

## Trends and Determinants of Urban Growth of the City of Qurna

Qassim Mutar Abad Alkhalidy

Article Info	Abstract
<p><b>Article History</b></p> <p>Received: April 24, 2021</p> <p>Accepted: May 01, 2021</p> <hr/> <p><b>Keywords :</b> Urban Growth, Areal Expansion, Natural And Human Determinants.</p> <p><b>DOI:</b> 10.5281/zenodo.4730906</p>	<p><i>The city of Qurna took two distinct directions in its urban growth, the first direction extended north of the Euphrates River and included thirteen residential neighborhoods, while the second direction extended south of the Euphrates River and included eleven residential neighborhoods. Population growth, which reached 4.7% between 2009-2020, however, urban growth in the study area faces natural and human determinants that hinder its extent, and the aim of the research is to reveal the importance of the study area as an area that attracts the inhabitants of the surrounding areas, as well as identifying the obstacles that Limit urban growth to develop planning solutions and treatments, and the research has adopted the historical approach in tracking the stage of urban development and methods of descriptive methodology, office sources, maps and relevant official departments to analyze the current urban growth of the city, and the research reached results, the most important of which is the acceleration of urban growth, both demographically and spatially. Population from (27811) people on an area of (540) hectares in 1977, to (155707) people on an area of (1503.7) hectares, in addition to the housing deficit, which amounted to 8954 housing units for the year 2020.</i></p>

### Introduction

The phenomenon of urban growth is one of the problems that have become a concern of planners as well as specialists in urban studies, and the increase in the rate of population growth in cities at the expense of urban land use, and the imbalance between rural and urban residents has become a global phenomenon threatening the future of world cities. This research seeks to study the urban growth of the city of Qurna by relying on spatial and statistical data approved from multiple sources, the most important of which are population censuses, relevant official departments, maps and spreadsheets. The urban growth of the study area was characterized by its rapid expansion as a result of several factors, the most important of which was the increasing population growth and the social factor represented by the relationship of kinship, as well as the economic factor, especially the oil fields in West Qurna and Majnoon fields in the north, which was an important reason for the influx of immigration from neighboring areas to the city, which led to an increase in population size. And the area of the city greatly expanding, which requires an increase in its urban area, especially the demand for housing units.

**Research problem:** The problem of this study lies in the following questions:

- 1- What are the directions in which Qurna has expanded?
- 2- Has the increase in the population size of Qurna been accompanied by the expansion of the urban area?
- 3- What are the determinants of the urban expansion of the city of Qurna?

Research hypothesis:

As a result of the proposed study problem, the hypotheses are as follows:

- 1- As a result of the absence of urban planning, Qurna has taken different directions.
- 2- The increasing urban growth has a great impact on the areal surveying expansion.
- 3- There are natural and human obstacles that limit the expansion of the city to the east and west.

### The importance of the study and its justification:

The importance of carrying out this study for the distinguished location of the city at the meeting point of the Tigris and Euphrates rivers, as well as the availability of oil resources in it, and the justifications for the study can be summarized as follows:

- 1- Determine the appropriate urban growth trends for the city.
- 2- The scarcity of lands suitable for surveying expansion, which requires the responsible authorities in urban planning to study comprehensive planning for the study area.
- 3- The need to plan and organize all current land uses in the study area.
- 4- The study area is of great historical importance among Iraqi cities due to the presence of Adam, p.
- 5- The presence of a large number of residential neighborhoods in the study area of different sizes, which requires the need to organize and plan the relationships between these neighborhoods.
- 6- The interconnectedness of tribal and social relations in terms of kinship and lineage in the study area in a manner that differs from the rest of Basra Governorate.

**Research goal:**

This study aims, in general, to analyze the current situation in the city of Qurna, and to study the trends and possibilities of future urban growth, and it seeks in particular to achieve the following goals:

- 1- Explaining the importance of the location of the study area and its effect on attracting the residents of the surrounding areas.
- 2- Identifying the obstacles that limit urban expansion to develop planning solutions and treatments.
- 3- Disclosure of the city's available capabilities for its development and advancement, to be a model for the surrounding areas.
- 4- Availability of a database of information and statistical data about the region and the population groups in it.

