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An Economic Analysis Of Wheat Crop Production In Iraq In The Context Of Government Support Policies And Influencing Factors For The Period (1980-2017)

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Abstract

Wheat cultivation is strategically significant because it is one of the most basic food commodities on which a large number of people rely. Between 1980 and 2017, the study concluded, ISIS terrorist gangs were a factor in reducing cultivated land and production rates in the governorates of Nineveh, Wasit, Kirkuk, Diyala, and Salah al-Din, thereby increasing farmer migration and exacerbating Iraq's water crisis. It is regarded as the second primary reason for the study period's decline in production. The study made several recommendations and suggested solutions, whether they were related to the issue of irrigation water scarcity or the expansion of desertification reclamation.

Keywords: Wheat production, Irrigation Equipment, Farm Migration, Marketing Process, Area, Iraq.

Introduction

In order to initiate the country's economic reality towards advancement and prosperity, it requires transformational work that adopts the principles of sustainability and addressing the root causes of the obstacles and challenges facing this sector, achieving comprehensive national growth and advancing positive change through a clear line of action and strategy. The agricultural sector in Iraq plays an important role in the national economy, as it is one of the most important pillars of the national economy, as the average contribution of the agricultural sector is about (10–14) %.

Food security is one of the most pressing issues confronting Iraq, and the main cause is the previous period's agricultural policy, which has transformed the citizen into a consumer and non-producer element, reliant on imported envelopes from beyond the borders. Overseas, more than 80% of the food is imported, with amounts amounting to hundreds of billions, despite the fact that Iraq is an agricultural country and has a history in this aspect. On the other hand, the cultivation of crops is facing other difficulties that have worsened in recent years, the most important of which is the high salinity of the soil and the limited irrigation water Because of the decline in river imports from upstream countries, this prompted the country to follow a policy of limiting the area planted with crops.

The wheat crop is an important economic crop, as it ranks first among the Iraqi grain crops and is a major source of food. This is despite the fact that Iraq is a country specialized in the cultivation of wheat, which requires the state to follow many policies that work to increase the productivity of wheat using improved seeds and extension and transfer of modern technology, which is positively reflected in the increase in total production. Despite that, the country still imports large quantities to meet the needs of local consumption, and many studies have focused on the total production of wheat in Iraq, while other studies have examined that productivity within a particular province.

This study attempts to take a look at the five most important governorates that produce wheat over a long period of time (37 years) and try to explain the quantitative change in each governorate separately to avoid the generalization that occurs with its study combined.

Study Problem

The problem of this study is to identify the productivity of wheat in the Iraqi governorates with the highest wheat production in the period from 1980 to 2017, and to identify the variation of this production between these governorates and try to find the reasons for that.

Study Questions

- How did the area planted with wheat and its production rate develop over four decades in the Nineveh Governorate? What is the explanation for that?
- How did the area planted with wheat and its production rate develop over four decades in the Waist Governorate? What is the explanation for that?
- How did the area planted with wheat and its production rate develop over four decades in the Kirkuk Governorate? What is the explanation for that?
- How did the area planted with wheat and its production rate develop over four decades in the Diyala Governorate? What is the explanation for that?
- How did the area planted with wheat and its production rate develop over four decades in the Salah al-Din Governorate? What is the explanation for that?

Study Approach

This study relies on a descriptive approach coupled with a statistical analysis of the results related to the cultivated area and the rate of production of dunums issued by the Directorate of Agricultural Statistics in the Iraqi Central Bureau of Statistics.

