A Study on Urban Growth Issues and Future Perspective from the Viewpoint of Influencing Living Health Environment in Planned Residential Neighborhoods of Kabul City

（カブール市の計画近隣住区における居住衛生環境への影響から見た都市発展の課題と将来展望に関する研究）

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Mohammad Ramin AMIRYAR
モハマド　ラミン　アミリヤ

Department of Architecture and Civil Engineering
Toyohashi University of Technology

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Abstract

Kabul is Afghanistan's capital and most populous city. Following stability in 2001, many people returned to the country and settled in major cities. Because of the abundance of opportunities, including jobs, housing, and security, the capital city was the first choice for returnees. Furthermore, many internally displaced people relocated to Kabul due to declining income and property values. Kabul City was not prepared to accept such a large influx into urban areas. As the urban population grows, so does the demand for housing, infrastructure, and services. Unfortunately, this has resulted in the proliferation of informal and illegal structures throughout the city. Despite the fact that planned residential neighborhoods make up a small portion of the urban area, rapid urbanization has contributed to significant transformation in Kabul City. Therefore, the study examined the level of transformation and its influential factors.

To conduct this study various data collection methods were carried out through case studies in three districts of Kabul City. Study areas were visited to examine physical features by taking photographs and measuring. In addition, aerial photography is also used for historical differentiation. Our targeted respondents included residents, monitoring officers, experts and policymakers, and Engineers' Associations. To understand Kabul City better, a detailed explanation is given regarding its historical developments. Meanwhile, the city's population growth and expansion are described based on master plans. Then, the study focused on urban areas including planned residential neighborhoods and informal settlements. In Kabul City, formal governmental approaches are not the only ones used. However, it is also accompanied by a customary or traditional system of local government. As the two systems coincide with each other, actors and stakeholders react based on their own approaches. As a result, the study also focused on approaches based on collaboration and participation levels.

In the study, the main focus is on transformation, its causes, and how to prevent it in a planned residential neighborhood. Therefore, the structure and crucial components such as community centers, houses, greenery, and streets are evaluated. Community centers closed down, and others changed their missions. The cul de sac street mode is lost due to conversion to direct traffic flow streets. The green strips that served as a playground for children and women were turned into bare land. Rapid urbanization, on the other hand, affected houses. Many of these houses are the result of typological transformation. Apartment buildings bring a slew of issues, both social and environmental. These issues include constant shadow existence, ventilation, increase in energy consumption, air pollution, sound pollution, lack of natural light, indoor and outdoor activities, and privacy.

The study attempted to determine the cause of such transformations, particularly in planned residential neighborhoods. We discovered that the transformation of houses, community centers, and

the entire structure of planned residential neighborhoods is motivated by a variety of factors. One of the primary reasons was a flaw in the monitoring mechanisms. Kabul Municipality has extremely few monitoring officers to inspect and the majority of construction activities are left without monitoring. They monitor construction activities using outdated and ineffective technologies. Residents were always left out of the planning process. As a result, residents' awareness of laws and regulations diminished. Along with the monitoring mechanism, there were numerous other issues associated with the housing transformation. These issues included mismanagement, the lengthy construction permit process, and a lack of coordination between internal and external organizations. Due to limited capacity, this study focuses solely on monitoring mechanisms, whose improvement indirectly improves other issues.

As a result, we examined the current monitoring system and proposed a more comprehensive one. Many stakeholders, including resident councils and engineers' associations, are involved in the novel monitoring mechanism. The Engineers Association would serve as a bridge between the municipality and residents and inform KM about the area's situation and society's needs. On the other hand, these organizations are kept up to date on policies and political issues that affect the public. As a result of these collaborations, the relationship between KM and residents strengthens in unprecedented ways. Engineering associations serve as catalysts for activities and bring together KM and residents. By allowing residents to make decisions that affect their quality of life and health, KM builds trust and credibility with them. As a result of residents' inclusion in the system, KM shares responsibilities with them and receives their cooperation. Engineering associations can educate residents about the rules and regulations, the importance of their inclusion in the system, and the role they can play at an early stage. As a professional association, they can also train in monitoring and construction management techniques. They assist KM by carefully reviewing construction activities and ensuring that permits issued correspond to improved plans. As a result, KM and resident unity established reciprocity coordination, with Engineers' Associations filling the gaps. Finally, based on the foregoing considerations, a robust control system achieves the highest success rate in reducing housing transformation and development regulations violations.

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Abbreviations

KM	Kabul Municipality
MUDH	Ministry of Urban Development and Housing
GoIRA	Government of Islamic Republic of Afghanistan
JICA	Japan International Corporation Agency
KUDF	Kabul Urban Design Framework
CRIDA	Central Regional Independent Development Au
CDC	Community Development Council
OM	Operation Manual
NSP	National Solidarity Program
GAs	Gozar Assemblies
PMU	Provincial Management Unit
FPs	Facilitating Partners
WB	World Bank
IDA	International Development Association
ARTF	Afghanistan Reconstruction Trust Fund
CCAP	Citizen Charter Afghanistan Project
USSR	The United Socialist Soviet Republic

General Instructions

Fonts	Times New Roman, Title (18), Sub-titles (14), Text (11)
References	APA Style
Figures & Tables	Based on chapter categorized. 1-1, 2-1, 3-1… Table: on the top. Figures: on the bottom.
Dissertation Structure	A total of 8 Chapters & 193 pages

Chapter 1: Background

1.1 Introduction

Kabul, the capital, is one of Afghanistan's most urbanized cities. Kabul, in the 2000s, became the fifth fastest-growing city in the world (The Guardian, 2014). In 2002, the city's urban area was 20,468 hectares, increasing at an average annual rate of 1.4% since 1987 when it was 17,212 hectares (Atlas, 2014). It is estimated that in 2014 Kabul's urban area accounted for 34,409 hectares, growing 3.7% annually. It is also confirmed by an estimated urban extension rate of 4% per year in 2017 (MUDH, 2017), which is the highest in the world. Population growth is the driving force behind urban expansion. Population growth was contributed by Internally Displaced Persons, an ever-increasing number of returnees, and rural migrants.

The population grew from 1.78 million in 1999 to 2.721 million in 2005. It represents a population growth rate of 2.5% during this period. In the meantime, according to Atlas, the population increased by 2.9 million between 2001 and 2015, reaching 3.536 million people. In 2020, the Central Statistics Organization of the Islamic Republic of Afghanistan reported that Kabul's urban population had reached 4.5 million (CSOIRA, 2020). Over 41% of the population of the entire country lives in the capital city (GoIRA, 2015). It is estimated that urban populations will grow by approximately 4% between 2015 and 2020, and by approximately 3.5% from 2020 to 2025 (MUDH, 2017).

The 1978 Master Plan and Detailed Plans were not strictly followed in urban development. Rapid urbanization and volatile political environments hampered plan implementation (JICA, 2011). The majority of housing areas were constructed within these plans, albeit in the form of informal settlements. Kabul now hosts 66 percent of informal settlements (Sasaki Associates, Inc., 2018). Although planned neighborhoods made up a small portion of Kabul's urban areas, they also saw a development that violated laws and regulations. Housing typology was significantly changed. The originally designed layout is no longer used for structure layouts. Green strips are rarely available. Cul-de-sac streets, which kept traffic out of residential areas, have been converted to extended roads. In some cases, the Community Center functionality has been changed or eliminated.

In planned residential neighborhoods, housing typology was transformed, particularly detached houses, into apartment buildings. The proliferation of apartment buildings increased the density in these planned residential neighborhoods. Due to disorderly development due to vertical development, many detached houses were negatively impacted. Residents had to deal with many issues related to the environment and social factors, which made living there uncomfortable. Today, the area is overcrowded, and basic needs are not met due to the emergence of these apartment buildings. Residents of detached houses no longer receive as much sunlight as before. In addition, residents cannot comfortably enjoy their open spaces. The traffic stream is extremely congested and makes unpleasant sounds. As a result, planned residential neighborhoods with single-family lots (housing schemes) have lost their identity.

Our investigation revealed numerous issues surrounding housing transformation. These issues included mismanagement, long-term construction permits, a lack of coordination between internal departments and external organizations, and faulty monitoring mechanisms. Because of the limited capacity, this paper focuses exclusively on monitoring mechanisms, whose improvement indirectly improves other issues too.

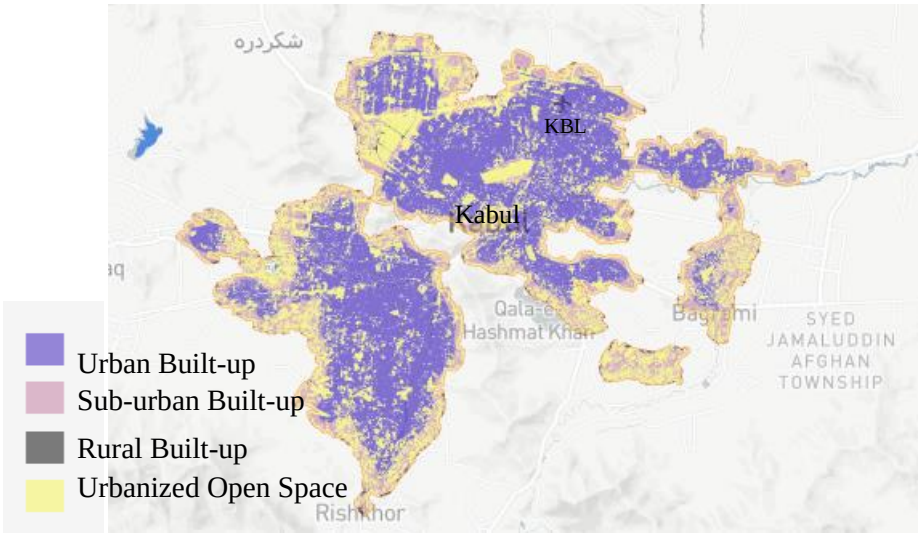

Figure 1-1: Kabul Urban Extent 1987, source: Atlas, 2014.

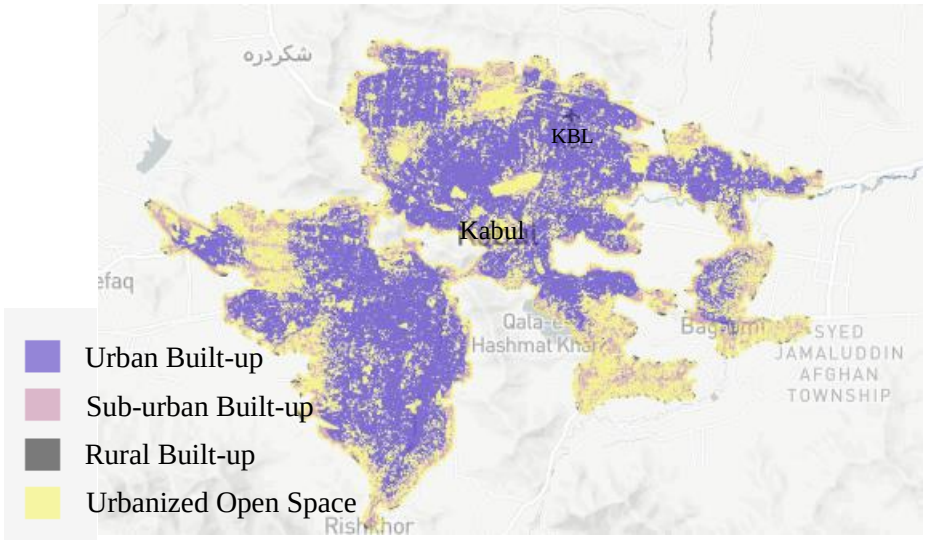

Figure 1-2: Kabul Urban Extent 1987, source: Atlas, 2014.

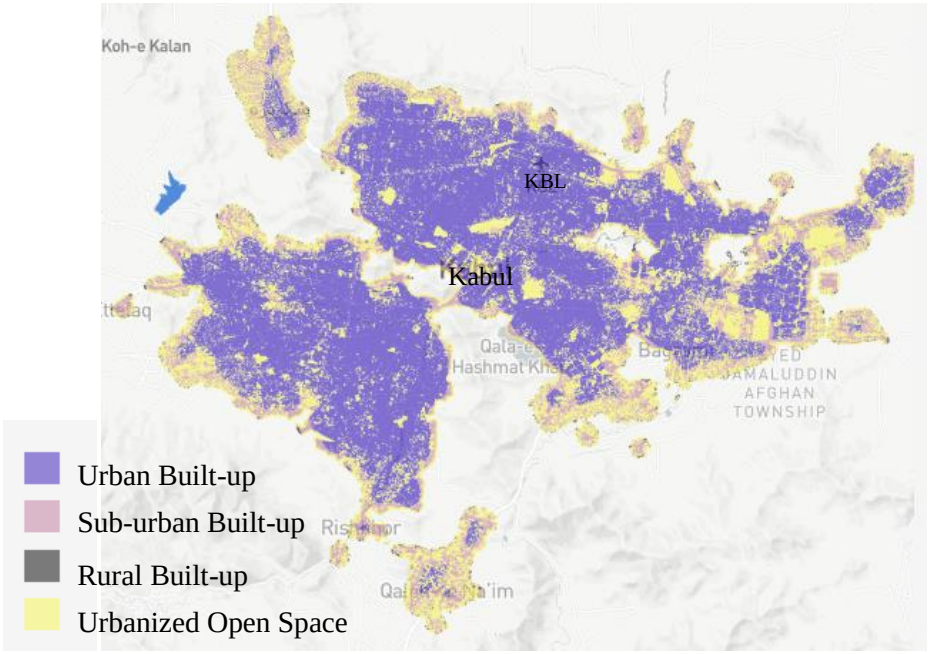

Figure 1-3: Kabul Urban Extent 1987, source: Atlas, 2014.