**Research structure and organization:**

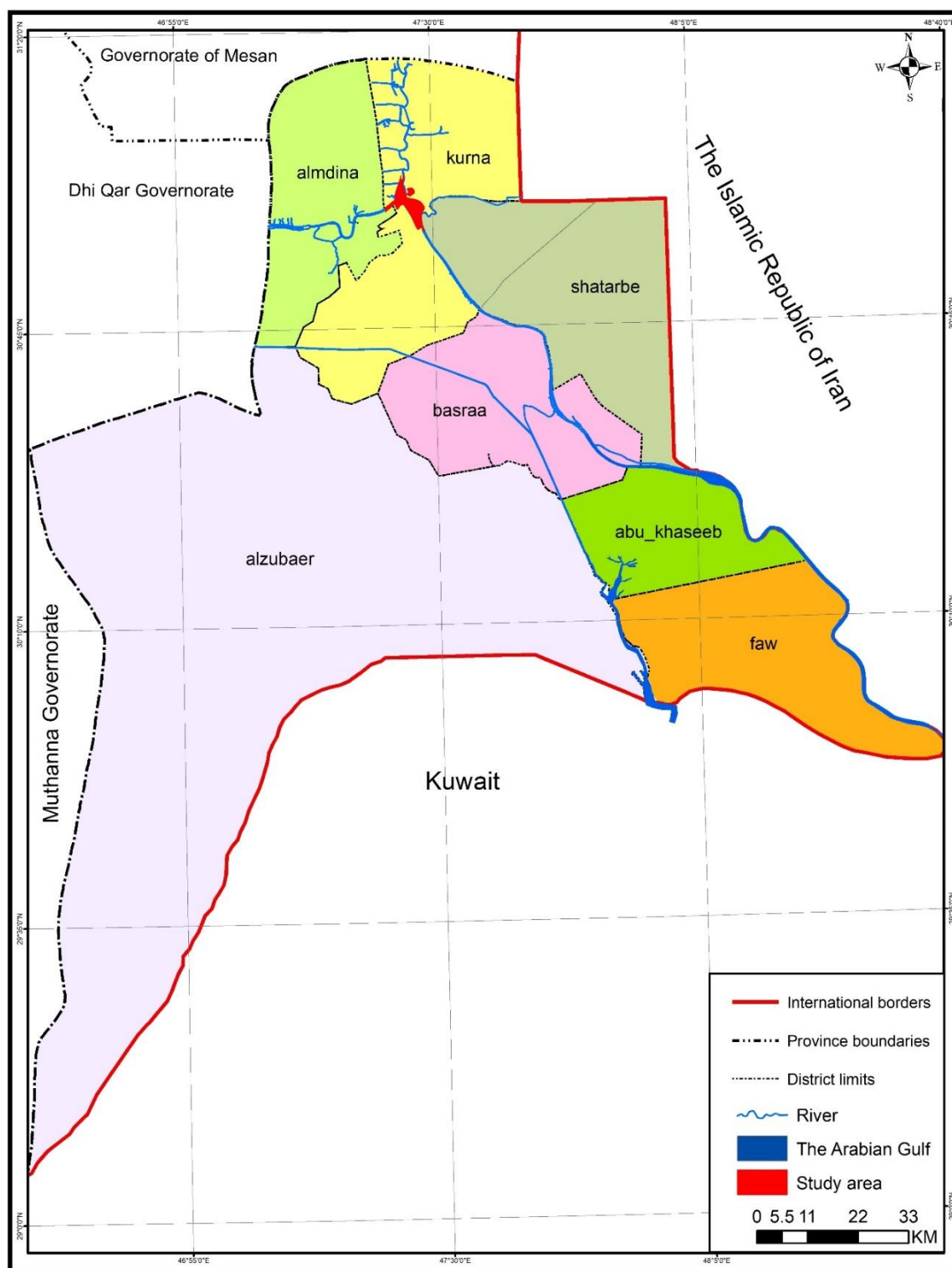
The researcher followed the historical approach by tracking the stages of urban growth, as well as the method of the survey approach, one of the methods of the descriptive methodology, the office sources and the relevant official departments to analyze the current urban growth of the city, and diagnose the determinants of this growth to develop appropriate planning alternatives for future spatial expansion, as well as adopting the analytical statistical approach. According to what the research covered in collecting data and information related to the number of population, the number of housing units and the area of the population census in Iraq for the years 1977-1987-1997-2009 and the population estimates for the year 2020, where the research took place in an introduction and two papers, the first dealt with the causes of urban growth and spatial expansion, The second dealt with the stages and trends of urban growth and determinants of natural and human growth, as well as a set of conclusions and recommendations.

**Spatial and temporal research limits:**

**Spatial boundaries:** The city of Qurna, map (1), is located in the northern part of Basra Governorate, as the city is far from the governorate center within the limits of 75 km within the Qurna district, astronomically: it is located between two latitude circles ( $30^{\circ} 56'30''$  -  $31^{\circ} 03' 0''$ ) to the north and an arc of length ( $047^{\circ} 29' 0''$  -  $047^{\circ} 23' 30''$ ) to the east, spatially: it is bordered on the north by the village of Moza, on the south by the Al-Ghumayj river that connects to the Shatt al-Arab, and from the east by the Shatt al-Arab and the end of the neighborhood boundaries Muzaira'a, and from the west, the boundaries of the Imam Sadiq sub-district (formerly Talha) and the Izz al-Din Salim sub-district of the Medina district. The city of Qurna includes 24 residential neighborhoods according to the administrative divisions of the Qurna municipality, map (2).

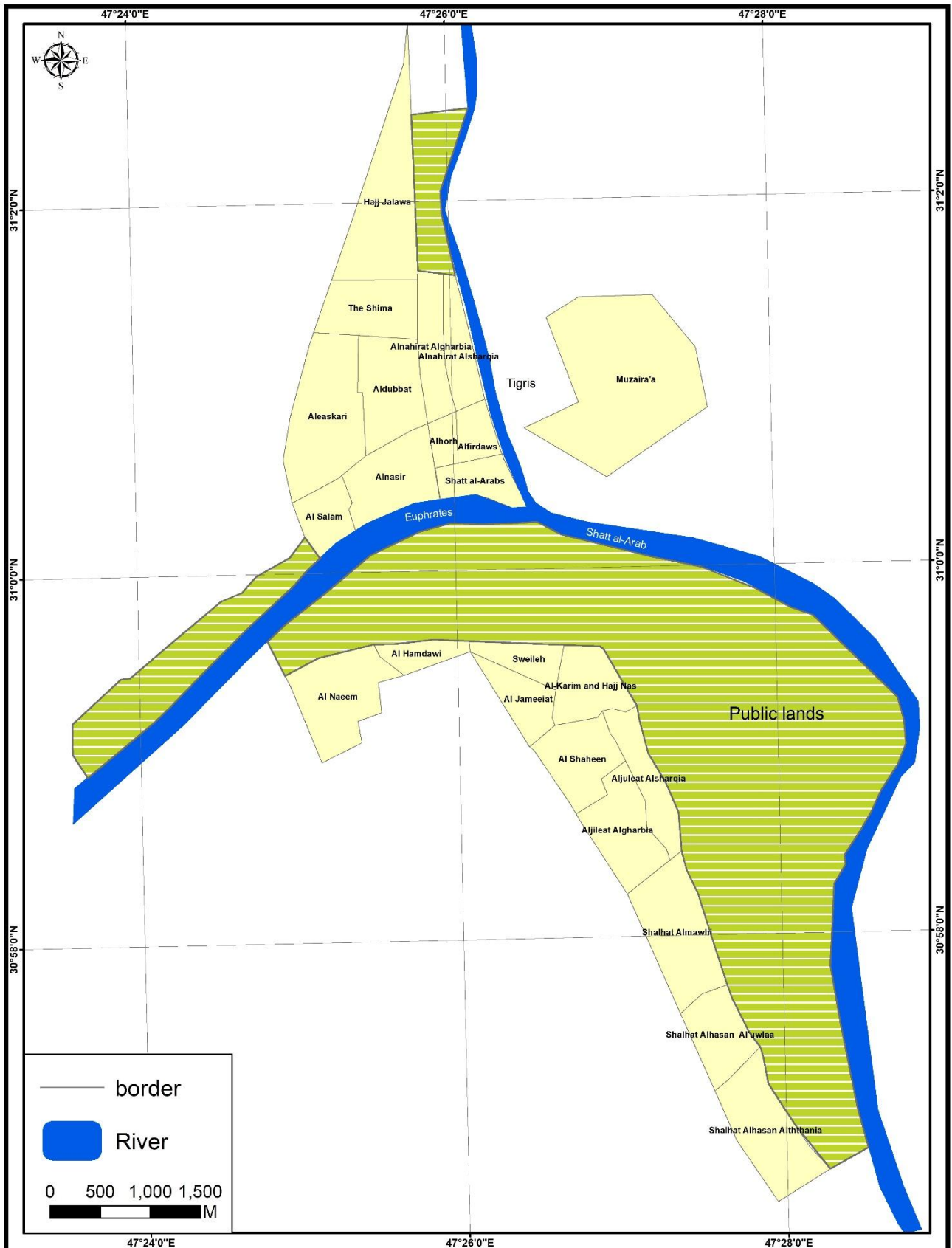
**As for the temporal boundaries:** It is the period of preparation of the research, represented by writing the theoretical part, field visits to the researcher, and reviewing the official records and documents of the research community for the year 2020.

