



# Plant Archives

Journal homepage: <http://www.plantarchives.org>  
doi link : <https://doi.org/10.51470/PLANTARCHIVES.2021.v21.S1.196>

## THE ROLE OF AGRICULTURAL EXTENSION IN ADDRESSING OBSTACLES OF SUPER ADVISORS IN BAGHDAD GOVERNORATE, IRAQ

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### ABSTRACT

The study aimed to identify the role of agricultural extension in addressing the problems which facing of agricultural development by identifying some extension measures to address obstacles in accordance with performance of agricultural extension workers. The scale included six axes representing agricultural development obstacles in following areas (salinity and desertification, water problem, agricultural policy problems, technological constraints, structural constraints, human constraints), and these axes included 90 paragraphs representing indicative measures to confront development problems. A random sample of 40% was chosen out of 17 agricultural divisions in Baghdad governorate on both sides of Karkh and Rusafa. A random sample of 50% of the agricultural extension workers in the agricultural departments and divisions was also chosen. The questionnaire was used as a tool to collect data from the two subjects. After analyzing the data, it was using the SPSS statistical program. The study concluded that agricultural guides had see great importance for procedures related to addressing problems and obstacles facing the agricultural development process, but the level of implementation of the treatment procedures was a weakness degree, and it was found that there were a clear deficiency in addressing problems of salinity, desertification and water problems. The study also showed a clear absence of the process of coordination, cooperation and integration with the relevant agricultural organizations and other supportive institutions, which was negatively reflected in implementation of measures to confront problems related of agricultural policy, the provision of agricultural technology, and the rehabilitation of infrastructure. The study included some scientific recommendations based on the research findings.

**Keywords :** salinity and desertification, agricultural, technological obstacles, human obstacles

### Introduction

It is a profound economic and social disparity between developed and developing countries is one of the most important characteristics of the contemporary world between developed and developing countries. These countries are still searching for their identity and position in this world, which has become looking for a better life after centuries of economic exhaustion and social backwardness, which left its mark on all aspects of life and countries will not achieve the life they hope for except by eliminating dependency or adopting developmental programs based on comprehensive, integrated structural planning to rebuild them in a way that allows the content of these programs to be absorbed to give them real meaning and help to support and succeed them (Mukhtar, 2002). The development is an integrated process to improve aspects of economic and social life of society, as it works to achieve stability, continuity and communication from perspective of its using of natural materials through a strategy that takes environmental balance as a controlling axis for purpose of raising the living standard and achieving luxury and development operations depend mainly on mobilizing all capabilities and energies and identifying of stages of progress besides achieving social justice in distribution of basic needs, and therefore development is a goal for all of developing societies, as it contributes to developing the human being to become more capable and

demanding, including for work (Al-Samalouti, 2011). There is no doubt that agriculture is the mainstay of the economic and social architecture as it contributes to comprehensive development events and advancement of society, and its importance increases as it represents one of the strategic sectors in most developing countries and it is linked to its activities more than half of population, whether in productive or marketing and manufacturing activity (Jumaa, 2010). Because of the importance and vitality of sector, most developing countries have moved towards agricultural development in order to modernize and expand the use of scientific methods in agricultural work based on science and experience (Arab Organization for Agricultural Development, 1994) and on this basis, The comprehensive development in general and agricultural development in particular it is no longer just a necessity for life, but an obligation to promote societies. Agricultural extension is one of the best key entry points for achieving agricultural development, as it represents the active component in bringing about behavioral changes and providing farmers with knowledge and skills and developing positive trends through various educational and educational activities and efforts (Heikal *et al.*, 2015). Also, the message of agricultural extension is not limited to merely to increase agricultural production or seek to modernize of agricultural sector only, but it exceeds that scope and extends to include economic

renaissance events through optimal exploitation of all that is in countryside of natural and human opportunities, the resources, tools and capabilities, human awareness, farmers and developing their capabilities and style their thinking so they can benefit from scientific and technological advances in their communities (Hamdi, 2012). In Iraq, the agricultural sector represents is one of the major of economy sectors, with the food security it achieves that contributes to supporting national income and improving economic and social conditions for members of society (Kazem, 2007). Despite the availability of agricultural ingredients in Iraq, today he suffers from various problems, which made him at a level that is not commensurate with the size of agricultural production and his hoped-for role in developing the Iraqi economy (Hamid, 2015; Al-Ezzi, 2010) states that the agricultural sector in Iraq suffers from a miserable and dangerous deteriorating situation that requires the competent authorities to pay attention to its seriousness and expedite its study with an accurate scientific manner, determine reasons that led to this deteriorating level, and develop successful solutions to try to extract it and bring it to safety (Al-Hashemi, 2018) indicates that agricultural sector in Iraq entered into mazes and narrow vestibules as a result of complicated circumstances that passed through Iraq made it into a dark corner and, as a result, it was transformed from a productive agricultural country into an importer of all agricultural products (Salem, 2012) states that problem of agricultural development in Iraq is represented by a group of interrelated and interrelated obstacles represented in destruction of infrastructure, land problems, salinization, desertification, water problems, environmental pollution, low investments, stopping of state support, high price, and low using of the agricultural technological package, as well as problems trade policy and resulting policy of dumping Iraqi markets with imported products.

