

Proposed Planning Methods to Confront the Effects of Urban Encroachment in Najaf Governorate

Ms. Saif al-deen mohammed olewi

Regional planning / faculty of physical planning / university of kufa / najaf ashraf / Iraq

Ms. Ruoqayah Basim Mohammed Al_Nuwaini

Environmental planning / faculty of physical planning / university of kufa / najaf ashraf / Iraq

Abstract: The importance of this study lies in its exploration of proposed planning strategies to address the phenomenon of urban encroachment in Najaf Governorate. It highlights the social and economic characteristics of residents in informal settlements, emphasizing their dangers and the implications for human life. A thorough understanding of the environment in these areas enables officials, engineers, and planners to develop effective programs for improvement and significantly mitigate associated risks. The study also examines the reality of informal settlements and their negative impacts while identifying key urban characteristics of these residential areas. Thus, the study aims to explore planning approaches derived from global experiences to eliminate or reduce the spread of informal settlements and prevent their future emergence.

The study found that the number of families in Najaf in 2019 was 218,903, while the number of housing units in the governorate that same year was 208,498. This indicates a housing deficit of 10,405 units, in addition to the number of units occupied by squatters, estimated at 53,810, and the dilapidated units, totalling around 5,212. This means the governorate needs 69,427 housing units to achieve adequate housing. The study also revealed a variation in the number of informal housing clusters, which numbered 27 in 2014 and increased to 89 by 2017, with the district of Kufa ranking first with 18 informal clusters.

Keywords: informal housing, urban encroachment, housing sustainability, housing crisis.

Methodology of the Study: A descriptive approach to study the terminology, concepts, and theories, combined with an analytical methodology using planning methods and scientific tools necessary for diagnosing the problem and validating the hypothesis to obtain results.

1. Introduction:

At the outset of our study, it is essential to review the literature and previous studies to understand the key issues, how to address them, and identify aspects that have not been covered, allowing us to reach potentially unique findings for the study area. The issue of encroachment on public and private properties has been a significant problem in Iraq following the political transformation in 2003, during the invasion of Iraqi forces. The informal housing that has emerged in various regions of Iraq, particularly in Najaf Ashraf, has caused damage across all aspects of life—health, cultural, social, political, and religious. Urban encroachment has become the focus of our study, overshadowing other areas of life and posing a threat to the civil society that its citizens aspire to achieve in terms of urbanity and cultural advancement, which relies on

lifestyle, work, thinking, and relationships. After this period, however, life began to regress due to demographic changes in Iraqi cities (1). Researcher Amal addressed environmental issues, such as visual pollution resulting from the informal construction of buildings and residences, as well as inconsistent street furniture that lacks aesthetic appeal and architectural decorum (2). Researcher Manshanan discussed organizational problems that encourage the horizontal expansion of cities and poorly developed suburbs in architectural, economic, and social aspects, alongside the proliferation of shantytowns and rising transportation costs within cities (3). Researcher Hindawi focused on transportation and traffic issues, dividing them into two categories: the spatial distribution of transportation uses and their spatial relationships, and the management and organization of transport patterns within these informal areas (4).

This background provides the researcher with a general overview of the study topic and forms a long-term vision, indicating that solutions must consider the human and social aspects of these communities due to the overall economic deterioration faced by their residents. Thus, these areas should be handled with high-level planning expertise to address them effectively, as incorrect solutions could lead to humanitarian and political disasters. Additionally, rural areas in Najaf Ashraf are facing a reduction in agricultural land and a conversion of land use from agricultural to residential, which constitutes a crime against future generations, resulting in desertification and posing a threat to food security (5). The number of residents in informal settlements is estimated to be in the thousands, leading to potential unrest due to their defence of these areas, similar to events in Egypt. Therefore, these regions must be addressed in a way that achieves social justice by providing services and enhancing the urban and economic conditions of their residents while considering the human aspect during their development. Regarding their impact on land use change, they lead to a decline in agricultural land and exceed the carrying capacity of neighbouring areas concerning infrastructure and social services, resulting in deprivation from services and encroachment on the foundational design of the governorate (6). This creates imbalances in planning and design standards, as well as social and class issues with neighbouring areas, which are affected by the rural characteristics of informal settlements. There is also a lack of affordable housing for low-income individuals, causing severe overcrowding in popular neighbourhoods and empty spaces within the governorate, as well as in remote areas outside it (7).

Demographic trends have significant social, economic, and ecological effects. Researcher Eliya summarized that these trends impact individuals' mental, physical, and social health. Studies have shown that individuals living in healthy, suitable housing and planned locations tend to improve their well-being, foster personality development, and raise families in a conducive social environment due to reduced overcrowding (8). The absence of effective planning has hindered the management of increasing migrations to cities and urban centres caused by unbalanced development and a lack of attention to rural areas regarding service improvements and wages (9). Thus, planning for sustainable growth in this governorate requires studying the mechanisms of its expansion, identifying the types of incentives and constraints it faces during this growth, and determining how to mitigate these issues to pave the way for healthy development (10).

The study problem was formulated according to the principle of the question: Has the Najaf region witnessed manifestations of urban encroachment? Or manifestations specific to slums, and what are the proposed planning methods to address and confront this? Therefore, the aim of the study is the role of planning in confronting manifestations of urban encroachment, including residential slums, as well as a comprehensive analytical study of the phenomenon of residential slums and collecting the necessary surveys and data related to the analysis of slums and clarifying their impact on the environment of the cities of the region and the role of research in coming up with recommendations to implement the necessary planning solutions and present a planning guide that explains the necessary solutions to the phenomenon of slums in the Najaf region, noting that the hypothesis of the study was characterized by the presence of the phenomenon of slums, and this phenomenon is one of the most important manifestations of

urban encroachment in the Najaf region and it had major negative effects on the region. There are many planning methods drawn from global experiences and models that can contribute to overcoming the effects of this phenomenon and developing the necessary solutions for it and contributing to achieving sustainable development.

1-1. Location of Najaf Ashraf Region:

The location of the region refers to its spatial extent and its relationship to the surrounding areas. The significance of the location is crucial in studying urban centres, as it influences their emergence, size, and functions. It is a large geographical area defined by spatial and regional relationships that transcend the administrative borders of the region.

Najaf Ashraf region is located in the southwestern part of the Republic of Iraq, between the latitudes of 29°50'00" and 32°21'00" north, and the longitudes of 42°50'00" and 44°44'00" east. It is bordered to the north by the provinces of Babel and Karbala, to the east by the provinces of Diwaniya and Al-Muthanna, to the west by Karbala, and to the south by the international border with the Kingdom of Saudi Arabia, as shown in Map No. (1). The area of Najaf Ashraf is approximately 28,824 km², accounting for 6.6% of Iraq's total area of 435,052 km². About 5% of the region lies within the alluvial plain, while the remaining area is situated in the western plateau. Najaf Ashraf is distinguished by its location, which has fostered strong connections with the provinces of Central Euphrates. It is also located along the shortest route connecting the fertile agricultural plain with the desert plateau, which is characterized by abundant primary resources (11).