The limits of the study

Spatial boundaries: Governorates Nineveh, Wasit, Kirkuk, Diyala, Salah al-Din

Time limits: from 1980 to 2017

Objective limits: The area planted with wheat and its production rate

Statistical analysis and discussion

First: The general assessment of wheat production in the study governorates

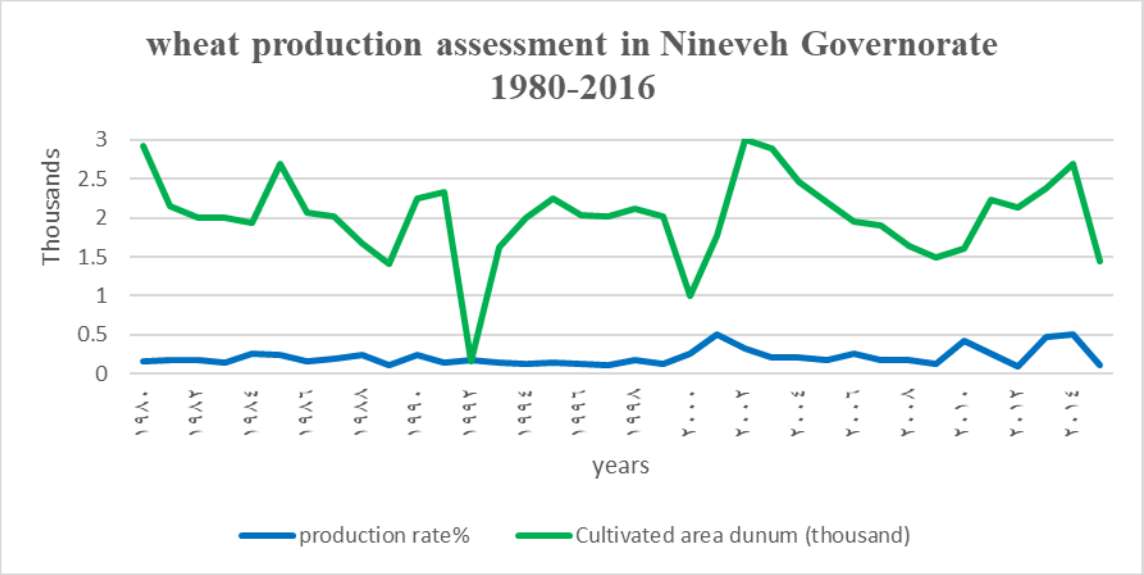
Table (1) A general assessment of wheat production in the study governorates (1980/2017)

	Nineveh	Wasit	Kirkuk	Diyala	Salah al-Din
Average production per year (tons)	439476 **first**	223429 **second**	204780 **Third**	133728 **fourth**	114991 **Fifth**
Average Cultivated Area (tons)	2056829 **first**	513568.7 **Third**	648425.5 **Second**	355737.4 **Fifth**	460527.3 **Fourth**
Productivity rate per year (kg/dunum)	214 **Fifth**	435 **First**	316 **Third**	376 **second**	250 **Fourth**

The table shows that the highest average production of wheat was in Nineveh Governorate (439,476) tons/year, while the same governorate occupied the lowest average dunum productivity (214) kg/dunum, while Wasit Governorate occupied the highest average dunum productivity (435), which made it occupy the second place in the average production (223,429) tons/year.

It follows from this that Nineveh Governorate needs to make a double effort in the field of vertical expansion, through early distribution of wheat seeds to farmers, provided that these seeds include higher ranks of wheat at a subsidized price less than the cost of production, as well as providing all facilities to wheat farmers Whether it is fuel, irrigation pumps, chemical fertilizers, pesticides, etc., because in the case of Nineveh Governorate's success in raising the average productivity per dunum to reach the same average in Wasit Governorate; At that time, the average production in Nineveh will be (894720) tons / year , which is equivalent to 203% of the current average, which is what will ensure the self-sufficiency of the whole of Iraq from the wheat crop.

Second: Evaluation of wheat production in Nineveh Governorate



The data is from the researcher's work, extracted from the statistics directorate of Agricultural Statistics in Iraq.

Fig.1 wheat production assessment in Nineveh Governorate (1980-2016)

Figure (1) shows that it is evident from this that the largest area planted with wheat was in 2002 (3,002,609) dunums, while the least cultivated area was in 1989 (1,413,030) dunums, followed by 2016 (1,438,808) dunums.

It also shows that the highest productivity was in 2001 (507) tons/kg, while the lowest productivity was in 2012 (102 tons/kg), then in 1989 (109) tons/kg and 2016 (110) tons/kg.

