

International Journal of Agriculture Extension and Social Development

Volume 9; Issue 6; June 2026; Page No. 865-868

Received: 14-03-2026
Accepted: 18-04-2026

Indexed Journal
Peer Reviewed Journal

The potential role of agricultural extension in future: A review and roadmap

Ahmed Hamdan Lafta

Department of Agricultural Extension and Technology Transfer, College of Agricultural Engineering Sciences, University of Baghdad, Baghdad, Iraq

DOI: <https://www.doi.org/10.33545/26180723.2026.v9.i6k.3787>

Corresponding Author: Ahmed Hamdan Lafta

Abstract

Agricultural work is the main source for achieving food security and providing sufficient income for a decent life for many farmers in this world. The organization of extension is one of the main pillars of agriculture sector which tries to create development and change the rural family through the operations of extension. The paper reviewed the central objective of the tasks agricultural extension education in future. This paper dwelt on the basic concepts underlying the meaning of new approaches and paradigms of agricultural extension. This paper try to assist the decision makers in order them to adopt a clear agricultural extension education programs as a method to link between agricultural extension organization, the scientific research centers and agriculture colleges as the new model to attain of the goals of agricultural extension in order to efficient use of human potentials and material assets wherever they are to execute these programs to convince the farmers about the importance of using modern methods in the agriculture sector. Therefore, this article review is an effort to close a gap in the literature on scope of agricultural extension services. Thus, it would contribute to the existing body of literature in the field of agricultural extension.

Keywords: Agricultural extension, agricultural extension services, agricultural sector, agricultural extension programs, agricultural extension education

1. Introduction

Most countries around the world especially the developing countries aim to achieve the comprehensive development through the developing plans and programs in order to reduce the ignorance people especially rural area (Al-Hafidh, 2023).^[1] The organization of extension is one of the main pillars of agriculture sector which tries to create development and change the rural family through the operations of extension. The extension process is an informal educational process aims to increase the rural people's knowledge to improve their skills, correct their attitudes, enable them to understand the modern technology and adopt these devices in their fields (Rana, 2025)^[31]. Today, the agricultural extension works among others to translate science for practical application, Identify emerging research questions, find answers and encourage the application of science and technology, to improve agricultural, economic and social conditions. In order to achieve that the relevance of agricultural extension in any agricultural revolution is certain and therefore it is posited that no meaningful agricultural development can happen without the services of agricultural extension (Adnan, 2022)^[1].

In another perspective, Lafta *et al.*, (2022)^[25] explained agricultural extension systematically as a process which helps farmers to analyse their present and expected future situations, helps farmers to become aware of the problems, which can arise in such an analysis, increase knowledge and develops into problems and helps to structure farmers'

existing knowledge, helps farmers to acquire specific knowledge related to certain problems, solutions and their consequences so that they can act on possible alternatives, helps farmers to evaluate and improve their own opinion-forming and decision-making skills.

2. Literature Review

Agricultural extension is an essential pillar both for rural community progress and as part of a strategy of agricultural research and development (Mahmoud, 2010)^[27]. Jasim *et al.* (2020)^[9] confirmed the agricultural extension is a general term meaning the application of scientific research and new knowledge to agricultural practices through farmer education. As mentioned by Challob *et al.*, (2020), agricultural research remains an academic endeavour unless it is informed by real problems on the ground and efforts are made to deliver solutions to farmers by appropriate forms of extension.

Research institutions focus on the technical aspects for generating useful technologies, while agricultural extension focuses on the acceptance and adoption of those technologies by users and; it emphasizes taking knowledge gained through research and education and bringing it directly to the people to create positive changes (Al-Awsi, 2008)^[6]. According to Saleh *et al.*, (2020)^[34], the agricultural extension provides non-formal education and learning activities to farmers throughout the country particularly education to people rural communities. On the other hand, Ramadan (2023)^[30] confirmed the agricultural

extension is the function of providing need and demand based knowledge in agro- economic techniques and skills to rural communities in a systematic, participatory manner, with the objective of improving their production, income, and by implication quality of life.