1-2. The location of the Najaf Al-Ashraf region

The location of a region refers to the natural characteristics of the land it covers, which influence its formation, development, and functions. These characteristics include geological composition, surface features, land slope, local climate conditions, natural vegetation, soil, and water resources. The location largely determines the functions of cities. Moreover, the internal structure of the region and its land use are significantly affected by its location. Hence, the natural attributes of the location play a key role in the development of the region.

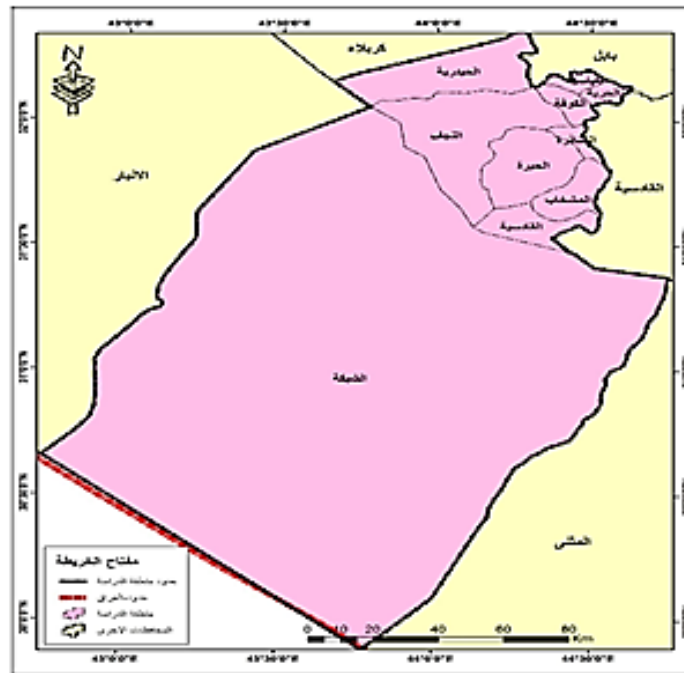
The Najaf Al-Ashraf region is situated on the edge of the Western Desert, which extends to the national borders with the Kingdom of Saudi Arabia. To the north and northwest, it overlooks Karbala and Babil provinces, while to the west it borders Anbar province. The region is elevated about 60 meters above sea level. It can be accessed from the north and northeast through the Najaf-Karbala and Najaf-Hilla roads, and from the south via the Najaf-Abu Sukhayr road (12), as shown in map number (2).

Map (1) illustrates the location of the Najaf region in Iraq.



Republic of Iraq, Ministry of Water Resources, General Authority for Survey, Administrative Map of Iraq 2015, at a scale of 1/100,000

Map (2) illustrates the position of the Najaf region in Iraq.



Republic of Iraq, Ministry of Water Resources, General Authority for Survey, Administrative Map of Najaf 2017, at a scale of 1\100,000

2. Population and Growth Rates

The population of the Najaf region, according to the 1997 census, was approximately 772,384 people. This was followed by population estimates for 2007, which reached 1,081,203 people, and the 2010 estimate, which was 1,193,603 people. The population estimate for 2013 was approximately 1,354,180 people, while the 2016 estimate reached 1,462,706 people. The population estimate for 2019 was approximately 1,510,337 people. Table (1) shows the population of the region (13).

Table (1) shows the population counts and growth rates for the Najaf region.

The year	population	Growth rate
1997	773448	3.4
2007	1081203	3.3
2010	1193603	3.4
2013	1354180	3.2
2016	1462706	2.6
2019	1510337	2.6

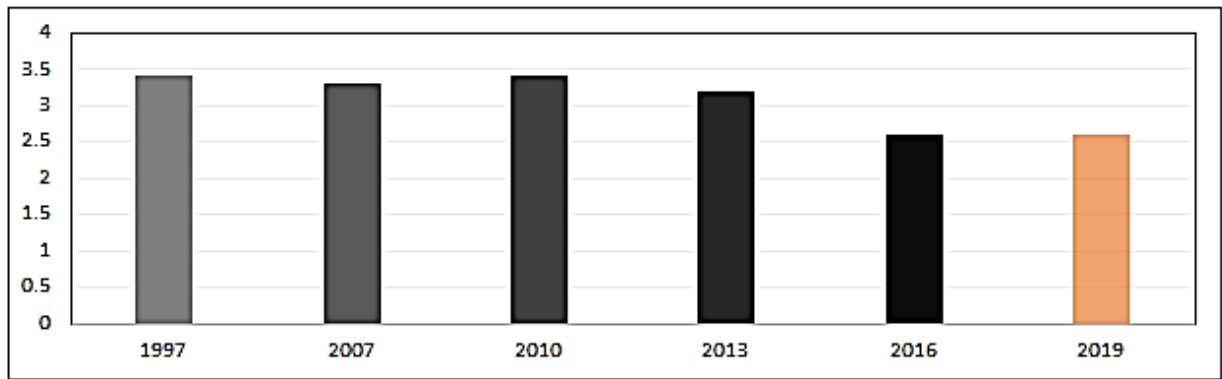


Figure (3) illustrates the population growth rate percentages.

Source: The researcher based on Table (1).

Table (2) shows the population counts for the Najaf region.

district	Administrative units	1997	2007	2010	2013	2015	2017	2019
al-najaf النجف	m.g.najaf	390525	535042	587260	714252	751779	791217	795799
	alhaidariyyah	22011	31531	35097	50432	53119	55907	56347
	n.alshabaka	-	767	851	428	451	475	477
	total	412536	567340	623208	765113	805349	847599	852623
al-kufa	m.g.kufa	131882	283507	202414	222652	234419	246715	248334
	n. abbasiya	53638	77778	86900	86909	90925	95697	96512
	n. alhureya	18848	26970	30013	28996	30537	32142	32388
	total	204368	388255	319328	337957	355881	374554	377234
almanathera المناثرة	m.g.almanathira	62265	89553	99433	85562	90118	94849	95593
	m.g.almishkhab	58368	84003	93488	85721	90288	95025	95776
	n.alqadisiyah	35911	52052	58146	42964	45261	47635	48047
	n.alhera	-	-	-	36864	38823	40860	41164
	total	156544	225608	251067	251111	264490	278369	280580
total	773448	1181203	1193603	1354181	1425720	1500522	1510437	

Republic of Iraq, Ministry of Planning and Development Cooperation, Central Bureau of Statistics and Information Technology, Najaf Al-Ashraf Statistics Directorate, Population Estimates, 2019, unpublished data.

