys, and studies. It was evident most of the sample members agreed with the standards proposed by the policy and objectives of the counseling centers.

Communicating Editor: Dr. A.N. Farhood

Manuscript received: April 29, 2023; Accepted: June 05, 2024.

Citation: Khamis AI, Ali NS, Saleh JM (2025). A proposed vision for developing agricultural extension centers in Central Iraq. *SABRAO J. Breed. Genet.* 57(1): 366-373. http://doi.org/10.54910/sabrao2025.57.1.37.

INTRODUCTION

Agriculture has been and continues to be the main source of food and clothing for societies, with no alternatives, whether for developed or developing countries. Life existence would be difficult without it, as it is the economic activity where people's lives depend on and the main axis of driving agricultural and rural development engines in countries classified as progressing (Saleh and Man, 2017).

The importance of agriculture growth in most developing countries, with agricultural sector as the national economy's chief source, is evident in shifting from traditional production methods to modern ones according to outputs of scientific agricultural research (Saleh et al., 2016). Agricultural extension is one of the best main entry points that is reliable to achieve agricultural development. It represents the active element in bringing about desired changes, providing farmers with knowledge and skills, and developing positive trends through various educational and cultural activities and efforts (Alidu et al., 2022).

Agricultural extension is also one of the primary poles in agronomic development programs responsible for providing an integrated system for the flow of agricultural information, ideas, and technologies developed from research sources targeting local communities (Khamis et al., 2024). Heikal **(**2015) mentions one of the compelling reasons for the creation of a network of extension centers and farms is to develop extension work and unify this information and transfer it to farmers. Specifically, working to develop and raise the performance efficiency of agricultural extension agents and develop their capabilities through training programs. Accordingly, agricultural extension centers today are one of the crucial innovations for agricultural extension in basically radiating and channeling problem diagnosis related to agricultural production. They improve dissemination of advanced agricultural technologies and modern methods and putting them into practice by farmers (Abdulmumini et al., 2022).

Agricultural extension centers have become subjects of great interest for those developing the work of farming extension (Saleh and Man, 2016), as these extension centers are considerably the locomotive of agricultural development due to the roles entrusted them. These roles comprised the planning, training, educational, supporting role, coordinating, and evaluation. Agricultural extension centers have been set up to achieve the following goals: 1) A cultural radiation center in the village helping support the rural people in the various areas of rural development; 2) Strengthening the link between research, extension, and agricultural agencies; and 3) Building extension programs from the bottom up to ensure the effective participation of farmers in these programs to achieve their goals and solve their problems.

Linking agricultural extension centers to the central administration of agricultural extension and local units through an integrated information network will serve the village more effectively. Easy and timely access of problems by competent authorities will find appropriate solutions for them at the right time. Cooperating with local bodies and institutions is a requirement to create integrated educational programs with extension programs. Holding seminars, counseling meetings, and listening and watching sessions could convince the rural family's adoption of modern agricultural technology. This requires further training of agricultural extension agents, rural leaders, and farmers on modern technology. Similarly, training rural youth and women on environmental activities and rural industries could promote agriculture extension programs. Holding periodic training courses for the extension center officials are valuable (Ministry of Agriculture, 2019)**.**

Most of the respondents agree with the standards included in the proposal to develop the work of agricultural extension centers in Iraq. The research generally aimed to build a proposed theoretical vision for the development of the work of agricultural extension centers, to include the following: 1) The extent of application of proposed standards for the development in the work of agricultural extension centers and 2) The degree of agricultural extension agents' approval of the proposal to develop the work of agricultural extension centers.

MATERIALS AND METHODS

Research methodology

The current research comes within the framework of exploratory and diagnostic research, using the descriptive approach. It depends on the study of the phenomenon as in reality and the detection and interpretation of the relationships between the variables related to the phenomenon and its prediction. This type of research provides data and information about the phenomenon or the research problem to reach conclusions and scientific recommendations therein (Khamis et al., 2023).

Searching area

The governorates of central Iraq were chosen areas to conduct the research, as they included the agricultural extension centers affiliated with the Governorates of Iraq (Baghdad, Diyala, Babylon, Al-anbar, and Salah al-Din).

Research community

The research community included all agricultural extension workers working in five research centers in the Governorates of Central Iraq. Thus, the entire research community respondents totaled 95. Calculating the number of agricultural extension workers was by counting all extension workers working in extension centers in the studied governorates**.**

Research outline development

The questionnaire form became the tool for collecting data related to the research subject, representing the best appropriate study methodology, as it is suitable for obtaining more objective and credible information and facts compared with other means (Zahran, 2018). The process of preparing and developing the questionnaire has passed through multiple stages. The initial research outline consisted of 29 items divided into seven areas, representing the proposal to develop work in agricultural extension centers, as follows. The policy and objectives of the extension centers comprised 12 items. Preparing and planning training extension programs were nine items. Financial capabilities and infrastructure were eight items.

