

Post-Conflict Reconstruction: Reimagining

Khan Younis City Center, Gaza Strip

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Abstract

The prolonged conflict in Gaza has inflicted severe and widespread damage on Khan Younis city, resulting in extensive destruction of urban infrastructure, public spaces, and civilian buildings, with an estimated 80% of structures either damaged or rendered uninhabitable. As the scale of devastation necessitates a comprehensive and coordinated effort to reconstruct the city's physical and social fabric, this study conducted comprehensive analyses to understand public spaces in Khan Younis, focusing on the central plaza. It evaluates the geographical and demographic context, assesses the recent conflict's impact, and offers sustainable solutions for recovery and reconstruction. The study identifies public spaces from all neighborhoods on an urban scale. These public plazas will be connected by green corridors to form the green structure of the city. Architecturally, the project proposes to design the city center plaza as a green urban garden that reflects its historical context. The historic Barquq Castle will be restored and pedestrian use will be increased. Memorial walls will be created through participatory design to allow people to remember their lost loved ones. A market area will support women's presence in public spaces, helping them to gain economic independence and feel safe. Safe shelters will be integrated into the basement of the square to provide refuge during conflict, designed to meet international safety standards. The methodologies and recommendations aim to create a scalable model for urban reconstruction applicable to other conflict-affected areas. The destruction in Khan Younis offers a chance to address pre-conflict urban issues. Reconstruction should begin promptly with local and international cooperation, addressing various academic and practical aspects.

Keywords: *Post-Conflict Reconstruction, Humanitarian Crisis, Khan Younis City Centre, Public Space Reconstruction Methodology, Urban Green Corridors, Nature-Based Solutions, Memorial Walls, Women's Economic Empowerment, Safe Shelters*

I. INTRODUCTION

To address these questions, recommendations have been made for reconstructing the central public plaza in the city. These recommendations comprehensively address urban reconstruction through integrated approaches to human rights, risk management, sustainable practices, gender diversity, effective governance, and humanitarian architecture.

The main objective of this project is to develop methods for the reconstruction of the city center of Khan Younis. It aims to create green, sustainable, nature-based solutions that enhance

the resilience and inclusiveness of the city. Key to these solutions is identifying potential public plazas in all neighborhoods and planning green corridors to connect them, thereby increasing biodiversity and improving the quality of life for residents. Architectural proposals for the central plaza of Khan Younis include the creation of an urban garden, memorial walls, safe shelters and women-run market areas. This reconstruction methodology can be applied to other squares in Khan Younis, providing a scalable and replicable model for urban regeneration. The success of this approach can serve as an example for other cities and similar projects.

The research employs a mixed-methods approach, integrating qualitative and quantitative methodologies to collect and analyze data. Satellite imagery, geographic information system (GIS) maps, and photographic evidence were accessed to provide spatial and visual data. Historical and contemporary maps were obtained from online databases and repositories to facilitate an understanding of spatial and infrastructural changes over time. Documentary evidence, including reports from local government records, non-governmental organizations (NGOs), and international bodies, was reviewed to gather contextual information. Semi-structured interviews were conducted with key informants from the Khan Younis municipality, including relevant officials.

A relevant literature review was conducted, which encompassed academic articles, case studies, and practice guidelines to extract insights and lessons learned. The study drew upon eight modules from a UBI post-master's course on Humanitarian Architecture, Infrastructure, and incremental housing to devise a strategic framework for the reconstruction plan. Each module was explored in depth to extract applicable theories, methodologies, and strategies that could be adapted to the context of Khan Younis.

This paper is structured to provide an in-depth analysis of pre- and post-conflict conditions in Khan Younis, detailing the methodologies used, examining the geographical and demographic contexts, assessing the impact of recent conflicts, and proposing sustainable, nature-based reconstruction solutions through integrated urban planning and public space development.