When we look at Table (2), we find that the center of Najaf district accounted for 52.7% of the total population of the province. The center of Kufa district ranked second with about 16.4%, followed by Al-Abbasiyah subdistrict, Al-Mishkhab subdistrict, and the center of Al-Manathira district with similar percentages of about 6.4%, 6.3%, and 6.3%, respectively. Al-Haydariya subdistrict accounted for approximately 3.7%, while the populations of Al-Hira and Al-Hurriya subdistricts were about 2.7% and 2.1%, respectively. Due to the low population in Al-Shabaka subdistrict, it ranked last with about 0.03% of the total population of the province in 2019, as shown in Figure (4).

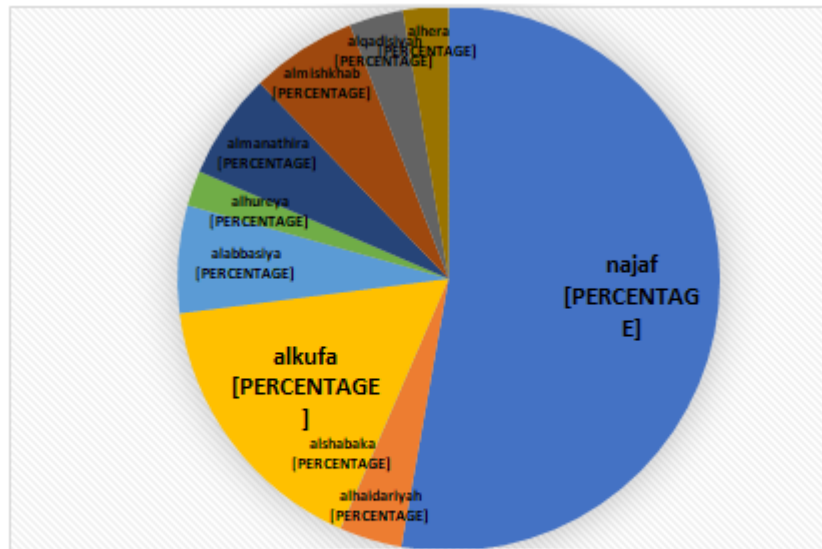


Figure (4) illustrates the percentage of the population in the districts and subdistricts of Najaf Al-Ashraf for the year 2019. Source: The researcher based on the data from Table (2).

2-1. Number and Size of Households

The number and size of households, as well as population growth rates, are important factors in preparing studies to determine the number of families, and the required housing units, estimate the housing deficit, calculate occupancy and overcrowding rates, and the dependency rate for each family. The number of households cannot be measured by the number of housing units alone, as many families consist of multiple households. In the Najaf Al-Ashraf region, the number of households in 1997 was 103,126, which increased to 142,263 households in 2007, 165,778 households in 2010, 208,958 households in 2016, and 218,889 households in 2019(14), as shown in Table (3).

Table (3) shows the number of households in the Najaf Al-Ashraf region.

The year	population	Average family size	Number of families
1997	773448	7.5	103126
2007	1081203	7.6	142263
2010	1193603	7.2	165778
2013	1354180	7	193454
2016	1462706	7	208958
2019	1510437	6.9	218904

Republic of Iraq, Ministry of Planning and Development Cooperation, Central Bureau of Statistics and Information Technology, Population and Labor Force Statistics, Population Estimates, 2019, unpublished data.

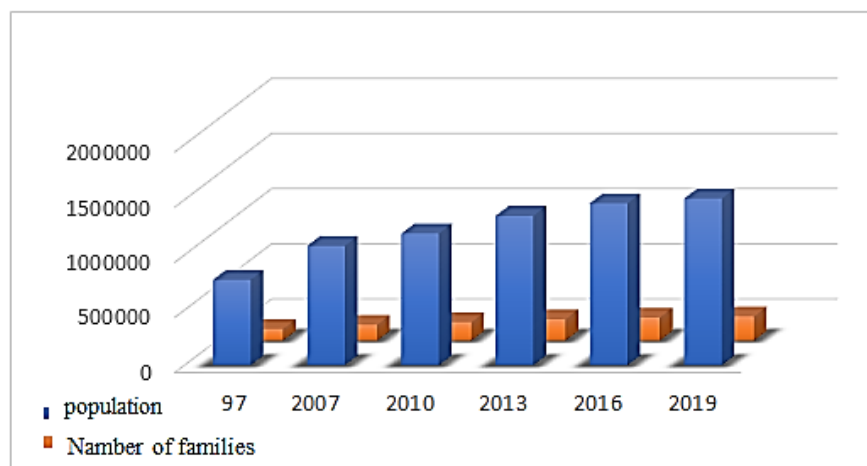


Figure (5) illustrates the number of households in relation to the population.
Source: The researcher based on the data from Table (3).

2-2. Population Density

Population density is the ratio of the number of people to a unit of area (square meter, hectare, square kilometre). It is a measure that indicates the degree of pressure in a specific area, reflecting the interaction between humans and the land they inhabit. It shows how humans respond to their surrounding environment. Population density is an important aspect of population distribution and varies from one area to another within the region, resulting from diverse factors, including population distribution patterns and the area occupied by housing. The region exhibits varying sizes of districts and subdistricts; some are large, while others are medium or small, necessitating an understanding of their size and area, as well as their populations, which lead to differing densities. The density and degree of population concentration are indicators of the economic and social levels of the inhabitants. Population density often influences urban growth and trends in urban expansion(15).

Table (4) shows the population densities for the Najaf Al-Ashraf region and its administrative units

district	Administrative units	population (person)	(km ²) space	Population Density (person/km ²)
nejaf	m.g.najaf	795700	1448	549.5
	alhadariyyah	56347	962	85.6
	n.alshabaka	477	24863	0.02
	total	852524	27273	31.25
kufa	m.g.kufa	248334	106	2342.7
	n. abbasiya	96512	250	386
	n. alhureya	32388	109	297.1
	total	377234	464	813
almanathira	m.g.almanathira	95593	67	1426.8
	n.alhera	41164	271	151.9
	total	136757	338	405.9
almishkhab	m.g.almishkhab	95776	135	709.5
	n.alqadisiyah	48047	322	149.2
	total	143823	457	314.7
total		1510337	28824	52.4

