

## The obstacles facing agricultural development from the view point of agricultural employees in Salah al-Din Governorate

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### ABSTRACT

**Key words:**

Obstacles, agricultural, development.

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The objective of the research was to identify the level of obstacles facing agricultural development from the point of view of the agricultural employees in the governorate of Salah Al-Din, and then the order of obstacles and paragraphs according to the relative importance of each, as well as finding the correlation between the level of constraints and a number of independent variables. The research included all agricultural employees in the Directorate of Agriculture of Salah Al-Din, Governorate and its affiliated population of (277) employees, a random sample of which was elected by 50%, after the exclusion of the initial sample of (27) employees. Thus, the research sample consists of (125) agricultural employees. The results of the study showed that the most (82%) of respondents think that the general level of obstacles to agricultural development in Salah al-Din governorate is average and tends to rise. And the field of extension work ranked first in the order of areas of agricultural development according to the importance of an average of (113.32), while the field of plant production ranked last with an average of (70.61). The results also showed a significant correlation between the level of obstacles and the level of education, number of years of service, sources of information, attitude towards agricultural development, participation in training courses. The results showed no significant correlation between the level of disability and specialization .

### المعوقات التي تواجه التنمية الزراعية من وجهة نظر الموظفين الزراعيين في محافظة صلاح الدين

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### الخلاصة

استهدف البحث في الأساس التعرف على مستوى المعوقات التي تواجه التنمية الزراعية من وجهة نظر الموظفين الزراعيين في محافظة صلاح الدين، ومن ثم ترتيب المعوقات والفقرات حسب الاهمية النسبية لكل منهما، وكذلك إيجاد علاقة الارتباط بين مستوى المعوقات وعدد من المتغيرات المستقلة. شمل البحث جميع الموظفين الزراعيين في مديرية زراعة محافظة صلاح الدين والشعب التابعة لها والبالغ عددهم ( 277 ) موظفاً ، تم انتخاب عينة عشوائية منهم بنسبة 50% ، بعد استبعاد عينة الاختبار الاولى البالغة (27) موظفاً ، وعليه اصبحت عينة البحث تتألف من (125) موظفاً زراعياً. اظهرت نتائج الدراسة ان نسبة (82%) من المبحوثين يرون ان المستوى العام لمعوقات التنمية الزراعية في محافظة صلاح الدين هو متوسط يميل الى الارتفاع ، وان مجال العمل الارشادي جاء بالمرتبة الاولى عند ترتيب مجالات التنمية الزراعية وفق لأهميتها بمتوسط مقداره (113.32) ، في حين جاء مجال الانتاج النباتي بالمرتبة الاخيرة بمتوسط (70.61) ، كما اوضحت النتائج وجود علاقة ارتباط معنوية بين مستوى المعوقات من وجهة نظر المبحوثين وكل من المتغيرات : مستوى التعليم ، عدد سنوات الخدمة ، مصادر المعلومات ، الاتجاه نحو التنمية الزراعية ، المشاركة بدورات تدريبية ( كما اظهرت النتائج عدم وجود علاقة ارتباط معنوية بين مستوى المعوقات و التخصص.

### الكلمات المفتاحية:

المعوقات، التنمية الزراعية، الموظفين الزراعيين.

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## **The obstacles facing agricultural development from the view point:**