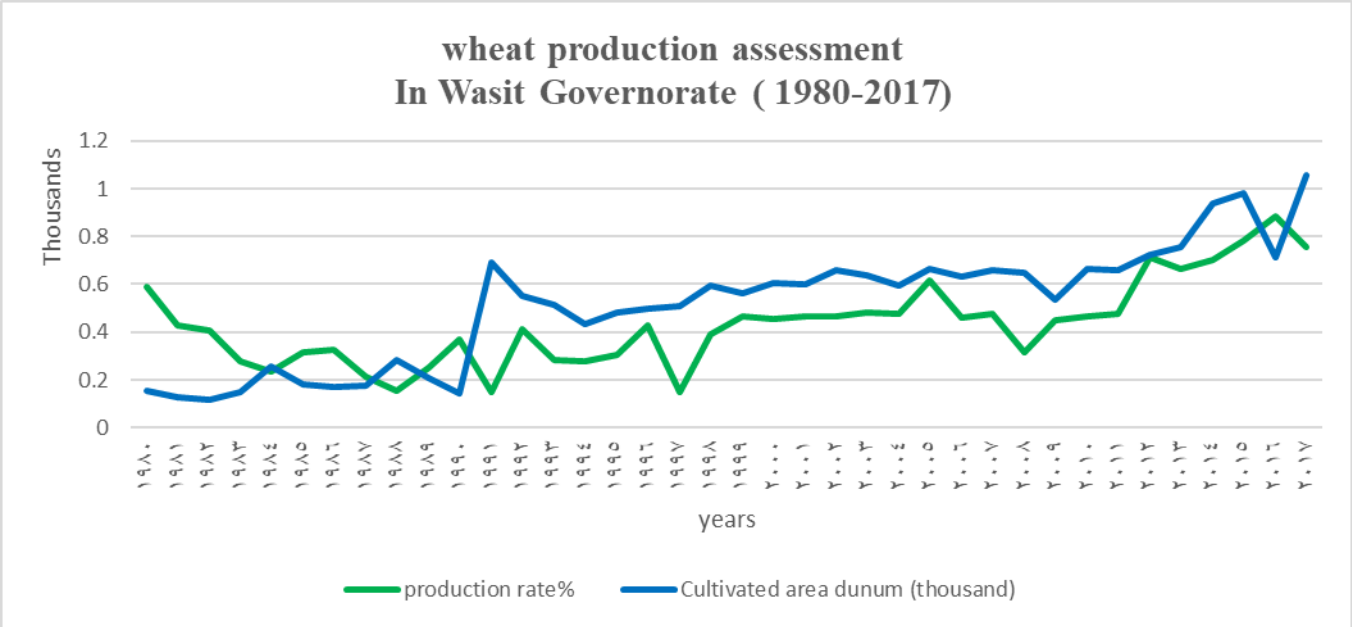
The decrease in both the cultivated area and the rate of production in 1989 as well as in the nineties is explained by the decrease in irrigation sources. According to a previous study, the optimum production volume of the wheat crop reached (1,571) kg/dunum in rain-secured land and (6,180) kg/dunum in semi-rain-secured lands. And (1,170) kg/dunum on the land is not guaranteed rain, especially since the international sanctions imposed on Iraq at the time led to the withdrawal of foreign companies working in irrigation projects such as Henyang Company from South Korea, so work was not done in both the southern facility and the eastern facility of this project, while only the facility remained The North is working, while the decline in the production rate in 2012 is explained by the destruction of the areas cultivated by rain.

As for the decrease in the cultivated area and production rate in 2016, it is explained as follows:

- ISIS took control of the wheat cultivation areas in the governorate as it tried to operate the northern irrigation pump, and this caused damage to the equipment due to its lack of technical knowledge in operating this equipment, which damaged most of the small sub-pumps in the North Island irrigation project, as well as bridges

and canals during the war in Nineveh in 2016. Reports indicate the United Nations disrupted 100 irrigation canals out of 280.

- The state supports wheat farmers by subsidizing the prices of inputs and outputs from the production process by providing subsidized seeds, fertilizers, and pesticides, as well as buying crops from them after harvesting at good prices that exceed the market price. However, these farmers suffer from the high cost of fuel and electricity necessary to operate their small irrigation networks.
- Fertilizers that are distributed to farmers in Nineveh are devoid of urea because it is used in the manufacture of explosives, which weakens the efficiency of those fertilizers, in addition to the fact that fertilizers are delayed in their arrival for security reasons.
- The water level of the Mosul Dam lake has receded from 330 meters above sea level before the drought to about 306 meters, a level that is too shallow to operate the North Island project's pump if it is resumed.



Third: Evaluation of wheat production in Wasit Governorate

The data is from the researcher's work, extracted from the statistics directorate of Agricultural Statistics in Iraq.

Fig.2 Wheat production assessment in Wasit Governorate (1980-2017)

Figure (2) shows that it is evident from this that the largest area planted with wheat was in the year 2017 (1,057,664) dunums, followed by in 2015 (98,011) dunums, while the least cultivated area was in 1982 (118,400) dunums.