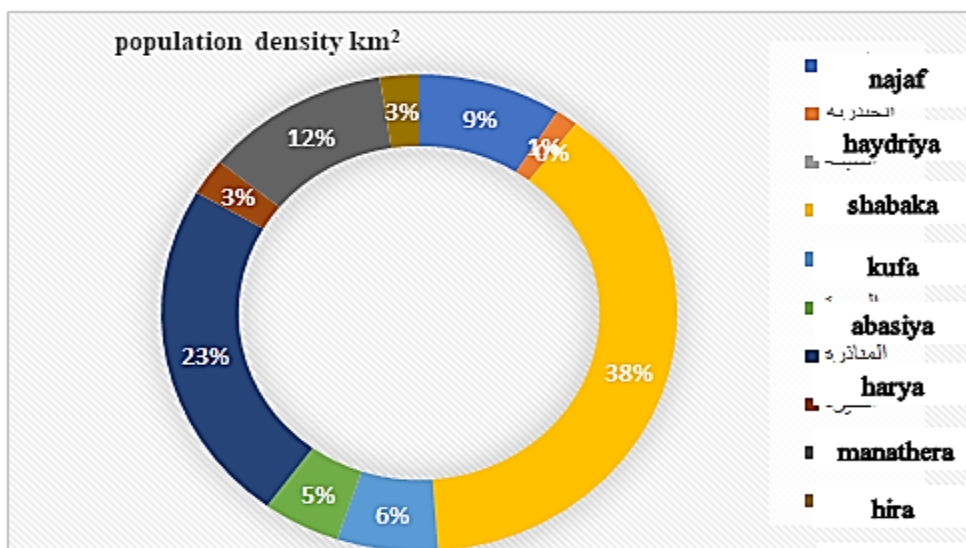


Figure (6) illustrates the population density in the Najaf region.
Source: The researcher based on the data from Table (4).

2-3. Housing Studies for the Najaf Al-Ashraf Region

The number of housing units in Najaf province was 204,498 in 2016. The percentage of housing units in urban areas was approximately 77.5%, while around 22.5% were in rural areas. The center of Najaf district accounted for 58.5% of the total number of housing units in the province, followed by the center of Kufa district with about 17.2%. The centers of Al-Manathira district and the subdistricts of Al-Mishkhab and Al-Abbasiyah accounted for approximately 6.09%, 5.2%, and 5.1%, respectively. The subdistricts of Al-Haydariya, Al-Qadisiyah, and Al-Hira had about 2.8%, 2.6%, and 2.4%, respectively, while Al-Hurriya subdistrict had around 2%. Due to the low population in Al-Shabaka subdistrict, it ranked last with about 0.05% of the total housing units in the province, as shown in Table (5).

Table (5) shows the number of housing units.

Administrative units	Number of residential units		
	urban	countryside	total
m.g.najaf	115772	3891	119663
n.alhaidariyyah	2189	3561	5750
n.alshabaka	105	-	105
m.g.kufa	24991	10148	35139
n.abbasiya	1922	8552	10474
n.alhureya	1477	2498	3975
m.g.almanathira	5217	7253	12470
n.alhera	2385	2521	4906
m.g.almishkhab	3661	6981	10642
n.alqadisiyah	813	4561	5374
total	158532	49699	208498

Republic of Iraq, Ministry of Planning and Development Cooperation, Central Bureau of Statistics and Information Technology, Najaf Statistics Directorate, 2019, unpublished data.

Republic of Iraq, Ministry of Planning and Development Cooperation, Central Bureau of Statistics and Information Technology, Najaf Statistics Directorate, 2019, unpublished data.

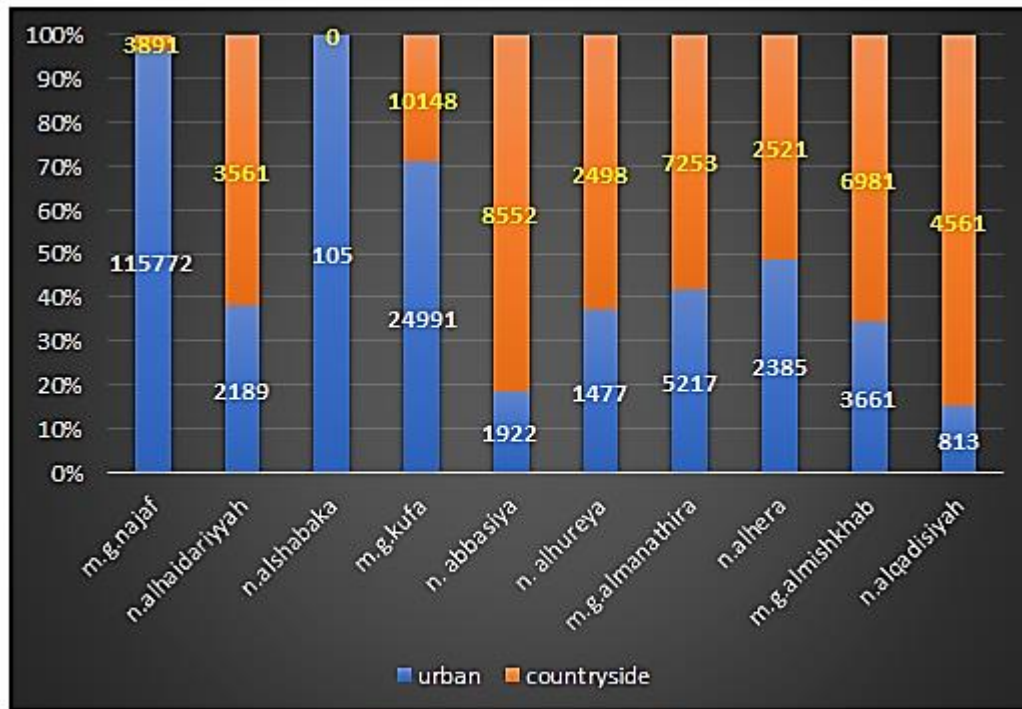


Figure (7) illustrates the number of housing units.
Source: The researcher based on the data from Table (5).

2-4. Housing Deficit

2-4-1. Quantitative Deficit

The number of housing units in Najaf province was 208,498, while the number of households was 218,903. This results in a deficit of 10,405 housing units across the province, as shown in Table (6). It is evident that there is a surplus of housing units in the center of Najaf district (4,330 units) and also in Al-Shabaka subdistrict (63 units). However, there is a deficit in Kufa district amounting to 851 housing units, as well as in Al-Haydariya, Al-Abbasiyah, Al-Hurriya subdistricts, the center of Al-Manathira district, Al-Hira subdistrict, the center of Al-Mishkhab district, and Al-Qadisiyah subdistrict. The housing deficit in Kufa district, as well as in Al-Haydariya, Al-Abbasiyah, Al-Hurriya, the center of Al-Manathira, Al-Hira, the center of Al-Mishkhab, and Al-Qadisiyah can be mitigated by establishing population attraction centers in areas with a surplus of housing units.