Along these lines, Rana (2024) ^[32] tried to look at agricultural extension from the modern perspective, that explains it from the aim which extension seek to accomplish; the main aim, in this case, is to teach both the rural clientele how to determine their problems and be able to solve problems using their own locally available resources so; she further explained extension as having three important dimensions namely: Firstly, Educational component which involves changing the behavior complex. Secondly, Economic dimension which includes: increased income of the clientele, increased crop yield, better financial management. Finally, Social dimension which also includes: leadership development, development cooperation, increased zeal for development. Below is a complete overview of the potential role of agricultural extension in the future as a review and roadmap:

3. New Approaches and Paradigms of Agricultural Extension

With the changing environment of agricultural extension, institutional pluralism and bottom- up participatory approaches are essential (Lafta, 2016) ^[19]. The public sector was still in need of playing an important role in providing agricultural extension services due to the services' public good nature. Nevertheless, its role needs to change in the face of the increasing role of the private and non-governmental organizations sectors and new and additional responsibilities of extension services (AL Khafaji *et al.*, 2022) ^[5]. In line with the above, Jasim *et al.*, (2025) ^[9] confirmed that the new approaches to extension need to emphasize three elements: strategies to develop agricultural innovation systems, pluralism of service providers and extension services should be demand- driven.

On the other hand, Al- Hafidh *et al.*, (2025) summed up those four possible combinations each of which could represent a different new approach and paradigm of agricultural extension as follows:

1. Technology transfer (persuasive and paternalistic). This paradigm was prevalent in colonial times and reappeared in the 1970s and 1980s when the "training and visit" system was established across Asia. Technology transfer involves a top-down approach that delivers specific recommendations to farmers about the practices they should adopt.
2. Advisory work (persuasive and participatory). This paradigm can be seen today where government organizations or private consulting companies respond to farmers' inquiries with technical prescriptions. It also takes the form of projects managed by donor agencies and non-governmental organizations that use participatory approaches to promote predetermined packages of technology.
3. Human resource development (educational and paternalistic). This paradigm dominated the earliest days of extension in Europe and North America when universities gave training to rural people who were too poor to attend full- time courses. It continues today in

the outreach activities of colleges around the world. Top- down teaching methods is employed, but students are expected to make their own decisions about how to use the knowledge they acquire.

4. Facilitation for empowerment (educational and participatory). This paradigm involves methods such as experiential learning and farmer-to-farmer exchanges. Knowledge is gained through interactive processes and the participants are encouraged to make their own decisions. The best-known examples in Asia are projects that use farmer field schools or participatory technology development.

4. Tasks Agricultural Extension Education in Future

Extension should play the role of facilitating the access to and transfer of knowledge among the different entities involved in the innovation system of agricultural extension education in future and create competent institutional modes to improve the overall performance of the innovation system inability to play this important role would further marginalize extension efforts in future (Al-Kubaisy, 2021) ^[7]. In the same vein, Rana (2025) ^[31], mentioned to three basic tasks of agricultural extension education in future as; disseminating useful information, applying it to the analysis of practical problems and help people to use it to help themselves.

In another perspective, Saleh *et al.*, (2025) ^[35] summed up the tasks and aspects of agricultural extension education in the future as follows:

- 1) Evolution of extension system and operationalization of approaches.
- 2) Future extension education initiatives.
- 3) Collegiate participation of farmers.
- 4) Web enabled technology dissemination.
- 5) Developing cases as tools for technology dissemination.
- 6) Agriculture as a profitable venture.
- 7) Scaling up of group mobilization.
- 8) Micro- enterprises promotion.

5. Scope of Agricultural Extension Services

Extension services are the different programmes- projects- recommendations, which the extension service make available to their clientele through the use of extension education process (Lafta, 2011) ^[15]. Agricultural extension services encompass all aspects of agriculture. It includes the provision of timely information, the linking of farmers with sources of farming inputs and credit facilities and most importantly, the provision of education services to farmers. The mistake people have been making was that of limiting agricultural extension services to helping the farmers to procure their planting inputs and other inputs needed on their farms; but people through hard experiences have come to realize the fact that for any agricultural project or programmes to succeed, agricultural extension must be fully involved, so as to participate in all its activities from planning to execution (Rakhit, 2025) ^[29].

As mentioned by Ridha *et al.* (2020) the modern agricultural extension scope, covers a wide spectrum of services, which include; improvement in production, marketing, storage, processing, fish farming, agro- forestry, input supply and distribution, man- power development, home economics- women in agriculture, irrigation, land management, farm

mechanization, erosion control, livestock management, human resources- development, administration- management, programmes planning and evaluation, youth development programmes etc.