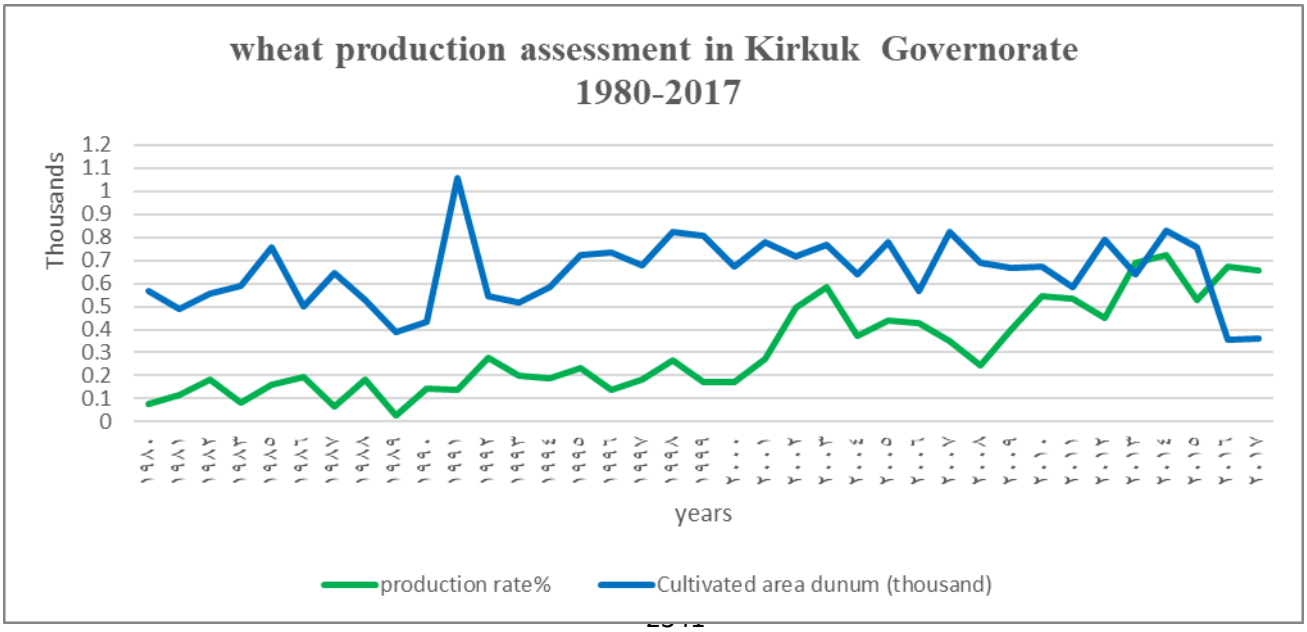
It also shows that the highest productivity was in 2016 (885 tons/kg), followed by 2015 (782 tons/kg), while the lowest productivity was in 1991 (147 tons/kg).

This means that this governorate is going in the right direction, which has brought the governorate to self-sufficiency with a surplus that suffices millions outside it, and this is due to the following:

- Regarding the horizontal expansion, the area planted with wheat exceeded one million dunums, and the arable area in Wasit Governorate is estimated at about (2,556,626) dunums , of which (47,847) dunums are reclaimed lands and (151,550) dunums semi-reclaimed lands, while the area of non-arable lands is estimated at (2,035,489) dunums, and these areas are irrigated through a large irrigation system spread in the areas of this governorate in both the tourist and pumping directions, but the prevailing is pumping irrigation, which depends entirely on the electric current that the governorate has worked to ensure its continuity, and of course the Tigris River is the main source of water in that governorate.
- Regarding the vertical expansion, the yield of the dunum increased through the early distribution of wheat seeds to farmers through the outlets of the Mesopotamia Company as well as the Iraqi Company for Seed Production, both of which are affiliated with the Ministry of Agriculture and the Technology Center of the Ministry of Science, and these seeds included higher ranks of wheat at a subsidized price less than the cost of production, and these seeds were characterized by superior yields per dunum, in addition to providing all facilities to wheat farmers, whether they were fuel, irrigation pumps, chemical fertilizers, pesticides, and so on.

The researcher joins with others by paying attention to the marketing aspects and the speed of payment of the dues of wheat farmers in the governorate so that they can continue to develop wheat production, as well as the continued expansion of desertified lands, and the continuation of agricultural technical and economic research with the importance of its application through agricultural guidance to farmers to keep pace with agricultural scientific development.