Map (1) of the location of the city of Al-Qurnah in Basra Governorate, 2020



Source: Qurna Municipality Directorate, Planning Department, Geographic Information Systems Division 2020.

Map (2) of the revival of the city of Qurna for the year 2020



Source: Qurna Municipality Directorate, Planning Department Division, Gis, 2020

## THE FIRST TOPIC: THE CAUSES OF URBAN GROWTH

Urban growth: It is the expansion occurring in the area of the city and this expansion includes changing the uses of the land surrounding the city, and this means the expansion of the urban geographical area, and this expansion results in adding new lands to the area of the urban center (Al-Muzaffar, 1996, p. 3), or is the spatial convenience to increase the use of the land Urban in the next period of time (Ayasrah, 2013, p. 200), and growth represents a natural state of the city due to the continuous developments and changes that it witnesses over time in various economic, social, administrative and cultural aspects, with the aim of absorbing its momentum by providing suitable spaces for those uses to exercise its functions in it. There are several factors that coincided in the expansion of urban growth in the study area, as follows:

### 1-Increasing the population size:

The study of the change of population numbers in any area is an important matter in the geography of the population, as it is concerned with monitoring the occurrence of change in the size of the population, their characteristics and the pattern of their distribution (Al-Issawi, 2001, p. 121), shown from Table (1) and Figure (1) increasing the size The population that occurred in the population of the city of Qurna during the years from 1977 to 2020, as we note the extent of the development that took place on the increase in population. In 1977 the population was (27811) people, while in 2020 it reached (155707) people, that is, an increase of the population of ( 127896) people during 40 years, and it is noticed that there is a variation in the population growth, during the period between 1977 - 1987 the rate of increase was 1.6%\*, which is a low percentage compared to the rates that followed, and it was caused by the migration of the city's population as a result of the Iran-Iraq war in the year 1980, then the percentage increased to 6.6% for the return of the city's population after the end of the war in 1988, then increased to 7.7% between the 1997-2009 census as a result of annexing new lands and distributing them to the population. 4.7% This is due to the increase in the natural rates of births and the decrease in deaths as a result of health development, as well as the improvement in the general conditions in Egypt The city and social and economic stability, as the study area is considered an attractive area for residents, due to its distinguished location at the confluence of the Tigris and Euphrates rivers, which requires the development of new housing stores.

**Table (1) The evolution of the population size in the city of Qurna for the years 1977-2020**

Annual Censuses	population		The increase between the two censuses	%
	Previous census	Post census		
1977- 1987	27811	32136	4325	1.6
1987- 1997	32136	53344	21208	6.6
1997-2009	53344	102936	49592	7.7
2009-2020	102936	155707	52771	4.4

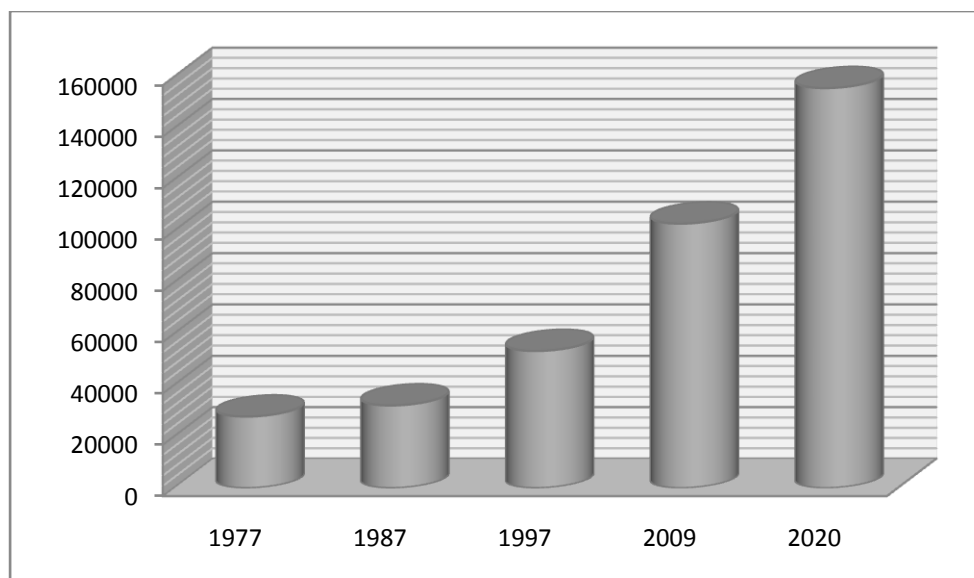
Source:

- 1- The Council of Ministers - Ministry of Planning - Central Bureau of Statistics - Results of the General Population Census for the year 1977 - Basra Governorate, (Table 22), pg.24.
- 2- The Council of Ministers - Ministry of Planning - Central Bureau of Statistics - Results of the General Population Census for the year 1987 - Basra Governorate, (Table 22), pg. 81.
- 3- Council of Ministers - Planning Commission - Central Bureau of Statistics - Results of the General Population Census for the year 1997 - Basra Governorate, (Table 22), p. 24.
- 4- The Republic of Iraq, the Ministry of Development Cooperation, the Central Bureau of Statistics, the annual statistical collection, the results of inventory and numbering for the year 2009.
- 5- Directorate of Qurna Municipality, Primary Health Care Centers of the City, Annual Inventory 2019-2020.