6. Conclusion

The scope of agriculture sector is very broad. It is not a mere matter of giving the farmer actual knowledge from new research and technology, to help him raise his efficiency. It is this, of course, but it is more. It hopes to change his view of life, to persuade him and his family that they may reach and enjoy a higher and richer existence. Yet, the role of agricultural extension in agricultural development is pertinent. It has been established that no nation will have real growth in the agricultural sector without effective extension service. Agricultural extension is an educational process and brings about desired behavioral change in farmers.

7. Recommendations

Increasing interest in agricultural scientific research by providing the necessary capabilities to fulfill its hoped- for role in solving agricultural problems and; finding an appropriate mechanism to link agricultural scientific research with agricultural and field guidance devices in order to find a good solutions to field agricultural difficulties so that the outputs of scientific research are commensurate with the field agricultural sector reality and the needs of rural residents.

References

- Adnan SA, Lafta AH. Environmental obstacles in the process of rationalizing irrigation water and treatment methods from the point of view of farmers in Baghdad province. *International Journal of Agricultural and Statistical Sciences*. 2022;18(1):2281-2286.
- Adnan SA, Lafta AH. Obstacles to extension service in the process of rationalizing irrigation water and treatment methods from the viewpoint of farmers in Baghdad governorate. *NeuroQuantology*. 2022;20(6):7324-7334.
- Alabboodi MT, Lafta AH. Training requirements for integrated management of diffusing agricultural innovation incubators among rural youth in Iraq. *MSW Management Journal*. 2026;36(1 Suppl):2990-2994.
- Al Karoot AS, Lafta AH. The role of economic empowerment of rural women and enhancing active participation in the transition to sustainable farming systems in Iraq. *MSW Management Journal*. 2026;36(1 Suppl):145-150.
- Al Khafaji NJM, Lafta AH. Problems encountered by beekeepers in the field of breeding imported bees in Iraq. *International Journal of Agricultural and Statistical Sciences*. 2022;18(1):2269-2274.
- Al-Awsi AI, Al-Saad IH, Lafta AH. Wheat grain farmers' desire to use central pivot irrigation: a survey study in Al-Saqlawia region. *Anbar Journal of Agricultural Sciences*. 2008;6(1):343-352.
- Al-Kubaisy MIS, Lafta AH. The productive obstacles in the process of marketing agricultural vegetables in Fallujah district. *Annals of the Romanian Society for Cell Biology*. 2021;25(4):14124-14134.
- Hatem MS, Lafta AH. Evaluation of the training programs conducted by the Training and Qualification Center of the Agricultural Extension and Training Directorate from the trainees' perspective in Iraq. *MSW Management Journal*. 2026;36(1 Suppl):2995-2998.
- Jasim A, Norsida I, Nollila S, Lafta AH, Man N, Latiff IA, *et al*. The learning experience of Iraq middle-aged adult learners in online undergraduate degree programs. *Developing Country Studies*. 2015;5(21):56-60.
- Khamis AI, Hasan AMA, Lafta AH. Work ethics and its impact on efficiency of workers' performance in agricultural extension zones. *Annals of Forest Research*. 2022;65(1):4468-4491.
- Lafta AH. The level of job performance of agricultural extension workers in the General Board of Agricultural Extension and Cooperative. *Iraqi Journal of Agricultural Science*. 2007;38(4):10-16.
- Lafta AH, Jasem SD, Hamad TN. Job satisfaction of agricultural extension workers in Iraq. *Iraqi Journal of Agricultural Sciences*. 2007;38(5):24-33.
- Lafta AH, Mazher SH, Khamees AA. The effect of organizational climate on workers in the General Board of Agricultural Extension and Cooperative in Iraq. *Iraqi Journal of Agricultural Sciences*. 2007;38(5):15-23.
- Lafta AH. Constraints to technology transfer as viewed by extension farmers. *Iraqi Journal of Agricultural Sciences*. 2009;40(4):86-91.
- Lafta AH. Factors affecting work motivation and their relationship to performance. *Iraqi Journal of Agricultural Sciences*. 2011;42(2):103-110.
- Lafta AH. Trends of agricultural extension workers towards the profession of agricultural extension. *Journal of Kerbala University*. 2011;9(2):292-298.
- Lafta AH, Alwan MF. Satisfaction of farmers benefiting from training centers and demonstration farms. *Diyala Journal of Agricultural Sciences*. 2012;4(1):235-247.
- Lafta AH, Fayadh SU, Alwan MF. Work environment and its impact on the performance of workers in the field of agricultural extension. *Journal of Kerbala University*. 2012;1(1):21-27.
- Lafta AH, Salih JM, Man NB, Samah BA, Malaysia P. Adult learning, lifelong learning and their socioeconomic contribution. *Information and Knowledge Management*. 2016;6(1):113-118.
- Lafta AH, Man N, Salih JS, Samah B, Nawi N, Yusof R. A need for investigating organizational climate and its impact on performance. *European Journal of Business and Management*. 2016;8(3):136-142.
- Lafta AH, Jasim M. A synthesis of research papers in adult learning literature. *Journal of Business and Management*. 2016;18(1):45-48.
- Lafta AH. Conceptualizing workplace conflict from diverse perspectives. *Journal of Business and Management*. 2016;18(1):49-53.
- Lafta AH, Norsida M, Khamees A, Bahaman S, Nawi N, Yusof R. Extension workers' perception of organizational environment and job satisfaction in agricultural organizations in Iraq. *University Community Transformation Centre*. 2017;1(1):125-132.
- Lafta AH, Challob MA, Ridha BAJ. Study on major constraints and problems facing agricultural extension