1.2 Statement of the Problems

Kabul, the capital, is the political, administrative, educational, and financial center of the country. It is the main hub for migrants, both those who relocate within the country and those returning from abroad. Cities that have become centers of power, extensive development, and exposure to more advanced urban development techniques have led to the emergence of distinct trends (Roggema, R., 2016). Eventually, cities expand beyond their legal boundaries and peripheries, violating the rules to accommodate rising populations (Mahtta, R., et al., 2022, & Bokova, I.G., 2016). Responding to urban populations' needs presents many challenges, whether in terms of housing, transportation, energy systems, infrastructure, employment, or basic services.

Our observation revealed that urbanization changed the physical features and main elements of planned neighborhoods. But it hosted a bunch of social and environmental issues which severely affected residents' living conditions and health. Many community centers disappeared and many of them were changed to another land use and function. Meanwhile, many houses were transformed from detached houses into illegal apartment buildings. Therefore, this study analyzed and evaluated the fundamental changes in spatial structure, housing typology, monitoring mechanism, capacity and capability of stakeholders, and quality and characteristics of community centers.

1.3 Research Objectives of the Study

In general, the research focused on the factors that contributed to the transformation of planned residential neighborhoods. These factors included the transformation of housing typology, the loss of layout structure, and the deterioration of living conditions and residents' health. Because of this many objectives were assessed. First, the historical existence of community centers along with their role in community cohesion and sustainability was studied. Second, the physical transformation of housing typology, and violation of regulations such as number of floors, building coverage ratio, and setbacks were analyzed. Third, the research focused on residents' opinions regarding the social and environmental impact of housing transformation on residents' living conditions and health. In addition, the research evaluated the current monitoring mechanisms as a major factor in achieving transformation, as well as the participation level and stakeholders involved. Lastly, the inclusion of other stakeholders such as residents (councils), and engineering associations for the improvement of mutual collaboration and the increase in technical staff capacity in the system is investigated.

The main research questions focus on the following points:

1. Does community involvement and access to community centers contribute to the sustainable development of planned residential neighborhoods in the current situation?

2. What is the relation between illegal housing transformation, violation of rules and regulations, and residents' living conditions and health?

3. Does the inclusion of a third party have a significant impact on the effectiveness of rules and regulations enforcement and monitoring mechanism efficiency in terms of technical capacity and human resources?

1.4 Practical Significances of the Research

This research has enormous practical implications. The study attempted to highlight the issues raised by the proliferation of apartment buildings in planned residential neighborhoods as an alternative to detached houses. It attempted to explain how low-rise residential neighborhoods lost their identity. The study emphasizes the importance of the involvement of councils of residents and technical associations in addressing the lack of human resources and technical deficiencies. This study's findings assist Kabul Municipality and other municipalities throughout the country in improving their monitoring mechanism, which is based on a comprehensive system. As a result of the transformation of the housing typology from a replacement perspective, Kabul City is in critical health and living conditions. In this regard, we believe that our proposed mechanism will be appreciated and implemented.

Despite regime changes, this study has enormous practical implications. Kabul Municipality continues to operate under the same policies, laws, and regulations as before. Authority changes are common after a regime change around the world. Whether or not they are technically qualified, the highest-ranking officials are hired for their political connections. However, because Kabul Municipality is a technical and service organization, its previous personnel are required to run it. Human resources and technical capacity, according to our findings, are still insufficient to improve the situation. Kabul City is in critical health and living conditions due to the transformation of the housing typology from a replacement perspective. In this regard, we are optimistic that our proposed mechanism will be valued and implemented.

1.5 Scope and Limitation of Research

In a society, one can discern the lifestyle through the distinctive features of the residential units, which are rooted in socio-economic and cultural characteristics (Alagbe, O.A., & Aduwo, E.B., 2014). Changes in habits often reflect changes in public and private behaviors, and built environments reflect society's lifestyle (Yldz, B.Y., & Ek, F.İ., 2018). The way people experience a place, the meaning they attach to it, and how they perceive it offer insights into how urban transformation affects their lives (Dianati, V., 2021). The houses' changing shapes reflect the transforming socio-cultural structures of each specific era, and that transformed form of the house embodies the ideology of each era. (Dener, A., 2005). Transformations are defined as alterations, modifications, improvements, and changes. Tipple defines transformation as the process of altering or extending a dwelling using readily available materials and technologies (Tipple, A.G., 1991). Transformation, however, is described as the alteration of an entire building, resulting in changes to what is visible in various parts of the building (Kim, S., et al., 2005). Activities related to housing changes ranged from redesigning the interior of a room and painting it to making structural modifications such as adding a room or even tearing down a building (Popkin, S.J., et al., 2012). In the literature, several theories have been put forward to explain housing transformation. One such theory is the theory of housing adjustment. Morris and Winter say people typically evaluate their housing conditions based on their family and cultural norms. This is because settlements are designed to meet the needs, social norms, and lifestyles of the people living there (Morris, E.W., & Winter, M., 1975).

Overpopulation, pollution, and fossil fuel use are just a few of the ways humans harm the environment. Human interactions with the environment result in climate change, land degradation, air pollution, poor ventilation, and housing congestion. Environmental transformation is the result of people meeting their needs. Drilling holes, building dams, and constructing newly built houses can all have a significant impact on the environment, either positively or negatively. Hammond in 1995

(Hammond, A.L., 1995) theoretically justified this relationship between human activity and the environment. As a result of this interaction, human health is impacted by polluted air and water, degraded services, and a number of other factors (Akintunde, E., 2017).

Kabul is experiencing a critical urbanization pace. Urban areas were drastically developed disregarding master plans, zoning plans, and rules and regulations. Areas were developed according to a master plan consisting of less than one-third of urban areas. Our study focused on the influences of urban growth and population increment and its consequences on residents' living conditions and health considering the social and environmental impacts as a result of housing typology transformation.

Our research has some limitations that must be acknowledged. A larger sample area would have been advantageous. It was extremely time-consuming and tedious to reach out to residents and reach an agreement on questions and research. Another critical point is that we have not reached all planned residential neighborhoods due to security concerns. We opted for paper-based questions instead of online questions and interviews due to a lack of internet access and knowledge. Authorities were overburdened and unwilling to support our research. We were unable to select additional sampling areas due to financial constraints. Due to sensitive cultural reasons, we were not permitted to take photographs or conduct research from within. A lack of policies, rules, and regulations pertaining to our study hindered our research.

1.6 Literature Reviews

1.6.1 Housing

Housing is one of the most significant needs for human existence, along with food, enabling us to satisfy our basic needs for work, life, and recreation (Dunn, J.R., 2000, Ojikpong, B.E., & Agbor, A.E., 2016). It is widely acknowledged that housing is one of the most fundamental societal needs, affecting health, happiness, and productivity in many ways (Jinadu, A.M., 2007). Housing is an exemplary expression of prosperity for a society and a determinant of health and well-being (Rolfe, S., et al., 2020). It is imperative that housing protects the self-esteem and value of human existence. While its importance cannot be underestimated, supply inadequacies are evident in many developing countries. In the world today, major demographic and socio-economic changes, technological advancements, and socio-political interventions have been instrumental in housing transformation. Typology can be used to analyze buildings or cities (analytical typology) or to design buildings (generative typology) (Leupen, B., et al., 1997). Typology is an analysis of the formal and spatial characteristics of a building that are influenced by culture and history (Demiri, D., 1983). Typology is regarded in this sense as model classification (Salama, A. M., 2006). A type represents the organic ensemble of the common characteristics of buildings within a defined culture (Petruccioli, A., 2007). In order to provide a clear

indication of how form changes in a given society, typology is defined as a dynamic evolutionary paradigm. An explanation of form transformation can be provided by interpreting the typological process as dynamic evolutionary paradigms of a particular type of building in a society (Leupen, B., et al., 1997). Housing typology represents the difference in living conditions in Kabul City. There are various housing types in Kabul including courtyard houses (traditional), detached houses, apartment buildings, and houses on preserved hillsides and mountains (Bertaud, A., 2005 & World Bank, 2006). Detached housing is more common in planned neighborhoods. At the same time, courtyard houses in traditional style are more common in informal or organic settlements. Municipalities usually prepare detached house packages. In the past, government apartment-type buildings were constructed based on master and structure plans. There are many apartment building practices, either legal or illegal.

1.6.2 Transformation

In a society, one can discern the lifestyle through the distinctive features of the residential units, which are rooted in socio-economic and cultural characteristics (Alagbe, O.A., & Aduwo, E.B., 2014). Changes in habits often reflect changes in public and private behaviors, and built environments reflect society's lifestyle (Yldz, B.Y., et al., 2018). People's perceptions of a place, the meanings attached to it, and their experiences of it are insights into how urban transformation affects citizens' lives locally (Dianati, V., 2021). The houses' changing shapes reflect the transforming socio-cultural structures of each specific era, and that transformed form of the house embodies the ideology of each era. (Dener, A., 2005). Transformations can be defined as alterations, modifications, improvements, and changes. Tipple explains transformation as the process of altering or extending a dwelling using readily available materials and technologies (Tipple, A., et al., 2004). Transformation, however, is described as the alteration of an entire building, resulting in changes to what is visible in various parts of the building (Kim, S., et al., 2005). Activities related to changes in housing ranged from redesigning the interior of a room and painting it to making structural modifications such as adding a room or even tearing down a building (Popkin, S.J., et al., 2012). In the literature, several theories have been put forward to explain housing transformation. One such theory is the theory of housing adjustment. According to Morris and Winter (1975), people typically evaluate their housing conditions based on their family and cultural norms. This is because settlements are designed to meet the needs, social norms, and lifestyles of the people living there (Morris, E.W., & Winter, M., 1975).

A variety of factors can influence housing transformation within a place. In particular, when the government fails to provide housing for its citizens, especially those with low and middle incomes (Hasan, A., 2006). Urban housing transformation is often coupled with desperation among low-income households (Tipple, A., et al., 2004). Housing has also changed due to the inability to incorporate

traditional lifestyles and socioeconomic characteristics. Moreover, personalization also contributes to transformation, although it is more prevalent in developed countries than in developing countries (Mohammed, M., & Shamsuddin, S., 2007). As it is clear, low-income households often remodel or expand their homes through alterations or extensions. This phenomenon is prevalent in most cities in developing countries. In some cases, owning a residence is a major catalyst for transformation and can help some people break the cycle of poverty (Avogo, F.A., et al., 2017). Private owners also observe such initiatives in Kabul. As is clear, transformation occurs over time. However, the Kabul transformation was rapid and more of a replacement than an adaptation.

1.6.3 Community Centers and Their Roles in Sustainability

All civilizations have always had public spaces that give them their identity. Those spaces serve as a place of meeting and the center of this urban arrangement. Public space is clearly valued in ancient civilizations like the Roman, Greek, and Indus Valleys. Plenty of cities in Europe such as Rome, Florence, and Athens are well-known for their significant public spaces. From a social standpoint, the center acts as a gathering place for social events and as a resource for residents in need. An area where neighborhood residents can meet for social events, classes, and recreational activities. Community centers facilitate interactions between different groups of people through activities. People from various cultural, religious, and political backgrounds who share similar interests gather to play, learn, or collaborate to better themselves or their communities (Yasmin, F., & Gulsan, A., 2008). An environmentally sustainable community adapts constantly to meet its residents' needs while protecting the environment's ability to support community needs. Having neighborhood centers in a city or town increases considerable community interaction and creates a sense of belonging to the community (Farkisch, N., et al., 2011). Neighborhood centers also serve as the center of spatial units where services are available (Korpan. C.A., et al, 1997). Most prominent are the covered semi-private terraces between houses and the central square (neighborhood center) of a neighborhood (Farkisch, N., et al., 2011). (Qingwen, X., & Chow. J. C., 2011) argue that community services are widely accepted as effective solutions to social and economic problems, and community centers are the cornerstones of service delivery. Consequently, community centers play an instrumental role in the cohesion of a neighborhood or community. In addition to contributing to local cohesion, community centers play an integral role in neighborhood and community development. Therefore, Johann Wolfgang von Goethe and Richard Tarnas theory explains that inclusion of development project beneficiaries in the planning, implementation, and maintenance of development projects result in more positive outcomes and impacts (Richard Tarnas, 1993).