**Figure (1) The evolution of the population size in the city of Qurna for the years 1977-2020**

\* ( ) Law of population growth:  $R = (P_2 / P_1) e / t * 100$  where:  
 R = growth rate  
 P2 = modern census  
 P1 = Old census  
 e = base of the natural logarithm, which is a constant = 2.71828  
 T = the time interval between the two censuses.

See: Taha Hammadi Al-Hadithi, Population Geography, University of Mosul, Dar Al-Kutub for Printing and Publishing, Mosul, 1988, p. 291.



**Source: Table (1)**

## **2- Social factors:**

These factors are represented by the social and clan ties and bonds of Iraqi families that affect the increase in population size, especially in the encouragement of marital and nuclear families that lead to the birth of the largest possible number of children, or the encouragement of unmarried persons of both genders to marry early, which is characterized by a high population fertility (Abdul Al-Muti, 1989, p. 46), the social values in the study area encourage early marriage that ranges between 14-16 years, which increases the fertility of the female population and its demographic composition (Fathi, 1980, p. 245), which leads to the birth of a greater number of children. Likewise, clan relations between families, as the relationship of kinship had an important motive for housing side by side in the study area, where the presence of some relatives generates a desire to move and live near them, especially families who flee from the marshes near the study area as a result of the scarcity of water in the Euphrates River as well as the availability of opportunities Agricultural and industrial work.

## **3-Economic factors:**

Economic factors refer to a group of phenomena related to the material life of society and the means of developing its resources of wealth, the production, circulation, distribution and consumption of these wealth, and it includes the elements that produce goods and services such as: land, natural resources, cultural values, technical knowledge, capital and organization And the work that is represented in the skills of individuals (Muhammad, 1975, p. 6), which leads to attracting employment to provide job opportunities, given that Qurna is one of the richest cities in the world with oil wealth, where the fields of West Qurna, from the east are Majnoon oil fields, and from the south are the fields of Nahran Omar, As well as its central location for three provinces (Basra, Amara and Nasiriyah), not to mention its location at the confluence of the Tigris and Euphrates rivers and its enjoyment of economic activity, including the production and canning of dates, due to the availability of date presses and the practice of the people of this city for a lot of handicrafts, including hunting and raising fish, making mats, baskets and moorings, raising domestic animals and making Cheese and trading in it (Al-Suraih, 1977, p. 173). These factors combined contributed to the growth of the city, in urban and spatial terms, in different directions.

## **Second - The stages and trends of urban growth for the city of Qurna.**

1-Stages of urban growth for the period from 1869-2020.

The city of Qurnah is one of the ancient Iraqi cities whose opinions differed about its emergence, as it is not precisely known the time in which it arose, but it was mentioned by the books of travelers who visited Iraq in its modern history, including the Italian traveler (Ferdigi), who arrived in Iraq in 1563 AD, and wrote about it before Arriving in Basra, we saw a small fortress called Al-Qurnah, standing at the end of the land where the Tigris meets the Euphrates and they form a great river pouring water south into the Gulf (Al-Bazi, 1969, p. 26). When Medhat Pasha assumed the mandate of Baghdad in 1869, the emergence of Qurna as a city (Al-Madamagh, 1981, p. 37), and the stage of its development can be divided into four stages as follows:

### **The First Phase (1869-1913)**

This stage represents the beginning of the establishment of the Qurnah district and was subordinate to the Basra district. Then the city of Qurna arose and included several areas (Muzaira'a, Bani Mansur, An-Nashwa, and Al-

Dir and Al-Sharsh). The number of housing units in it reached 284 units, and the total population of the city was 700, with an area of 5.6 hectares (Jabr, 2018, p. 265).

#### **The Second Phase (1914-1957)**

This stage witnessed the beginning of the surveying expansion of the city, where the Shatt al-Arab and Western Nahirat stores appeared, and with this, the city included five residential neighborhoods, which caused an increase in its area over the previous phase, reaching 11.4 hectares, while the number of housing units reached 200 housing units (Al-Suraih, 1977 248), at this stage the population reached 3,156 according to the 1947 census, then the population rose to 9,486 people according to the 1957 census, and this phase ended with the end of the monarchy and the beginning of the republican rule of Iraq in 1958.

#### **Third Phase (1958 – 2002)**

This stage began when the republican government was established in Iraq in 1958, the city developed during this stage as a result of the change that occurred in the standard of living of the country in general after the nationalization of oil in 1972, as the state planned projects and infrastructures in all areas, and distributed plots of residential lands to citizens as well as Providing financial loans to build housing units, so the city expanded in 1974 towards the west, represented by the emergence of the neighborhoods of Al-Naseer, Al-Salam and Nahr Al-Basha, and to the north appeared the Al-Nahirat Al-Sharqiya neighborhood, which caused an increase in the number of the city's population, which reached 27,811 people in the 1977 census, and in 1982 the city expanded In the north to include new neighborhoods, represented by the northern rivers (Hajj Jallaw), al-Dhubat, al-Askari and al-Shima, and for this reason the number of housing units reached 2,400 housing units and reached an area of 540 hectares (Ministry of Municipalities, 2015), which increased the number of the city's population to 32,136 according to the 1987 census, when The population of the city is 53,344 according to the 1997 census, but at the end of this stage urban growth diminished in most Iraqi cities, due to the economic blockade imposed on Iraq in 1992, and this stage ended By occupying Iraq in 2003.