II. THE CONSEQUENCES OF POST-CONFLICT RECONSTRUCTION: A REVIEW OF LITERATURE

Conflicts are a significant form of disaster not only because of the mass destruction of lives

but also due to their long-term impact on livelihoods, physical infrastructures, governing institutions, social cohesion, and trust. Post Conflict Reconstruction (PCR), therefore, should take a holistic approach of rebuilding shattered livelihoods while restoring governance and trust, in order to avoid future conflict (Sakalasuriya et al. 2016).

Societies emerging from conflict have become a growing concern for many international donors. There is awareness that while war has ended, peace, especially sustainable peace, is not so easily forthcoming. Dire poverty, ongoing ethnic, political, or religious rivalry, the proliferation of arms, nonexistent governments, and infrastructure all pose tremendous threats that can easily lead a country back into war. Simultaneously and despite the overwhelming challenges, the post-conflict period is also a period of hope and opportunity. Coming after years or even decades of fighting, it is a time—albeit brief—when financial and technical resources are available to help address the root causes of war and shape the future of a nation (Naraghi Anderlini and El Bushra, 2012, p. 52).

III. POST-CONFLICT RECONSTRUCTION

The integration of urban planning processes and public space development into activities related to migration and displacement presents a valuable opportunity to bridge early-response and humanitarian efforts with sustainable, long-term development and peace-building activities. Recognizing this, development actors have increasingly acknowledged the importance of considering the specific needs and aspirations of migrants and displaced communities within the framework of long-term development initiatives, especially given evolving migration patterns and the rising prevalence of prolonged displacement. In this context, integrated urban planning and public space development are pivotal to improving the built environment for all urban residents, creating meaningful spaces for interaction, exchange, community-building, public engagement, and more (UN-HABITAT, 2024, P27).

Within the framework of Sustainable Development Goal #11 ("Make cities and human settlements inclusive, safe, resilient and sustainable"), one of the proposed targets (#11.7) advocates for "universal access to safe, inclusive and accessible, green and public spaces" by 2030, particularly emphasizing the needs of vulnerable groups ("women and children, older persons and persons with disabilities")(UN-HABITAT, 2024, P25).

IV. METHODOLOGY

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V. STUDY AREA

Khan Younis is a part of the eastern coast of the Mediterranean Sea, 25 kilometers south of Gaza, and is considered the center of Khan Younis Governorate. It is located on the cross of latitude 31.212 north and longitude 34.18 east, and it is adjoined by Rafah city from the south, Al Qarara city from the north, eastern villages from the east, and the Mediterranean Sea from the west (Andersson et al, 2020, p.24)

Historically, the city of Khan Younis functioned as a station for commercial caravans. It gained special significance for its strategic location connecting the Nile Valley to the Fertile Crescent, Egypt, and the Arabian Peninsula. The khan served as a resting stop for couriers of the barid, the Mamluk postal network in Palestine and Syria. At the end of the 19th-century, the Ottomans established a municipal council to administer the affairs of Khan Younis, which had become the second largest town in the Gaza Strip after Gaza itself (SIDP for Khan Younis Municipality, 2023) (Figure 1).

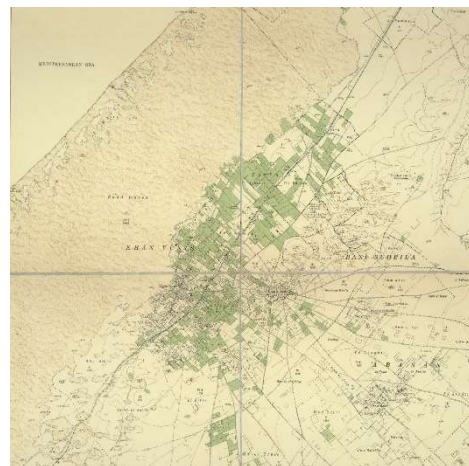


Fig. 1. Khan Younis 1931, Source: Wikipedia

Khan Younis is considered the largest city in terms of area, and its population represents one-fifth of the total population of the Gaza Strip (Alastal, et al., 2019). The city of Khan Younis is considered an urban area by the Palestinian Central Bureau of Statistics. The population of the city and Khan Younis camp is distributed approximately equally in terms of gender, and the latest update of the population growth rate in Palestine, the growth rate in the Gaza Strip reached 2.8% according to the year 2021 AD (SIDP for Khan Younis Municipality, 2023). (Figure 2).