Also, the problems and obstacles that hinder the progress of the agricultural development process in Iraq are water problems and low water levels. The scientific sources and statistics indicate a decrease in imports of the Euphrates River by a rate of (70%) and the Tigris River at a rate of (50%), as well as the deterioration of water quality due to the control of neighboring countries over on headwaters of two rivers (Saead, 2010), another obstacle is salinity and desertification as a result of using irrigation farmers by traditional methods. The area of land without production reached (2,934,507) thousand hectares, which is equivalent to (68.9%) of the total area of Iraq (Arab Organization for Agricultural Development, 2007). Also, one of the problems of agricultural development is large dangerous environmental pollution of water and air. The statistics indicate that salinity rate has increased from (250) ppm to (3000) ppm, and the pollution rate has increased from (1.3) to (50) ppm, which is high dangerous on health of human, animal and plant (Al-Jamal, 2010). It is the neglect of farmers and weak efficiency and effectiveness of extension agencies is one of the important factors in stopping the agricultural renaissance. The dependence of farmers on their ancient experiences and the absence of extension programs to develop their capabilities led to a weak knowledge and skill level for farmers and their weak material and knowledge capabilities, which was reflected in their social, economic and cultural conditions. The process of transformation towards economic openness is one of the most important problems facing the

agricultural sector, as the transformation of economic policy towards the application of market measures through the abolition of protection measures which it leads to open the foreign trade and the elimination of customs duties for the majority of imported products (Idan, 2010) Another obstacle to the agricultural development process is complexity of tenure structure of agricultural lands and fragmentation of agricultural ownership into small and scattered production units and thus led to low agricultural productivity rates, as scientific sources indicate that ownership area confined between (less than 10 dunums and less than 20 dunums) has formed (90 %) of the total agricultural properties in Iraq, thus forming non-economic properties that do not allow of farmers to cultivate them according to the economic cycle (AL-Jamal, 2010). Also, poor interest in agricultural price and marketing policy which played prominent role in obstructing of agricultural development and neglecting to support agricultural prices and working to not raise them to nearly global prices or to the level that makes these prices rewarding led to discouraging agricultural investment and another aspect is that absence of a policy to support agricultural production requirements did not encourage farmers to use modern high-efficiency production inputs (such as equipment, fertilizers, improved varieties, etc.). The liberalization of prices of these inputs and the lifting of subsidies have led to higher prices in the markets, which have contributed to increasing financial burden on farmers and their inability to purchase sufficient quantities from them to expand agricultural production (Arab Organization for Agricultural Development, 2009). The mismanagement of agricultural resources led to agriculture deterioration and absence of follow-up and implementation of laws which generated human draining practices for resources such as (urban expansion at expense of fertile agricultural land, removal of vegetation by logging, overgrazing that affected finest agricultural lands, as well as ill and using of agricultural machinery and the indiscriminate use of fertilizers and agricultural pesticides was resulting pollution of the environment. Based on the above and in light of interlocking challenges, it is the responsibility of agricultural organizations in general and agricultural extension in particular to use all human, technological and administrative capabilities to address their obstacles that prevent the advancement of agricultural realities and work through cooperation, coordination and integration with relevant institutions to develop an integrated plan to reduce the deterioration in the agricultural sector and address its problems and create objective conditions to make this vital sector play a wide role in the development process in Iraq. Accordingly, the idea of research came through trying to answer the following question (What is the role of agricultural extension in addressing of problems and obstacles that hinder the progress of the agricultural development process in Iraq)?

### **The aims of this study**

To learn about the role of agricultural extension (reality and expectations) in addressing the obstacles to agricultural development.

The importance of studying : The importance of the study is embodied in the following:

1. Disclosure of the real, realistic and prospective roles of agricultural extension from how to deal with

fundamental problems that hinder the agricultural development.

2. It helps in knowing the effectiveness of the advisory system in Iraq and its material, human, cognitive and technological capabilities.
3. Opening new horizons for effective contribution of agricultural extension in field of agricultural development, such as participation in shaping agricultural price, marketing and financing policy.
4. The importance of this study is one of the recent studies that dealt with various aspects that related to essential axes of agricultural development process.

### Materials and Methods

#### Study methodology

The descriptive approach was adopted, which describes and explains what an object is, and determines the relationships that exist between reality and give an explanation. The descriptive method was used in collecting the data in question in addition to analyzing that data to obtain more accurate and objective facts.

#### Study area

This study was conducted in Baghdad governorate and was chosen as a region for conducting study due to the

presence of large numbers of agricultural extension workers were working in agricultural organizations such as Agricultural Extension Department and extension training centers and agricultural directorates on both sides of Karkh and Rusafa and the agricultural divisions affiliated to it.

#### The study sample:

1. Select of Agricultural Guidance of Training Department, the Agricultural Training Center, the Rusafa Agriculture Directorate and the Karkh Agricultural Directorate were tested as a sample for the study, due to the large number of agricultural extension workers in them, In addition to a random sample (40%) of agricultural divisions of the two districts of Baghdad (Al-Karkh and Al-Rusafa), which number (17) agricultural divisions, at the rate of (7) : Rashidiya, Al-Madaen, Baghdad Center, Al-Taji, Al-Kadhimiya, Abu Ghraib, and Al-Rasheed.
2. Select of (50%) of the agricultural extension workers in Baghdad Agricultural Directorate of Al-Karkh and Al-Rusafa and agricultural divisions mentioned above were selected and the same percentage of the agricultural extension workers in the Agricultural Extension Department and the extension training center, who numbered (155) agricultural extension workers, to be total of the research community (78) respondents. As shown in table (1).

**Table 1 :** Distribution of numbers and proportions of the research community and sample according to the agricultural directors and divisions.