Table (6) shows the quantitative housing deficit in the Najaf region, detailing the number of housing units.

district	Administrative units	Number of residential units	Number of families	Husing deficit
najaf	m.g.najaf	119663	115333	4330
	n.alhaidariyyah	5750	8166	-2416
	n.alshabaka	105	69	36
kufa	m.g.kufa	35139	35990	-851
	n.abbasiya	10474	13987	-3513
	n.alhureya	3975	4694	-719
almanathira	m.g.almanathira	12470	13854	-1384
	n.alhera	4906	5966	-1060
almishkhab	m.g.almishkhab	10642	13881	-3239
	n.alqadisiyah	5374	6963	-1589

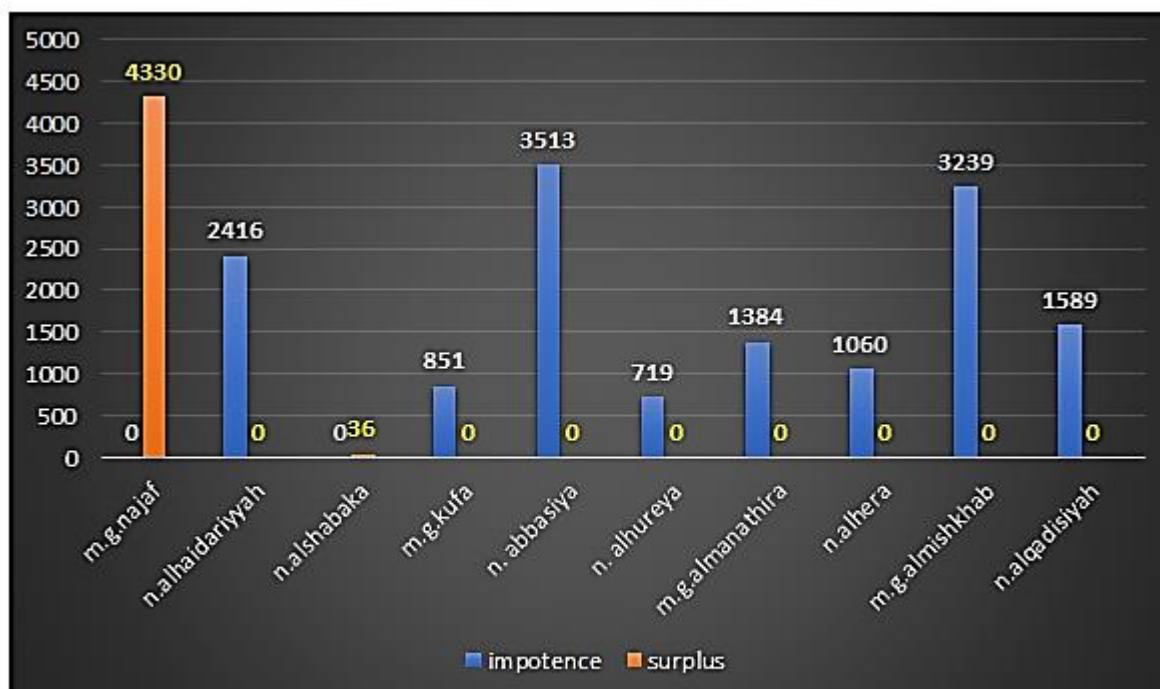


Figure (8) illustrates the quantitative housing deficit in the province.
Source: The researcher based on the data from Table (6).

2-4-2. Qualitative Deficit

The number of informal housing units in Najaf Al-Ashraf province is 53,810, inhabited by 53,810 households, as shown in Table (7). It is noted that the rate of housing deterioration and obsolescence in the province is 0.025 of the total stock, equivalent to 5,212 housing units. There are informal housing units in the center of Najaf district amounting to 26,916 units, and in Al-Haydariya subdistrict, there are 196 units. In Kufa district, there are 12,855 informal units, while Al-Abbasiyah subdistrict has 1,854 units, Al-Hurriya has 534 units, the center of Al-Manathira district has 7,276 units, Al-Hira subdistrict has 1,251 units, the center of Al-Mishkhab district has 2,648 units, and Al-Qadisiyah subdistrict has 280 units. In addition, the number of deteriorated and obsolete units in the province is 5,212. Therefore, the total qualitative deficit amounts to 59,022 units. The qualitative housing deficit can be reduced by establishing population attraction centers in areas with a surplus of housing units.

Table (7) shows the qualitative housing deficit in the Najaf region, detailing the number of housing units.

District	Administrative units	Number of random units
najaf	m.g.najaf	26916
	n.alhaidariyyah	196
	n.alshabaka	-
kufa	m.g.kufa	12855
	n.abbasiya	1854
	n.alhureya	534
almanathira	m.g.almanathira	7276
	n.alhera	1251
almishkhab	m.g.almishkhab	2648
	n.alqadisiyah	280
Deterioration and extinction		5212
total		59022

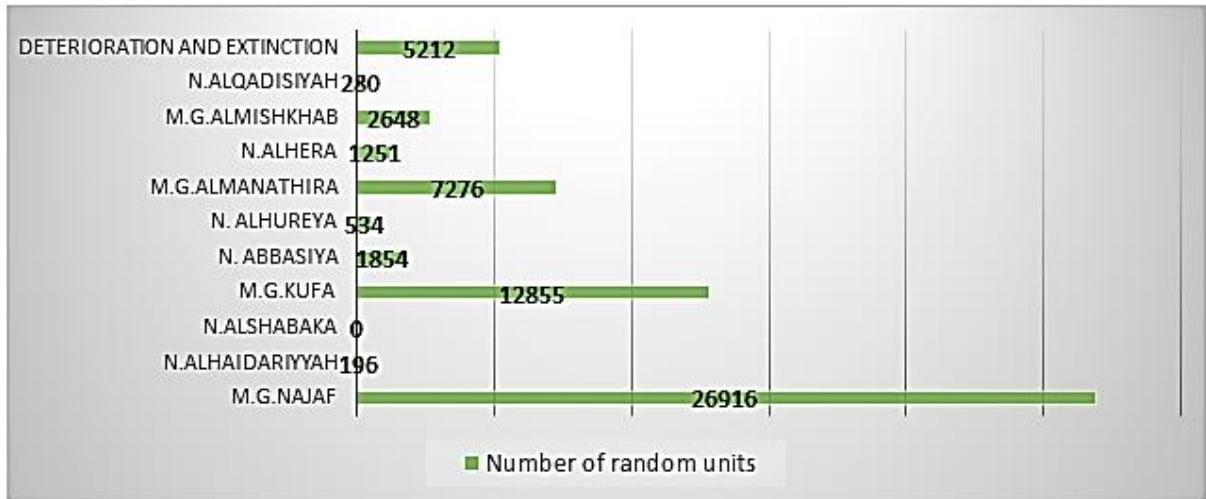


Figure (9) the qualitative housing deficit in the Najaf region, detailing the number of housing units.
Source: The researcher based on the data from Table (7).