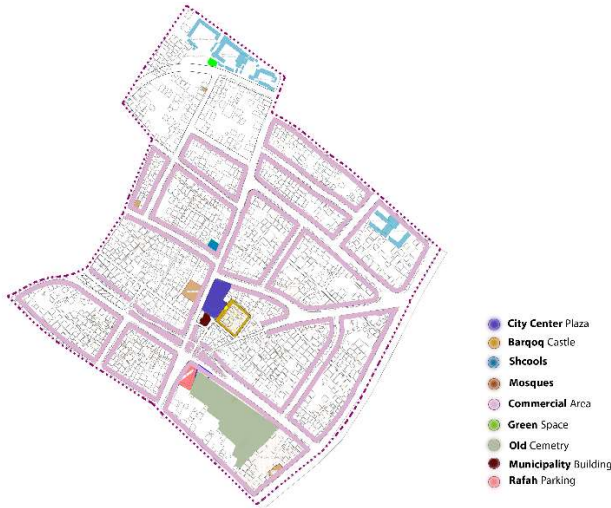


Fig. 2. City center land use, Source: Authors

VI. KHAN YUNIS CITY CENTER PLAZA

The most important components in the plaza are: the Grand Mosque on the western side, the monument of unknown soldiers on the northern side, Barquq Castle on the eastern side, and the old municipality building on the southern side, which attracts many visitors during the day and night. (Figure 3).

Additionally, the paved area serves as the space where daily vendors sell their products. The plaza used to be a focal point for the community in the city center neighborhood, which has now been destroyed, leaving only monuments from the previous area.

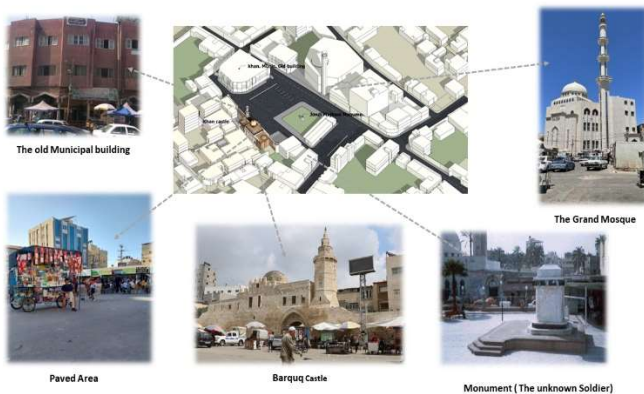


Fig. 3. Plaza elements, Source: Authors

VII. RESULTS AND DISCUSSIONS

Before the war, Khan Younis faced several major challenges. There was no public policy to preserve the castle as an important archaeological and tourist site for the city. Heavy traffic in the city center and around the historic Barquq Castle created unsafe and inaccessible spaces for pedestrians. Additionally, random parking at intersections increased traffic congestion, and using the main plaza as a parking area reduced the area's historical significance. The disorganized movement of private cars, taxis, motorcycles, and pedestrians, along with the spread of kiosks, created confusing conditions. These problems collectively contributed to environmental, visual, and noise pollution (Municipality of Khan Younis, 2019, pp.4-5). (Figure 4).



Fig. 4. City Center Plaza Pre-conflict Land Use, Source: Authors

Additionally, City Center did not experience significant development or expansion despite the growth in population and car numbers. As a result, it became a corridor dominated by cars coming from all directions, leading to many issues such as congestion, traffic jams, and pollution in all its forms—environmental, noise, and visual. These problems are further exacerbated by the accumulation of people, cars, stalls, kiosks, and other disruptions that interfere with people's interests. If the issue continues to worsen and the area is not redeveloped to suit its functions, movement might cease after several years, as problems are growing more complex every day (Municipality of Khan Younis, 2019, p.4). (Figure 5).