### **Research Introduction and Problem:**

The development issue is one of the most important contemporary issues of the world . because it has become an important trend in various national activities. It is a necessity in contemporary societies. It is an imperative and a main requirement for developing societies because it is the basic way or means by which these countries can face backwardness In its economic and social environment, which has made various scientists interested in the cause of development , As they find that they occupy a large space in the books of sociologists, anthropologists and economics, but what distinguishes the writings of scientists is their focus on development in their respective fields in order to learn about the possibility of developing their countries (Hjira, 2007: 33). The agricultural development is one of the main pillars of the development of the economies of the world because of its direct relation to food security on the one hand, and the role played by the agricultural sector in its national economy on the other hand, and its direct link with rural development and social, economic and civilizational transformations in large areas of these countries From the third side (Abdul Qadir, 2000: 21) , If the development of the developed countries means positive change in the existing situation, in developing countries it is considered a radical change in the different conditions and areas of life, so that development goals cannot be achieved without balance between the economic and social sides (Erekat, 1997: 19). Where rural development, including agricultural development in some countries of the world, occupies a privileged place and an important role in the social and economic life of all peoples. In developed countries, there is considerable financial, scientific, technical and technological support from governments to the agricultural sector in these countries, despite the modern capabilities of the private sector , As for the developing countries, despite the efforts and increasing attention to agricultural development issues on the one hand, and despite the availability of agricultural land and human resources, water and material, on the other hand, the agricultural sector still suffers from many difficulties and challenges, which constitute a major barrier to the progress And to develop them better (Lazar, 2015: 2). Therefore, these countries seek to achieve the rural development inherent in agricultural development, which requires the attention of the work of many agricultural extension agencies, which depends on the success of the participation of farmers and the community in different sectors in the implementation of their development programs where agricultural development aims to optimize the utilization of the unit of land area with access to On a high return from being exploited with minimal costs , to get the marginal productivity at the lowest costs per unit area. In order to achieve this, it is necessary to develop the crop structure suitable for the type of land and the surrounding environmental conditions taking into account the social dimension and the taste of the consumer so that there is a market for the disposal of products produced from the unit of area with continuity of production and not exposure to risk, production and disposal operation (TIPS, 2010: 20) .The province of Salah al-Din from the Governorate of Iraq, which has good linguistic potential and in both the human and material. The idea of this study is to study the obstacles of agricultural development from the point of view of employees working in the agricultural sector because they are in direct contact with the agricultural reality and as tools used in the planning, implementation and evaluation of agricultural operations, and therefore They are aware of the obstacles facing agricultural development so the problem of research will be concentrated in answering the research questions:

- 1- What are the obstacles of agricultural development from the point of view of workers in the agricultural sector in Saladin Governorate?
- 2 - What is the correlation between the obstacles facing agricultural development and some independent factors related to the respondents?

### **Research Objective:**

- 1- Identify the level of obstacles facing agricultural development from the perspective of agricultural employees in the province of Salah Al-Din in general.
- 2- Arranging the obstacles to agricultural development according to their importance:
- 3- Finding correlation between the general level of the obstacles of agricultural development in Salah Al-Din governorate and some independent variables which was: educational level, scientific specialization, sources of agricultural development information, trend towards agricultural development, participation in training courses for agricultural development

### **Statistical Hypotheses:**

- 1- There is no significant correlation between the views of employees working in the agricultural sector in Salah Al-Din governorate and the level of education.
- 2- There is no significant correlation between the views of employees working in the agricultural sector in Salah Al-din province and scientific specialization.
- 3- There is no significant correlation between the views of employees working in the agricultural sector in Saladin Governorate and number of years of active service,
- 4- There is no significant correlation between the views of employees working in the agricultural sector in Salah Al-Din governorate and sources of agricultural development information.
- 5- There is no significant correlation between the views of employees working in the agricultural sector in Salah Al-Din province and attitude towards agricultural development.
- 6- There is no significant correlation between the views of employees working in the agricultural sector in Salah Al-Din province and participation in training courses for agricultural development

### **Procedural definitions:**

- 1- Agricultural employees: Graduates of colleges and institutes and economics of agriculture in various departments working in the Directorate and people of Salah al-Din province.
- 2- Obstacles: It is the existence of a problem in the agricultural sector in general hindering the process of agricultural development

### **Materials and Methods:**

#### **First: the population and its design:**

The research included the Directorate of Agriculture of Salah al-Din governorate and the people and its divisions, which consists of (20) agricultural divisions distributed in the districts of its districts of the governorate. A random sample was selected by 50%. Thus, the total frequency(125) was distributed among the governorate agriculture population as shown in Table (1).