1.6.4. A Novel Participatory Monitoring Mechanism

Collaboration and participation are the fundamentals of our novel participatory monitoring mechanism. Activities between organizations are based on collaboration, coordination, and cooperation (Castañer, X., & Oliveira, N. 2020). Modern knowledge societies are increasingly shaped by complex interactions between government, business, academic, and societal actors (Carayannis, EG., Campbell, DFJ, 2009). Sustainable city development involves the public, private, and community sectors (UN, 1992). As part of a healthy democratic process, local government relies heavily on public participation. This gives citizens a chance to participate in and contribute to the planning process (A, Abas., et al, 2023). Participation of the population in decision-making processes and planning systems is crucial to ensuring our shared values and basic living conditions in a sustainable society (ibid). According to Arnstein, citizen participation equates to civic power. Citizens who are not included in decision-making can be empowered to be considered and included through citizen engagement, which redistributes power (S.R., Arnstein, 1969). In order to accomplish common objectives, groups from many sectors work together in social partnerships (Waddock, 1991).

For sustainable development to be successfully managed, a participatory approach and engagement between community stakeholders are required. Collaboration and participation approaches in modern societies for sustainability are common and can be practiced together. Today, public affairs education says that the horizontal network of public private and non-profit organizations is called a new structure of governance. However, there is another face of new governance, one that involves citizenry - the tool makers and tool users—and the processes through which they participate in the work of government (Liasa. B.B., et al, 2005). Kettl observes that the forces transforming governance are the diffusion of administrative action, the multiplication of administrative partners, and the proliferation of political influence outside government's circles. Kettl also points to the need for improved skills in negotiation and coordination (Kettl, D.F, 2002). Agranoff and McGuire (2003) have documented the emergence of networks for collaborative management, which they define as the process of facilitating and operating in multi-organizational arrangements to solve problems that cannot be solved, or solved easily, by single organizations.

The novel participatory mechanism in this study also focuses on the participation of residents and the collaboration of nonprofit organizations. As technical deficiencies exist in the system, a technical and professional organization as a third party can be involved. KM's technical limitations are a major concern that can be addressed by adding a third party. Professional associations solve these problems. These organizations set standards relevant to government operations, offer certification and licensing, encourage sound management practices, and intervene in urban affairs as change catalysts (Royston, G., et al, 2002, Mark, A. H., 2014, David, N. A., 1994). So, the residence community and technical

organizations play a key role in strengthening the monitoring system. Kabul Municipality practiced many participatory projects through international NGOs, however, none of them focused on strengthening the monitoring mechanism, especially through the involvement of professional associations. To conclude, our novel participatory mechanism not only involved residents that bring civil participation to the city but also satisfy from a technical aspect including professional organizations.

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Chapter 2: Research Methodology

2.1. Outline Structure

Chapter 1: This chapter provides context for city problems caused by urbanization. The city's population and urban growth, as well as their impact on Kabul, particularly planned residential areas, are clearly stated. The chapter then focuses on the problem statement. This focuses on the evaluation and analysis of fundamental changes in spatial structure, housing typology, monitoring mechanisms, stakeholder capacity and capability, and community center quality and characteristics. Meanwhile, research objectives and research questions have been included. The chapter also discusses the study's scope, limitations, and practical significance. The last section is devoted to literature reviews on housing, housing typology, transformation, and community centers.

Chapter 2: This chapter outlines the overall structure of the dissertation. Following that, the study's research strategy is described in detail. Methods for research sampling and data collection are defined in a systematic manner. The chapter is followed by an explanation of how the study area was chosen. This chapter's final section is devoted to areas of research.

Chapter 3: The history of Kabul City is described at the beginning of the chapter. The chapter then delves into the existence of master plans for Kabul's development at each stage. The chapter also discusses Kabul's city settlements. The planning stream's paradigms as a formal system are clearly stated, and they are based on the government's approach to Kabul City. Furthermore, the informal system and its advantages, as well as the traditional system, are thoroughly explained. Following that, the stakeholders and actors involved in Kabul city affairs were explained.

Chapter 4: This chapter addresses the destructive issues associated with the disappearance of community centers throughout history. The chapter compares the number of community centers in different periods. Meanwhile, it also concentrates on population increment differences including the start of residential neighborhoods. Then, the chapter deeply focuses on community centers' physical changes and the land use that occurred. In addition, the Khairkhana district is evaluated in order to realize how crucial is the layout stability and durability.

Chapter 5: This chapter investigates the physical form and transformation of housing typologies. The chapter illustrates the impact of housing transformation on residents' living conditions as a result of social and environmental issues. At the end of the chapter, the impacts of social and environmental issues resulting from apartment buildings are discussed.

Chapter 6: This chapter focused on the analysis of activities in the study area. The activities are analyzed based on comparing the past and present needs for community centers in accordance with population growth. The per capita analysis enabled us to find the number of community centers in need. Furthermore, the significance of community centers in the long-term development of planned

residential neighborhoods is also analyzed by a systematic literature review. This chapter is in direct relation to the explanation of community centers described in Chapter 4.

Chapter 7: The chapter examines and analyzes the influential factors in house transformation. The chapter describes monitoring mechanisms as an essential element of transformation. A SWOT analysis is conducted to determine the strengths, weaknesses, opportunities, and threats confronting our system. Finally, based on the conducted analysis a participatory approach mechanism is proposed.

Chapter 8: This chapter includes a research summary and significant research results including layout models and Community Centers. It also includes housing transformation, the impact of housing transformation on residents' living conditions, factors and reasons for transformation, and social and environmental issues. In the end, some general suggestions are proposed. Figure 2-1 depicts the structure's outline of the dissertation. It is divided into eight chapters, beginning with an Introduction, and ending with a Conclusion and Suggestions. The diagram only highlights the dissertation's main points.

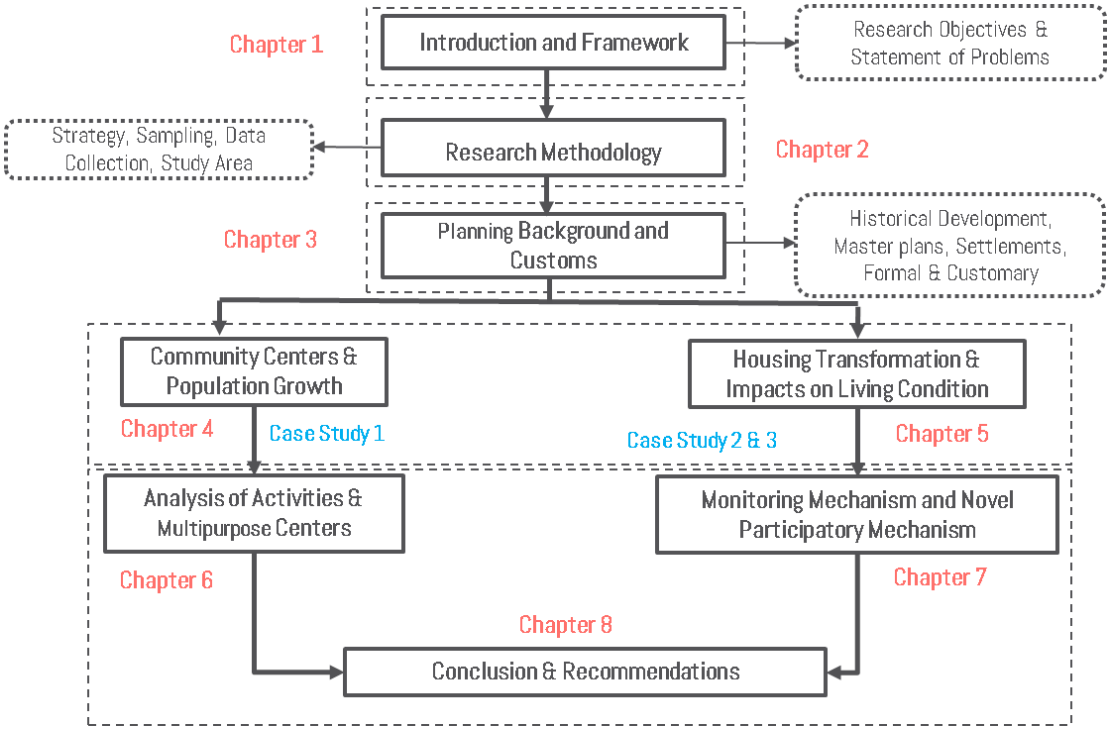


Figure 2-1: Outline Structure of Chapters

2.2. Research Strategy

Based on our objectives described in the previous part, the strategy for conducting our research is a case study. Three case studies were conducted to analyze the impacts of urbanization and transformation on planned residential districts. At first, a case study was performed on the physical structure, layout, and historical existence of community centers. It also examined their capacity compared to the current population. It also examined the role they could play in the cohesion and sustainability of planned neighborhoods and communities. For this, we conducted a literature review, collected documents, and records, and focused on secondary data analysis. Residential neighborhoods are surrounded by schools, kindergartens, and mosques. Afghanistan is an Islamic country and most of the community activities are focused on mosques. In addition, schools and kindergartens are also used as centers for many cultural practices and social activities. Compared to masjids or mosques, their engagement is minimal.

The second case study was carried out on the impact of urbanization on planned residential districts. This led to the transformation of housing typology from detached houses to illegal apartment buildings. The transformation resulted in many social and environmental issues that directly impacted residents' health and life. The third case was conducted regarding housing typology changes, residents' exclusion, and the monitoring mechanism. The second and third case studies were conducted simultaneously.

2.3. Research Samplings and Data Collection Methods

As we mentioned, to compare the physical structure layout and historical viability of community centers we collected detailed plans from the 1980s, and satellite images from 2004, 2008, and 2013. Kabul Municipality and the Ministry of Urban Development and Housing contributed detailed plans and aerial photographs for this study. ArcGIS and AutoCAD software were used to digitize and scale the maps. The population increment is calculated based on the population growth rate and the differences in community centers are tabled. We also analyzed the structure and layout of residential districts. Through this, the alternation of shapes and modes of community centers and their importance for the originality of the original layout were focused on and evaluated. The purpose of this systematic literature review is to glorify impotence and propose the multipurpose center as a solution.

In our second case study, we discussed with the Kabul Municipality the availability of information and documents related to laws, regulations, and rules. In October 2021, aerial photographs and shape files were collected, and some type of literature was reviewed until January 2022. The City Planning Department of Kabul Municipality provided a high-quality aerial photo of District 4. In addition, we also received rules and regulations regarding building a detached house from the Kabul Municipality Construction Permit Department. The study areas were mapped using the most recent enhanced and

high-quality aerial photo of 2018. Additionally, we observed from the field and took pictures of the buildings to update the features and elements of our map between January and February 2022. For physical feature analysis, a few characteristics such as the Building Coverage Area (built-up area) on a plot, the number of floors, and the typology of the buildings were considered during our physical element analysis. We also observed the construction materials to determine the quality of the buildings.

In the next stage, to gather information related to the environmental and social impacts, we targeted residents of detached houses. These residents were affected by the emergence of apartment buildings. We developed a semi-structured questionnaire including general instructions, personal information, and specific questions about apartment buildings and their impacts on environmental and social aspects. During our field visit, we conducted a paper-based interview. Two surveyors were assigned to administer the questionnaires. All aspects of the questionnaire were tested on a small group of students in advance. The area was selected based on the willingness of residents to contribute and participate (resident representatives' sessions), security, accessibility, and consultation with the Kabul Municipality authorities. The degree of transformation of housing typology was the main reason we selected the study areas. Aerial photos and our observation of buildings in each part of District 4 led to specifying the level and degree of transformation. Our research team used a simple random sampling method to collect data on social and environmental issues from affected residents living in these areas. A total of 32 responses were received from individuals, while approximately 40 houses were surveyed. Table 2-1 clearly describes the processes, including categories, methods, sources, and when the activities occurred. To analyze questionnaires related to environmental and social aspects, descriptive statistics were applied to frequency counts and percentages. Likert scale data analysis was used to determine the weight given to variables such as ventilation, natural light, shadow effect, energy consumption, air pollution, sound pollution, and privacy. Likert scales with numerical indexes provide an effective way to judge people's opinions. To analyze the resident's satisfaction scores, (5), (4), (3), (2), and (1) were substitutes for strongly agree, agree, neutral, disagree, and strongly disagree. It was then divided by the total number of responses, which is 32, to obtain the satisfaction index. Then, it was divided by the total number of responses, which was 32, to obtain the satisfaction index.

To correlate the perceptions of the residents with the physical form of the houses in the study areas, impacts on the environment and social issues were classified into different types. For each type, there are specific conditions that indicate the impact intensity. In order to analyze all of the above issues, specific terms have been used that correspond to the actual conditions. The plots were analyzed in relation to the areas around them. To simplify it, the impacts are divided into Satisfactory, Fair, and Critical Conditions:

- Ventilation is calculated based on existing apartment buildings around the detached house. According to the criteria, the building should have at least three sides left open to be considered in Satisfactory Condition. As long as two sides of a plot of land are enclosed by an apartment building and the other two sides are free, that plot is categorized as in Fair condition. In contrast, a detached home surrounded by apartment buildings on at least three sides is considered in Critical Condition.
- Natural light, shadow effects, and energy consumption are evaluated based on available solar radiation from the east, west, and south. Shade effects were studied in the morning, during the day, and in the evening. It is considered satisfactory if a detached house receives sunlight from at least two sides. In other words, the detached house's two sides are not lined with apartment buildings. If only one side of the house receives sunlight, the single-family house is considered Fair Condition. Detached homes may be classified as Critical if two or more sides are obscured by apartment buildings.
- Sound pollution is analyzed based on where the houses are relative to the streets. This is because the traffic causes the soundest pollution. For this reason, we consider the types of streets when measuring sound pollution effects. The Satisfactory Condition is for detached houses on dead-end streets, where there is no traffic outside but only the owners' cars. In addition, they are not placed close enough to apartment buildings to hear sounds coming from human activity inside the apartments. Detached houses located on sub-main streets and not in direct view of apartment buildings are valued in Fair Condition. Among the detached houses most affected by sound are those located on collector streets. They are also exposed to traffic sounds, human activities, and crafting noise. Our assessment is based on street availability, and the main street is not included.
- Air pollution is evaluated based on NEPA, Afghanistan Environmental Protection Agency. The evaluation was based on the average of the main air pollutants as specified by the National Protection and Environmental Agency: PM2.5 = 75 μg/m3, PM10 = 150 μg/m3, NO2 = 80 μg/m3, SO2 = 76 μg/m3, and O3 = 100 μg/m3.