Additionally, UN-HABITAT has reported that in Khan Younis, fourteen percent of public spaces are linked to incidents of crime and harassment. This has made these areas unwelcoming and unappealing for many women and girls, who

would otherwise benefit from the recreational opportunities that public spaces offer. This situation reinforces the notion that in Khan Younis, public spaces predominantly serve as arenas for men (Andersson et al., 2020, p. 42).

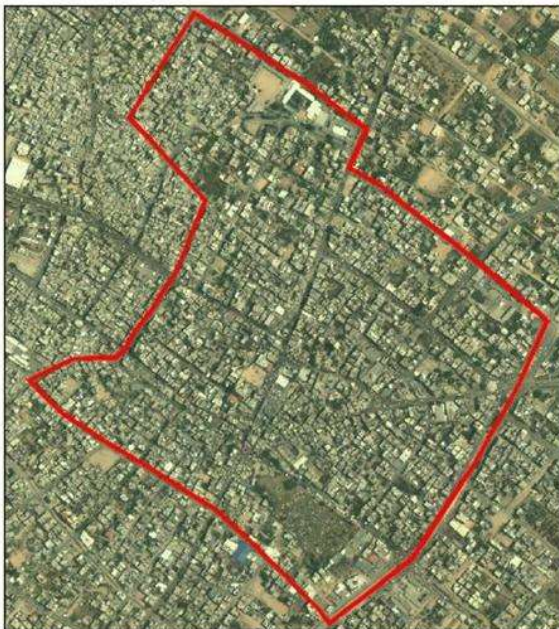


Fig. 5. Situation of the plaza before the conflict.

Source: Municipality of Khan Younis, 2019

KHAN YOUNIS CITY CENTER AFTER 7TH OCTOBER, 2023

Since the start of the war in Gaza, Israeli shelling has caused devastating destruction in all aspects of life. As of now, more than 37,877 people have died, and over 86,696 Palestinian civilians have been injured, with the majority being women, the elderly, and children (PCBS, 7/2024). According to Sche and Katz, by 2023, over 60% of buildings in Khan Younis have been damaged or destroyed, affecting an estimated 45,000 structures. The city center has become "unfit for life," with entire neighborhoods reduced to rubble and debris (PBS NewsHour, 2024). (Figure 6)



(a)

Fig. 6. (a) Khan Younis city Center before 7th, October 2023
Source: Google Earth Image



(b)

Fig. 6. (b) Khan Younis city Center after 7th, October, Source: Pal48.ps

The city center neighborhood, serving as the heart and economic hub of the city, was a primary target of the destruction machine. In addition to the devastation of Baqoq Castle and the main plaza, as shown in Fig. 7, all commercial stores were bombarded, leaving them in ruins. The war machine also partially damaged the Jasser Building, one of the city's prominent landmarks, and destroyed Al-Farra Tower, one of the tallest buildings in the area. Furthermore, the Al-Kabir Mosque, which had just been rebuilt months before the war, was fully demolished.

In the process of reconstructing Khan Younis city after the war, it is essential to consider the significance of the urban form. This form reflects the physical characteristics that make up urban areas, including the shape, size, density, and composition of settlements. These characteristics can be analyzed at various levels, from the regional to the urban, neighborhood, block, and even street levels.



Fig. 7. Situation of the plaza after the conflict Source: Pal48.ps

Green Corridor in the City as NbS for Khan Younis

Significant efforts have been underway over the past decade to define a clear vision for the city center of Khan Younis. The aim has been to enhance its overall appearance and fulfill its primary functions while addressing various challenges in the current difficult reality. This led to the conceptualization of the city's development plan, which centers around Castle Square and extends to the surrounding areas and streets. Key projects include the development of Al-Sikka Street and its gardens, as well as improvements to Street No. 68, located near the end of Al-Zaini Street (Municipality of Khan Younis, 2019, p.5).

