

# THE FOOD GAP AND SELF-SUFFICIENCY OF WHEAT CROP IN WASIT GOVERNORATE

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## **Abstract:**

The study area suffers from insufficient wheat crops to meet the local need and secure the requirements of the population to meet this problem. The study presented several paragraphs with regard to production, as the study indicated the advancement of the agricultural reality through the development of new strains capable of tolerating drought and soil salinity, improving irrigation projects and providing fertilizers in their time. Consumption Considering an increase in the amount of flour more than what is specified in the ration card and supporting the price of flour in accordance with the financial capabilities creates an equilibrium ratio between production and demand for it. Hence, the research problem emerged from providing food, which is one of the main problems facing Iraq in general and the study area in particular.

**Keywords:** Food gap, self-sufficiency, wheat crop.

## **Abstract**

The study area suffers from insufficient wheat crops to meet the local need and secure the requirements of the population to meet this problem. The study presented several paragraphs with regard to production, as the study indicated the advancement of the agricultural reality through the development of new strains capable of tolerating drought and soil salinity, improving irrigation projects and providing fertilizers in their time. Consumption Considering an increase in the amount of flour more than what is specified in the ration card and supporting the price of flour in accordance with the financial capabilities creates an equilibrium ratio between production and demand for it. Hence, the research problem emerged from providing food, which is one of the main problems facing Iraq in general and the study area in particular

## **Introduction:**

The problem of the food gap is one of the most prominent economic problems facing many developing countries, including Iraq, as the problem of the food gap in Iraq has exacerbated significantly, especially after (2003) due to lack of interest in the agricultural sector, weak support, changing regulations, high prices and the proportion of imports from abroad and the absence of the role of trade policy Which controls government import operations led to a widening of the gap and a low rate of self-sufficiency despite the fact that Iraq possesses the resources and capabilities that qualify it to achieve self-sufficiency in agricultural and animal commodities.

Achieving self-sufficiency is no longer a political goal, but rather has become a social goal that aims to achieve healthy food sufficiency for all members of society without distinction in terms of income level or region. and educational appropriate for the individual, and there is no doubt that providing an appropriate nutritional level for the individual is one of the ingredients for achieving the health level targeted by human development, which in turn is the ultimate goal of

continuous development.

**Research problem:**

(Does the wheat crop in Wasit governorate achieve self-sufficiency for the population? What is the size of the food gap in Wasit governorates)?

**Second: the hypothesis of the study:**

That the wheat crop does not achieve self-sufficiency for the population, and therefore the lack of food for the population in quantity and quality, which creates a food gap between supply and demand in Wasit Governorate?