Finally, a house has acceptable privacy if no apartment buildings surround it. Meanwhile, a house is considered Fair Condition if it is not directly faced by apartments or if there are some apartments on the side of the house with head-level windows. On the other hand, a detached house surrounded by apartments would be rated as a Critical Privacy Condition.

On the other hand, for the third case study, we used a convenience sampling technique to collect data from residents. Basically, both detached houses and apartment buildings were targeted for this study. Residents of detached houses were asked about their participation and contribution to community activities. We targeted 40 detached house owners, while the response was 32. As part of the survey, the

apartment building residents were asked why they choose to live in illegal buildings in planned residential districts.

We also surveyed about 40 respondents from apartment buildings. At the same time, interviews were conducted with monitoring engineers, policymakers, and the Engineers Association. This was to gain a better understanding of how construction activities are monitored under the current system. We distributed questionnaires to all districts, which means all monitoring engineers. However, the response only came from 15 of them. Many departments involved in policymaking were contacted. These departments are Planning and Implementation, Land Readjustment and Urban Redevelopment, Upgrading Department, Construction Control, and Plan and Policy. The research includes reviewing and examining documents and records to suggest a better monitoring mechanism.

Table 2-1: Methods of Data Collection.

Categories	**Methods**	**Sources**	**Dates**
1. Analyzing Community Centers (Current Community role, Population, sustainability)	Digitizing, Literature Review Examining Secondary Data Analyses	Kabul Municipality Ministry of Urban Development Affairs Literature Review	Jan2017 - June2017
2. Related articles, records, and Documents (The topics include laws, regulations, statutes, master plans, and shape files.)	Reviewing Examining	Kabul Municipality Websites	Oct 2020 - Jan 2021
3. Analyzing physical characteristics (Plot size, building layout, number of floors, and topology of the buildings.)	A combination of ArcMap, AutoCAD, and SketchUp for digitization. Drawing, measuring, and photographing observations.	Kabul Municipality Field Survey	Jan 2021 - May 2021
4. Living Status (Living Status & Housing Information)	Questionnaires Interviews	Field Survey	June2021 - July2021
5. Monitoring Mechanism (Current challenges, public cooperation, Stakeholder coordination, Mechanism strengths)	Questionnaires Interviews	Resident Policymakers Monitoring engineer Engineers Associations	June2021 - July2021

2.4. Selection of the Study Areas

As we already discussed, urban areas have undergone a drastic transformation in the last two decades of stability. Formal settlements were neglected due to high informal settlement rates in urban areas. Through this research, we focused on urban transformation in planned neighborhoods. These areas were supposed to be regulated by rules and regulations provided by Kabul Municipality and the Ministry of Urban Development Affairs. Their identity is altered, however, by housing transformations and violations of drastic regulations. Therefore, we tried to clarify the condition of planned neighborhoods by selecting two districts (4 and 11) for our research.

For a variety of reasons, we decided to conduct our research in District 4. The first factor is the high level of housing transformation compared to other districts. By examining recent aerial photographs and satellite images, we determined the extent of the transformation. Additionally, our trip around the city to determine the level of transformation led us to choose District 4. The second factor is residents' willingness to contribute data to our research. District 4 representatives agreed to contribute to our research during a monthly resident representatives' session in Kabul Municipality. Third, we chose this district over others because of its high security level. Kabul Municipality and District Office employees came up with this idea. Based on their daily interactions with people, they advised us that other districts' situations were not appropriate for research at this time. Fourth, we chose this district because it is easily accessible. We needed to be accompanied by a Kabul Municipality official in order to enter the study areas for research. This district is located in the city's heart and is ideal for commuting and transportation costs. Finally, the District 4 office had a reliable supply of data to complete and confirm our questionnaires.

On the other hand, district 11 was selected for two reasons. First, religious and educational centers were considered community centers instead of cinemas and other cultural facilities. However, due to cultural differences and religious aspects, the masjid (mosque) is also embedded as a community center in their plans. In their plans, a twist in the housing scheme from traditional courtyard houses to contemporary detached houses was evident. The second reason is the decline and disappearance of most schools and kindergartens in the last two decades due to high urbanization pressures.

This area has been selected for research because of these two clarifications. To begin with, the study area was the first experience of Russian Urban Planners in implementing detached houses for Kabul's poor. Contrary to the previous Micro-rayon system used by cinemas and other cultural facilities. The detached house system uses religious and educational centers as community centers, which is unique to the Russian planning system. The second clarification is that the school and kindergarten have declined tremendously as community centers in this neighborhood, especially after the 2000s. This is a result of

strong urbanization and poverty. Khairkhana as an Islamic society only has a mosque as a CC which is not enough in this area. In order to achieve ordered development and sustainable progression in the community, the parallel existence of the school and the kindergarten alongside the mosque is crucial.

2.5. The Study Area

The selected study areas are located in planned residential districts. Districts 4, 11, and 15 are located in Kabul city's central and northern parts. These neighborhoods were the first residential neighborhoods developed and accommodated according to the 1978 Master Plan. These residential neighborhoods date back to the 1960s and 1970s. The selected residential neighborhoods are designed for low-rise residential houses. Among the mentioned residential neighborhoods are mostly allocated to low and middle-income families.

District 4 is located in the center of the city. There are 369,455 residents according to Kabul Municipality, and most people who own transformed houses are from the middle to upper classes, while residents living in courtyard detached houses are from low to middle-income families. The district has a land area of 11.63 km2 of which 83.1% is urban area located in the central part of the city. The houses were built on privately owned land distributed by KM in the past to low- and middle-income families, especially government employees (according to residents' interviews).

District 11 is on the other hand, located in the northeastern part of Kabul city. KhairKhāna is a neighborhood in northwest Kabul, Afghanistan, part of District 11. It is predominantly a residential suburb about 6 km from the city center. The urban area consists of a total area of 17.4 kilometers. sq, which is about 75.4 of district. The district is predominantly designed for low-rise courtyard detached houses. In addition, apartment buildings and mixed-use buildings are also located along major roads. The highway of Kabul Parwan is located southwest of this district. Khairkhana residential micro-districts date to the 1950s and early 1980s. As a plan to expand Kabul. It mostly consists of regular blocks and paved road grids. People mostly moved in from north part of Afghanistan to this district. This neighborhood has been considered one of the most populated areas of Kabul City. District 15 is also located on the east side of District 11. The area consists of about 32.1 km. Sq. This is about 32.2 % of the district. A small part of the Khairkhana district is located in District 15.

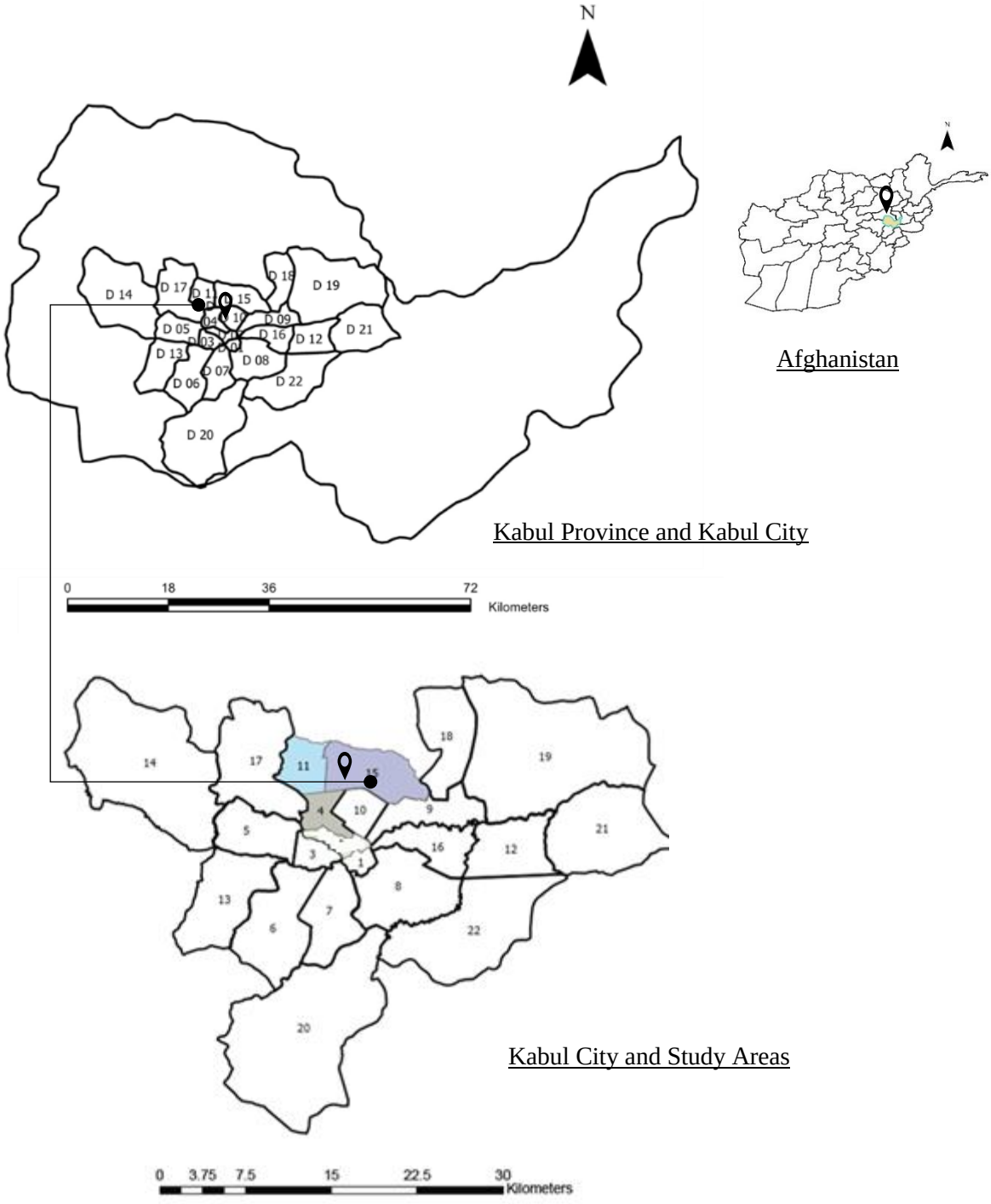


Figure 2-2: Study Area-District 4, 11 and 12.

Chapter 3: Planning, Traditions and Cultural Practices

3.1 Historical and Development Background of Kabul City

It is believed that Kabul, Afghanistan, has a 3,500-year history. This oasis was established along the east-west trade route on the plateau now part of Afghanistan. The city was built along the Hindu Kush Mountain range. Various empires controlled it successively: The Great Alexander, Sassanian Persia, the Islam Empire, the Timor Empire, and the Mughal Empire, among others. The city's growth and expansion began at this time, with a population of 1,000. The transfer of capital from Kandahar to Kabul in the eighteenth century was an essential step toward Kabul's stable growth.