In addressing the issues mentioned, we have identified key squares across all urban areas in the post-war reconstruction of Khan Younis. Our plan aims to rebuild these squares with extensive greenery, providing natural solutions to enhance urban resilience and sustainability. Research has demonstrated that green spaces in urban areas can significantly improve air quality, reduce urban heat islands, and promote mental well-being (Wolch, Byrne, & Newell, 2014).

We envision a sustainable urban environment by linking these squares with green urban corridors. These corridors will provide ecological benefits while also promoting social cohesion and recreational opportunities for the community. Integrating green infrastructure is a key part of our approach, aligned with the principles set forth by the United Nations Sustainable Development Goals, especially Goal 11, which aims to make cities inclusive, safe, resilient, and sustainable (United Nations, 2015).

Studies have shown that urban green corridors can enhance biodiversity, provide habitat connectivity, and aid in climate change mitigation by functioning as carbon sinks (Pauleit et al., 2019). Our project aims to establish a network of green spaces that will serve multiple purposes: ecological corridors, recreational areas, and community gathering spots. Ultimately, this initiative will contribute to creating a more livable and resilient urban environment (Figure 8).

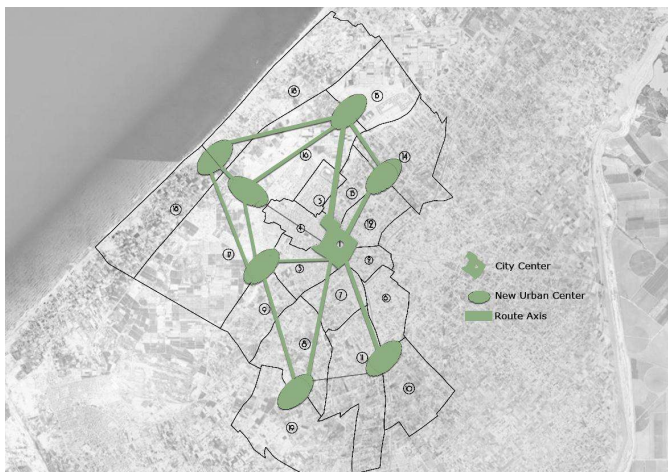


Fig. 8. Proposed Map of the green corridors in Khan Younis, Source: Authors

The Khan Younis City Centre Plaza already features an existing memorial. Our proposal aims to integrate this memorial into the concept of a green plaza. Research indicates that incorporating trees and greenery is one of the most effective ways to commemorate loss, as natural elements in memorials can offer comfort and promote healing for those who are grieving (Dwyer et al., 1991).

With this approach in mind, we have developed several conceptual sketches, as illustrated in Fig. 9. The plaza's considerable size requires the establishment of spatial boundaries. We propose using memorial walls to define these boundaries. These walls are envisioned as vertical memorial gardens, providing spaces where individuals can engage in the process of remembrance. This concept aligns with the idea of therapeutic landscapes, where natural elements play a crucial role in emotional and psychological healing (Gesler, 1992).

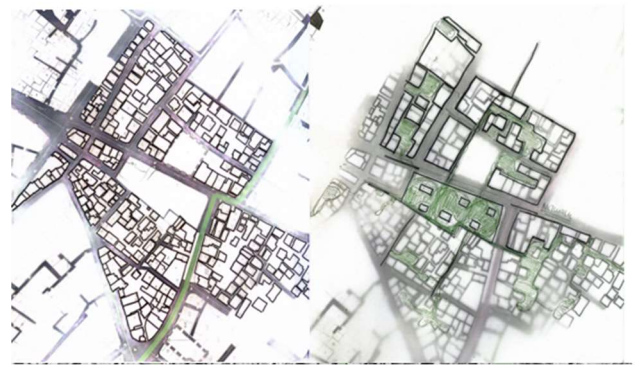


Fig. 9. Urban green corridors, Source: Authors

In this proposal, we focus solely on designing the outer framework of memorial walls, allowing individuals to plant and cultivate greenery within them. This participatory approach ensures that the space evolves over time, reflecting collective memories and shared grief. Research supports the idea of community involvement in green memorials, demonstrating that active participation in the creation and maintenance of green spaces can strengthen community bonds and foster a sense of ownership and belonging (Litt et al., 2011).