**Third: Spatial and temporal boundaries of the study area**

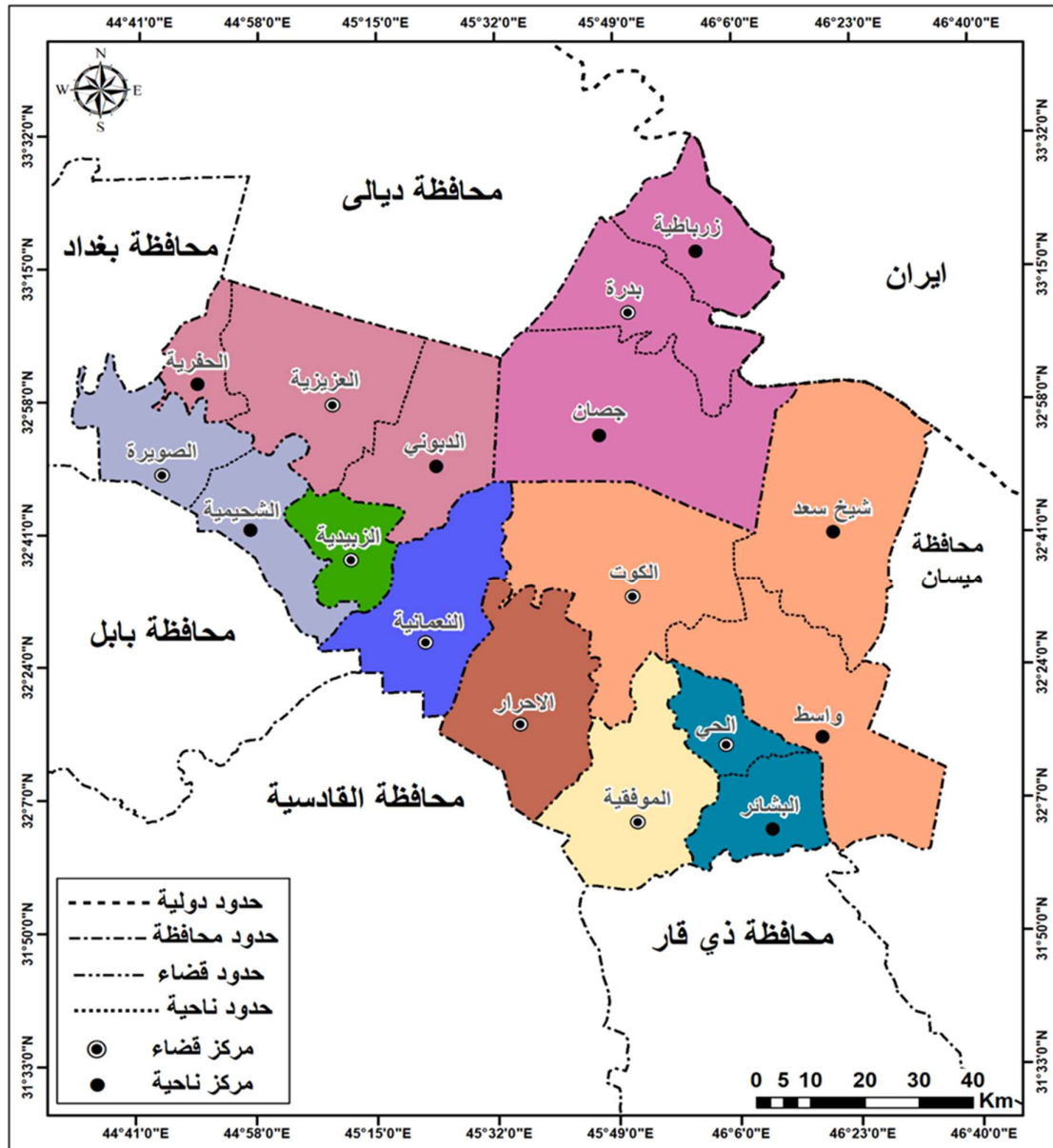
The study area is geographically located in the central region, specifically at the southern part of central Iraq, and is bordered to the north by DiAla, and from the northwest is the province of Baghdad, and its borders from the west are the province of Babylon and Qadisiyah, To the south is the province of Dhi Qar, and to the southeast is the province of Maysan While from the east it is represented by the political borders between Iraq and Iran. As for the astronomical location of the study area, it is located between two circles between latitudes ( $31^{\circ}$  and  $33^{\circ}$ ) north and longitudes ( $44^{\circ}$  and  $46^{\circ}$ ) east From an administrative point of view, it is noted from Map (1) that the governorate includes seventeen administrative units, some of which are at the level of the district center, and some are at the level of the sub-district, and these units are: (Center spend Kut hand Wasit, hand old man Saad, center spend Numaniyah, center spend Al Ahrar Center spend neighborhood center spend Al-Muwafaqiah, hand omens, center spend Badra hand Jessan hand Zorbatia, center spend Essaouira, center spend Zubaidi, hand Al Shehimiyah, Center spend Aziziyah, hand Dabouni and hand fossil). And soIt occupies an area of 17 square metres (153km<sup>2</sup>), which constitutes a percentage of about (3,9% of Iraq's total area (434120km<sup>2</sup>), As for the temporal boundaries, they depended on the years (2010-2021), and the year (2010) was adopted as a base year, while the year (2021) was a comparative year.

**Fifth: The justification for the study:**

The study was justified by several points as follows:

- 1-The importance of the wheat crop as it is the main food source for the population
- 2-Statement of the insufficient local wheat crop to meet the needs of the population in Wasit Governorate.

**A map (1) Wasit Governorate Administrative Units for the year 2020**



Source: Republic of Iraq, General Authority for Survey, Wasit Governorate map, 2020, drawing scale: 1 500000.

## First, the theoretical concepts

### 1\_ food gap:-

The adequacy of local food production to meet consumption requirements at the local level. It thus shows the extent of dependence on imports from abroad for food commodities, and the size of the gap changes from year to year depending on the quantities produced locally and the development of food demand. For food, this results in the draining of currencies abroad (The narrator, 2013, p. 124). It is a measure of the extent of the food problem facing the country, and it is measured by the difference between the total needs of different products and the total produced locally. The gap is divided into two types.

**a\_ Apparent nutritional gap:** It expresses the adequacy of the local production of food to meet

the requirements of consumption at the national level, that is, the adequacy of the quantity of food commodities to meet the needs of the population.

**B\_The real nutritional gap (nutritional):** It expresses the adequacy of food for the individual in quantity and quality, i.e. the difference between the basic requirements of actual calories and stipulated by international organizations (quantities in grams and calories). Nutritional Gap Index.