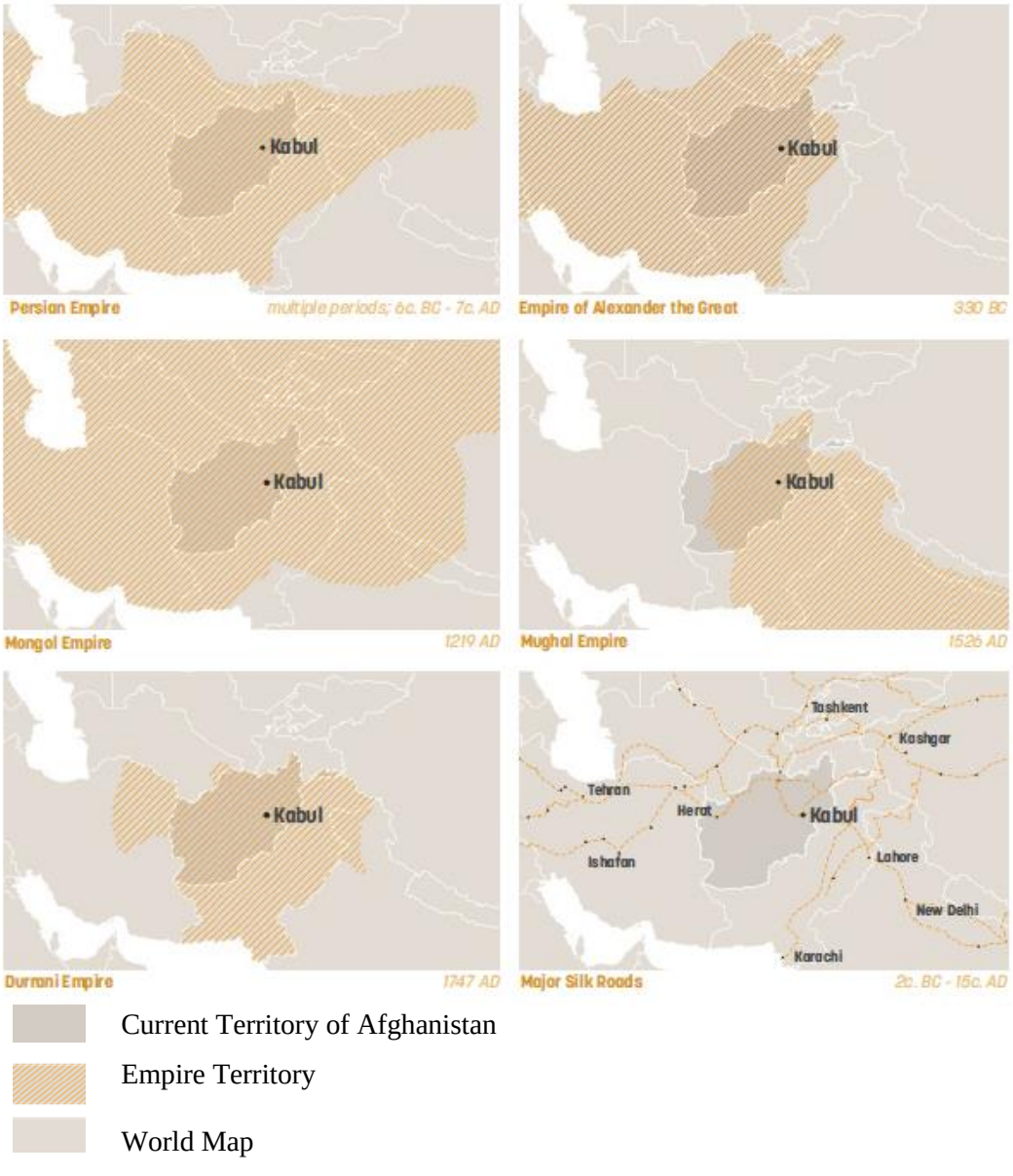


Figure 3-1: Kabul and the dynasty of Empires, source: Sasaki Associates, Inc., 2018.

Kabul's stabilization resulted from the transfer of capital from Kandahar to Kabul in the eighteenth century. Kabul has evolved into a lovely city in the region since then. Tourists mostly came at the end of the eighteenth century. In 1878, Kabul had a population of 70000 people living in 23000 traditional-style houses. Kabul was estimated to have an area of 180 hectares at the time. Several villages were built at the time, including Deh Afghanan, Bebe Meru, Deh Mazang, and Guzerga.

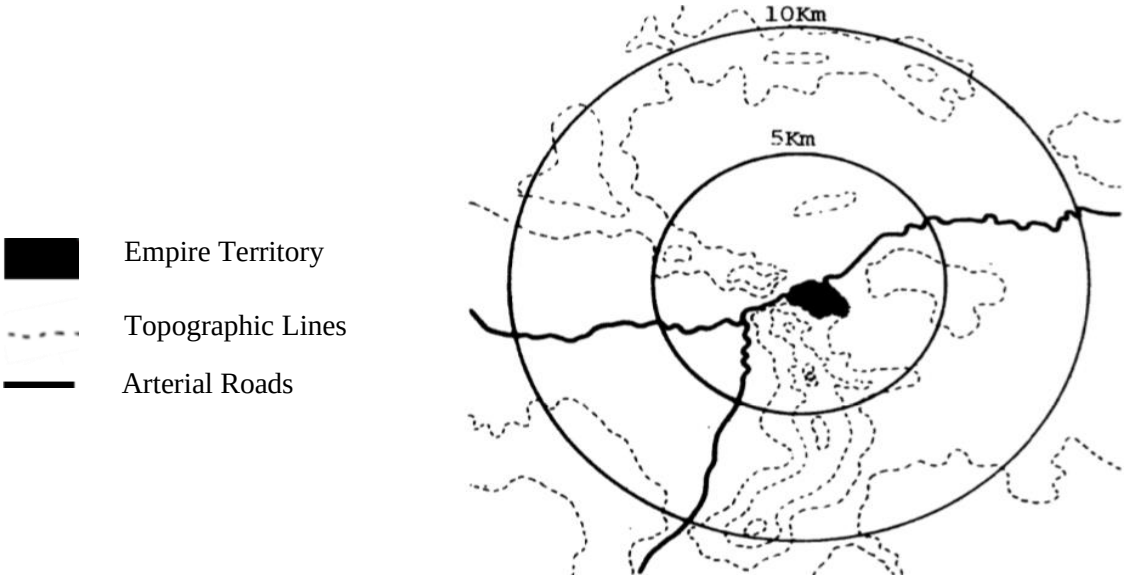


Figure 3-2: Kabul City 1878, source: Samizai, M. R., 1974.

These villages are still known by their original names today. Despite the fact that urbanization has had an impact on these areas over the last century. The city had a number of "Chowk" public spaces. This area is now situated along Jade-Maiwand Road. Famous bazaars such as Chindawul, Charchata, and Shorbazar were established. Amir Sher Ali (1869-1879) wanted to build a new city at the time, but his dream was never realized. During this time, Kabul City experienced significant growth. The first establishments during this time period were the Postal Code, a secondary school, a Motor Transport Company, a phone line link, and a hydroelectric power plant. The beginning of the twentieth century was a period of modernization for Kabul City residents. The majority of Indian architects were introduced to Kabul City residents during the first decade. Later that year, in 1916, Kabul City grew to 400 hectares. In Kabul, the total population reached 65000 people. The reason for this was that the population growth in the area had slowed at the time. City expansion occurred in the peripheral areas, which explains why the city's area has doubled.

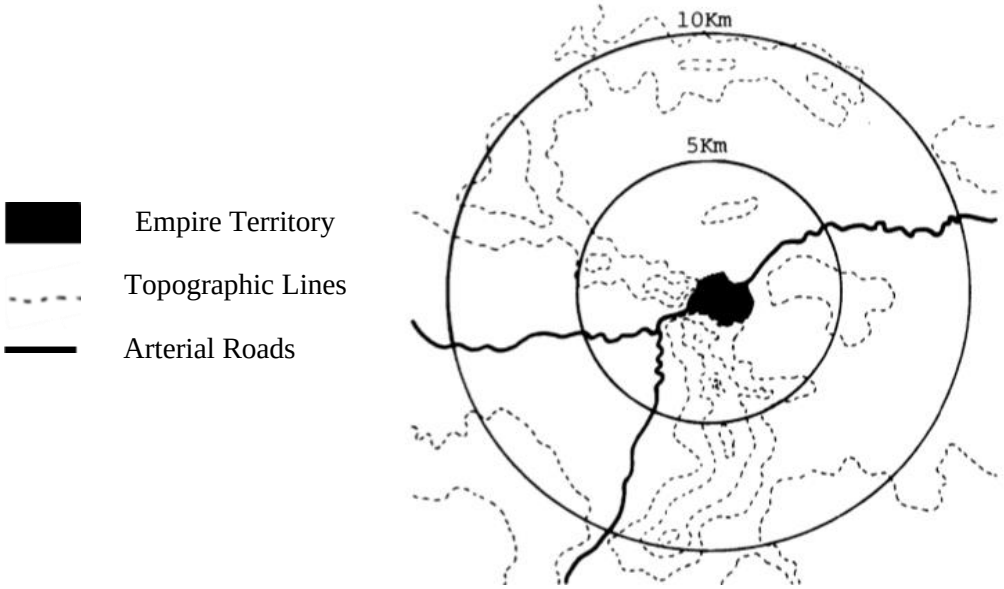


Figure 3-3: Kabul City 1926, source: Samizai, M. R., 1974.

King Amanullah Khan rose to power in the early twentieth century. His first attempt was to bring electricity and a girls' school. He attempted to build a new city southwest of Kabul as a replacement for the old Kabul City. Amanullah Khan, the Afghan king, pushed Kabul into a modernization program in the 1920s. According to Amanullah, the new capital would be built in the Chahr Dehi basin, seven kilometers southwest of Kabul city center. Kabul Jadid was established in 1923 for the purpose of implementing the construction of the new capital. In 1925, Kabul had a population of about 90,000 people.

Figure 3-4: Darul Aman Palace, source: Calogero, P., 2011b.

Jadid, which means 'modern' in Indo-European, stands in contrast to "naw", which means 'new' in Indo-European. As part of his modernizing efforts, Amanullah hired a German architect, Albert Harten, to design Kabul Jadid in the Beaux-Arts style of urban design popularized by Daniel Burnham at the Chicago World's Fair in 1893. As shown in Figure 3-5, the Kasr-e Dar ul-Aman, the central palace of government, was designed in explicit imitation of the Reichstag in Berlin. A series of radial avenues connected the Dar ul-Aman palace with the Forty Pillar (Chehel Sotun) palace and park to the east, with another palace to the south (Tapa-e Taj Beg); and a circular plaza in Deh Mazang to the north.

Figure 3-5: The Arterial Road to Darul Aman Palace, source: Calogero, P., 2011b.

However, it was quickly abandoned due to its collapse in 1929. He attempted to instill European culture in the city of Kabul. His accomplishments include the creation of road networks between cities, the expansion of public facilities (auditoriums, theaters, and museums), the establishment of aerial networks, the establishment of radio stations, the establishment of factories, the expansion of schools, and the attraction of foreign scholarships. The city of Kabul increased in size by 450 hectares in 1925 and by 500 hectares in 1930. According to reports, Kabul City had a population of 120,000. During this time, many residential neighborhoods were expanded. The Shar-Naw neighborhood denotes the establishment of a new city outside the old city ring. In contrast to the radical reforms of the 1920s, the 1930s were generally a time of conservatism during which change was viewed as a gradual process.

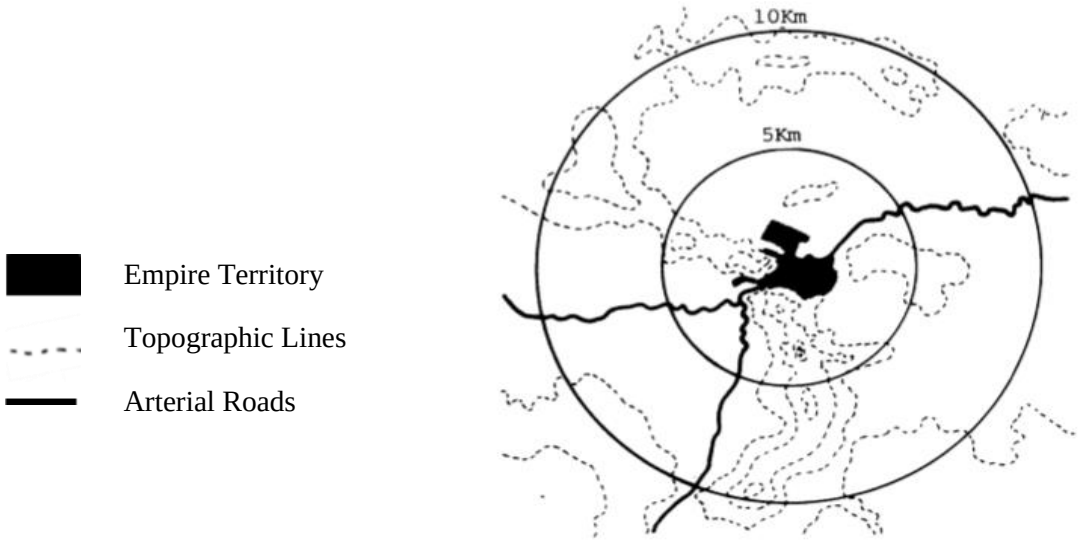


Figure 3-6: Kabul City 1940, source: Samizai, M. R., 1974.

Some of this time period's high points include the following: A hospital specifically for women, a dental clinic, a mental health clinic, and a bacteriological institute to combat cholera were all established, along with the expansion of the postal service and the first use of air mail. The bank started operating, and contracts were made with other businesses to extract mines. The years 1940 to 1960 were extremely important for the growth of Kabul. The current Kabul city's basic structure was established in the 1940s and 1950s. Residential construction began, and the main street of Jada e Maywand was built alongside Kabul University, hospitals, and bazaars. During the 1950s and 1960s, Kabul's street network and residential development expanded steadily.

Kabul is reported to have a population of 150000. The area grew to 750 hectares, which was 1.5 times larger than in the 1940s. On the west side of the mountains, residential homes were planned. Many new colleges and institutes were added to the University of Kabul during this time, which also saw its official opening. Radio stations had grown eight times by the end of the 1940s. Theater productions were held in the Exhibition Hall (Nendarton), which was built.