The concept is to create a memorial that serves as both a place of remembrance and a living, evolving green space. It honors those who have been lost while promoting environmental sustainability and community engagement. By incorporating vertical gardens, we are addressing the constraints of urban space, enhancing biodiversity, and providing ecological benefits. This design will blend harmoniously with its surroundings, taking into account the castle entrance and existing pedestrian routes. However, the large size of the square presents a challenge, as it may create a sense of spatial loss and disorientation for visitors.

We propose the installation of commemorative walls that will serve several purposes. These walls will not only allow people to remember their loved ones, but they will also create a sense of enclosure and define the space. By doing this, the memorial walls will establish clear boundaries for the plaza, transforming it from a large, undefined area into a more intimate and meaningful environment, as shown in Fig. 10.

The concept of memorial walls as important features in public spaces is supported by several studies. For example, Smith (2015) states that "memorial walls in urban plazas contribute to both the historical narrative and the spatial coherence of the area." Similarly, Johnson (2017) argues that "such walls serve as anchors, offering visitors reference points that enhance their spatial experience".



Fig. 10. proposed plan for plaza reconstruction, Source: Authors

Moreover, incorporating green features, like vertical gardens, into these walls can boost biodiversity and provide ecological benefits. This aligns with Köhler's (2008) findings on the positive effects of green infrastructure in urban environments. By integrating these elements, we not only tackle the problem of spatial loss but also promote environmental sustainability and community engagement.

Safe Underground Shelter in Khan Younis city center plaza

In the city center of Khan Younis, there are not only residential buildings but also commercial buildings, schools, mosques, and various service facilities. The proposed underground safe shelter will be situated beneath the main plaza, which serves as a hub for both residents and visitors, making it easily accessible. This underground shelter could also function as parking for visitors to the historical castle. Additionally, the plaza could include public services, such as public restrooms. (Figure 11)

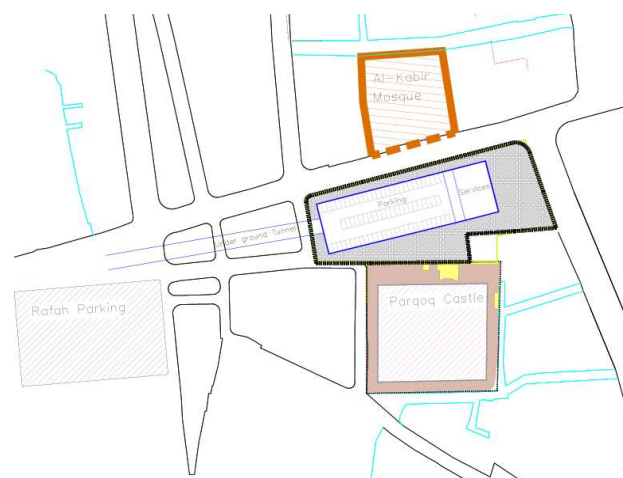


Fig. 11. Proposed plan of Safe Underground Shelter in Khan Younis city center, source: Authors

Women's Empowerment Initiatives: Dedicated Women's Spaces and Home Licensing

To ensure women's participation in the plaza, we propose establishing daily market modules in City Center Plaza, deliberately designed to support women. These market spaces will provide opportunities for women vendors, especially those skilled in traditional needlework and embroidery, to showcase and sell their handicrafts. Citing Beegle & Dehejia (2019) and Meagher (2019), this initiative aims to create a harmonious and supportive environment that fosters inclusivity and empowers female entrepreneurs. Additionally, it is essential to allocate dedicated restrooms and prayer cabins for women, ensuring their comfort, privacy, and fulfilling their religious needs.