The size of the food gap can be measured according to the following formula:

**The size of the food gap = production - consumption**

**2\_Self-sufficiency: -**

It expresses the degree to which a country is able to satisfy the needs of its citizens from its own national production (Al-Najafi, 1999, p. 16)The concept of self-sufficiency appeared after the First World War, because the World War emphasized to the whole world the necessity of production in the country according to the prevailing conditions. From the production of food, or in the event that it is not possible for that country to obtain the foodstuffs that it lacks by importing from abroad (Tohma, 2003, p. 75).

**There are three degrees of self-sufficiency:**

**1\_self-sufficiencyaFrom:-**It is the sufficiency that is ineThe products of food commodities are equal to the quantity consumed by the people of the community and are formulated according to the following formula:

(Security self-sufficiency = local production, available consumption). ≤

**2\_Safe food deficit: -** Where the produced quantity of local goods is less than the quantity available for consumption by members of the community and greater than half of it, i.e. when the ratio of local production to available for consumption is confined between (50%-100%).

**3\_Dangerous nutritional deficiency:**Self-sufficiency is in the stage of serious food deficit, that is, when the available locally produced food constitutes less than half of the quantity available for consumption of that commodity, meaning that the ratio of local production to the available for consumption is limited between (0%-50%) In order to find out the self-sufficiency ratio, it is done by calculating the ratio of local production to the total food consumption through the equation (Fayed, 2010, p. 81).

$$100 \times \frac{\text{الانتاج المحلي}}{\text{كمية الاستهلاك المتاح}} = \text{self-sufficiency ratio}$$

**Second: Estimation of the grain gap ratios and the self-sufficiency ratios of the wheat crop for the duration From (2010-2021)**

**Gap granularity:** It is defined as the adequacy of local grain production to cover the requirements of local consumption, and it is measured by the difference between the total domestic production and the production of domestic consumption. **As for the self-sufficiency of the crop? Wheat:** represents production Wheat yield over the quantities available for consumption multiplied 100 X (Blau, 2011, p. 57). There is a difference between the concept of self-sufficiency and the food gap, as the concept of self-sufficiency is narrower than the food gap, as self-sufficiency shows that there is no resort to the outside world and no import from abroad in the sense of absolute food security. Some countries have taken this

Experiences such as Saudi Arabia and Syria (Gharbi, 2010, pg. 75), While the food gap is the extent of dependence on the outside in import to meet the requirements of the population from

nutritional needs.

To evaluate the ratios of food gap estimates and self-sufficiency in Wasit Governorate, we have to Determine the quantity produced from the wheat crop and the size of the population to determine the quantity consumed through a time series for the period Extended from (2010 - 2021) to find out the general trend of the size of the grain gap and the self-sufficiency rate.

By looking at Table (1), it shows the evolution of the size of the grain gap and the variation in self-sufficiency rates in Wasit Governorate for the period (2010-2021), as it was found that the size of the grain gap for the wheat crop was varied during the study period, and this is due to the increase in consumption amounts due to population growth, which creates an increase in demand On the wheat crop, it was found that the highest volume of the wheat crop deficit reached (-14,616,734 / tons) for the year 2021 despite the amount of production amounting to (121.213 / tons) for the same year. .031/people) for the same year, and the lowest size of the gap was (608.903/ton) in (2015), despite the amount of production amounting to (766.406/ton), but it did not meet the population's need for the same year, which amounted to (1,273.435/people). As for the rates of self-sufficiency for the period from (2010-2021), they varied between high and low, and the largest amount of surplus production was achieved, except for a small percentage, the highest of which was (55).7%) for the year (2015) is at the average level, and the lowest rate of self-sufficiency was (0.8%), which is the lowest level in achieving surplus production for the year (2021).

From the foregoing, it is clear the low level of local production, the high size of the food gap and the increase in imports from abroad, despite the fact that Wasit Governorate is the first in terms of production for the years (2015-2018) and second place for the years (2019-2021), but the annual increase in the population led to Grain gap widening.

**Table (1) The size of the food gap and the self-sufficiency percentage of the wheat crop in Wasit Governorate for the period (2010-2021)**

Gap size* /ton	sufficiency self* /%	Consumption / ton	output/ ton	population/ breeze	the year
-936609	24.9	1248153	311544	1155698	2010
-865941	31.7	1269513	403572	1175475	2011
-784192	39.0	1287604	503412	1192226	2012
-815000	37.3	1301727	486727	1205303	2013
-733357	45.2	1338702	605345	1239539	2014
-608903	55.7	1375309	766406	1273435	2015
-781536	44.6	1312643	631107	1308003	2016
-739923	51.9	1540575	800652	1343125	2017
-757253	49.1	1489020	731767	1378723	2018
-1012950	33.7	1528236	515286	1415034	2019
-756783	52.7	1568167	811384	1452007	2020
-14616734	0.8	14737947	121213	1415031	2021

The table is from the researcher's work based on:

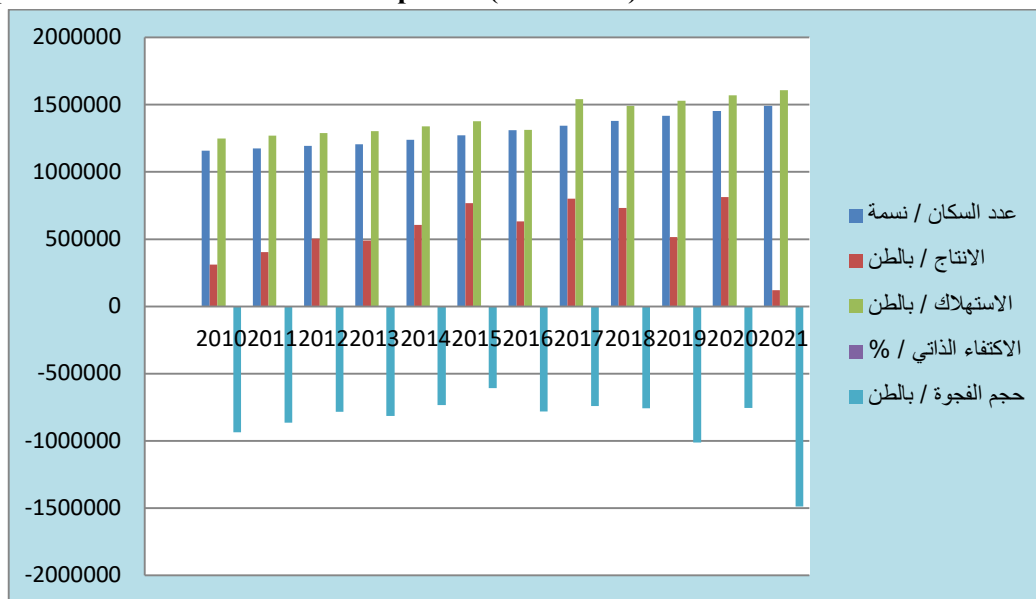
**1- Ministry of Planning, Central Agency for Statistics and Information Technology, Directorate of Population Statistics Unpublished datae, 2020.**

**2- Ministry of Agriculture, Wasit Agriculture Directorate, Agricultural Statistics Department, unpublished data, for the period) 2010-2021).**

\*Self-sufficiency =  $x 100 \cdot \frac{\text{الانتاج المحلي}}{\text{كمية الاستهلاك المتاح}}$

\*Grain gap = (domestic production - consumption).

appearance (1) The size of the food gap and the percentage of self-sufficiency in the wheat crop in Wasit Governorate for the period (2010-2021)



Source: the researcher based on Table (1).

**Third: Analysis of the grain gap and self-sufficiency of the wheat crop in Wasit Governorate:**

The final outcome of any production process is consumption, which is the important aspect on which the food gap depends, and it is a good measure to determine its size and estimate the real need for grain. The annual per capita consumption of wheat has been relied upon by the Ministry of Trade within the ration card program that is granted to the Iraqi individual (9000 /kg/month) of flour i.e. (108/kg/year) annual consumption and by looking at table (2) it was found that the total consumption of wheat crop in Wasit Governorate for the year (2021) amounted to (14,737.947/kg/year) this quantity It varies according to the administrative units between the districts and districts of the governorate, and this discrepancy is due to the variation of the population in those administrative units, and that the increase in the population of any administrative unit leads to an increase in the demand for this crop and thus the increase in the amount of consumption in it.

It was also found that the Kut district center witnessed the largest consumption of wheat crop in the province with a percentage of (34.0%) and a consumption amount of (50.308.884 / kg). It occupied the first place in consumption, while the district of Essaouira occupied the second place in terms of wheat consumption by a percentage (11.1%) and the amount of consumption amounted to (16,485.984 / kg) due to its population of (152.648 / people) people, and Numaniyah district occupied the third place with a percentage of ( 8.7%) with a consumption rate of (12,871.140/kg/year) and its population reached (119,205/people) those three consumer ranks of