- workers in Iraq. *Annals of the Romanian Society for Cell Biology*. 2021;25(4):8440-8447.
25. Lafta AH, Al Khafaji NJM. The work environment of agricultural extension workers in the agricultural extension organization in Iraq. *International Journal of Agricultural and Statistical Sciences*. 2022;18(1):2435-2438.
 26. Mahmoud YA, Lafta AH, Fayadh SU. Knowledge level of horticultural growers regarding side effects of excessive fertilizer use. *Iraqi Journal of Agricultural Science*. 2009;40(6):101-107.
 27. Mahmoud YA, Lafta AH, Fayadh SU. The reality of fertilizer use by farmers in the orchards district of Tarmiya, Baghdad, and the degree of knowledge of its risks. *Anbar Journal of Agricultural Sciences*. 2010;8(4):281-288.
 28. Rakhit MN, Lafta AH. Practices of vegetable farmers to face climate change in Iraq: a case study in Baghdad and Babylon provinces. *Iraqi Journal of Agricultural Sciences*. 2026;57(4):1199-1213.
 29. Rakhit MN, Lafta AH. The role of agricultural extension in enabling vegetable farmers to face climate change in Iraq: a case study in Baghdad and Babylon governorates. *Iraqi Journal of Market Research and Consumer Protection*. 2025;17(2):120-137.
 30. Ramadan NA, Lafta AH. Obstacles faced by agricultural extension workers in implementing the activities of the Agricultural Extension and Training Organization and proposed solutions. *Iraqi Journal of Market Research and Consumer Protection*. 2025;17(1):153-162.
 31. Rana SH, Lafta AH. Sustainability standards of agricultural innovation platforms to empower rural women in the transition to sustainable family agricultural systems in Baghdad Governorate. *Journal of Educational and Psychological Research*. 2025;22(84):331-354.
 32. Rana SH, Lafta AH. The challenges facing rural women in addressing climate change in Abu Ghraib district and strategies to address them. *Political Issues Journal*. 2024;1(1):155-165.
 33. Razzaq AA, Fadel M, Lafta AH. Achievement motivation of students in the College of Agriculture. *Diyala Journal of Agricultural Sciences*. 2010;2(1):76-87.
 34. Saleh JM, Man N, Lafta AH, Salih MH, Latiff IA, Nawi NM, *et al.* Needs of farmers for guidance publications for the development of agricultural extension in Anbar, Iraq. *Journal of Economics and Sustainable Development*. 2015;6(24):51-59.
 35. Saleh JM, Khamis AI, Hamid RM, Lafta AH, Aldabbagh EJ. The relationship between job satisfaction and the performance of agricultural extension workers: a perspective in a changing world. *Agriculture, Forestry and Fisheries*. 2026;15(2):61-66.