Moreover, the availability of basic infrastructure—such as clean water sources, sanitation, and waste management services—is crucial for the effective operation of the markets. These amenities will enhance the overall hygiene and safety of the marketplace, contributing to the well-being of both vendors and customers. Establishing these facilities is fundamental for creating a sustainable and thriving market environment that meets the diverse needs of the community.

The municipality can also grant home licenses for individuals who wish to practice a profession from home, supporting self-sufficiency for those who cannot open a physical shop or obtain a facility license. This initiative is particularly beneficial for individuals with special circumstances who are unable to leave their homes and can be trained in professions they can pursue from home.

In summary, our vision for the reconstruction of the plaza is to create a vibrant, sustainable, and well-defined space that respects the historic context while delivering environmental and social benefits. By thoughtfully integrating memorial walls, green infrastructure, and daily market modules, we aim to create a square that serves as both a place of remembrance and a dynamic public space that fosters a sense of belonging and connection among its visitors.

Furthermore, the design of an underground shelter beneath the green plaza ensures that the space remains accessible and functional during times of conflict. This design provides safety and protection for the community without disrupting the aesthetic and ecological functions of the surface area. This dual-use design allows the plaza to serve as both a peaceful, green urban space and a secure refuge, enhancing the overall resilience and utility of the area. We envision applying this design approach to other squares identified in different neighborhoods, which will be interconnected by green corridors as shown in Fig. 12.

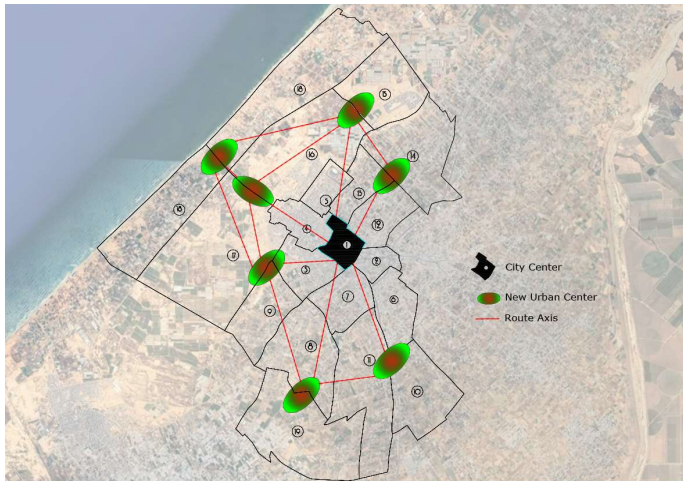


Fig. 12. Proposed Map of the New Urban Centers Network in Khan Younis, Source: Authors

CONCLUSION

The Khan Younis Central Plaza Reconstruction Project aims to tackle both pre- and post-conflict challenges and develop strategies for creating a sustainable and inclusive urban environment. It designates the center of Khan Younis as the focal point for the city's reconstruction. By adopting the proposed strategies, Khan Younis can be transformed into a sustainable, green, inclusive, and public urban center. The lessons learned from this project can serve as a valuable model for post-conflict urban reconstruction in other regions.

The proposed green reconstruction plan emphasizes human rights, environmental resilience, climate change mitigation, historical heritage preservation, and gender diversity. It seeks not only to rebuild Khan Younis but also to enhance the quality of life for its residents through participatory and sustainable urban planning. Within this framework, it is essential to identify and propose public spaces in the city center and surrounding neighborhoods. Thoughtful design of these public spaces will establish the foundational green infrastructure for the reconstruction. Ensuring connectivity and sustainability of these proposed public spaces is also critical to the project's success.

One of the few positive aspects of the destruction in Khan Younis is that it presents an opportunity to address pre-existing urban settlement issues and to build better. There are numerous academic and practical areas that require attention, which can be

pursued in collaboration with local and international organizations. This study aims to establish a foundation for future research in these areas.

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