#### **Fourth Stage 2003-2020**

This stage was represented by the beginning of the occupation of Iraq in 2003, and the occurrence of changes in the improvement of economic conditions after the lifting of the economic blockade imposed on Iraq, thus this phase was characterized accordingly by the rapid urban growth towards the south, and it did not expand towards the west and the east due to the presence of natural and human obstacles that we will mention later, and new neighborhoods appeared. They were joined to the city: (Al-Naim, Al-Hamdaoui, Al-Sweileh, Al-Jamiyat, (Al-Karim and Hajj Nasser), Al-Shaheen, Al-Jala Al-Sharqiya, Al-Jala Al-Gharbi, Al-Mouhi chalet, Al-Hassan you-first and Al-Hassan II chalet). For the year 2009, then the population increased to 155,707 people according to the population estimates for the year 2020, with an area of 1503.7 hectares, thus the number of residential neighborhoods for the city of Qurna became 24 residential neighborhoods for the year 2020, Annex (1).

#### **2-Trends of urban growth in the city of Qurna.**

The study of trends and axes of urban growth in the city reflects the effect of the characteristics of its locations in determining its areas of extension, highlighting the effect of various geographical factors in directing urban growth and showing the axes of extension and areas of urban obstacles, so that the urban picture of these cities becomes clear in the future (Abdel Fattah, 2003, p. 147). Urban growth is the desired trends on the part of the population in the areas of urban growth and land use, and it is the result of measuring social variables and taking them into account that achieves popular satisfaction, and it is one of the basic ingredients for the success and implementation of the city's general plan (Ayman, 2018, p.173). For the urban growth in the study area, we notice that the city expanded in the following directions:

**The northern axis:** This corridor extends on the northern side of the Euphrates River, and includes the neighborhoods: Shatt al-Arab, al-Firdaws, al-Hura, al-Nahirat al-Sharqiya, al-Firdaws, al-Hura, al-Nahirat al-Sharqiyya, al-Firdaws, al-Hura, al-Nahirat al-Sharqiya, al-Firdaws, al-Hura, al-Nahrat al-Sharqiyya, al-Firdaws, al-Hura, al-Nahirat al-Sharqiyya, al-Firdaws, al-Hura, al-Nahirat al-Sharqiya, al-Firdaws, al-Hura, al-Nahirat, al-Sharqiyya, al-Firdaws, al-Hura, al-Nahirat, al-Sharqiya, al-Firdaws, al-Hura -, al-Nahirat, al-Sharqiyya, al-Firdaws, al-Hurah The neighborhoods of Al-Naseer, Al-Salam and Bint Al-Basha extend on the Al-Qurna-Al-Madina road. As for the neighborhood of Mezaira'a, it is located east of this axis, that is, east of the Tigris River and linked by a metal bridge to the city center

**The southern axis:** This axis extends to the south of the Euphrates River and includes the neighborhoods: Al-Naim and Al-Hamdawi on the right side of the road: Al-Qurnah-Basra towards the center of Basra Governorate, as for the neighborhoods of Al-Sweileh, Al-Jumiyat, Al-Karim, Al-Hajj Nasser, Al-Shaheen, Al-Jalaa Al-Sharqiya, Al-Gharbiya, Al-Moahi, and Al-Hassan 1 and 2 on the left side of the same road, and these neighborhoods spread on the highway Qurnah - Basra, while the neighborhoods of Al-Naim and Al-Hamdawi extended on the right side of the same road, and these two axes included residential neighborhoods that vary in their numbers, numbers of inhabitants and the number of their families, in addition to the variation of their areas, which are as follows:

1-The northern neighborhoods: The population of this axis reaches (95881) people, at a rate of (61.6%) of the total population. They occupy (10917) housing units at a rate of (56.5%) of the total housing units, while the



number of families reached (16030). A family with a percentage of (56.4%) of the total number of families, and an occupancy rate of (1.5) families / housing unit, which means there is a housing deficit of more than (5000) housing units\*, on an area of (979.3492) hectares with a percentage (65.1%) of the total area of the city of Qurna.

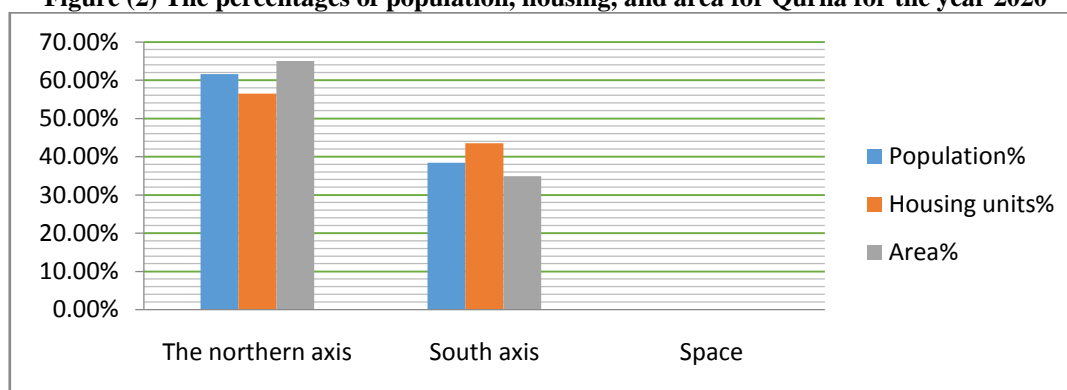
2-Southern neighborhoods: The population of this axis reaches (59826) people, representing (38.4) of the total population of the city. They occupy (8418) housing units at a rate of (43.5%) of the total housing units, while the number of families is (12372). A family of (43.6%) of the total number of families, and an occupancy rate of (1,2) families / dwelling, which means there is a housing deficit of (3954) housing units. This axis occupies an area of (524.3545) hectares at a rate of (34.9). % of the total area of the study area, Table (2) and Fig. (2).

**Table (2) Population, housing units, and area for the city of Qurna for the year 2020**

The axes	population	%	Number of housing units	%	Area/ Hectare	%
Northern	95881	61.6	10917	56.5	979.3	65.1
Southern	59826	38.4	8418	43.5	524.4	34.9
Total	155707	100	19335	100	1503.7	100

Source: Appendix (1).