In 1959, the population rose to 250,000, and in 1962, it reached 380,000. The city area expanded to 8,840 hectares during this period. This was the period of actual growth in Kabul as a result of support from the United States and the Soviet Union. Roads were improved, employment increased, office buildings and hotels sprouted up, and new residential areas sprouted up. Actually, this was the real-time period for Kabul's modernization. Afghanistan's authorities and the international community now have an official relationship. Hundreds of students were sent to study abroad. The Soviet Union's Five-Year Plan was implemented in 1957.

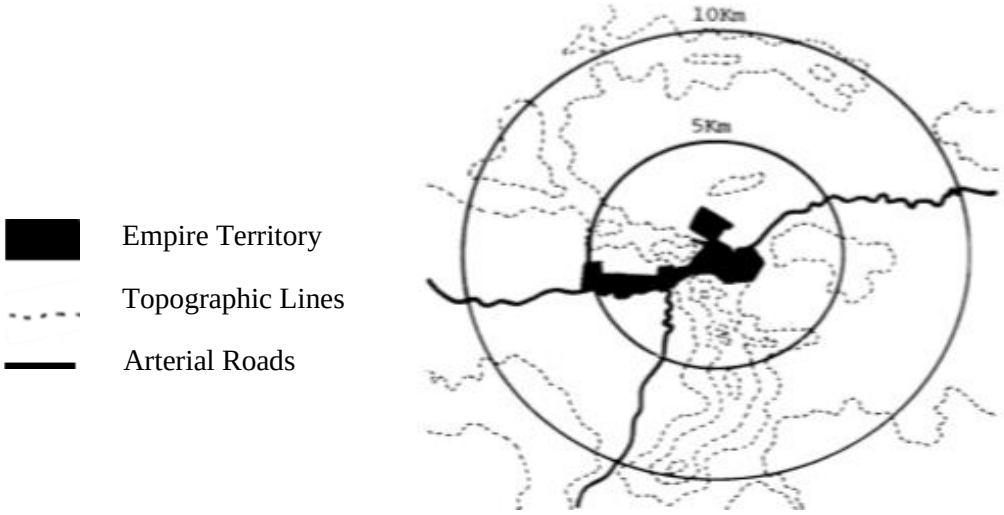


Figure 3-7: Kabul City 1950, source: Samizai, M.R., 1974.

In the late 20th century, Russian and local planners collaborated to create Master Plans and Detail Plans for Kabul (Beyer, E., 2012). In 1962-64, Afghan and Russian experts drafted the first city master plan for an 800,000 population. City expansion was unpredictable due to uncontrollable population growth. This necessitated a second master plan in 1970. During this time, Russian planners backed Kabul planners and adopted all of their ideas.

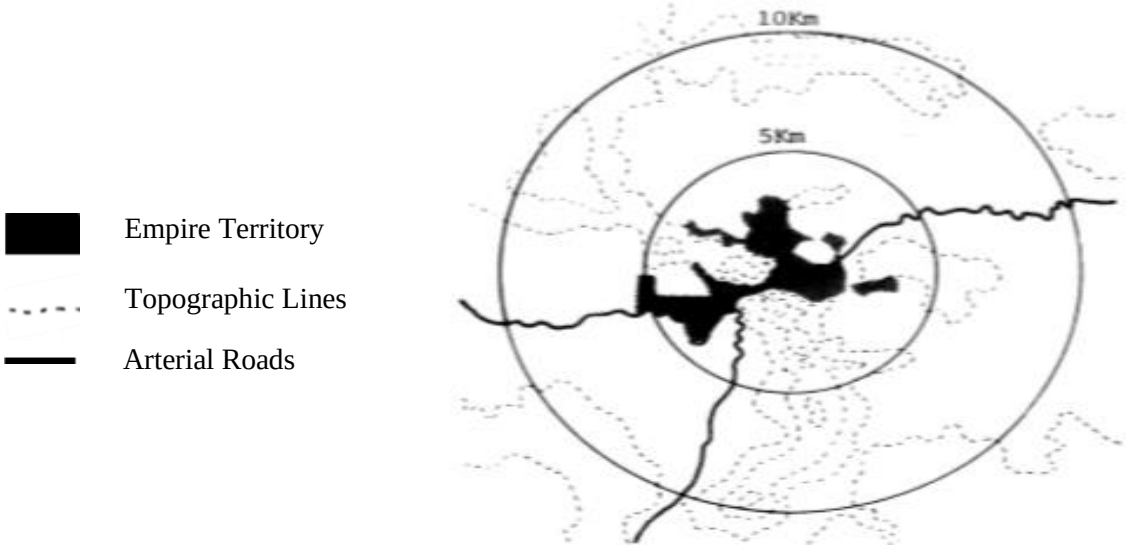


Figure 3-8: Kabul City 1960, source: Samizai, M. R., 1974.

In 1970, the city of Kabul had a half-million population. At the time, the area was approximately 2700 hectares. Urbanization began in the 1950s and continues today. At this time, modern buildings that had already been built began to appear. At this time, the buildings included hotels, theaters, intuitions, and other governmental structures. The Kabul Zoo, which opened in 1967, was managed by German zoologists.

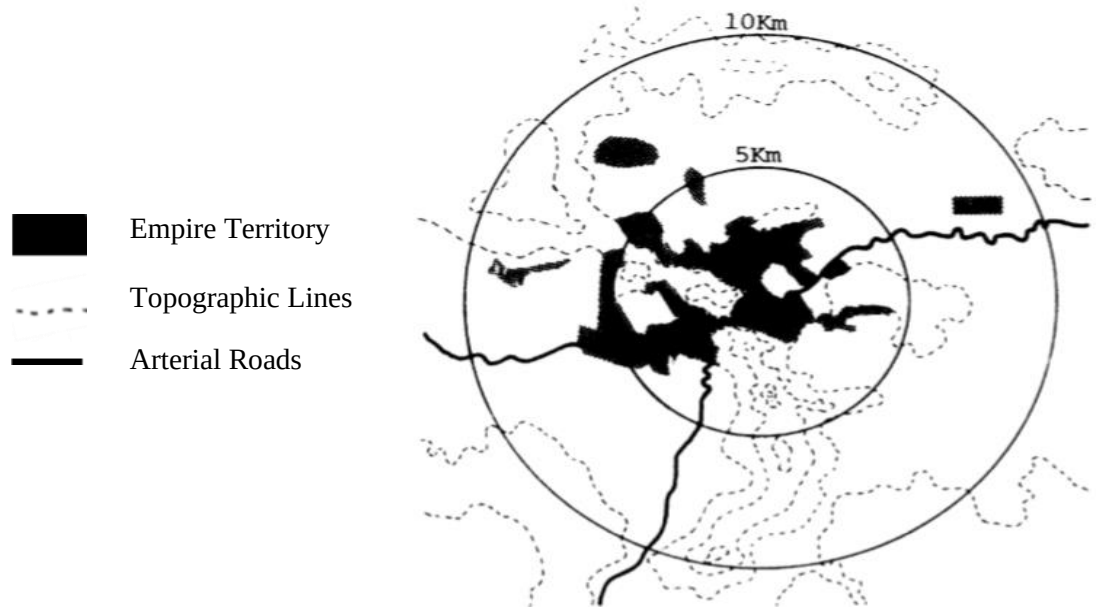


Figure 3-9: Kabul City 1970, source: Samizai, M. R., 1974.

Kabul experimented with liberalization, repealing laws requiring women to wear burkas and loosening restrictions on speech and assembly. This resulted in student politics in the capital. While King Zahir Shah was in Europe, his cousin Daud Khan, who was Prime Minister at the time, staged a coup and took power. Daoud declared himself President and announced plans to reform. According to the BBC, the period preceding the April 1978 Revolution was one in which different ethnic groups in Afghanistan coexisted peacefully, intermarried, and socialized. President Daoud and his family, as well as many of his supporters, were assassinated in Kabul on April 28, 1978. Hafizullah Amin seized power from the Soviet Union and began reforming some educational institutions. Over the course of 30 years, three Master Plans were created.

Aside from the political turmoil of the 1970s, the civil war was also a major obstacle to the master plan implementation. As a result of the civil war that followed the occupation, many refugees moved

into Kabul, and its population reached 1.5 million by 1992. Kabul's infrastructure was completely destroyed during the civil war. The third master plan, completed in 1978, was revised to accommodate 2 million people. The total area of the city was approximately 16,830 hectares. While the population was growing, so was the urban area. As a result of strong urbanization during the Mujahidin Period (1992-1997), public land was developed. The urban area expanded to 25,000 hectares and the population increased to 1.7 million.

Kabul, the capital, is the political, administrative, educational, and financial center of the country. It is the main hub for migrants, both those who relocate within the country and those returning from abroad. Following some stability, many people returned from neighboring countries and abroad at the beginning of the twenty-first century. More than 5.6 million people have returned to Afghanistan since 2002, with half of them settling in urban areas (GoIRA, 2015). It is estimated that the capital city had a population of 4.297 million people in 2019 (CSOIRA, 2019). In Afghanistan, around 41 % of the urban population lives in Kabul City (GoIRA, 2015). The rapid urbanization and the unexpected increase in population forced the city to expand informally and illegally. According to studies, factors such as a decline in income, job opportunities, housing opportunities, security, and poverty encourage people to relocate to cities, resulting in illegal settlements (Venla, N., Maija, T.,2019, Nazire, H., et al, 2016). This is evident in rural areas where agricultural income is decreasing or declining (Nenibarini, Z., et al, 2019). Furthermore, people in rural areas appear to find it difficult to find alternative employment, leading them to relocate to urban areas. In most cases, the local economy's decline resulted in poverty and financial problems, forcing people to migrate to cities (UN-Habitat, 2015). Furthermore, many people moved from rural areas to Kabul in search of work and other opportunities. The city's population increased to 2.7 million, necessitating the city's expansion to 1,022,700 hectares. As a result of the continuous expansion of the city under strong urbanization, the Third Master Plan (1978-2003) was officially suspended in 2005 by a presidential decree (Calogero, P., 2011a).

Upon suspension of the 1978 Master Plan and rapid urbanization, all urban planning in Kabul became illegal. Informal or illegal development is defined as settlements built after 1978 that do not comply with a third master plan. The built-up informal settlements did not adhere to the structure plans, and the detailed plans were based on the 1978 master plan. Buildings were mushrooming in the city as never before in the first decade. Rapid urbanization resulted in both vertical development and urban sprawl. Many vertical development projects were illegal, and the buildings violated the rules and regulations of planned residential areas. On the other hand, informal settlement is a result of urban sprawl. The city was in much need of an updated master plan. In 2009, JICA prepared the Master Plan, but urbanization has overtaken its implementation. The shelter was indeed required in order to integrate people into the city. The hillsides and other public lands were changing to residential areas. Due to the

high compensation need, the urban master plan was not implemented except for a few roads. Many detached houses were converted into apartment buildings in planned residential areas. Despite the fact that the master plan was a growth proposal, urbanization has surpassed its implementation. The greatest transformation of houses occurred during the second decade of this century. In 2018, the Kabul Urban Design Framework (KUDF) came into effect and superseded all previous plans (Sasaki Associates, Inc., 2018). The Kabul Urban Design Framework proposes more than just an update to land uses. In addition, it proposed comprehensive methods and strategies for its implementation, incorporating civil participation methods as well.

Table 3-1 summarizes the city of Kabul's population growth and territorial expansion. Kabul grew from a small city with 65,000 people on its 400-ha territory in 1916. It became a large city with 1.78 million people on its approximately 25,000-ha territory in 1999. Because of the inflow of people and the expansion of the city territory, the population increased at an average annual rate of 4.07% over the 83-year period. Over the same time period, the city area grew 62.5 times.

According to the Central Statistics Office, the population of Kabul City in 2005 was 2,268,300 for the old city area, which included 14 districts (Districts 1-16, except Districts 13 and 14). During 1999-2005, annual population growth averaged 4.0%. An agreement between the Ministry of Interior, the Kabul provincial governor, and the Kabul city mayor expanded Kabul city's jurisdiction in January 2005. With 22 districts, the population increased to 2,721,000 people. According to current estimates, the city's population increased to 4.0 million in 2008, representing an annual average increase of 9.41% from 1999 to 2008. Over this time, the city's territory has grown 4.1 times to 1,022.7 kilometers. Sq. Since 2008 there has been no city expansion. However, the city experienced vertical development like before.

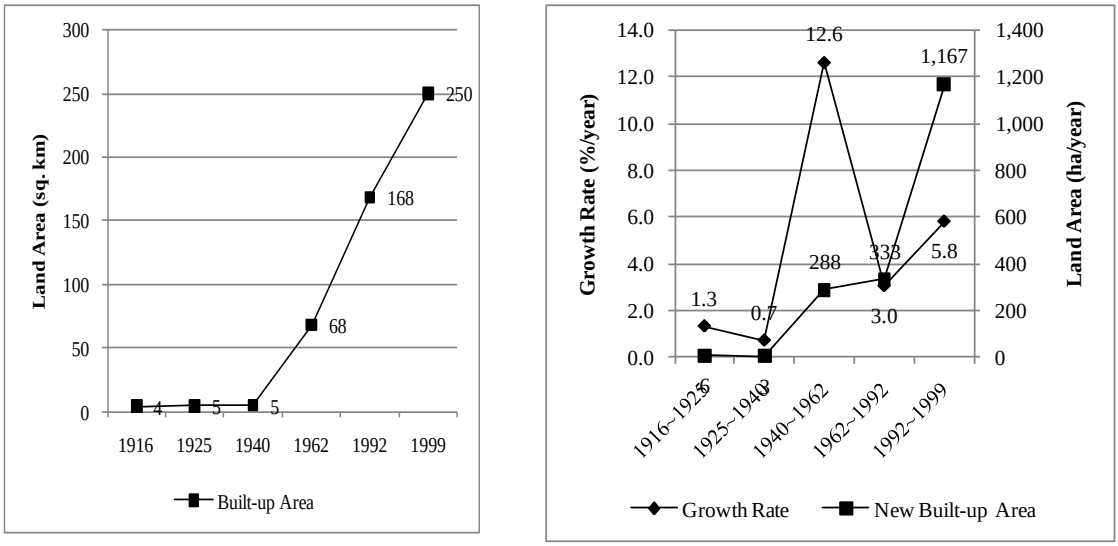
Table 3-1: Population Growth and Urban Expansion of Kabul City, source: JICA, 2011.