Fourth: Evaluation of wheat production in Kirkuk governorate



The data is from the researcher's work, extracted from the statistics directorate of Agricultural Statistics in Iraq.

Fig.3 wheat production assessment in Kirkuk Governorate 1980-2017

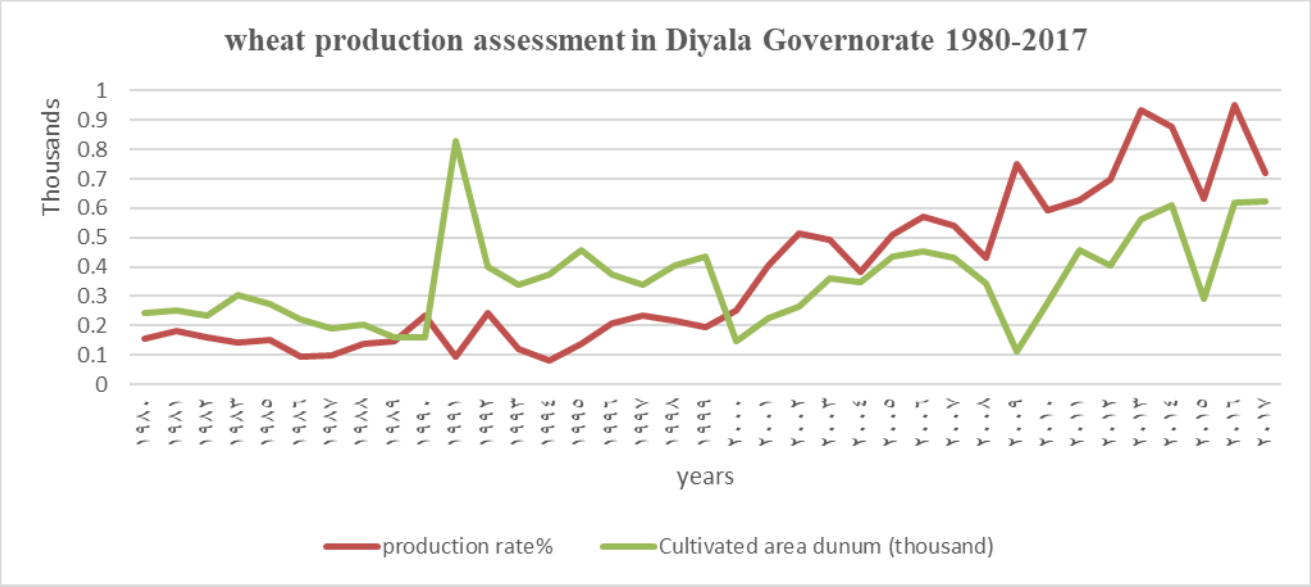
Figure (3) shows that it is evident from this that the largest area planted with wheat was in the year 1991 (1,055,857) dunums, followed by 2014 (830,300) dunums, followed by 1998 (822,355) dunums, while the lowest cultivated area was in 2016 (357,627) dunums, followed by the year 2017 (359,078) dunums.

It also shows that the highest productivity was in 2014 (725) tons/kg, followed by 2013 (689 tons/kg), while the lowest productivity was in 1987 (68) tons/kg.

It is noted that wheat production has generally witnessed a decline in the last two decades due to the lack of irrigation water, the lack of adequate rainfall, and the high cost of using artesian wells:

- Providing irrigation pumps with subsidizing the fuel needed by those pumps, and rehabilitating the old water network.
- Taking into account the rationalization of water and the shift to drip irrigation and the reduction of the cultivated area of crops that consume water, such as rice.
- Using techniques for recycling water that comes from irrigation and sewage to be used in the field of agriculture.
- The importance of carrying out extensive studies to assess the impact of climate change on Iraq with the help of United Nations agencies such as UNESCO, FAO, and ESCWA
- Dealing seriously with the riparian countries in the rivers that Iraq shares with them, in the interest of Iraq's water rights and reactivating the international protocols in force.

Fifth: Evaluation of wheat production in Diyala Governorate



The data is from the researcher's work, extracted from the statistics directorate of Agricultural Statistics in Iraq.