Presenting the outline in its initial form comprised a group of experts specializing in the field of agricultural extension and training. The questionnaire included the research axes, fields, and items to achieve the face and content validity of the questionnaire. Since validity will verify the proposed scale to measure what was set for it, the experts indicated the degree of their approval with each of the seven areas of research and the **29** items with a gradient scale of approval. This consisted of three statements (agree, agree with modification, and disagree), with the following standard weights (3, 2, and 1) given as a degree according to the order. A determined rate of the degree of approval of experts (threshold cut) was at 75%, as the occurrence of an agreement of 75% between the arbitrators or more is an indication of the research tool's validity. This was after calculating the average degrees of approval of the arbitrators and experts on the areas and items included in the questionnaire and comparing those averages with the threshold cut. All the axes and items related to the proposal to develop the work of the agricultural extension centers achieved an approval rate of 92%.

A prepared questionnaire for collecting data for the study consisted of two parts. The first part includes the opinions of the 95 respondents on the extent to which the proposed development standards of 29 items apply in the work of the agricultural extension centers. The measurement is according to a graduated scale consisting of the following statements: No, to some extent, yes, yes to a large extent, with corresponding standard weights of 0, 1, 2, and 3, respectively. The second part of the questionnaire shows the degree of respondents' approval of the proposed standards for developing work in agricultural extension centers in the Central Governorates. A preliminary test of the questionnaire, conducted on a random sample of 20 respondents, ensured the reliability of

the form. The calculation of total reliability coefficient of the questionnaire used the Cronbach's Alpha method, whose value reached 0.91 degrees. It expresses good reliability coefficients of importance to achieve the research objectives, and based on that, the tool, in its final form, applies to the field.

By presenting it to specialists in psychology at the University of Baghdad, and after ensuring its compatibility with study objectives, identifying the content validity of the questions asked in the questionnaire ensued to achieve the objectives of the study. Afterward, making a pre-test on 15 agricultural extension workers continued, who were excluded when collecting data in its final stage. After verifying the face validity, content validity, and reliability of the questionnaire, data collection from the research sample of 95 respondents proceeded**,** using SPSS statistical analysis program for processing and tabulating data and presenting the final results (Heikal, 2015).

RESULTS AND DISCUSSION

The results showed the respondents' degrees regarding the degree of application of the proposed standards in the work of the agricultural extension centers. These ranged between 30–207 degrees as the lowest and highest numerical values, with an average of 119.6 degrees and a standard deviation of 5.28 degrees. Meanwhile, the degrees of respondents' approval on the proposal to develop work in the agricultural extension centers ranged between 188–243 degrees, with an average of 220.5 degrees and a standard deviation of 3.94 degrees. Table 1 shows 87% of the respondents believed the level of application of standards that would work on developing agricultural extension centers is weak and modest. The reason for this weakness may be due to several factors, including the neglect of the senior management of extension centers, limited financial capabilities, the lack of workers' experience, the modernity of these centers, and the lack of follow-up (Abdulmumini et al., 2022). On the other hand, one can find the respondents' support with a very high percentage (96%).

The policy and objectives of the agricultural extension centers

The data contained in Table 2 showed the degree of application of the proposed standards related to the policy and objectives of the extension centers are significantly declining, as the average opinions of the respondents reached 22.6**.** The goals of the agricultural extension centers are not built according to the available capabilities, and they show less clarity and ease of application. Moreover, a weakness exists in integrating the goals of the agricultural extension centers and the goals of sustainable development, with the extension program goals not based on data, surveys, and realistic studies stemming from the problems the agricultural sector suffers (Maulu et al., 2021). However, it was evident most of the respondents agree largely with the proposed standards related to the policy and objectives of agricultural extension centers. They give great importance to this field, as the average degree of approval reached between 2.41 to 2.97 degrees and a general average of 41.3 degrees. According to the scale,

Table 1. Respondents who applied the proposed standards for the work of counseling centers.

The extent to which the proposed standards are applied in the work of the extension centers			The degree of approval of agricultural extension workers for the proposal to develop extension work		
Degree of Application	Number	%	Degree of approval	Number	%
Low	34	0.36	Low	------	------
Moderate	49	0.51	Moderate	4	0.04
High	12	0.13	High	91	0.96
Total	95	100	Total	95	100

Table 2. The extent to which the proposals were applied in work and the degree of their compatibility with the development of the policy and objectives of agricultural extension centers.