Year	Population	Pop. -Growth (% p.a.)	City area (ha)	City development
~1700	10,000	--	--	Became the capital of Afghanistan (1775)
~1878	70,000	--	180.0	Developed as a bazaar city
~1916	65,000	--	400.0	Leather and textile industries developed
~1925	90,000	3.7	450.0	Independence (1919)
~1940	120,000	1.9	500.0	Housing construction (1930~)
~1962	380,000	5.4	6,840.0	Main infra. Built; became the largest city in Afghanistan
~1992	1,500,000	4.7	16,830.0	Communist period (1979~1992): Stable urbanization by capturing public lands. Invasion by USSR; Provincial Council established.
~1999	1,780,000	2.3	~25,000.0	Mujahedin period (1992~1997): Strong urbanization by capturing public lands. Taliban period (1997~2001): Population flowed out from the central part of the city, while expanded in suburbs around the city center.
2001	2,000,000	4.0	40,000.0	Karzai newly appointed as Afghanistan president and the period was count as rapid growth period.
2005	2,721,000	4.0	1,022,700.0	Karzai period (2001~): Rapid urbanization resumed in the city.
2022	4,190,000	4.5	1,022,700.0	Taliban Period: No extension of boundary.

The population in the 2000s is shown in Table 3-2. The average family size is estimated to be approximately 6.4 people. The total number of families within 120539 houses was estimated to be around 277202. The occupation rate was 2.3 per family, which was very low.

Table 3-2: Kabul City Population 2000, source: JICA, 2011.

Population	1,782,012
Average family size	6.4
Total Families	277,202
Available Houses	120,539
Occupancy rate (families per house)	2.3



Growth of Built-up Area

Growth Rate and Annual Growth of Built-up Area

Figure 3-10: Built-up and Area Growth, Source: JICA, 2011.

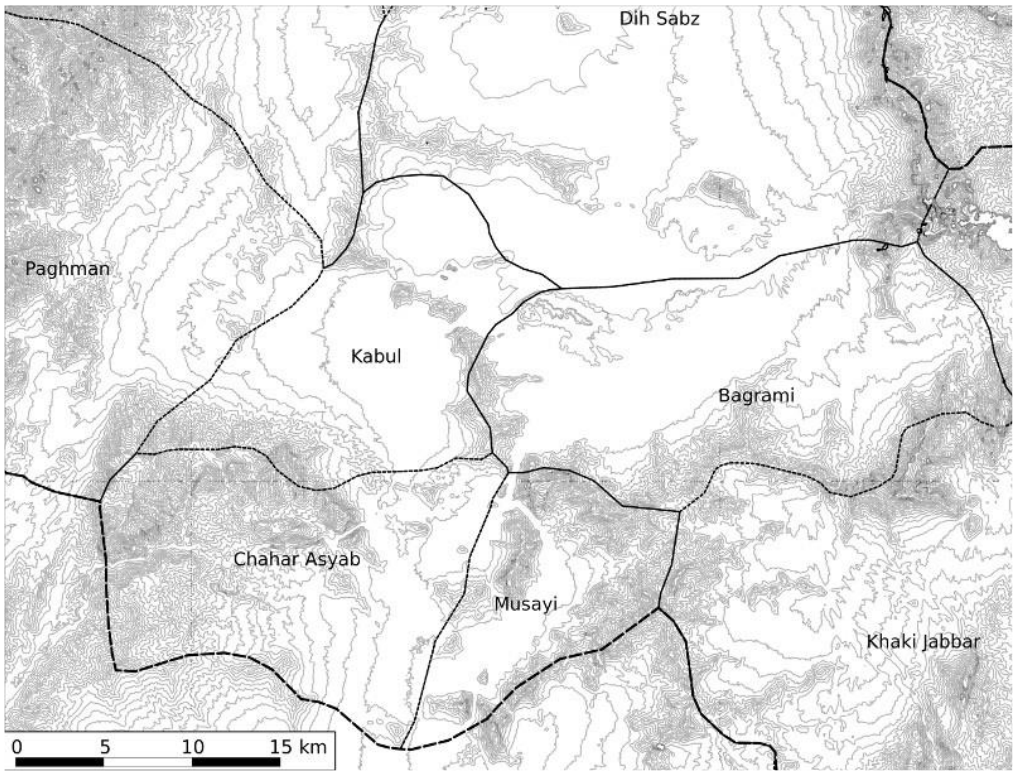


Figure 3-11: Sub-province District Map-Kabul Province, source: Calogero, P., 2011b.

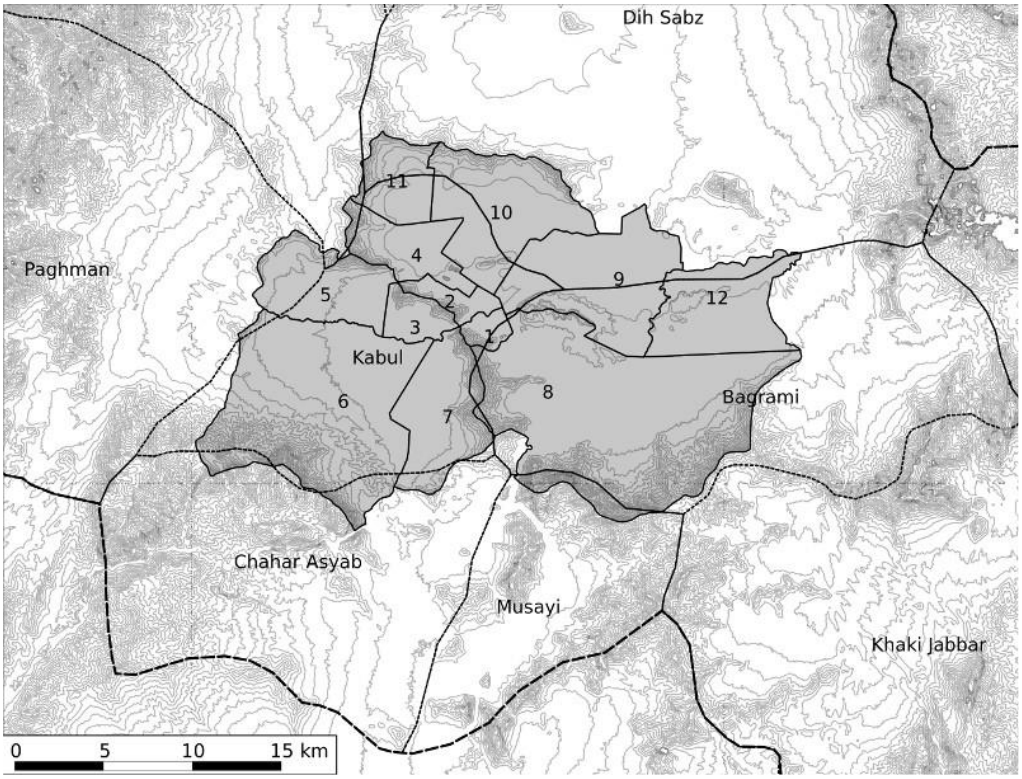


Figure 3-12: Kabul City 12 Districts Map, source: Calogero, P., 2011b.

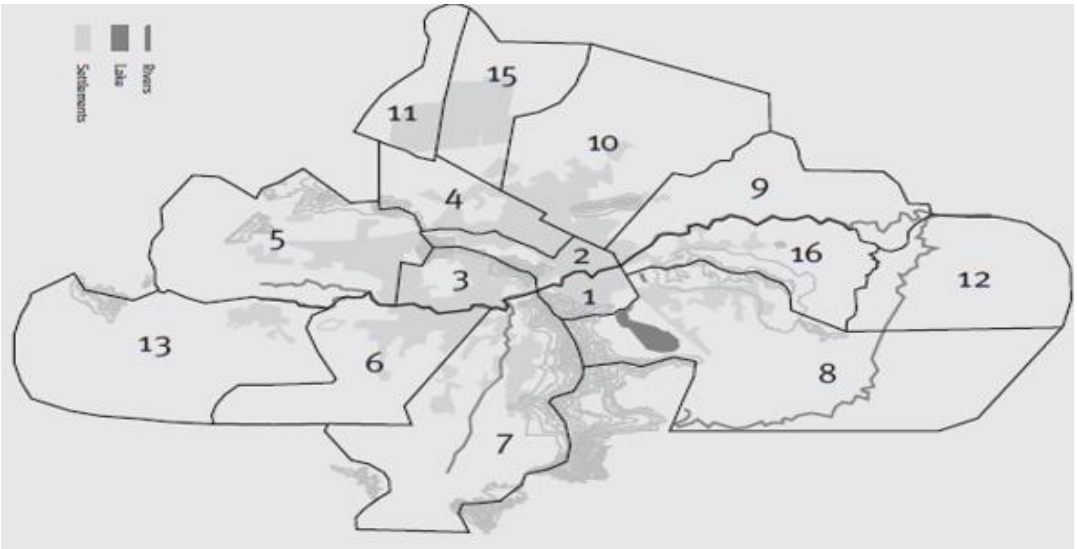


Figure 3-13: Kabul City 16 Districts Map, source: Calogero, P., 2011b.

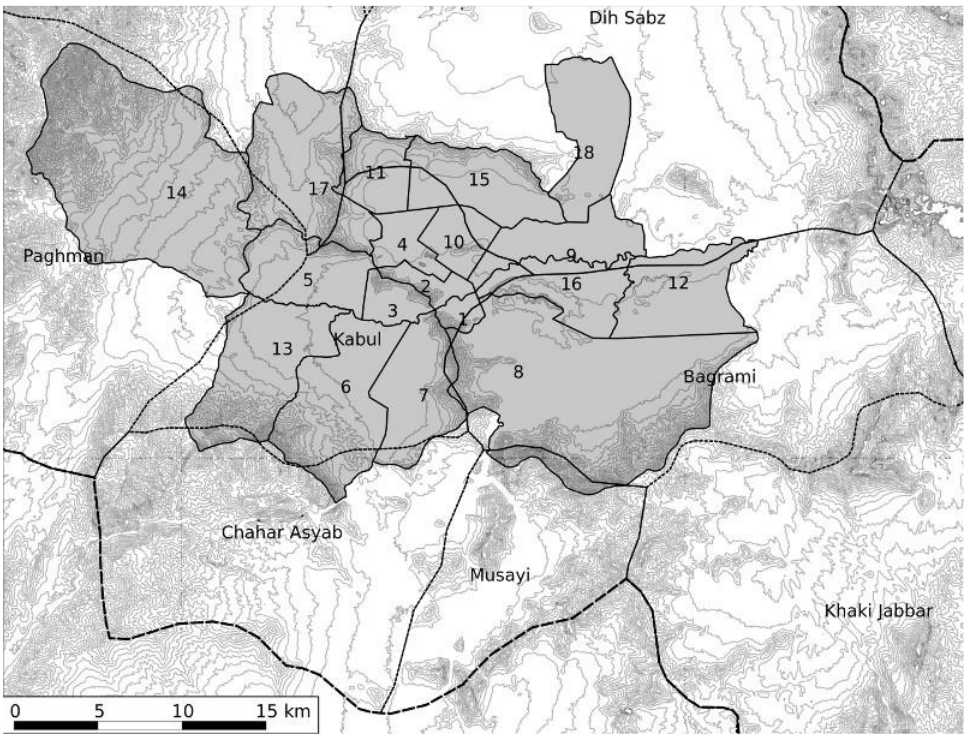


Figure 3-14: Kabul City 18 Districts Map, source: Calogero, P., 2011b.