**Figure (2) The percentages of population, housing, and area for Qurna for the year 2020**



Source: Table (2)

### 3-Determinants of urban growth

The phenomenon of urban growth of cities is a phenomenon known to most countries of the world, especially agricultural countries, because of its great importance in terms of geographical specializations, planners, sociologists and economists (Shannan, 2008, p. 110), and most cities are exposed to this phenomenon widely due to the growth of the city, at the expense of agricultural lands.

To meet its needs from the requirements of all land uses, especially residential ones, therefore, the city of Qurna faces some limitations that hinder its urban growth, including natural and human, as follows:

#### A- Natural determinants:

The rivers represent one of the main obstacles that limit the urban growth process of the city, as the Tigris River meets the Euphrates in the study area to form the Shatt al-Arab. From the east, the Tigris River limits the expansion of the city with the exception of the Muzaira'a neighborhood, while the Shatt al-Arab limits the expansion of the city from the southeast. The Euphrates River limits the expansion of the city to the west, as well as the palm groves and farms that extend along the sides of these rivers.

#### B- Human determinants:

They are imposed by humans on human settlements and include the following types:

1-The presence of the archaeological Adam tree, which is located to the east of the city and has become a tourist area visited by people from different countries of the world, stands an obstacle to the urban growth of the city.

2-Fertile agricultural lands, there are large areas located on the sides of the rivers, which are currently used for the cultivation of wheat and barley, as well as the cultivation of vegetables and citrus fruits.

3-Transportation routes: Where the road limits the link between Qurna and Basra, the expansion of the city from the east, as well as the Qurna-Maysan road from the north, as well as the Qurna-Medina road to the west.

4-Administrative boundaries: This limits the expansion of the city, which is represented in the boundaries of Al-Sadiq district, and Al-Huwair sub-district to the west.

### 4-Projections of population size for the city of Qurna for the years 2020-2030

Urban planning for cities depends primarily on expectations of the future growth of the population, and its relationship to the current and future urban space and all future uses of the land, meaning that the population projections represent the infrastructure for planning, as there is a relationship between the increase in the

\*Number of families - number of housing units



population size of cities and the demand for housing units, as well as the use of land. The other, and these relationships are positive, that is, the greater the population, the greater the need to provide housing units, and for the purpose of forecasting the size of the population for the years 2025 and 2030, the population estimate for the year 2020 has been relied upon, with a growth rate of 4.7%, so the population size will reach (196955) people. For the year 2025, and since the average family size is (7 people / housing units) for this, the city will need about 28 thousand housing units within five years. As for the forecast for 2030, the population size will reach (249130) people, and the need for housing units will reach 36 thousand housing units.

And to meet the city's needs of housing units, it can be expanded in the following directions:

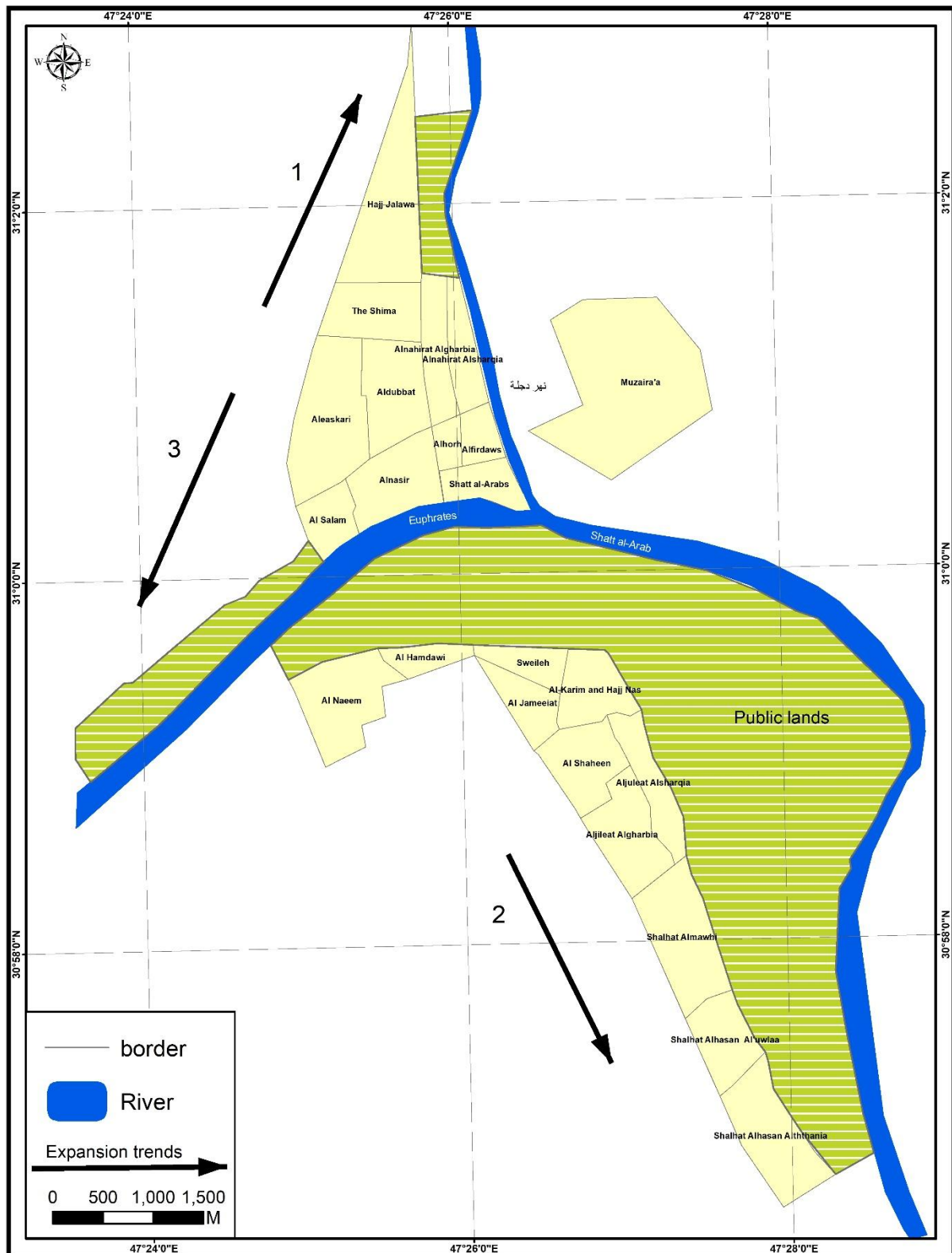
- 1- The area located northwest of the city to the borders of the village of Moza, as this area is characterized by its breadth, flatness, and absence of agricultural lands.