the wheat crop in Wasit Governorate, while Zurbatia district is the last consumer rank with a percentage of (0.05%) by consumption amounted to (78.300/kg/year) This decrease in the amount of consumption is due to the small number of its inhabitants, which amounted to (725/people). As for the other administrative units, they vary in percentages between (0.05-34.0%) and the amount of consumption ranges (78.300/kg-50.308.88). / kg / year), as the Azizia district reached a percentage (7.8%) with a consumption rate of (11,532.888 / kg / year), which is also a large consumption rate due to the increase in the population of (106786 / people) and the consumption percentage of the district district (7.4%) with a capacity consumption of (10.987.812/kg/year), which is not a small percentage, as the Taj Al-Din district reached a percentage of (6.0%) and the amount of consumption amounted to (8,919.612/kg/year), while Al-Ahrar district and Al-Dabouni district amounted to The percentage of both (4.1%) with consumption (6,134.616/kg/year) and (6,145.524/kg/year), respectively.8%) with a consumption rate of (11,532.888/kg/year), which is also a large consumption rate due to the increase in the population of (106786/people), and the percentage of consumption for the district's district is (7.4%) with a capacity consumption of (10.987.812/kg). / annually), which is not a small percentage, as the percentage of Taj al-Din district reached (6.0%) and the amount of consumption amounted to (8,919.612 / kg / year). /kg/year) and (6,145.524/kg/year) respectively.8%) with a consumption rate of (11,532.888/kg/year), which is also a large consumption rate due to the increase in the population of (106786/people), and the percentage of consumption for the district's district is (7.4%) with a capacity consumption of (10.987.812/kg). / annually), which is not a small percentage, as the percentage of Taj al-Din district reached (6.0%) and the amount of consumption amounted to (8,919.612 / kg / year). /kg/year) and (6,145.524/kg/year) respectively.616 /kg/year) and (6,145.524/kg/year) respectively.616 /kg/year) and (6,145.524/kg/year) respectively.

Al-Dujaila and Al-Bashaer sub-district reached a percentage of (3.9,3.5%), respectively, with a consumption rate of (5,789,880/kg, 5,304,960/kg), respectively, and the percentage of Sheikh Saad district was (2.9%), with a consumption rate of (4,423.788). /kg/year) and the percentage is similar to Al-Shahimiya and Al-Muwaffia District (2.7%) with a consumption rate as it was estimated

(4.051.944/kg,4.042.548/kg/year), respectively, while the percentage of Badra district and Jassan district reached (1.1%) for each, with a consumption rate of (1.363.608/kg, 1.763.100/kg/year). Straight.

**table number (2Amount of annual consumption of a substanceflourWasit Governor and according to the administrative units for the year (2021)**

The ratio %	Quantity* Consumption/kg/year	The ratio%	Population / people	Administrative units
11.1	16.485.984	10.7	152648	Essaouira District
6.0	8,919,612	5.8	82589	Taj al-Din district
2.7	4.042.548	2.6	37431	lipolytic
7.8	11.532.888	7.5	106786	Azizia District

1.7	2,615.760	1.7	24220	Zubaidi District
4.1	6.145.524	4.0	56903	Dabouni sub-district
8.7	12.871.140	8.4	119205	Numaniyah District
4.1	6.134.616	4.0	56802	Liberal District
34.0	50.308.884	32.9	465823	kut district
3.5	5.304.960	3.4	49120	Wasit district
2.9	4.423.788	2.8	40961	Sheikh Saad district
7.4	10.987.812	7.1	101739	district district
2.7	4.051.944	2.6	37518	Al-Muwafiqia District
3.9	5,789,880	3.7	53610	Al-Bashaer hand
1.1	1.763.100	1.1	16325	Badra District
1.1	1.363.608	0.8	12626	Jassan hand
0.05	78.300	0.05	725	Zorbatiyah sub-district
100	14737947	100	1415031	the total

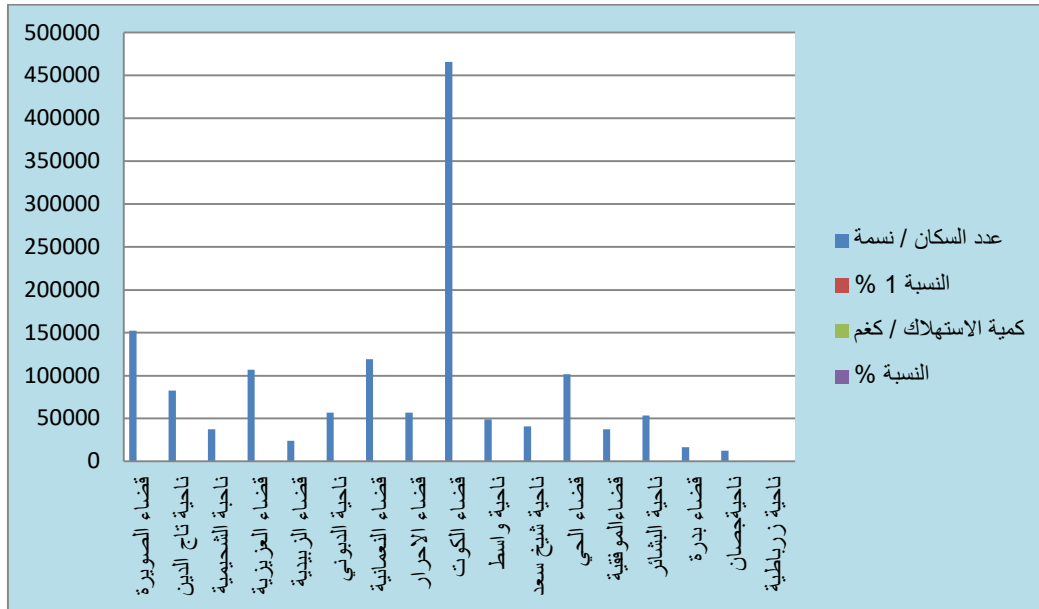
**Source: Ministry of Planning, Central Statistical Organization, Population Estimates for 2021, Unavailable Data published.**