#### **Second: Search Tool:**

The researcher used the questionnaire as a tool to collect data related to the subject of the research due to its relevance to the research methodology used. It is suitable for obtaining data and facts because it gives more objective data than other data collection methods to achieve the research objectives (Melhem, 2010: 371). The researcher prepared an initial questionnaire form The first part of the questionnaire contains data on some of the personal and functional variables of the employees working in the agricultural sector in Salah Al-Din governorate (Educational level, scientific specialization, sources of agricultural development independent , trend towards agricultural development, participation in agricultural development training courses), The second part includes a number of paragraphs to identify obstacles to agricultural development from the point of view of the employees working in the agricultural sector in Salah al-Din Governorate, Where it was prepared (185) disabled agricultural development in the first place .The rewording and deletion of some paragraphs has been modified to suit the search

### Third: the validity:

In order for the researcher to ascertain the validity of the paragraphs in terms of the wording, clarity and comprehensiveness of his research objectives, the questionnaire was presented as preliminary to a group of experts In the fields of agricultural extension, agricultural economics, educational and psychological sciences, and plant and animal production (13) experts and to identify their opinions and observations regarding the type of questions and the correct wording , The paragraphs on which the experts' opinions differed were modified

**Table (1) population and research sample**

N o.	Agricultural people	Total number of the population	Frequency	N o.	Agricultural people	Total frequency n the populationy	Frequenc y in the sample
1	Directorate of Agriculture Salahuddin	61	30	11	Agricultural Division Amerly	4	2
2	Agriculture Division Balad	15	7	12	Al - Ishaqi Agriculture Division	8	4
3	Agriculture Division Baiji	27	Excluded for use in the initial test	13	Agriculture Division AL- Tharthar	2	1
4	Agriculture Division Tikrit	11	5	14	Dijeel Agriculture Division	20	10
5	Agriculture Division Tlool AL- Bag	1	1	15	AL-Door Cultivation Division	16	8
6	Agriculture Division Hamreen	2	1	16	Cultivation Division Left Coast	7	4
7	Department of Agriculture of Dejla	4	2	17	Shargat Agriculture Division	16	8
8	Samarra Agriculture Division	14	7	18	AL-Senea Agriculture Division	4	2
9	Tuz Agriculture Division	26	13	19	Dulwiya Agriculture Division	11	6
10	Yathrib Agriculture Division	6	3	20	Agriculture Division AL- Alam	18	9
	Total	277	125	21	Mu'tasim Agriculture Division	4	2

\* Directorate of Agriculture Salahuddin Governorate, Human Resources Division, on 3/7/2017.

\*\* The initial test sample (27) was excluded from the total number of respondents.

### Results and discussion:

**The first objective: identify the level of obstacles facing agricultural development from the perspective of agricultural employees in the province of Salah Al-Din in general.**

The results showed that the highest value obtained by agricultural workers for the obstacles of agricultural development was (699), and the lowest numerical value (413) degree, with an average of (558.8) and a standard deviation of (60.38) . The raw grades were converted to standard grades and distributed to Three categories as in Table (2).

**Table (2) shows the categories of obstacles to agricultural development by used score low general**

Categories	Z -scores	numbers	%	Average degree of obstacles	
<b>Lowest</b>	less than (1–)	22	% 17.6	472.8	
<b>medina</b>	–) Between(1+1	79	% 63.2	556.3	
<b>highest</b>	more than (1+)	24	% 19.2	642.6	
	<b>Total</b>	<b>125</b>	<b>100%</b>	<b>s.d=60.38</b>	<b><math>\bar{X} = 558.88</math></b>

It turns out that 17.6% Of the respondents believe that the level of obstacles to agricultural development in general is low and (19.2%) believe that the are highest. This means that the obstacles of agricultural development from the point of view of the agricultural employees in Salah Al-Din generally Medium tends to highest, This result is the weakness of awareness or knowledge of agricultural workers to the importance of agricultural development, as a result of the weakness or absence of the role of some governmental development agencies, including agricultural extension in raising awareness of the importance of agricultural development and its positive role in the development of society

**The second objective – Arrangement the obstacles agricultural development according to their importance:**

The results of showed that the field of extension work is ranked first in the ranking by the respondents, it reached (113.328). As shown in the table (3) .

**Table (3): Arrangement obstacles agricultural development according to their importance**

No.	Extension	importance	Rank
<b>1</b>	Extension work	113.328	1
<b>2</b>	Agricultural Marketing	112.624	2
<b>3</b>	Agricultural Resources	108.608	3
<b>4</b>	Agricultural policies and agricultural legislation	89.04	4
<b>5</b>	Animal Production	75.064	5
<b>6</b>	Plant production	70.616	6

The results shown in Table (3) The scope of the obstacles to the work of extension has ranked first of the obstacles of agricultural development with an average arithmetic (113,328) . Despite the fact that the agricultural extension system is the most important device that deals with development processes and all type, this result may reflect the lack of clarity of the development role of this device in the Salah AL-din cultivation staff or poor performance of development tasks. While the field of plant production came last with an average of (70.616). The result may be the result Staff Knowledge or their contribution to most of the agricultural operations that take place in it and thus did not find a significant impediment to development processes.