No.	Proposed standards related to the policy and objectives of agricultural extension centers	Average degree of application	Arrangement according to the degree of application	Average degree of approval of the proposal	Arrangement by the degree of approval
1	The policy of work in agricultural extension centers stems from the general agricultural policy of the state	1.84	2	2.71	11
2	That the extension centers adopt a clearly defined policy based on a realistic and objective vision supported by plans and programs	1.66	6	2.94	4
3	That the policy and approach of the extension centers be based on the dissemination and adoption of modern agricultural technologies	1.63	7	2.97	2
4	Policy of work in agricultural extension centers is characterized by being an educational and cultural work activity	1.83	3	2.80	8
5	Objectives of the agricultural extension centers are an extension of the objectives of agricultural development in the country	1.77	4	2.84	7
6	Objectives should be formulated according to the requirements and needs of the rural community that the farmers suffer from	1.47	9	2.65	12
7	Adopting the goals based on data, surveys, and realistic studies stemming from the problems faced by the agricultural sector	1.18	12	2.89	6
8	Making fundamental changes in the knowledge, skills, and attitudes of farmers is one of the main objectives of the extension centers	1.91	1	2.98	1
9	There must be integration between the goals of agricultural extension centers and the goals of sustainable development	1.11	13	2.78	9
10	To set goals to achieve an agricultural renaissance through the application of advanced agricultural technology by farmers	1.41	10	2.73	10
11	Adopting the principle of planning indicative programs to formulate and achieve goals	1.69	5	2.95	3
12	The objectives of agricultural extension centers must be according to the available capabilities and be clear and easy to implement	1.06	14	2.90	5

determining its degrees was between 0–45 degrees. At the forefront of these standards come fundamental changes in the knowledge, skills, and attitudes of farmers. These one of the extension centers' main objectives, with the policy and approach of the extension centers depending on the dissemination and adoption of modern agricultural technologies (Khamis et al., 2023).

Preparing and planning extension and training programs

The extension centers rarely depend on the preparation and planning of extension programs to carry out their extension tasks. Most of the programs and work activities come from the central authorities and are not suitable according to the needs and requirements of the farmers (Table 3). A notable weakness in the participation of the targeted farmers occurred **.**The average scores of the respondents in the application of the proposed standards related to the preparation and planning of agricultural extension programs reached 13.19 degrees, according to a scale ranging between 0–33 degrees. The reason for this decline in the adoption and application of these standards in the work of extension centers may be due to their

Table 3. Participants' opinions according to the application of the proposed standards in action and the degree of their approval of the development proposal for preparing and planning the guidance programs.

No.	Proposed standards related to the policy and objectives of agricultural extension centers	Average degree of application in the extension center	Arrangement according to the degree of application	Average degree of approval of the proposal	Arrangement by the degree of approval
1	The extension centers should take the preparation and planning of the programs as a method to implement their activities	1.25	7	2.91	1
2	Program planning must have realistic data and information about the individuals or community whose capabilities will be developed	1.34	5	2.83	2
3	There should be active participation of the extension farmers in the process of planning and implementing extension programs	0.71	10	2.54	8
4	Preparing the training indicative programs according to the needs and requirements of the targets	1.33	6	2.61	5
5	Planning programs in extension centers must be a continuous and orderly process	1.01	8	2.67	4
6	A well-thought-out work plan must be developed to implement the training programs, and these plans should be flexible	1.39	4	2.72	3
7	Creating a positive atmosphere and enhancing confidence between those in charge of planning and implementing training programs and the targets	1.53	2	2.59	6
8	Training, qualification and capacity development programs for farmers must qualify extension staff	1.44	3	2.46	9
9	Training programs should be comprehensive, targeting all segments of the local community	1.62	1	2.56	7

subordination and reference to the Central Extension Organization, which issues all programs, instructions, and directives centrally (Khamis et al., 2023).

Human potential in the agricultural extension centers

The results revealed a significant shortfall in the capabilities and infrastructure of the agricultural extension centers, represented in the scarcity of granting material incentives to workers in the centers (Table 4). A substantial weakness emerged in the availability of financial allocation to maintain the assets of the extension center. This included the small number of devices, equipment, and audiovisual educational aids. Likewise, the lack in the availability of sufficient financial allocations to cover the activities provided by the extension center is evident. The average of the respondents' opinions about the capabilities and infrastructure in the extension centers reached 8.5 degrees, according to a scale whose degrees ranged between 0–24 degrees. The reason for limited financial capabilities and infrastructure of the extension centers could be the weakness in the senior leaders in the Ministry of Agriculture to value the extension centers and their role in achieving agricultural and social development (Jasim et al., 2023; Haskah et al., 2024).