The Circle name	number of agricultural extension workers	number after drawing the sample
1. Agricultural Extension Division	78	39
2. Extension Training Center	18	9
3. Al-Rusafa Agriculture Directorate	10	5
4. Al-Karkh Agriculture Directorate	12	6
5. Al-Rashidiya Agriculture Division	5	3
6. Al-Madaen Agriculture Division	4	2
7. Baghdad Agriculture Division (Division Center).	6	3
8. Division of Taji Agriculture	4	2
9. Al-Kadhimiya Agriculture Division	7	3
10. Abu Ghraib Agriculture Division	5	3
11. Al-Rasheed Agriculture Division	6	3
Total	155	155

#### Preparing plan for agricultural extension (reality and expectations) in addressing the obstacles to agricultural development in Iraq.

The plan was prepared through the following stages:

1. The prepared plans was initially, through reviewing literature and studies related to the topic of obstacles that impede the progress of the agricultural development process and the role of agricultural extension in addressing them, as well as through a field survey and interviewing officials in higher management of agricultural extension and some managers working of the Ministry of Agriculture. The scale may consist of six areas representing agricultural development obstacles, which are related to the following (salinity and desertification, water constraints, agricultural policy constraints, technological, human, and structural constraints) as these areas included (92) paragraphs.
2. The scheme was presented in its initial form to experts group in field of agricultural extension and field of agricultural policy and in field of soil and water resources, through a questionnaire that included areas and paragraphs of the scheme in order to achieve apparent honesty and truthfulness of the content. Experts were asked to indicate degree of their agreement to each field and paragraph in scale light for inclusion consisting of three phrases (agree, agree with amendment, disagree), and a numerical value was specified (3, 2, 1) degree for each phrase. By calculating of averages of expert approval scores, all areas and paragraphs obtained an approval rating that ranged from (81% - 89%) after two paragraphs were excluded, with components of the scheme remaining in their final form.
3. A questionnaire was prepared for purpose of collecting study data, as it included six axes was representing the obstacles to development policy under which (90)

paragraphs represent realistic and hoped for extension activities to address agricultural development problems distributed as follows: field of salinity and desertification (16) paragraphs, field of water obstacles (16 items), agricultural policy obstacles (14 items), human obstacles (16 items), structural obstacles (12 items). These paragraphs were placed under a four-step gradient scale to see the degree of implementation of extension activities, the represents (role of realistic agricultural extension) consisting of the following statements (always, sometimes, rarely, not implemented) and weights (0, 1, 2, 3) were given a degree, respectively, corresponding to that .The scale is another quadrant scale that represents the importance of areas and paragraphs (role of the desired agricultural extension) consisting of the following statements (very important, important, somewhat important, unimportant) and standard weights (0, 1, 2, 3) were given a degree and so the degree of scale was determined by what between (zero -270) degrees as a minimum and the highest numerical value obtained by respondents.

4. A preliminary test of the questionnaire was conducted on a random sample of (18) researchers for purpose of consistency verifying of the form. The stability factor was calculated by using half-way segmentation method from identifying correlation value between odd and even values using the Pearson equation, and then stability factor was calculated using an equation Spearman Brown to correct it, the value of the stability coefficient (0.91) degrees.

It should be noted that role of agricultural (hopeful) extension was measured by identifying opinions of the respondents on the importance of areas and paragraphs, which had already been mentioned after it was placed under a four-step scale for a scale of importance, while the role of agricultural extension (reality) was measured by identifying opinions. The respondents are about the level of implementing the extension activities (the paragraphs that are included in the scale).After confirming of the apparent honesty and content validity and consistency of questionnaire, data were collected from the research sample of (78) respondents from agricultural extension agents distributed in agricultural departments and divisions of

Baghdad Governorate during month from (January 2019), and SPSS statistical program was used for purpose of analyzing data and display the results in final form.

## Results and Discussions

### Role of agricultural extension (reality and expectations) in addressing the obstacles of agricultural development in general.

In order to identify role of desired agricultural extension in addressing the obstacles of agricultural development in general, the subjects' degrees with ranged between (156-260) as a minimum and the highest numerical value and an average of (237.3) degrees according to a scale that shows the role of agricultural extension hoped in addressing the obstacles to development with between (zero-270) degrees. It appears from the results mentioned in table (2) that (78%) of respondents believe that it is (very important, important) to implement the measures that were mentioned in the scale of role of agricultural extension hopeful in dealing with obstacles of agricultural development and adopting these measures will contribute greatly to the progress of agricultural development in Iraq is on the right track. While only (13%) of them believed that some activities mentioned in the scale were (somewhat important, unimportant). On the other hand, in order to get acquainted the level of implementation of these procedures by the agricultural extension agents only, the total score of the respondents was ranged between (84 - 238) degrees as the lowest and highest numerical value and an average of (128.3) degrees according to a measure of the level of implementation of the extension measures between (0-270) degrees. The results show that reality of role of agricultural extension in addressing agricultural development obstacles is at weakness degree, as (73%) of the respondents believe that level of implementing the extension measures is not level of treatment bulk (rarely, not implemented), while (27%) of them believe that level of its implementation was (permanent, sometimes). The reasons for this decline and weakness are due to the lack of an indicative strategy of guiding organization to achieve agricultural development, and absence of coordination and integration with the relevant authorities. or may be the reason is due to the poor awareness of the extension agents in some of extension activities were mentioned in the scale.

**Table 2 :** Numbers and Percentages of respondents according to their roles in addressing the obstacles of agricultural development in Iraq.