**\* Populationx 108/kg = annual consumption**

Map No. (2) Amount of annual consumption of a substance flour glimpseqpe Wasit and according to units administrative for the year (2021)







**Source: From the researcher's work based on the table2).**

As for the self-sufficiency ratio and the size of the grain gap according to the administrative units, it was shown that the size of the grain gap in the study area for the year (2021) amounted to (-14616734 / ton).14.963.331 / ton) that the widening of that gap is due to the increase in the volume of consumption, as the district of Kut consumes what its amount (5.030.888 / ton) of wheat, this amount is due to the increase in the population size of (465823/population), while the lowest grain gap was recorded in Zurbatiya sub-district with (42 ..)947 / tons) and this is due to the lack of consumption, as it consumes an amount of (78.300/ton) and resulted from a small population as it reached (725/people). As for the self-sufficiency rate, it varied among the administrative units, as we find that the sufficiency rate for all units is below the average limit, and there is no high rate that exceeds the average rate, and there is no higher than a surplus when The average boundary is Zorbatia district The self-sufficiency rate reached (45.1%), although the percentage is below the average, but it is the highest percentage. As for the lowest surplus, the district district recorded (0.9%), which is the lowest level in achieving surplus production for the year (2021).

**Schedule (3The percentage of self-sufficiency and the grain gap for the wheat crop for Wasit Governorate and according to the administrative units for the year (2021)**

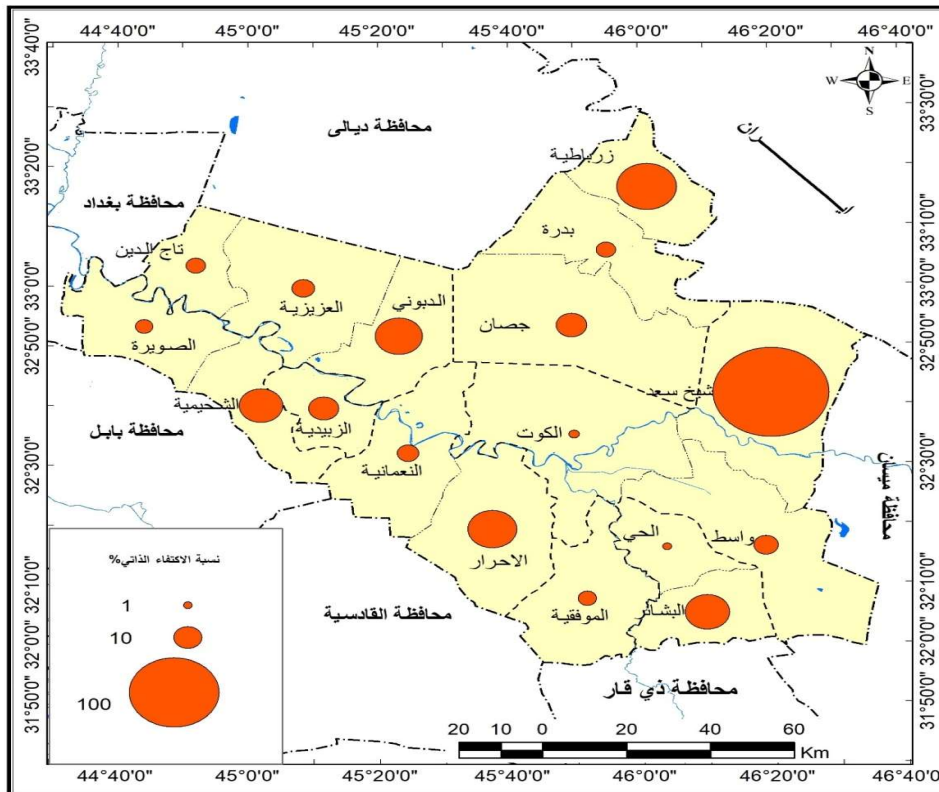
Gap size ton	self-sufficiency ratio	Consumption amount tons/	Population / people	production quantity/ ton	administrative units
-1581081	4.0	1648598	152648	67.517	Essaouira District
-825669	7.4	891961	82589	66.292	Taj al-Din district
-310949	23.8	404254	37431	93.305	lipolytic
-1080084	6.3	1153288	106786	73.204	Azizia District