In 2019, the number of households in Najaf province was 218,903, while the number of housing units was 208,498. This indicates a deficit of 10,405 housing units in the housing stock. Additionally, the number of informal housing units occupied by squatters is approximately 53,810, distributed throughout the province. Moreover, the number of deteriorated housing units in the province is around 5,212. This means that the province needs a total of 69,427 housing units to achieve housing sufficiency

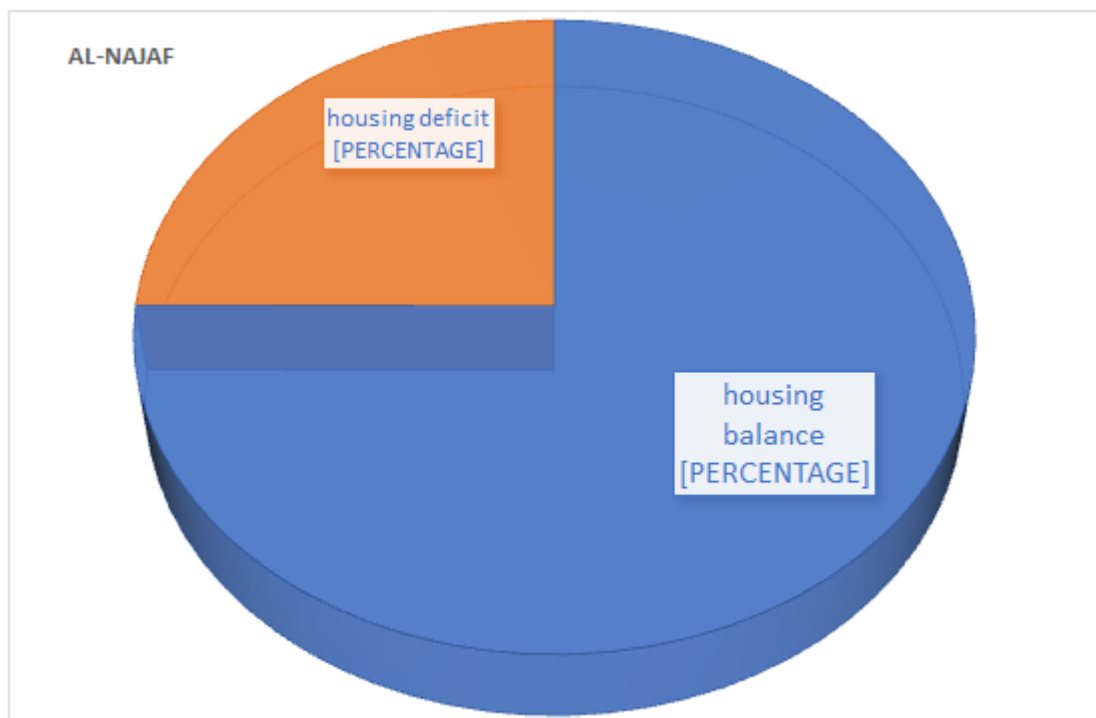


Figure (10) illustrates the percentage of housing deficit relative to the housing stock in Najaf province.

Source: The researcher based on the data from Tables (5), (6), and (7).

2-5. Spatial Distribution of Informal Housing Areas in Najaf Province

In 2017, the number of informal settlements in Najaf province was 89, with approximately 53,810 informal housing units. The phenomenon of informal housing continues to spread at the expense of agricultural land in the province, exploiting the lack of planning measures. The predominant housing pattern in the study area is horizontal housing. Kufa district ranked first,

with 18 informal settlements comprising 12,855 units. The center of Al-Manathira district ranked second, with 16 settlements and 7,276 units. Al-Hurriya subdistrict came third, with 11 settlements and 534 units. The center of Najaf district and Al-Hira subdistrict ranked fourth, with 10 settlements each, comprising 26,916 and 1,251 units, respectively. The center of Al-Mishkhab district ranked fifth, with 8 settlements and 2,648 units. Following these are Al-Abbasiyah, Al-Haydariya, and Al-Qadisiyah subdistricts, with 7, 5, and 4 settlements, respectively, comprising 1,854, 116, and 280 units. This information is detailed in Table (8), Figure (11), and Map (12).

Table (8) shows the informal housing settlements by administrative units, detailing the number of housing units.

Administrative units	Number of gatherings	Number of random units by cluster
m.g.najaf	10	26916
n.alhaidariyyah	5	196
m.g.kufa	18	12855
n. abbasiya	7	1854
n. alhureya	11	534
m.g.almanathira	16	7276
n.alhera	10	1251
m.g.almishkhab	8	2648
n.alqadisiyah	4	280
total	89	53810

Republic of Iraq, Ministry of Planning and Development Cooperation, Regional and Local Development Department, Najaf Al-Ashraf Planning Directorate, Estimates of Informal Settlements Population for 2017, unpublished data.

Republic of Iraq, Ministry of Planning and Development Cooperation, Regional and Local Development Department, Najaf Al-Ashraf Planning Directorate, Estimates of Informal Settlements Population for 2017, unpublished data.