The level of importance	Limits of average importance values	number	%	Average of importance	Execution level	value limits of medium execution	number	%	Average implementation
very important	234 degrees or more	31	40	216.3	Always	200 and above	8	10	214.3
Important	207 - 233 degrees	34	47	219.8	Sometimes	161-199	13	17	179.6
Somewhat important	180-206	9	12	191.2	Scarcely	122-160	35	45	148.4
not important	179 degrees and lowest	1	51	156	Do not implement	Less than 121 degrees	22	28	94.8
Total		78	100	Mean 237.3			78	100	mean 128.3

### Role of agricultural extension in addressing every impediment to agricultural development

The results indicate, according to the data presented in table (3), that more than three quarters of the respondents believe that a high importance of the indicative procedures that represent obstacles to the progress of agricultural development in Iraq, despite the slight variation in opinions of the respondents about the importance of these areas, but the agricultural extension measures to address the water constraints priority has been accorded the importance order, followed by the procedures related to the treatment of human obstacles, while recommendations and guidance measures related to treatment of structural obstacles came at the bottom of the order of importance. Despite the slight difference, the researchers believe that obstacles and water problems faced by farmers are among most severe problems to progress of the agricultural process, and absence of follow-up and control by the competent agencies has generated problems and obstacles caused by the human element such as bulldozing the land, cutting down trees, not preserving the vegetation, overgrazing and practicing many businesses that violate of laws and regulations.

In order to get acquainted with opinions of the respondents on the level of implementation of the procedures related to addressing the obstacles of development within the fields studied, the data in table (3) showed that (64% - 83%) of the respondents believe that the level of implementation to address these areas was a decline degree, and that there is a clear variation in level of implementation of extension activities. The role of agricultural extension in dealing with structural constraints represented the lowest levels with an average of (53) degrees, Another followed by addressing agricultural policy constraints by (88) degrees, while guidance measures to address human obstacles, salinity problems and land desertification came first as the value of weights reached Percentage (46.8%), (46.6%) respectively. This result reflects the decline in planning and implementation of extension programs, weakness of educational and educational activities and services for the public of farmers, and indifference to the problems and obstacles that hinder the progress of the agricultural process on the right track and obstruct the agricultural development process.

**Table 3 :** Numbers and percentages of agricultural extension respondents according to their roles of address every obstacle in agricultural development

Development impediments	Very important		Important		To some extent		Not important		Average field	Centenary weight	always		Some times		rarely		We do not implement		Average field	Centenary weight
	No.	%	No.	%	No.	%	No.	%			No.	%	No.	%	No.	%	No.	%		
Salinity and desertification	29	.37	41	.53	8	.10	—	—	2.77	92.3	9	.11	19	.24	27	.35	23	.29	1.40	46.6
Water obstacles	32	.41	40	.51	6	.07	—	—	2.88	96.0	6	.07	16	.21	35	.45	21	.27	0.95	31.7
Agricultural policy	26	.33	39	.50	11	.14	2	.03	2.5	83.3	6	.08	14	.18	36	.46	22	.28	0.88	29.3
Technology constraints	31	.40	39	.50	7	.09	1	.01	2.79	93.0	7	.09	17	.22	34	.44	20	.26	1.3	43.3
Human handicaps	32	.41	40	.51	6	.08	—	—	2.87	95.6	9	.11	20	.26	28	.36	21	.27	1.40	46.8
Structural constraints	20	.26	36	.46	18	.23	4	.05	2.33	77.6	3	.04	10	.13	39	.50	26	.33	0.53	17.6

#### 1. The role of agricultural extension in addressing the obstacles related to salinity and desertification of agricultural lands

The results showed the data presented in table (4) that implementation level of the guidance measures that would work to address the salinity and desertification of agricultural lands on a humility degree, as the general average level of implementation reached (1.40) degrees. The varied opinions of the respondents was regarding level of implementation of extension activities, where recommendation regarding educating farmers on importance of soil conservation and fertility was topped ranking scale with an average of (2.12) degrees, followed by recommendation related to use of modern irrigation methods and reduce of excessive irrigation of the crop and following the agricultural cycle and cultivation of leguminous crops with an average it reached (1.91) and (1.74), respectively, Whereas, came the recommendations related to the necessity of managing, maintaining and maintaining the drains came and urging farmers to use intertwining in cultivating the land at the end of the ranking scale with an average of (.71) and (.90) respectively. On the other hand, most of the recommendations and guidelines related to addressing the salinity and desertification of the land by carefully received of the respondents, as average importance of activities reached (2.77) degrees, at the top of which are the recommendations related to necessity to work and maintain

drains, and to use of modern irrigation methods as the percentage weight of two paragraphs reached (100%), and then recommending that farmers be educated to follow agricultural cycle and need to preserve and fertilize the soil with a percentage weight of 97.3% and 96.6%, respectively. We conclude from table (4) that role of agricultural extension in addressing the problems related to salinity and desertification of agricultural lands was weak, as the percentage weight of all paragraphs ranged between (23.6% - 70.6%) as lowest and highest numerical value, while the respondents opinions on the importance of adopting those Paragraphs to treatment of salinity and desertification (very important - important), as value of percentage weight of the items ranged (84% -100%) as the lowest and highest numerical value.