Fig.4 wheat production assessment in Diyala Governorate
1980-2017

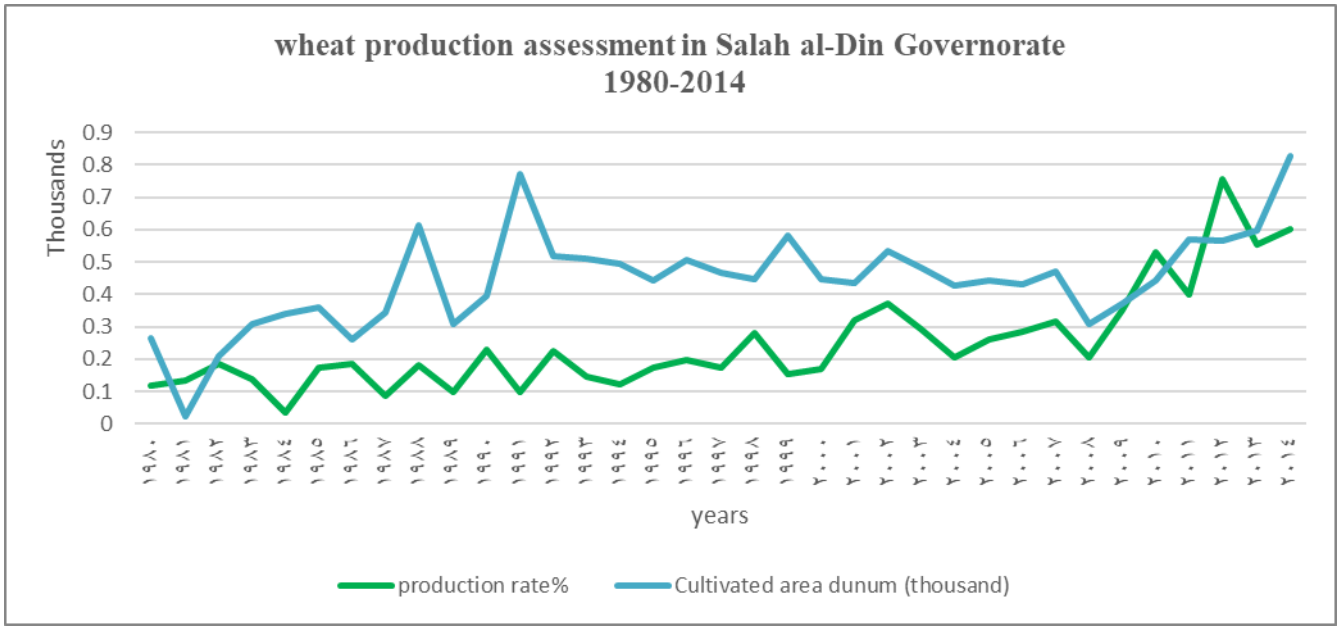
Figure (4) shows that it is evident from this that the largest area planted with wheat was in 1991 (828,157) dunums, followed by in 2017 (623,452) dunums, followed by 2016 (619,530) dunums, while the lowest cultivated area was (113,958) dunums in the year 2000 (146,684) dunums.

It also shows that the highest productivity in 2016 was (950) tons/kg, followed by 2013 (933) tons/kg, while the lowest production was in 1994 (82) tons/kg, followed by 1991 (95) tons/kg, followed by 1986 (96). ton/kg.

Here it is clear that this governorate has recently regained the area that can be planted with wheat due to its success in land reclamation, in addition to the improvement of the climate during the winter and heavy rains, as well as accompanying this success in vertical expansion, and this is due to several reasons, including: carrying out periodic pest control, providing fertilizers to farmers' wheat, and continuous supervision of the irrigation process, giving priority to the areas planted with wheat, and ensuring the purchase of production at a remunerative price.

As for the decline that occurred in 2017, it was due to the launching of missiles by ISIS fighters towards Al-Azim in the northwest of the province, which set fire to large areas of wheat fields.

Sixth: Evaluation of wheat production in Salah al-Din Governorate



The data is from the researcher's work, extracted from the statistics directorate of Agricultural Statistics in Iraq.

Fig.5 wheat production assessment in Salah al-Din Governorate
1980-2014

Figure (5) shows that it is evident from this that the largest area planted with wheat was in 2014 (826,580) dunums, while the lowest cultivated area was 211,300 dunums in 1982, followed by 2016 (226,400) dunums.

It also shows that the highest productivity was in 2012 (756) tons/kg, then in 2014 (600) tons/kg, while the lowest productivity was in 1984 (35) tons/kg and then in 1987 (85) tons/kg.