-189218	27.6	261576	24220	72.358	Zubaidi District
-546552	11.0	6.145.52	56903	68.000	Dabouni sub-district
-1211059	5.9	1287114	119205	76,055	Numaniyah District
-429086	30.0	613461	56802	184.375	Liberal District
-4963331	1.3	5030888	465823	67.557	Kut District
-492352	7.1	530496	49120	38.144	Wasit district
-368705	16,6	442378	40961	73,673	Sheikh Saad district
-1087928	0.9	1098781	101739	10,853	district district
-304034	24.9	405194	37518	101.160	Al-Muwafaqih District
-553314	4.4	578988	53610	25,674	Al-Bashaer hand
167856-	4.8	176310	16325	8.504	Badra District
119887-	12.0	136360	12626	16,473	Jassan district
42947-	45.1	78300	725	35.353	Zorbatiyah sub-district
14616734-	0,8	14737947	1415031	121.213	the total

Source: 1- Ministry of Planning, Central Agency for Statistics and Information Technology, Directorate of Population Statistics, unpublished datae, 2021.

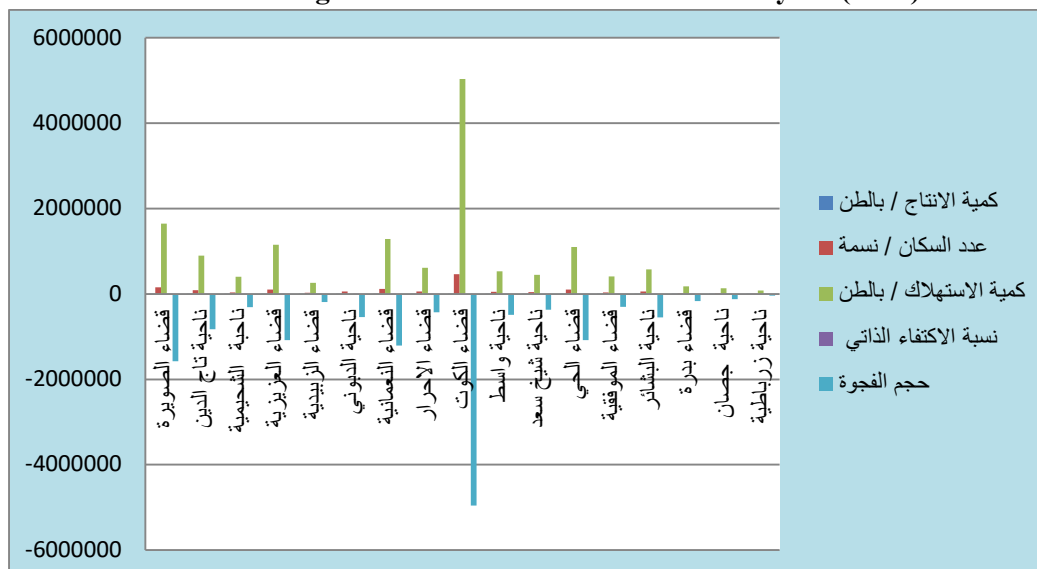
2- Ministry of Agriculture, Wasit Governorate Agriculture Directorate, Agricultural Statistics Department, data(Unpublished), 2021

map (3) Self-sufficiency rate of wheat crop for Wasit Governorate and according to administrative units for the year (2021)