#### 2. Role of agricultural extension in addressing constraints and problems of water

The data in table (5) showed that level of interest of the agricultural extension researchers with procedures related to treatment of water obstacles is mostly between (very important, important), as the percentage weight values ranged between (85-97.6%) respectively, and this means that agricultural extension workers are wide looking for future roles of agricultural extension are more extensive and profound in addressing water problems, and the following indicative measures have been important in terms of importance (contributing to drawing water policy and



designing agricultural plans in accordance with available water quantities, and educating farmers about risks of continuing with traditional irrigation), as average percentage weight it has (79.6%) and (97.3%). As for level of implementation of extension measures by extension agents to address these problems, the data indicate that level of implementation is twice average, with an average of (0.95) degrees and values of the percentage weight of implementation level ranged between (14.6- 64%) as the highest and lowest numerical value, and that more than (80%) of the procedures had an average implementation of less than (1.2) degrees, while only three procedures were level of implementation with an average degree which is (knowledge of developing farmers' in the field of water resources management, raising awareness of modern methods of irrigation, and warning farmers about the dangers of relying on traditional methods of watering the crop). On the other hand, it has reached the lowest level of implementation of the following guiding procedures (reporting and data to the higher management about the actual needs of farmers from irrigation water and coordination with irrigation departments to follow up the water transport channels and preventing the breach of the irrigation system) as the percentage of their percentage weight reached (14.6%) and (15.3) % respectively.

### **3. Role of agricultural extension in dealing with problems related to agricultural policy**

The respondents opinions was varied about level of the importance of the procedures related to dealing with problems of agricultural policy. Despite this, the respondents opinions about importance of measures were (very important, important), with an average of (2.5) degrees, were coming at the forefront of this procedures (activating the law of to protect the product Agricultural, enacting legal legislation, supporting farmers by purchasing productive crops at encouraging prices, as well as supporting and providing production requirements at reduced prices and imposing customs duties on imported crops). As for level of measures implementation on the ground, the results, according to the respondents opinions showed a significant weakness for dealing with problems related of agricultural policy, as the general average level of implementation reached (0.88) degrees, and it was clear from results the absence of cooperation, integration and interdependence with agricultural organizations with relationship and modest vision of the guiding organization to the agricultural problems. Despite the low level of measures to address agricultural policy obstacles, the opinions of the respondents on implementation measures were varied and according to the percentage weight of the arrangement of procedures. (Action measures to encourage farmers to increase agricultural investment and provide incentive to increase production, coordination with relevant authorities to provide agricultural technology at subsidized prices, and imposing customs duties on imported crops at the forefront of the implementation ladder at (38%), (36.3%), (34.6%), according to the arrangement.

### **4. Role of agricultural extension in addressing technological constraints**

It is clear from the data provided in table (7) that respondents estimate the importance of measures that would work to address technological obstacles, as it believes that

(90%) of them that these procedures are (very important, important) and an average of (2.79) degrees. The value of percentage weight for importance of these measures ranged between (83.3% - 100%) as it was lowest and highest value, at the forefront of which is according to the opinions of the researchers (encouraging farmers to use modern technology and training them in their use, intensifying extension efforts to persuade farmers to use modern technologies in agriculture, cooperation and coordination with research authorities around importance of developing and multiplying improved varieties and hybrids and disseminating them among farmers, and approaching the competent authorities to provide agricultural technology at subsidized and encouraging prices). As for researchers 'opinions on the level of implementation of these procedures, the data showed a clear variation in level of implementation, but overall average of implementation level was low with an average of (1.30) degrees, while some procedures recorded a high level of implementation relatively led by (encouraging Farmers use agricultural technology, teaching them and persuading them to use them continuously, training farmers how to use them, and contributing with actors in organizing exhibitions where agricultural innovations are presented). On the other hand, many of the procedures that are required to implement coordination and cooperation with other parties have witnessed a noticeable decrease that came in the forefront (coordination to provide requirements and allocations for conducting field research, approaching the higher departments to increase allocations to develop and import agricultural technology, and encouraging capital owners from farmers to import equipment and technologies Agricultural).

### **5. Role of agricultural extension in addressing of human constraints**

The data presented in table (8) showed high importance of proposed measures to address human obstacles according to the opinions of the respondents, as the average values ranged between (3 -2.6) degrees as highest and lowest numerical value and with a total average of (2.81) degrees, Also, the results shows that more than (90%) among of respondents, believed proposed measures to address human obstacles (very important , important), As well as the results did not show any procedures (low or not important), the reason that high importance explains that conditions events followed of 2003 and the accompanying destruction of government institutions and absence of oversight accounting were opened the door for many farmers to practice many activities that violate laws and regulations such as bulldozing orchards and urban encroachment at expense of agricultural lands and disturb irrigation systems through bypassing main channels carrying water and cutting trees and eliminating vegetation and to use of fertilizers and pesticides indiscriminately and adoption of those pesticides from unknown sources. On the other hand, the results appeared a slight progression in level of implementation of some of procedures related to treating human obstacles compared to the guiding procedures of addressing other developmental obstacles, as total average value reached (1.40) degrees, comes at forefront of those procedures (developing the farmer's awareness of the damages resulting from misuse of pesticides, Chemical awareness of farmers about risks of indiscriminate use of chemical fertilizers, importance of maintaining vegetation, and awareness of consequences of throwing animal and agricultural waste and pesticide

packages in rivers and their risks to human and animal health), as average level of implementation reached (78.1), (70.1), (69.1), (67.1) respectively. Nevertheless, the general nature of level of implementation of extension measures to address human constraints is described as low and does not meet the minimum level of ambition, and reason for this weakness may be due to the attention of the extension agencies to activities related to agriculture and crop service at the expense of many obstacles serious prevent agricultural development.