### The third objective : finding correlation between the general level of the obstacles and same independent variables

#### 1. Educational level:

Respondents were classified according to this variable into five categories (Graduate of Agriculture, Graduate of the Institute of Agriculture, graduate of college of Agriculture, Master of Agricultural Sciences, PhD Agricultural Science) As shown in table no (4) , The table shows that the highest percentage of respondents was (61.6%) with an average of development obstacles (568.1842) They are graduates of agricultural colleges . While the lowest percentage of respondents (2.4%) with an average of (644.3333) are PhD holders

**Table (4): Distribution of the respondents according to their educational level**

Categories	Educational level	frequency	percentage	Average size obstacles	rs
The first category	Graduated high school	11	% 8,8	634.4545	- *0.219
Category II	Graduate of Agriculture Institute	8	% 6,4	627.625	
Category III	Graduate of Faculty of Agriculture	77	% 61,6	568.1842	
Category IV	Master of Agriculture Science	26	% 20,8	552.4615	
Fifth category	Doctor of Science Agriculture	3	% 2,4	644.3333	
	Total	125	%100		

\* Significant at (0.05)

In order to finding the a correlation between the level of obstacles, Use the (correlation coefficient Spearman), The value of (-0.219 \*) was found to have a significant correlation between workers at the level of (0.05) , So we reject the statistical hypothesis So accept the alternative hypothesis, This is due to the fact that the level of obstacles is reduced by increasing the level of academic achievement, This means that the more the employee progresses in his / her academic achievement, the less the level of obstacles to agricultural development from his point of view, This result is not consistent with the study (Jubouri ,2011: 68) , As well as inconsistent with the study (Mohammad, 2016).

#### 2- Specialization:

Respondents were classified according to this variable into two categories (agricultural specialists and not- extension) as in Table (5). The table shows that the highest percentage of respondents (92%) with an average of developmental obstacles (577.2783) are non-agricultural extension specialists. While the lowest percentage of respondents (8%) with an average of (573.2) of the category of specialists in agricultural extension .



**Table (5) Distribution of respondents according to specialization**

No.	Specialization categories	frequency	percentage	Average size obstacles	rs
1	extension	10	% 8	573.2	0.013-
2	Not extension	115	%92	577.2783	
	125	Total	%100		

In order to finding correlation between the level of constraints facing agricultural development from the perspective of agricultural personnel and the specialization of respondents, the Spearman Brown correlation coefficient , The value of (-0.013) indicates that there is no significant correlation between the workers, so accept the statistical hypothesis that states (There is no significant correlation between the views of the employees working in the agricultural sector in the province of Salah al-Din and specialization) and rejects the alternative hypothesis., The result of this finding was the low proportion of 8% of the agricultural extension specialists measured by the remaining specialties. This result is in line with what was reached (Jubouri, 2013: 68), And also agree with what Jabouri found of the lack of divergence in the views of the respondents regarding the obstacles of agricultural development (Jubouri, 2011: 68)..

### 3. Number of years of service:

Respondents were classified according to this variable to three categories' according to number of years of service used range (lowest, medium, highest) as in Table (6). The table shows that the highest average of obstacles to agricultural development was in the high category (679.5556) and the lowest average was in the low category (556.1176).

**Table (6) Distribution of respondents according to number of years of service**

Categories	frequency	%	Average size obstacles	r	$\bar{X}$	s.d
<b>Few (14 -2)</b>	102	% 81.6	556.1176	**0.518	8.736	9.3335
<b>Medium (27-15)</b>	14	% 11.2	661.3077			
<b>High( 40-28)</b>	9	% 7.2	679.5556			
<b>Total</b>	125	%100				

\*\* At the level of (0.01)

To finding correlation between the level of obstacles' facing agricultural development years of service, the simple correlation coefficient (person) was used. The value of (.0518 \*\*), This indicates that there is a significant correlation at the level of (0.01). Therefore, we reject the statistical hypothesis .accept the alternative hypothesis, and the experience that an employee receives from years of service may be caused by this result. This result is consistent with the study (Jubouri , 2013: 66), while it did not agree with Jabouri's study on the lack of divergence in the views of the respondents regarding the obstacles of agricultural development and the duration of their employment (Jubouri, 2011: 72).