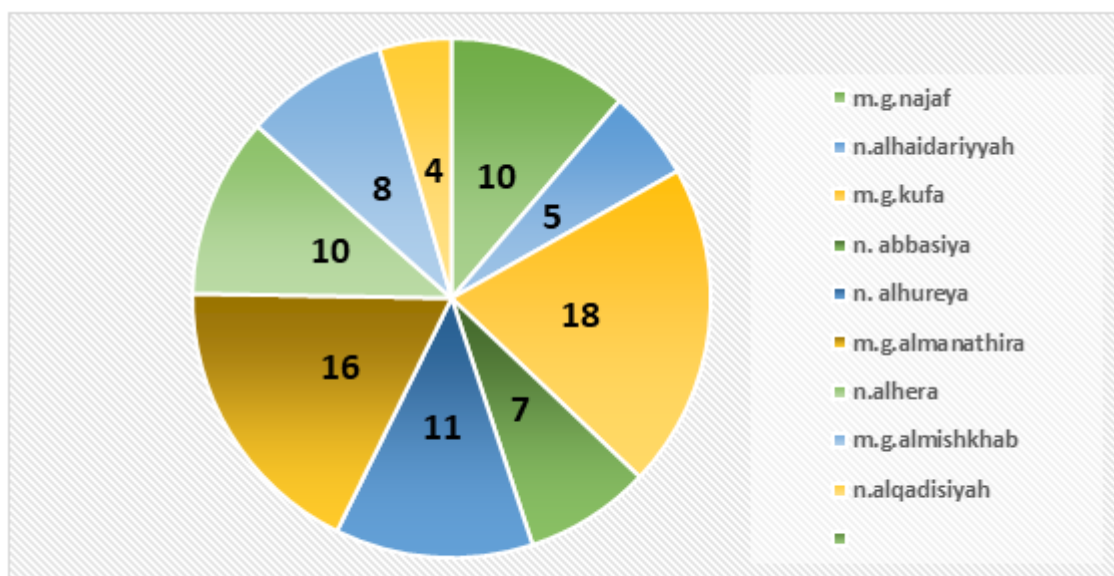
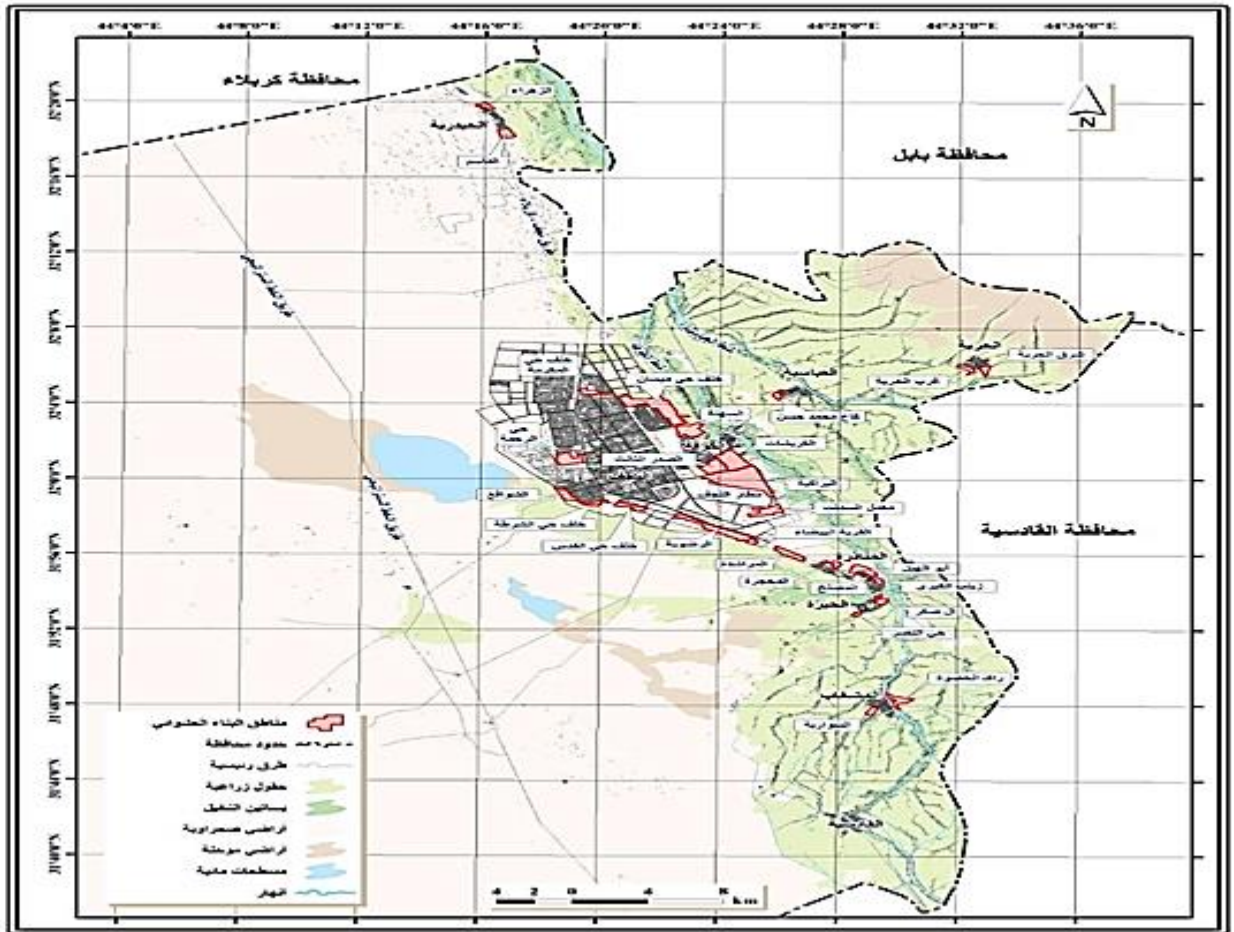


Figure (11) illustrates the number of informal settlements by administrative units. Source: The researcher based on the data from Table (8).

Map (12) illustrates the informal housing settlements by administrative units in Najaf province.



Source: Republic of Iraq, Ministry of Planning, Central Bureau of Statistics, Aerial Image of Informal Settlements in Najaf 2017, unpublished data

3. Proposed planning methods

1. Preparing an urban development program that aims to integrate slums and diagnose needs through organized field surveys and involve residents in most treatment projects and identify their social and economic problems through the program and with real capabilities that are consistent with the state's capabilities.
2. Establishing residential complexes containing low-cost housing units.
3. Providing soft loans to low-income people to purchase a housing unit, especially residents of slum areas.
4. Working to reduce migration, stop population growth, and relocate rural migrants to their areas by establishing model agricultural projects and activating support and financing the agricultural sector.
5. Activating the policy of removal and compensation for those affected, as redeveloping slum areas is expensive in addition to the visual distortion that slums suffer from.
6. Eliminating the phenomenon of changing the gender of the land by imposing strict laws to get rid of this phenomenon.
7. The necessity of adopting the idea of planning and development with the participation of the private sector and Arab and foreign investors in implementing the program to improve the reality of slums and legalize holdings in slums and activate the real estate market by registering buildings.

8. The necessity of addressing the negative impact of slums on the social and economic status of the population and the lack of public services, the lack of health conditions or security and safety due to the absence of proper planning, as there is no vacant land to build basic services and public facilities, and the high cost of connecting utility networks due to the lack of a road network and the deterioration of the condition of street and road equipment and their unsuitability for traffic requirements and the difficulty in knowing the directions of entry and exit, which affects the security, social and public safety aspects.
9. Taking into account the humanitarian aspect of the residents of slums, as many are forced to live in these areas due to the lack of housing, in addition to transferring slums to the outskirts of cities, to places that the state plans by establishing vertical residential complexes that are compatible with the size of families and at reasonable prices distributed to residents of areas that need to be removed, as this leads to alleviating the severity of the housing problem in addition to its economic and developmental effects for the state.
10. Establishing controls that prevent changing residential units for other uses (industrial, commercial, offices, or clinics) in order to increase the supply of residential units, which results in a decrease in the rents of these units in a manner that is consistent with the ability of a segment of citizens to benefit from them.
11. Addressing the phenomenon of the existence of unused government lands within the boundaries of the organization and on its borders, as exploiters of such opportunities are not allowed to build and acquire plots of land and reserve them in a random and illegal manner.
12. Giving the housing fund supervised by the Ministry of Housing a larger budget and facilities for citizens so that they can help them obtain a suitable housing unit. This fund may be the one relied upon to get out of the housing crisis in Najaf Governorate.
13. The process of treating and eliminating slums is a long-term process that must be achieved in a phased, announced manner that takes into account not having a negative impact on society, as it affects a significant segment of the population who should be understanding of the processes of expropriating some properties and satisfied with receiving fair compensation for them, so that the residents of those areas, with the stages of project implementation, transform from passive recipients of development processes to positive participants who are enthusiastic about improving their urban, economic and social environment, as global programs for developing slums have proven the necessity of popular participation in development work and accelerating it.