#### 6. The role of agricultural extension in addressing structural constraints

The subject of addressing obstacles related to infrastructure may be far from some perceptions of minds of many specialists to be a role of agricultural extension in addressing this problem in this field has been included in this study according to the researchers' belief that role of agricultural extension was able with this obstacle form directly, but by giving realistic facts and perceptions to the relevant authorities about the problems and obstacles that impede progress of the wheel of agricultural development in

general and structural constraints in particular, and principles of extension work are to identify the main factors in local community, such as economic, social, cultural and service conditions in villages and rural areas. The results showed (table 8) that respondents of agricultural extension workers observed great importance for indicative procedures related that dealing with infrastructure obstacles of the agricultural areas, the values of average importance ranged between (1.76 - 2.91) degree as the highest and lowest numerical value and with average of 2.33) Degree. While it was found that level of implementation of these procedures was at lowest levels with an average of (.53) degrees and that more than (80%) of respondents believed that procedures implementation that related with dealing with structural obstacles is often (implemented rarely , not implemented), and the reason for this to due failure to include such activities within the extension tasks, because many agricultural extension workers believe that these procedures are not within the extension work specialization, while guidelines for extension work emphasize of importance of preserving natural resources in agricultural areas.

**Table 4 :** Average and percentage weight of the respondents' opinions on importance and level of implementation of the procedures related of addressing the salinity and desertification of agricultural lands.

Guiding procedures to address salinity and desertification of agricultural lands. (Extension and awareness of farmers to achieve the following)	importance of items		Execution level	
	Average importance	Centenary weight	Average importance	Centenary weight
1.Educating farmers on importance of preserving soil fertility.	2.90	96.6	2.12	70.6
2.Recommendation for orthopedic tillage and soil ventilation.	2.82	94.0	1.70	56.6
3.Follow the agricultural cycle and cultivate the land with leguminous crops.	2.92	97.3	1.74	58.0
4.using of modern irrigation methods and not over-watering the crop.	3.00	100	1.91	63.6
5.To make and maintain main and subsidiary drains.	3.00	100	1.24	41.3
6.Cultivation of non stressful crops on the land.	2.71	90.3	1.33	44.3
7.Using organic fertilizers to improve soil properties.	2.80	93.3	1.45	48.3
8.Urging farmers not to put pressure on the soil by intensifying agriculture, especially stressful crops .	2.52	84.0	1.15	38.3
9.Planting trees and windbreaks around the farm fields and preserving them from felling.	2.80	93.3	1.58	52.6
10.Awareness of the damage of overgrazing and conservation of vegetation.	2.87	95.6	1.26	42.0
11.Instruct farmers of the actual needs of the water and the disadvantages of excessive irrigation.	2.70	90.0	1.60	53.3
12.Crop cultivation with high tolerance to salinity.	2.60	87.3	1.11	37.0
13.Proper soil management, non-depletion and fertility preservation.	2.75	90.0	1.54	48.3
14.Attention and preservation of existing field drains.	2.86	93.3	0.71	23.6
15.Educating farmers on the importance of using foliar fertilization to fertilize the crop.	2.73	91.0	1.12	37.3
16.Urging farmers to use interlocking cultivation that reduces soil salinity.	2.60	86.0	0.90	30.0

**Table 5 :** Average and percentage weight of the respondents' opinions around for importance and level of implementation of the procedures related to the treatment of water problems.

Guiding procedures for dealing with water problems. (Extension and awareness of farmers to achieve the following) .	level of importance		level of implementation	
	Average importance	Centenary weight	Average importance	Centenary weight
1.Knowledge and developing farmers' knowledge in the field of water resources management.	2.86	95.3	1.92	64.0
2.using of modern technologies in irrigation of agricultural crops.	2.91	97.0	1.75	58.3
3.Cultivation of crops with few water needs.	2.70	90.0	1.24	41.3
4.Awareness of the dangers of relying on traditional methods of irrigation and its consequences.	2.92	97.3	1.71	57.0
5.Educating farmers about the necessity of harvesting the water resulting from rain and torrential rain.	2.74	91.3	0.60	20.0
6.Awareness of the benefits of lining irrigation canals to prevent water intrusion.	2.63	87.6	0.52	17.3
7.Coordination with the irrigation departments to follow up the main quality water water transport channels and prevent the irrigation system from being damaged by farmers.	2.91	97.0	0.46	15.3
8.Not to allow farmers to create water channels according to their desire, which would disturb the water rations of other farmers.	2.80	93.3	1.18	39.3
9.Coordination with the relevant departments on the necessity of securing water quotas for farmers in accordance with agricultural plans.	2.84	94.6	0.79	26.3
10.Submitting objective reports and data to the senior management on the actual needs of farmers for irrigation water and other uses.	2.72	90.6	0.44	14.6
11.Knowledge and developing farmers' in the field of water resources management.	2.55	85.0	1.15	33.7

12.using of modern technologies in irrigation of agricultural crops.	2.81	93.6	0.65	21.6
13.Cultivation of crops with few water needs.	2.93	97.6	0.63	21.0
14.Awareness of the dangers of relying on traditional methods of irrigation and its consequences.	2.85	95.0	0.99	33.0
15.Educating farmers about the necessity of harvesting the water resulting from rain and torrential rain.	2.90	96.6	0.57	19.0
16.Awareness of the benefits of lining irrigation canals to prevent water intrusion .	2.87	95.6	0.66	22.0

**Table 6 :** Average and weighted percentage of respondents' opinions around importance and level of implementation of measures on addressing agricultural policy obstacles.