#### 4. Sources of agricultural information:

Respondents classified according to this variable into three categories according to sources of access to information by using range (lowest, medium, highest) and as in Table (7). The table shows that the highest average of obstacles to agricultural development was in the high category (597.08) and the lowest average was in the low category (547.96)

**Table 7: Distribution of respondents according to sources of access to information**

No.	Categories	frequency	percentage	Average size obstacles	r	$\bar{X}$	s.d
1	Low (12 -9)	29	% 23.2	547.9655	*0.221	14.5520	2.5255
2	Medium(16 -13)	62	% 49.6	579.4677			
3	High (20-17)	34	% 27.2	597.0882			
		125	%100				

\* Significant at (0.05)

For the purpose of determining whether there is a correlation between the level of constraints facing agricultural development from the point of view of agricultural personnel and the sources of access to information, the simple correlation coefficient (person) was used. The value of (0.221 ) indicates a significant correlation between Workers at (0.05) , Therefore, rejected the statistical hypothesis . accepted the alternative hypothesis, which is due to the increased exposure of the respondents to the sources of information Agricultural development in particular, which increases their knowledge and information and become aware of the importance of agricultural development and the necessity and therefore the seriousness of obstacles to agricultural development from their point of view , This result is consistent with the study (Jubouri ,2013: 69). This study is not consistent with the study (Jubouri ,2011: 74), which showed that there are no differences in the views of agricultural employees on the obstacles of agricultural development according to their different sources of information.

#### 5. Attitude towards agricultural development:

The respondents were classified according to their trends towards agricultural development into three categories using the standard scores (negative, neutral, positive) and as in Table (8) , The table shows that the highest average of obstacles to agricultural development was in the positive category (599.8) and the lowest average was in the negative category (543.75).

**Table (8): Distribution of respondents according to attitude towards agricultural development**

Categories	z-score	frequency	%	Average size obstacles	r	$\bar{X}$	s.d
Salia	less than(1-)	24	% 19.2	543.75	*0.237	47.0960	6.8479
Neutral	Between ( 1+,1-)	81	% 64.8	581.1481			
Positive	more than(1+)	20	% 16	599.8			
Total		125	100%				

\* significant at the level of (0.01)



In order to detect whether there is a correlation between the level of constraints facing agricultural development, the simple correlation coefficient (person), The value of (0.237) indicates that there is a significant correlation level of (0.01). Therefore, reject the statistical hypothesis accepted the alternative hypothesis , This can be attributed to the fact that the positive attitudes of the respondents towards agricultural development are prompting them to obtain more information on development constraints. This result is consistent with the study of( Jubouri, 2013: 71), as well as the study (mohammed, 2016).

## 6 - Participation in training courses:

The participants were classified according to the participation in the training courses into two categories (joint training courses and non-joint) as in Table (9) , The table shows that the highest percentage of respondents was (85.6%) with an average of (570.40) obstacles for agricultural development. The lowest percentage of respondents was (14.4%) with an average of (615.88) Within a common category of courses.

**Table (9) Distribution of respondents according to the categories of participation in training courses**

No.	Course categories	frequency	%	Average size obstacles	r	$\bar{X}$	s.d
1	non-joint	107	85.6%	570.40	*0.205	1.1440	0.3525
2	joint training courses	18	14.4%	615.88			
	Total	125	%100				

\* Significant at (0.05)

In order to determine whether there is a correlation between the level of constraints facing agricultural development from the perspective of agricultural personnel and the participation in training courses, the Spearman Brown correlation coefficient The value of (0.205 \*) indicates that there is a significant correlation between the workers at the level of (0.05). Therefore, reject the statistical hypothesis . accepted the alternative hypothesis , This may be due to the fact that trainees in the agricultural extension system are aware of the benefit that will accrue to them as a result of their participation in the training courses, thus increasing their knowledge of the level of obstacles facing agricultural development. This result is not consistent with (Jabouri's :2013, 67) study, unless it is in line with (Jabouri's: 2011, 74) study, which showed that there was no difference between staff and their views to the degree of obstacles to agricultural development followed by their training.