4. Results and Recommendations

4-1. Results

1. The overall trend of increasing populations in informal settlements is attributed to rising internal migration rates to the province, driven by strong pull factors, including its religious significance, alongside natural population growth in the study area.
2. The study revealed a significant variation in the relative distribution of informal settlement populations in the province. In 2017, the highest percentages were in the center of Najaf district and Kufa district, at 50% and 23.9%, respectively. By 2018, the relative distribution for Najaf center was 41.7%, while Kufa center was 16.2%. Conversely, Al-Shabaka subdistrict had the lowest percentage of residents in 2017-2018, at 0.01% and 0.3%, due to a lack of water resources, as it is a desert area with a large expanse.
3. Residents in these areas rely on social services and infrastructure from neighboring regions, which consequently experience a shortage of these services due to the significant demand and exceeding the designed capacity of services in planned areas.
4. Low family income, high unemployment rates, and increased urban land and housing costs have all contributed to the existence and expansion of informal housing in Najaf province.

5. Low educational levels and widespread illiteracy among families in informal settlements contribute to the growth of these areas without regard for environmental conditions and their negative impacts on families.
6. The phenomenon of informal housing has gained international attention, with governments and international organizations studying it as a significant issue that requires substantial financial resources to address through appropriate studies, policies, and programs.

4-2. Recommendations

1. Enact laws to regulate and limit incoming migration to the province and stop rural-to-urban migration, which creates significant pressure on services, increases urban populations compared to rural areas, and deteriorates agriculture. This can be achieved by supporting agricultural production and providing financial and moral support to farmers, encouraging them to remain on their land and create reverse migrations from urban to rural areas.
2. Consider the humanitarian aspect of residents in informal areas; many are compelled to live in these regions due to a lack of housing. Relocating informal settlements to the outskirts of cities to areas planned by the state can create vertical housing complexes suitable for family sizes at affordable prices, easing the housing crisis and having economic and developmental impacts on the state.
3. Address informal housing by redistributing it to align with the city's structure, offering accessible loans for rehabilitation.
4. Foster sufficient awareness among officials and decision-makers to mitigate the implications of this issue in the future, as it has social, health, educational, economic, and urban impacts. It is crucial to tighten supervision and follow-up effectively.
5. Link structural plans and organizational expansions directly with regional plans to ensure they are based on clear foundations and contribute to the overall goals of urban planning.
6. Consider families living in informal areas as an essential part of any solution, not just as part of the problem. Emphasize that the main goal of addressing informal settlements is to improve the quality of life for the families living there and that urban development in these areas is a means to achieve this goal—lifting people as well as their living conditions.

References

1. Abd Al-Majid, Maki. "Horizons of Urbanization and Informal Housing." Field Study, published in *Ahl Al-Bayt Journal*, College of Administration and Economics, Karbala University, Iraq, 2013.
2. Muhammad, Amal Shakir. "The Impact of Using Strategies Based on Project Employment in Developing Environmental Attitudes." Research submitted to the College of Educational Sciences, Jordan, 2017.
3. Mishnan, Fawzi. "Informal Neighborhoods: Their Reality and Impact on the Urban Fabric of the City." Study submitted to the College of Humanities and Social Sciences, Haj Lakhdar University, Algeria, 2015.
4. Al-Hindawi, Zainab Abdul-Razzaq Aboud. "Transportation Problems." Research submitted to the College of Administration and Economics, Babylon University, Iraq, 2016.
5. Abd Al-Zahra, Mustafa Jawad. "Spatial Variation of Urban Center Expansion on Agricultural Land in Najaf Ashraf Province." Master's thesis submitted to the College of Arts, Kufa University, Iraq, 2020.
6. Hamid, Aliya Maati, and Kazem, Miri Kazem. "Manifestations of Encroachment on Land and Their Environmental Effects in Najaf Province." Field study (published), College of Education for Women, Kufa University, Iraq, 2015.

7. Al-Khalidi, Anwar Mahdi Hadi. "Demographic and Economic Characteristics of Informal Settlement Residents in Najaf Ashraf Province." Master's thesis (unpublished), submitted to the College of Education for Women, Kufa University, Iraq, 2019.
8. Hafizi, Lilia. "New Cities and the Problem of Urban Housing." Master's thesis (unpublished), submitted to the College of Humanities and Social Sciences, Mentouri University, Palestine, 2009.
9. Al-Shamma, Heba. "The Importance of Spatial and Regional Dimensions for Urban Gatherings." Master's thesis (unpublished), submitted to the Department of Planning and Environment, Faculty of Engineering, Aleppo University, Syria, 2013.
10. Al-Khalidi, Anwar Mahdi Hadi. "Demographic and Economic Characteristics of Informal Settlement Residents in Najaf Ashraf Province." Master's thesis (unpublished), submitted to the College of Education for Women, Kufa University, Iraq, 2019.
11. Al-Jassani, Nasrin Awad. "Natural Tourism Development and Its Sustainability in Najaf Ashraf Province." Published research in the Journal of Natural Geographic Research and Sustainability, No. 21, 2014.
12. Al-Basri, Al-Malaki, Naseer Abdul-Razzaq, and Farah Abbas. "Functional Changes in the Modern Urban Fabric of Najaf Ashraf City." Published research in the Journal of Education for Women, No. 23, 2018.
13. Republic of Iraq, Ministry of Planning, Central Statistical Organization, Najaf Statistics Directorate, Annual Statistical Group, 2017, p. 49.
14. Republic of Iraq, Ministry of Planning and Development Cooperation, Central Statistical Organization, Population and Labor Force Statistics.
15. Al-Muthaffar, Safaa Majid. "Changes in Housing Patterns in Najaf Ashraf City and Their Impact on the Urban Environment." Research submitted to the College of Arts, Kufa University, Iraq, 2016.
16. Republic of Iraq, Ministry of Planning and Development Cooperation, Central Statistical Organization, Annual Statistical Group, 2017.
17. Republic of Iraq, Ministry of Planning and Development Cooperation, Central Statistical Organization, Najaf Statistics Directorate, Population Estimates, 2019, unpublished data.