Guidance measures to address agricultural policy constraints (To participate and coordinate with relevant authorities to achieve the following).	level of importance		level of implementation	
	Average importance	Centenary weight	Average importance	Centenary weight
1.Activating product protection and enacting special legislation.	2.97	99.0	0.95	31.6
2.Imposing customs duties on imported crops.	2.82	94.0	1.04	34.6
3.Supporting farmers by purchasing agricultural crops at encouraging prices.	2.90	96.6	5.89	29.6
4.Support and provide of production requirements (fertilizers, seeds, agricultural equipment) at low prices.	2.84	94.6	0.94	31.3
5.call to increase investment allocations in the public budget and give the agricultural sector to top spot on the ladder of allocations.	2.71	99.3	0.45	15.0
6.Coordination for activation of agricultural societies and revitalization of agricultural cooperative thought.	2.61	87.0	0.72	24.0
7.Requesting of amendment of legislations, regulations and laws that enhance the tasks of private activity in the agricultural sector.	2.49	85.0	0.79	26.3
8.call to produce a price and marketing policy that supports agricultural prices.	2.42	80.6	0.56	18.6
9.Work to encourage farmers to increase agricultural investment and provide incentives to increase production.	2.39	79.6	1.14	38.0
10.Coordination to provide agricultural technology at subsidized and encouraging prices to farmers.	2.75	91.6	1.09	36.3
11.Demanding to activate and activate the virtual policy and encourage the farmer to borrow and expand the implementation of agricultural projects.	2.76	92.0	1.02	34.0
12.Inviting the higher management to expand the agricultural area and work with the contract system and allocate lands suitable for agriculture and distribute them to agricultural and peasant engineers.	2.80	93.0	0.92	30.6
13.Advocacy to open facilities procedures and for obtaining agricultural loans.	2.79	93.0	0.74	24.6
14.Concluding international agreements for the commercial exchange of agricultural crops to export local agricultural commodities that revitalize the agricultural sector.	2.53	84.3	0.33	11.0
15.Contribution and coordination of production on international markets and entry of agricultural products products to the competition market.	2.22	74.0	0.92	9.6

**Table 7 :** Average and percentage weight of the respondents' opinions on importance and level of measures implementation related of addressing agricultural constraints .

Guiding procedures of addressing agricultural technology barriers. (Guiding and guiding farmers to achieve the following).	level of importance		level of implementation	
	Average importance	Centenary weight	Average importance	Centenary weight
1.Encouraging farmers to use modern agricultural data.	3.0	100	52.2	84
2.Coordination with relevant agency to provide agricultural technology at stimulating and subsidized prices.	94.2	98	64.1	6.54
3.Intensifying extension efforts to persuade and educate farmers of the importance of using modern agricultural technology.	98.2	3.99	21.2	6.73
4.Cooperation and coordination with agricultural scientific research authorities to devise and develop various agricultural technologies.	61.2	94.0	42.1	3.47
5.Follow-up confirmatory experiences of modern agricultural technologies to verify their success and effectiveness.	99.2	87	94.0	3.31`
6.Training agricultural extension agents for farmers on how to use modern technology.	92.2	6.99	82.1	6.60
7.The higher authorities demand necessity of increasing resources allocated to import and development of agricultural technology.	81.2	3.97	75.0	25.0
8.Coordination with the relevant authorities to provide the allocations and requirements required for conducting field research among farmers.	96.2	6.93	65.0	6.21
9.Cooperation, integration and coordination with research bodies on importance of hybrid development and improved varieties and their dissemination among farmers.	83.2	6.98	08.1	36.0
10.Provides a real database for research authorities on needs and problems encountered by farmers.	77.2	3.94	49.1	6.41
11.Cooperation and participation with research agencies importance of adapting and adapting imported on the agricultural technology.	53.2	3.92	13.1	6.37
12. Encourage farmers with capital to import agricultural equipment and technologies.	62.2	3.84	80.0	6.26
13. The relevant authorities approached for necessity to reducing customs fees and providing facilities for introducing agricultural technology.	76.2	3.87	87.0	29.0
14. The concerned parties should hold exhibitions that show agricultural technology and urge farmers to view them .	50.2	92.0	75.1	3.58
15. Coordination with lending banks to provide facilities for lending to farmers and reducing interest rates	36.2	3.83	51.1	3.50
16. Cooperation with high level of authorities to develop research centers and increase their numbers in all governorates of the country.	36.2	78.6	0.86	28.6



**Table 8 :** Average and percentage weight of the respondents opinions on importance and level of implementation of the procedures related to treatment of human obstacles.