Here, it is first noted that this governorate was on the right path, whether in terms of horizontal or vertical expansion in the pre-ISIS stage, and these increases after 2010 are explained by the following:

- Heavy rain, as well as the provision of fertilizers and insecticides to farmers.
- The Ministry of Agriculture's support for farmers by providing loans and fertilizers, as well as subsidizing the price of pivot sprinklers by 50% of their previous price.

As a result, this governorate ranked first in wheat production in Iraq in 2012 and received more than 413 billion dinars as a result of marketing operations, which removed it from the list of the poorest governorates in Iraq. The following contributed to this:

- Adoption of farmers to maintain modern agricultural techniques
- Supporting and encouraging farmers to return to agricultural production, including the distribution of about 80 water sprinklers to them at a subsidized price and a comfortable premium.

Secondly, he notes the lack of reliable data in 2015. As for the post-ISIS phase, many projects have been killed and what is available, and we mention from that:

- Theft and destruction of modern irrigation systems by ISIS fighters and military operations in the governorate.
- Theft of the department's mechanisms and the exposure of some silos to sabotage and their unloading from the wheat stockpile.
- Damage to more than half of the sprinklers in Tikrit and its suburbs.
- Migration of farmers and leaving their lands.
- Direct looting of thousands of tons of wheat from inside storage warehouses.
- For the liberated areas, the lack of combine harvesters is because ISIS seized most of the machines when it took over the area, in addition to what it planted mines in the fields.
- In Dhuluiya, Due to Iraq's financial crisis, the owners of the farms sponsored the purchase of modern agricultural machines and the reconstruction of the damaged ones

to harvest the crop, although they did not receive any governmental compensation for the agricultural machines destroyed during the battles with ISIS.

This coincided with the drop in the world price of oil, which turned the state away from increasing support for the agricultural sector, and the state budget for 2015 did not allocate money to purchase grain from areas controlled by ISIS, for fear of cash falling into the hands of the organization.

Conclusions

- ISIS terrorist gangs are considered one of the reasons for reducing the area of cultivated land and the rate of production, especially in the governorates of Nineveh, Kirkuk, and Salah al-Din, because of the military operations that were reflected in the destruction of pumps, the bombing of canals, the burning of fields due to the fall of missiles, and the excavation of other fields, as well as the migration of farmers from their lands under the pressure of the situation. security, looting wheat warehouses, destroying silos, looting harvesters, and sometimes fertilizers that lack urea, or where urea is used in the manufacture of explosives.
- The water crisis in Iraq is the second main reason for the decline in the cultivated area and the rate of production in the governorates of Nineveh and Kirkuk, after the lack of rain, the decline in the level of lake water, and the high cost of reliance on artesian wells, as well as the failure of neighboring countries to respect Iraq's water rights, which led to a decline in the rate of production.
- The economic reasons come in third place in the reasons for the decline and decline in the rate of wheat production; the high costs of fuel and electricity needed to operate the small private irrigation networks; and the delay in the payment of financial dues to farmers due to the security audit on the one hand and the financial crisis of the state on the other hand.

Recommendations

- The need for the government to pay attention to supporting the farmers of the study governorates, especially the governorate of Nineveh, by providing high-ranking wheat seeds at a subsidized price less than the cost of production, as well as providing all facilities, whether they are fuel, irrigation pumps, chemical fertilizers, pesticides, and so on.
- The necessity of adopting a marketing policy in the study governorates, especially Wasit governorate, without delaying the payment of financial dues to wheat farmers in the governorate so that it can continue developing wheat production, as well as continuing expansion in the reclamation of desertified lands and continuing agricultural technical and economic research with the importance of applying it through agricultural guidance to farmers until they keep pace with scientific agricultural development.
- The study governorates, especially Kirkuk, need solutions to the problem of irrigation water scarcity, such as providing irrigation pumps with subsidies to the fuel needed by those pumps, rehabilitating the old water network, taking into account water rationalization and switching to drip irrigation, reducing the area

planted with water-consuming crops such as rice, and using water recycling techniques Which returns from irrigation and sanitation to be used in the field of agriculture, with the importance of carrying out extensive studies to assess the impact of climate change on Iraq, and using United Nations agencies such as UNESCO, FAO, and ESCWA, and dealing seriously with the riparian countries on the rivers with Iraq in the interest of private water rights in Iraq and reactivating the international protocols in force.

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