---

**(\*) Depending on the following equation:  $P_n = P_0 (1 + r)^n$  Where:  $P_n$  = the population of the target year  $P_0$  = the population of the base year,  $R$  = annual growth rate , $n$  = the number of years between two censuses. Source: (Al-Saadi, 2001, p. 304).**

- 2- The area near the Technical Institute towards the south of the city to the Al-Ghumajj River, where there are empty lands located within the administrative boundaries of the city of Qurna to the administrative boundaries of Al-Sadiq district in the west.
- 3- The area west of the city on the Qurna-Al Huwair road to the boundaries of Al Huwair sub-district belonging to the city district, Map (3).

Map (3) directions of the future expansion of the city of Qurna, 2020



- 1- Qurna Municipality Directorate, Planning Department, Gis Division, 2020
- 2- Field study

## Results

Through the study, the following results were identified: -

- 1- Urban and spatial growth accelerated, as the size of the population developed from (278,211) people over an area of 540 hectares in 1977 to (155707) people over an area of (1503.7) hectares in 2020.
- 2 - The trends of urban growth in the city of Qurna were not balanced, as the northern axis was greater extension, area and population than the southern axis as a result of the absence of an urban planning role.
- 3- The city of Qurna is an attractive city for residents due to the availability of industrial employment opportunities, especially the oil fields west of Qurna and Majnoon fields in the north, as well as agricultural activity where palm forests, fruit and vegetable trees that extend on the Tigris and Euphrates and Shatt al-Arab rivers.
- 4- It appears that the study area is expanding towards the north to the borders of the village of Moza, and to the south towards the Technical Institute to the Al-Ghumayj River in the south and to the southwest towards the Qurna - Al-Hawair axis, as a result of the presence of determinants towards other axes.
- 5- The housing deficit, which reached 8,954 housing units, as a result of the rapid population increase.
- 6- By predicting the future population, the population will reach 196,955 people in 2025 and 249130 people in 2020.

## Recommendations

The study recommends to the Urban Planning Directorate in Basra Governorate and to the Qurna Municipality Directorate the following: -

- 1- The necessity of planning to face the growing population, whose population growth rate has reached 4.7, in terms of preparing plans to address the housing deficit as well as all services.
- 2- Not to expand urban growth at the expense of agricultural lands.
- 3- The necessity of building low-cost housing complexes and selling them to city residents in convenient installments to solve the housing deficit.
- 4- Directing urban growth towards the axis of the Qurna - Maysan road in the north due to the existence of a large area of land, as well as the road of the Qurna - Basra road in the south near the Technical Institute.
- 5- The orientation to the vertical building in the city center to maximize the area.
- 6- Following the scientific planning for developing the city of Qurna based on future population predictions for the purpose of expanding the city in all land uses in accordance with the planning standards adopted in designing cities.

## Appendix (1) Number of population, housing, families, area, mathematical density, and housing unit occupancy rate for the city of Qurna for the year 2020.

	S.	Neighborhoods	Population / people	Number of families	Number of housing units	Area / Hectare	Unit / family
Northern neighborhoods	1	Alfirdaws	5300	643	545	22.8755	1.2
	2	Shatt al-Arabs	4844	598	466	31.6517	1.3
	3	Alhorh	3950	766	590	11.2593	1.3
	4	Muzaira'a	7344	1621	813	223.0164	2.0
	5	Aldubbat	4833	1104	840	62.5309	1.3
	6	Aleaskari	6543	1181	846	94.4938	1.4
	7	Nehrbnt Basha	11745	1594	1249	227.0805	1.3
	8	The Shima	7304	2989	1354	51.2111	2.2
	9	Alnahirat Alsharqia	10155	1378	1060	33.1299	1.3
	10	Alnahirat Algharbia	8950	1042	787	33.6941	1.3
	11	Alnasir	11795	1379	1054	64.2779	1.3
	12	Al Salam	8730	816	740	30.685	1.1
	13	Hajj Jalawa	4388	919	573	93.4431	1.6
<b>Total of Northern neighbourhoods</b>			<b>95881</b>	<b>16030</b>	<b>10917</b>	<b>979.3492</b>	<b>1.5</b>
Southern neighborhoods	14	Al Naeem	7789	982	790	69.9637	1.2
	15	Al Hamdawi	3365	1104	952	19.4376	1.2
	16	Sweileh	3800	1301	690	25.8942	1.9
	17	Al Jameeiat	4277	934	800	33.9055	1.2
	18	Al-Karim and Hajj Nas	5198	1565	1028	46.172	1.5
	19	Al Shaheen	4489	837	600	52.7885	1.4
	20	Aljuleat Alsharqia	6964	1769	866	42.1665	2.0

21	Aljileat Algharbia	7981	877	789	33.6941	1.1
22	Shalhat Almawhi	4678	1161	654	80.3351	1.8
23	Shalhat Alhasan Al'uwlaa	4290	865	460	46.4958	1.9
24	Shalhat Alhasan Alththania	6995	977	789	73.5015	1.2
<b>Total southern neighborhoods</b>		<b>59826</b>	<b>12372</b>	<b>8418</b>	<b>524.345</b>	<b>1.5</b>
<b>Total for the city</b>		<b>155707</b>	<b>28402</b>	<b>19335</b>	<b>1503.704</b>	<b>1.5</b>

## References

- 1- Qurna Municipality Directorate, Planning Department, Geographical Information Systems Division**  
**2- Primary health care centers of the city, annual inventory 2019-2020.**