CONCLUSIONS

A significant weakness prevails in the coordination process between the agricultural extension centers and the governmental and non-governmental agricultural companies, agricultural associations, local community service associations, irrigation department, specialized departments in the agricultural directorates, and colleges of agriculture and veterinary sciences. The extension centers also lack human staff. Specifically, they have a

Table 4. Participants' opinions on applying the proposed standards and their degree of agreement with the proposal to develop the financial capabilities.

No.	Proposed standards related to the policy and objectives of agricultural extension centers	Average degree of application	Arrangement according to application degree	Average approval of the proposal	Arrangement by the degree of approval
1	The necessity of providing sufficient financial allocations to cover all activities provided by the extension center	0.84	5	3	1
2	Availability of financial allocation for the maintenance of guidance centers	0.65	7	3	1
3	Availability of educational buildings, halls, and laboratories necessary to carry out the extension tasks	1.34	1	2.94	3
4	Availability of devices, equipment, and audio-visual educational aids	0.75	6	2.97	2
5	Availability of the means of transportation, machinery, and agricultural machinery necessary to carry out extension activities	1.23	2	3	1
6	Providing the necessary educational guidance fields to achieve realistic agricultural production	0.88	4	2.78	4
7	Working on the availability of modern means of communication in the extension centers to communicate with the targets	1.03	3	3	1
8	Adopting a system of material and moral motivation for workers in agricultural extension centers	0.56	8	3	1

shortage of agricultural specialists, sufficient number of technicians and administrators, and the scope of the agricultural extension agents' supervision over the farmers exceeds their capabilities. The lack of female specialists in the field of agricultural extension also requires attention.

ACKNOWLEDGMENT

The authors extend sincere thanks and appreciation to Al-Bayan University for providing financial and moral support to complete this manuscript for publication. They also thank and appreciate everyone who provided them with any information to complete and publish the manuscript.

REFERENCES

Abdulmumini U**,** Man N, Haris BM, Kamarulzaman NH (2022). Rural women farmers' participation in planning and implementation of agricultural practices in North Eastern Nigeria. *S. Afr. J. Agric. Ext*. 26(1): 2022. https://dx.doi.org/10.4314/jae.v26i1.9.

Alidu AF, Man N, Ramli NN, Haris NBM, Alhassan A (2022). Smallholder farmers access to climate information and climate smart adaptation practices in the Northern region of Ghana. *Heliyon* 21, 8(5).doi: 10.1016/j.heliyon.2022.e09513.

Haskah SA, Al-Hamdany MHS, Khamees AI (2024). Role of agricultural extension in the improvement of the agriculture sector. *SABRAO J. Breed. Genet*. 56(2): 898-905. http://doi.org/10.54910/sabrao2024.56.2.40.

Heikal SA-N (2015). Obstacles to agricultural development in the New Valley Governorate. *Ann. Agric. Sci. Pop.* 53(2): New Valley, Egypt.

Jasim MS, Ali RA, Aldabbagh EJ (2023). Evaluation of the performance of agricultural and related departments and the extent of job satisfaction for employees in Anbar Governorate-Iraq. *IOP Conf. Ser. Earth Environ. Sci.* 1214, 1. 012056.

Khamis AI, Saleh JM, Ali NS, Ghaffoori AT (2023). Strengthening rural youth in Anbar province: Assessing the influence of small-scale agricultural initiatives. *Pak. J Agric. Res.* doi: https://dx.doi.org/10.17582/journal.pjar/2023/36.4.389.403.

Khamis AI, Saleh JM, Ali NS, Ghaffoori AT (2024). Strengthening rural women in Anbar

province: Assessing the influence of small-scale agricultural initiatives. *Pak. J Agric. Res*. 37(1): 1–12. doi: https://dx.doi.org/10.17582/journal.pjar/2024/37.1.1.12.

Maulu S, Hasimuna OJ, Mutale B, Mphande J, Siankwilimba E, Yildiz F (2021). Enhancing the role of rural agricultural extension programs in poverty alleviation: A review. *Cogent Food Agric*. *7*(1). https://doi.org/10.1080/23311932.2021.1886663.

Ministry of Agriculture (2019). The most prominent achievements of the Ministry of Agriculture for the agricultural sector for the period 2018–2019, published document. Al-Izza Press, Baghdad, Iraq.

Saleh JM, Man N, Ahmad HL, Majeed HS, Salim H, Nolila MN, Bassim HK (2016). A review: Training requirement of agriculture extension officers in Iraq. *Asian J. Appl. Sci.* 9(2): 34–40.

Saleh JM, Man NB (2017). Training requirements of agricultural extension officers using borich needs assessment model. *J. Agric. Food Inf*o. 18(2): 110–122. doi: 10.1080/10496505.2017.1281748.

Zahran YA (2018). Estimating the level of extension specialists in extension centers to keep pace with some contemporary extension concepts*. J. Agric. Sci.* 15(1): 23–32.