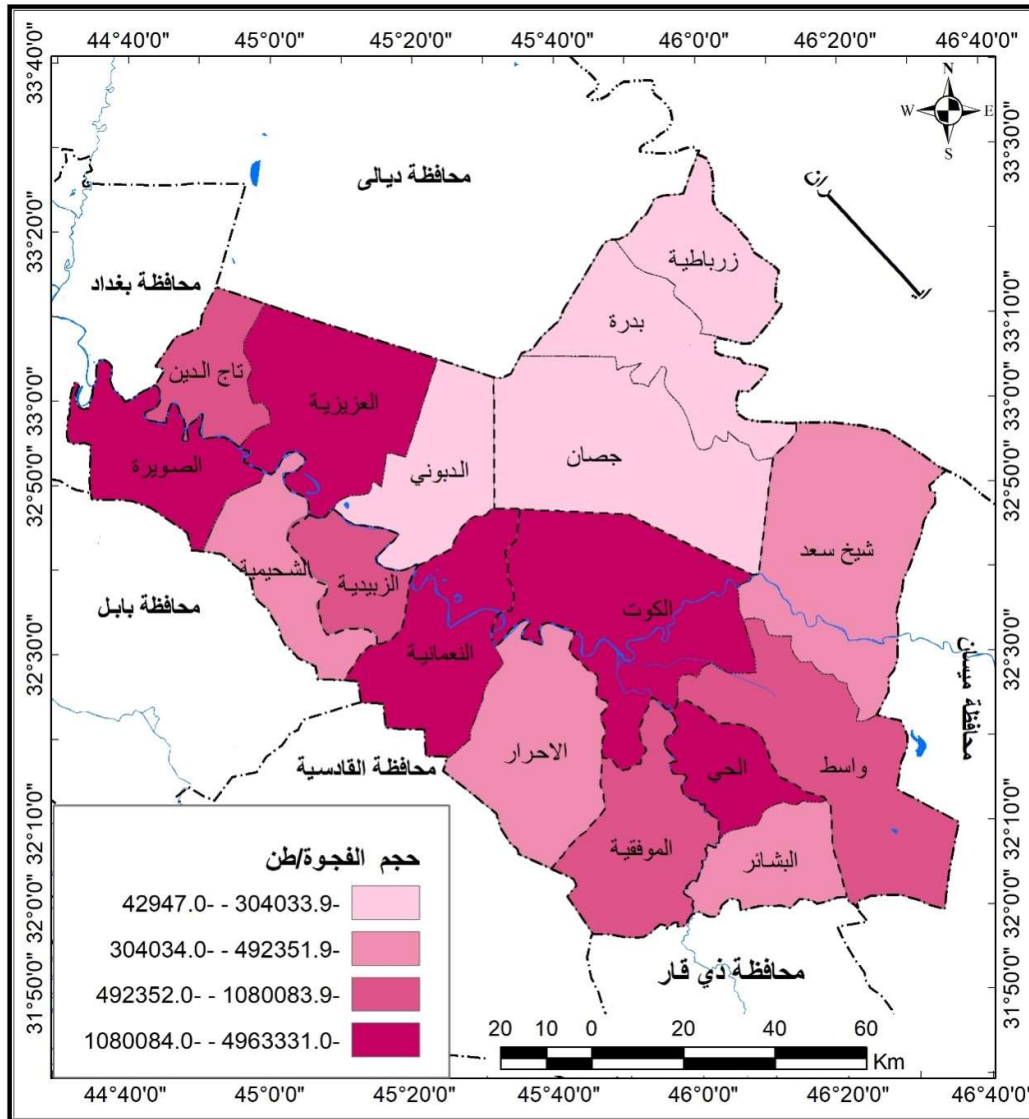
Source: the researcher based on Table (3).

Shape (3) The percentage of self-sufficiency and the grain gap of the wheat crop for Wasit Governorate and according to the administrative units for the year (2021)



Source: From the researcher's work based on the table3)

**Map (4) The size of the grain gap for the wheat crop for Wasit Governorate and according to the administrative units for the year (2021)**



Source: the researcher based on Table (3).

**Conclusions:**

1\_ Showed the results of the study. The problem of wheat production in the study area increases with the passage of time in light of the decrease in local production. The reason for the absence of vertical expansion, the prevalence of traditional agricultural patterns, weak soil and water scarcity, is that it is not expected to lead to an increase in the growth rate of wheat production in order to achieve significant increases in meeting the population's food needs.

2- The study showed that there is a grain gap between grain production and consumption, it reached critical levels as it was estimated at (14274052-) tons in the study area, while the self-sufficiency rate was (0.8%), which is a very low percentage, which requires consideration of agricultural policies and the use of advanced technologies in the field of strategic grain production through the optimal use of natural, human and material resources in the study area.

3-The study showed that the population of Wasit Governorate is subject to a natural and continuous increase, and in return it creates an increased demand for the amount of consumption of the wheat crop, and then finds it difficult to meet these requirements of limited local production.

#### **Recommendations**

1\_ The wheat crop is the first and main crop among the field crops in the study area, and its productivity must be improved and developed in order to abandon the import process in the future and focus on raising the productivity of the cultivated land by following the agricultural cycles by following modern scientific methods for irrigation, fertilization and seed selection.

2\_ keeping away from the idea that population increase is the root of the problem, but rather seeking to increase the productivity of the yield of the agricultural area unit.

3\_ It is necessary to reduce the size of the grain gap and achieve self-sufficiency in the study area, which works to increase the production of the wheat crop on a continuous basis through vertical expansion Investing desert lands and making improvements to weak soils Using practical technological methods in agriculture of equipment, fertilizers and the acquisition of improved seeds.

4\_ Interest in conducting a survey of agricultural soil in all districts and districts of Wasit Governorate in order to determine the needs of the soil for fertilizers and to indicate its suitability for the cultivation of the wheat crop in a way that enhances food security.

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