## Conclusions:

- 1- The results of the study showed that the obstacles to agricultural development in Salah Al - Din governorate in general Medium tend to highest, and we conclude that there are serious obstacles facing agricultural development processes and all their fields (agricultural resources, extension work, plant production, animal production, agricultural marketing, Agricultural policies and legislation).
- 2- In the order of areas of obstacles to agricultural development According to its importance, the field of agricultural extension ranked first We conclude that this area, despite its developmental importance But it has obvious problems that may be caused by poor interest or government contribution ..

- 3- The results showed a significant correlation between the level of obstacles to agricultural development from the point of view of agricultural employees in general and each of the following independent variables: (level of education, number of years of service, sources of information, participation in training courses, trend towards agricultural development) These variables have a positive relationship with the obstacles of agricultural development. Therefore, the level of awareness and of agricultural workers with the obstacles of agricultural development can be increased by increasing the levels of this change.

#### **Recommendations:**

- 1 - Attention to the agricultural reality in the study area by supporting farmers with easy agricultural loans and the establishment of meetings and conferences Extension that emphasize the importance of agricultural production.
- 2- Activate the role of agricultural extension in the process of transferring the results of research, especially in the field of agricultural development, with the need to form a specialized agricultural Extension in the field of agricultural development, which works to disseminate the recommendations on a large scale while supporting the continuity of publication.
- 3 - Implementation of training programs and training in the various areas of agricultural development.
- 4 - Organizing intensive information campaigns to educate employees and farmers about agricultural development techniques and modern scientific methods used.
- 5 - There should be a role for the state in addressing the problems of agricultural development because of the weak financial, technical and technological potential of the private agricultural sector on the one hand and the intertwining of the problems of agricultural development in Iraq on the other hand.
- 6 - Increase interest in modern agriculture and send guides and experts and farmers for training courses outside the country to see the world's successful experiences in the field of modern agriculture.

#### **References:**

- Abdel Hafiz, Ekhlas Mohamed and Mustafa Hussein Bahi ((2000, methods of scientific research and statistical analysis in the fields of education, psychological and sports, the book center for publishing, Cairo.
- Abdelkader, Mohamed Said (2000), Documentation of Agricultural Policies in the 1970s in Iraq, Arab Organization for Agricultural Development, No. 4.
- Atta, Lamis Mohamed Mamdouh Abdel-Rauf (2010), Strategies for Sustainable Development of Agricultural Land in the West Bank of Tubas Governorate as a Case Study, Master Thesis, Department of Urban and Regional Planning, Faculty of Graduate Studies, An-Najah National University, Tubas, Palestine..
- Erekat, Harbi Mohamed (1997), Introduction to Development and Economic Planning, Dar Al-Carmel for Publishing and Distribution.
- Hajira, Bouasak (2007), Social Development Service in the Rural Community, Master's Thesis, Department of Sociology and Demography, Faculty of Arts and Social Sciences, Mohammed Boudiaf University, Massila, Tunisia.
- Zaher, Mohammed Amin (2015), Periodic Series on Development Issues in the Arab States, No. 121, Arab Planning Institute in Kuwait.
- Jubouri, Ali Mohamed Jassim (2010), Obstacles to the development of plant production from the point of view of employees working in the agricultural sector in Nineveh province, Master Thesis, University of Mosul - Faculty of Agriculture and Forestry, Department of Agricultural Extension and Technology Transfer.

- Jubouri, Muhannad Ahmed Khalaf (2013), the awareness of agricultural employees of the concept of sustainable agricultural development in Salahuddin province, Master Thesis, University of Tikrit, Faculty of Agriculture, Department of Economics and Agricultural Extension.
- Melhem, Sami Mohamed (2010), Research Methods in Education and Psychology, I6, Dar Al Masirah for Publishing and Distribution, Amman, Jordan.
- Mohammad ,Bekal asim (2016),the perception level of the agricultural employees in sulamani governorate of the sustainable development concept and its relationship with some variables ,master thesis ,faculty of agricultural science, university of sulamani .