### Margins:

- Al-Muzaffar, Abdul-Mahdi Salim, Factors of urban expansion in the city of Basra, Journal of the College of Arts, University of Basra, Issue 25, 1996.
- Thamer Mutlaq Muhammad Ayasrah, Assessment of Urban Growth Trends in the City of Jerash Using the Goals Achievement Matrix, The Jordanian Journal of Social Sciences, Volume 6, Issue 2, 2013.
- Al-Issawi, Fayez Muhammad, Foundations of Population Geography, University Knowledge House, Alexandria, 2001.
- Hammadi Al-Hadithi, Population Geography, University of Mosul, Dar Al-Kutub for Printing and Publishing, Mosul, 1988.
- Abdel-Moati, El-Sayed, Urban Sociology and Population, Cairo, Heliopolis Press, 1989.
- Fathi Muhammad Abu Ayyana, Population of Alexandria, a Systematic Demographic Study, Institution of Methodological Culture, Alexandria, 1980.
- Muhammad Al-Gohary and others, Studies in Rural and Urban Sociology, University Books House, second edition 1975.
- Abdul-Hussein Jawad Al-Suraih, The functional region of the city of Qurnah (a study in the geography of cities and their regions), Al-Irshad Press, Baghdad, 1977, p. 173.
- Al-Bazi, Hamid Ali Turki, History of the Old City of Basra, Basra, 1969.
- Mustafa Kazem Al-Madamagh, Texts on Ottoman Documents on the History of Basra, Center for Arab Gulf Studies, 1981.
- Saad Jaber Khalaf, Najat Abdul Karim Abd al-Sada, Administrative Conditions in the Qurna District in the Ottoman Era, Basra Heritage Magazine, Issue 24, 2018.
- Abdul-Hussein Jawad Al-Suraih, previous source.
- Ministry of Municipalities and Public Works, Basra Municipality Directorate, Qurnah District Municipality Department, Property Division, unpublished data, 2015.
- Abdel Fattah Imam Hazin, Egyptian Cities, Part 1, The Supreme Council for Culture, 2003.
- Ayman Muhammad Muhammad Al-Sayed, Evaluation of Axes, Trends and Patterns of Urban Urban Growth in the Sharqiya Governorate, Journal of Scientific Research in Literature, Nineteenth Issue, Volume 11, 2018.
- Tahseen Jasim Shannan, Determinants of Urban Sprawl in the City of Nasiriyah, Basra Research Journal, Human Sciences, Vol. 32, Issue 2, 2008.
- Abbas Fadel Al-Saadi, Population Geography, Part 1, Directorate of Dar Al Kutub for Printing and Publishing, Baghdad, 2001.

### Sources:

#### First - Books:

- 1- Hamid Ali Turki Al-Bazi, History of Old Basra, Basra, 1969.
- 2- Hammadi Al-Hadithi, Population Geography, University of Mosul, Dar Al-Kutub for Printing and Publishing, Mosul, 1988.
- 3- Abbas Fadel Al-Saadi, Population Geography, Part 1, Directorate of Dar Al Kutub for Printing and Publishing, Baghdad, 2001.
- 4- Abdul-Hussein Jawad Al-Suraih, The Functional Territory of the City of Qurna (A Study in the Geography of Cities and Their Territories), Al-Irshad Press, Baghdad, 1977, p. 173.
- 5- Abdel Fattah Imam Hazin, Egyptian Cities, Part 1, Supreme Council for Culture, 2003.
- 6- Abdel Moati El-Sayed, Urban Sociology and Population, Cairo, Heliopolis Press, 1989.
- 7- Fayez Muhammad Al-Issawi, Foundations of Population Geography, University Knowledge House, Alexandria, 2001.

8- Fathi Muhammad Abu Ayyana, Population of Alexandria, a Systematic Demographic Study, Institution for Methodological Culture, Alexandria, 1980.

9- Muhammad Al-Gohary and others, Studies in Rural and Urban Sociology, University Books House, second edition 1975 0

Second - scientific journals

1- Ayman Muhammad Muhammad Al-Sayed, Evaluation of Axes, Trends and Patterns of Urban Urban Growth in the Sharkia Governorate, Journal of Scientific Research in Literature, Nineteenth Issue, Volume 11, 2018.

2- Tahseen Jasim Shannan, Determinants of Urban Sprawl in the City of Nasiriyah, Basra Research Journal, Human Sciences, Vol. 32, Issue 2, 2008.

3- Thamer Mutlaq Muhammad Ayasrah, Assessment of Urban Growth Trends in the City of Jerash Using the Goals Achievement Matrix, The Jordanian Journal of Social Sciences, Volume 6, Issue 2, 2013.

4- Saad Jaber Khalaf, Najat Abdul Karim Abdul Sada, Administrative Conditions in the Qurna District in the Ottoman Era, Basra Heritage Magazine, Issue 24, 2018.

5- Mustafa Kazim al-Madamagh, Texts on Ottoman Documents on the History of Basra, Center for Arab Gulf Studies, 1981.

Third - government publications

1- The Council of Ministers - Ministry of Planning - Central Bureau of Statistics - Results of the General Population Census for the year 1977 - Basra Governorate, (Table 22), pg.24.

2- The Council of Ministers - Ministry of Planning - Central Bureau of Statistics - Results of the General Population Census for the year 1987 - Basra Governorate, (Table 22), pg. 81.

3- Council of Ministers - Planning Commission - Central Bureau of Statistics - Results of the General Population Census for the year 1997 - Basra Governorate, (Table 22), p. 24.

4- The Republic of Iraq, the Ministry of Development Cooperation, the Central Bureau of Statistics, the annual statistical collection, the results of inventory and numbering for the year 2009.

5- Directorate of Qurna Municipality, Primary Health Care Centers of the City, Annual Inventory 2019-2020.

6- Directorate of Qurna Municipality, Planning Department, Division of Geographic Information Systems.

---

#### **Author Information**

---

**Assist. Prof.Dr Qassim Mutar Abad Alkhalidy**

Basra University - College of Education / Qurnah

---