Guiding procedures that related of addressing human obstacles. (Guiding and guiding farmers to achieve the following)	level of importance		level of implementation	
	Average importance	Centenary weight	Average importance	Centenary weight
1.Awareness and develop of the farmer's to the good management of agricultural resources.	2.94	98.0	1.54	51.3
2. Educating farmers about importance of maintaining and maintaining vegetation.	2.97	93.0	1.69	56.3
3. Warning against the dangers of overgrazing and its impact on the environment.	2.91	97.0	1.66	55.3
4. approaching the higher authorities to need to take deterrent measures to limit urban expansion of expense of agricultural lands.	2.84	94.6	0.94	31.3
5. Educating the farmer of the risks of the indiscriminate use of chemical fertilizers.	2.90	96.6	1.70	56.6
6.Awareness and developing of farmer's of the harm caused by misuse of chemical pesticides.	3	100	1.78	59.3
7.Urging the sower to preserve the trees,' natural plants and reduce their depletion by cutting and logging.	2.98	99.3	1.39	46.3
8.Sensitizing the farmer to good management of livestock and disadvantages of random drawing of groundwater for watering animals.	2.60	68.6	0.90	30.0
9.Warning against the dangers of bulldozing , orchards , orchards and building industrial facilities on fertile lands.	2.95	98.3	1.19	39.6
10.Educating the farmer about the dangers of throwing agricultural wastes and pesticide packages in the rivers and their impact on the environment and human and animal health.	2.39	79.6	1.67	55.6
11.Urging the farmer to take care of the environment and warn against burning agricultural waste that pollutes the air.	2.97	99.0	1.22	40.6
12.Educating the farmer about the dangers and harms of dumping sewage in the rivers, which raises the level of salinity in the water.	2.88	96.0	1.49	49.6
13.Knowledge and developing farmers' for controlling agricultural pests by biological process and reducing the use of chemical control.	2.84	94.6	1.24	41.3
14.Follow the scientific principles for preserving livestock and risks of animal slaughter.	68.2	89.3	12.1	37.3
15.Awareness of importance of preserving natural resources of agricultural areas and not tampering with them.	2.90	96.6	1.56	52.0
16.The importance of preserving drains and rivers and not throwing dead animals into them.	2.70	90.0	1.42	74.3

**Table 9:** Average and percentage weight of the respondents opinions on importance and level of implementation of the procedures related to treatment of structural constraints.

Guiding procedures that related of addressing human obstacles. (Guiding and guiding farmers to achieve the following)	level of importance		level of implementation	
	Average importance	Centenary weight	Average importance	Centenary weight
1.Construction of roads and barrages, and rehabilitation of those affected in agricultural areas.				
2.To Work to construct and cover river channels and rehabilitate the damaged ones.				
3.Ensuring of continuity of electrical energy for agricultural areas.				
4.To maintain the main and subsidiary drains, restoring and maintaining old ones to eliminate the risks of salinization of agricultural lands.				
5.Opening schools and training centers to devoted of agriculture and animal husbandry in agricultural areas.				
6.Providing health centers in rural areas to spread health awareness among members of society.				
7.Providing veterinary centers and dispensaries, and providing care for farm animals.				
8.Establishing of social and educational center and taking care of it.				
9.Construction and maintenance of schools affected by education.				
10.Providing of stores, silos and refrigerators to secure receipt and storage of agricultural crops.				
11.Providing water tanks and dams to secure the water shares for irrigation.				
12.Securing mobile networks and Internet, which can be used to transfer agricultural knowledge and technology to farmers.				

## Conclusions

Based on the results, the study reached the following conclusions:

1. The study showed that a large percentage of agricultural extension workers consider the necessity of expanding their roles and extension functions from through active participation in facing the obstacles facing the progress of agricultural development in fields of (technology diffusion agricultural, infrastructure and agricultural policy constraints, human constraints, water and desertification problems).
2. The study showed that the level of implementing extension measures by agricultural extension workers to address obstacles to development Agricultural in general is a degree of weakness and does not rise to level of ambition, and that situation will remain the same compounding agricultural problems and complicating agricultural development process at the level of Iraq.
3. The study also showed a clear deficiency in addressing the obstacles related to salinity, desertification of lands and water problems irrigation and obstacles related to the use of agricultural technology. Also the study also showed the process of coordination, cooperation and integration with the supportive agricultural agencies in order to address the problems related to agricultural policy-making, infrastructure constraints and constraints and human handicaps.

- Agricultural extension workers have shown high interest in extension measures that will work to address obstacles to development agricultural and adoption of these procedures within the future extension programs.

#### Acknowledgements

I extend my thanks and appreciation to the Presidency of the University of Mosul, the Dean of the College of Agriculture and Forestry, and the affiliates of the Agricultural Extension Department and the General Directorate of Agriculture in Al-Karkh and Rusafa/Baghdad and the Deanship of the College of Science for Energy/Al-Karkh University of Energy for their efforts in providing the research requirements and their fruitful cooperation contributed to the completion of the research.

#### Recommendations

In light of the findings, the study was recommends as following:

- Giving a great attention for impediments to agricultural development in Iraq by agricultural organizations in general and agricultural guidance especially because of dangers that will be reflected negatively on proper course of agricultural process and the provision of security food.
- The need to work to intensify efforts and indicative activities for the purpose of addressing problems related to salinization and desertification and secure of irrigation water by preparing extension programs to educate and train of farmers and develop their knowledge , skills and using modern technologies in agriculture.
- Cooperation, integration and coordination with the agricultural authorities and specialized departments for purpose of addressing the obstacles related to provision and rehabilitation of infrastructures (such as construction and rehabilitation of irrigation canals and drains, provision of roads and service, educational and health services) and the establishment of warehouses and dams (to address technological problems) and provision of agricultural inputs made from fertilizers and improved seeds and advanced agricultural technologies such as advanced agricultural equipment and machinery.
- Actively contributing to design of agricultural policy, activating product protection measures and urging to imposition of customs duties for imported crops, secure purchase of crops from farmers at encouraging prices, and call for a marketing and pricing policy fair, energizing the political to farmers, opening the way for local agricultural products to enter global markets and activating agreements the trade exchange.
- Preparing of extension programs to educate farmers to better manage natural agricultural resources and activate follow-up, control procedures and taking deterrent decisions to limit urban expansion and the effects of overgrazing, In addition to educating farmers to preserve infrastructure such as river channels and the dumps and installations that serve of agricultural sector.
- Taking into consideration high importance shown by the agricultural extension workers towards to guiding procedures for dealing with obstacles agricultural development and its adoption in future extension programs.

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