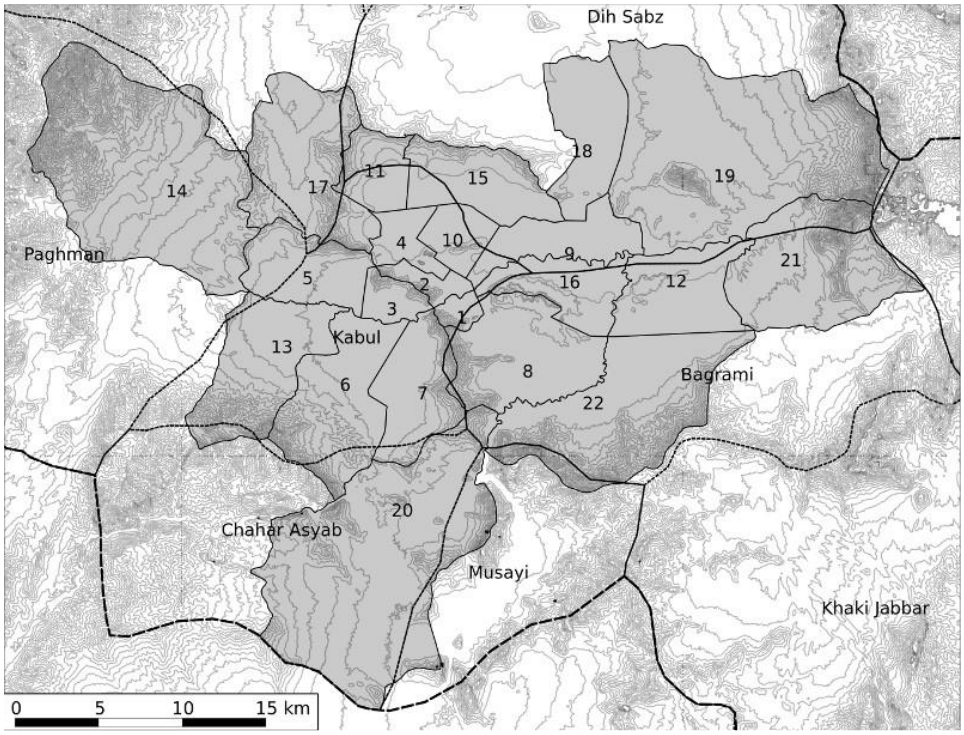


Figure 3-15: Kabul City 22 Districts Map, source: Calogero, P., 2011b.

3.2 The Previous Master Plans for Kabul City

Managing population growth and urban expansion was difficult for Kabul's architects and planners. Soviet architects planned and built several Afghan projects at the Central Scientific Research and Design Institute for Town Planning in Moscow in the first half of the 1960s. Russian planners passed on their knowledge of urban planning to Kabul planners. They proposed ways to organize settlements based on urbanist principles that had only recently been developed in the Soviet Union following Khrushchev's election. Between 1960 and 1980, three master plans were developed. In addition, structure plans and detailed plans are created based on the master plans. Table 3-3 contains detailed explanations of each master plan.

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Table 3-3: Kabul City Master Plans based Russian Planning, source: JICA, 2011.

Master Plans	Approved Year	Horizon Year	Estimated Population (Million)	Covered Area (Sq.km)
First	1962	1987	0.8	237.8
Second	1970	1995	1.4	299.0
Third	1978	2002	2.0	323.3
Fourth	2012	2025	4.5	1,024.0
Fifth	2018	-	4.5	1,024.0

3.2.1 First Master Plan

The First Master Plan was prepared between 1962-64. The first master plan was the first production of the Kabul and Soviet planner's partnership. The plan was first ratified in 1962. The plan was prepared for a span of 25 years. The high urbanization rate made the planners think about a huge number of populations, about 0.8 million. The urban area covered an area of 23,780 hectares.

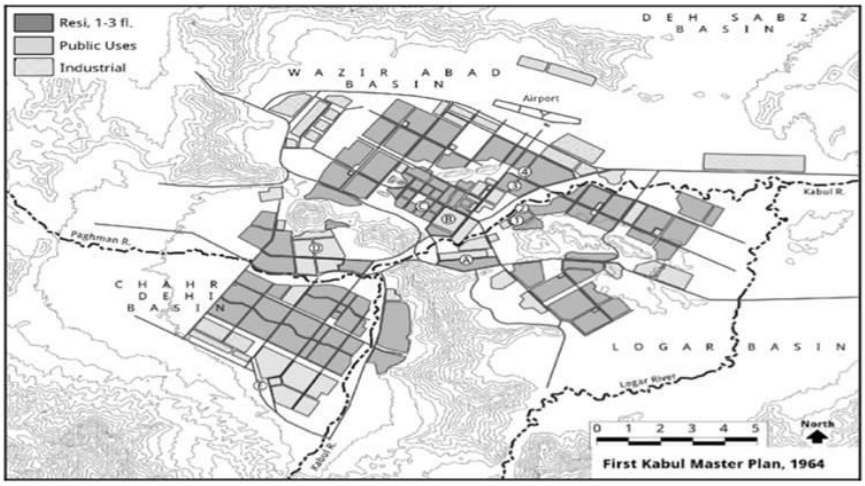

Figure 3-16: Kabul City Master Plan 1964, source: Calogero, P., 2011b.

The main goal of this plan was housing, so the USSR established the Housing Plant to achieve this goal. Most of the Old City was replaced in this plan by typical Soviet-style apartment buildings in Micro-region (Micro-rayon) for public use. The master plan included the construction of the Wazir Akbar Khan residential area, the Indra Gandhi Hospital, and the reconstruction of some areas of Shahr-e-Kohna. The plan was carried out with insufficient oversight by the authorities. As a result, in violation of the master plan, some areas of the city, such as Sayed Noor Mohammed Shah Mina, Khoshaal Khan, Khair Khana, the three phases of Parwan, and Wazir Abad, were distributed among people and developed informally. The recreation hills were overrun with unplanned settlements.

3.2.2 Second Master Plan

The second master plan was a revision of the first master plan, which was prepared between 1970 and 1971 with the help of Soviet experts and the United Nations Educational, Scientific, and Cultural Organization (UNESCO). Over a 25-year period, the plan covered 29,900 hectares and was designed to house 1.416 million people. Within this plan, the first two detached house systems, which are most similar to the Afghan traditional system, were developed. 1st. Khairkhana Mina Khushal Khan the recreation hills were overrun with unplanned settlements.

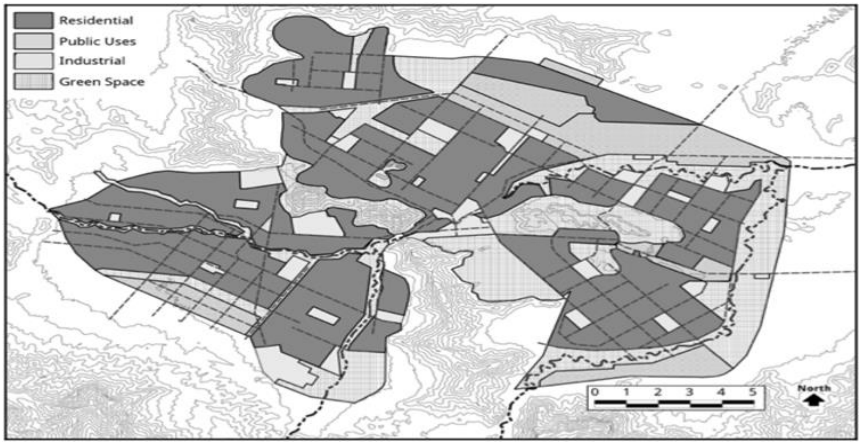

Figure 3-17: Kabul City Master Plan 1970, source: Calogero, P., 2011b.

The town was divided into four main sectors (North-West, North-East, South-East, and South-West) in the l971 Master Plan, which were further subdivided into sub-sectors. These were then subdivided into neighborhood units. Each sub-sector included a central service area with shops, restaurants, hotels, cinemas, a mosque, a cinema, a concert hall, banks, offices, a public park, and an industrial area. Each neighborhood had a small center with a kindergarten, shops and services, schools, and a mosque.

3.2.3 Third Master Plan

In 1976, the third master plan was revised and prepared and approved in 1978. The plan covered 32,330 hectares over a 25-year period for a population of two million by 2002. The Kabul city master plan of 1978 included a general plan, ten structure plans, and numerous detailed plans (JICA, 2009). In particular, the third master plan is based on the Soviet social planning concept based on Sir Ebenezer Howard's ideas and concepts (Calogero, P., 2011b). This plan managed urban growth and city expansion within the boundaries of the planned residential district. Because of the low land prices at the time, they adopted a land acquisition policy to implement the social concept within Kabul City. The basic points include appropriating or acquiring properties, exchanging properties, and carrying out the plan for expropriating properties (Toofan, N., & Michihiro, K., 2012).

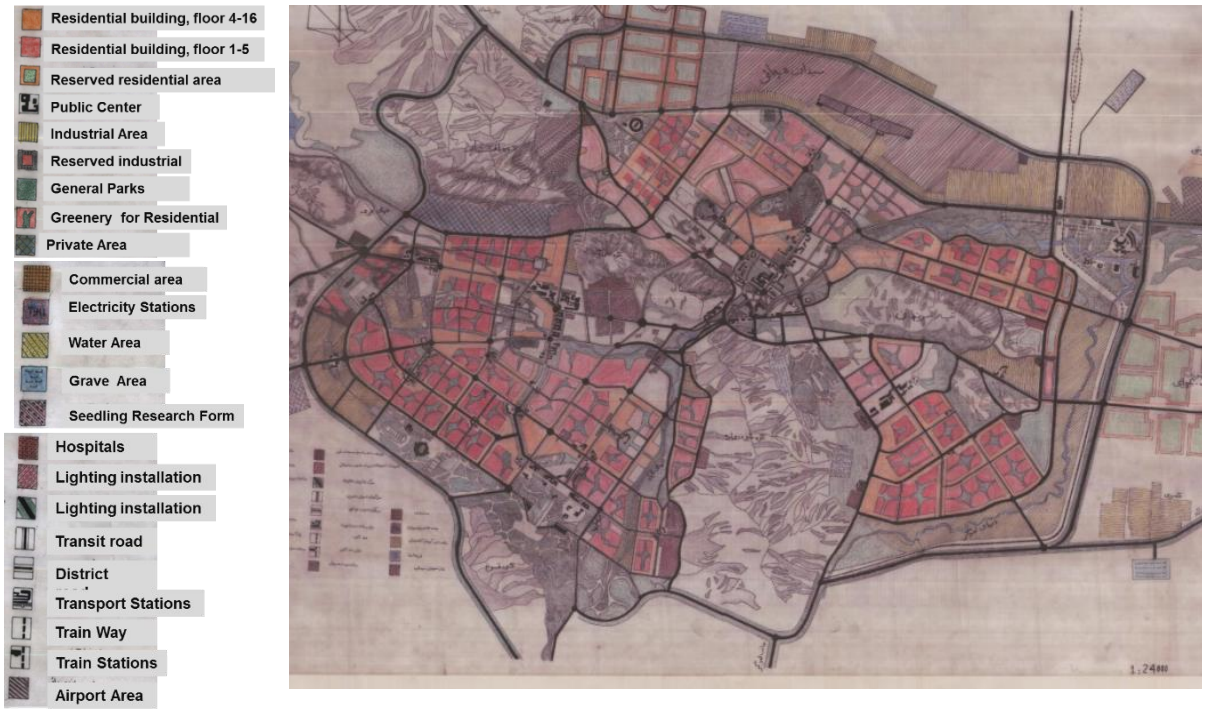

Figure 3-18: Kabul City Master Plan 1978, source: Calogero, P., 2011b.

Table 3-4: Proposed Land use of Kabul City 1978, source: JICA, 2011.

Land Use	Area (ha)	Percentage (%)
Roads and Street	28,780.	8.9
Public Structures	679.0	2.1
Parks and open space	3,557.0	11.0
Individual houses	4,222.0	13.0
Commercial and Residential Buildings	4,574.0	14.1
Mountains & Rivers	16,428.0	50.8
Total	32,338.0	100.0

It encourages much higher residential densities as a means of doubling the city's population without increasing the gross developed land area. Mid-rise densification began in a few areas of Kabul after 2002, but only in the form of private apartment districts or shahraks (Calogero. P, 2011b). Table 3-5 depicts the 1978 Master Plan applied to four zones.

Table 3-5: City Urban Zones, source: JICA, 2011.

No	Urban Zone	Urban Areas		Urban Population	
		Hectares	%	Population	%
1	Northwest	4,920.0	29.3	630,000	31.5
2	Northeast	1,670.0	9.9	210,000	10.5
3	Southwest	7,440.0	44.2	840,000	42.0
4	southeast	2,800.0	16.6	320,000	16.0
	Total	16,830.0	100.0	2,000,000	100.0

This Master Plan was divided into four urban zones with populations ranging from 210,000 to 840,000 according to Tofan Nabizada, 2012.

1. The South-West Zone consists of 13 projects covering 7440 hectares of land and housing 840,000 people. Kushal Khan Mina, Qalai Wahed, Dasht Barchi, Qalai Qazi, Darul Aman, Karte 4, Karte 3, De Bori, Jamal Mina, Chilstone, Ayob Khan Mina, Karte Mamorin, and De-Dana are among those that were planned and implemented.
2. The Rahman Mina Project (Shashahid and Karte- Naw) has been allocated 2800 hectares of land in the South-East zone for 320,000 people.
3. North-West zone projects include the North side of the airport project, the BeBe Mahro project, and the West of the Airport project, as well as Qasaba, Taimani, Wazirabad, WazirAkbarkhan, Share-Naw, Parwan 3, and the Khairkhana Project.
4. The North-East zone is being considered for projects such as Micro-rayons 1, 2, 3, 4, and Pule-Charkhi Industrial areas, Qalai Zaman Khan, with an area of 4920 hectares of land for 630,000 people.

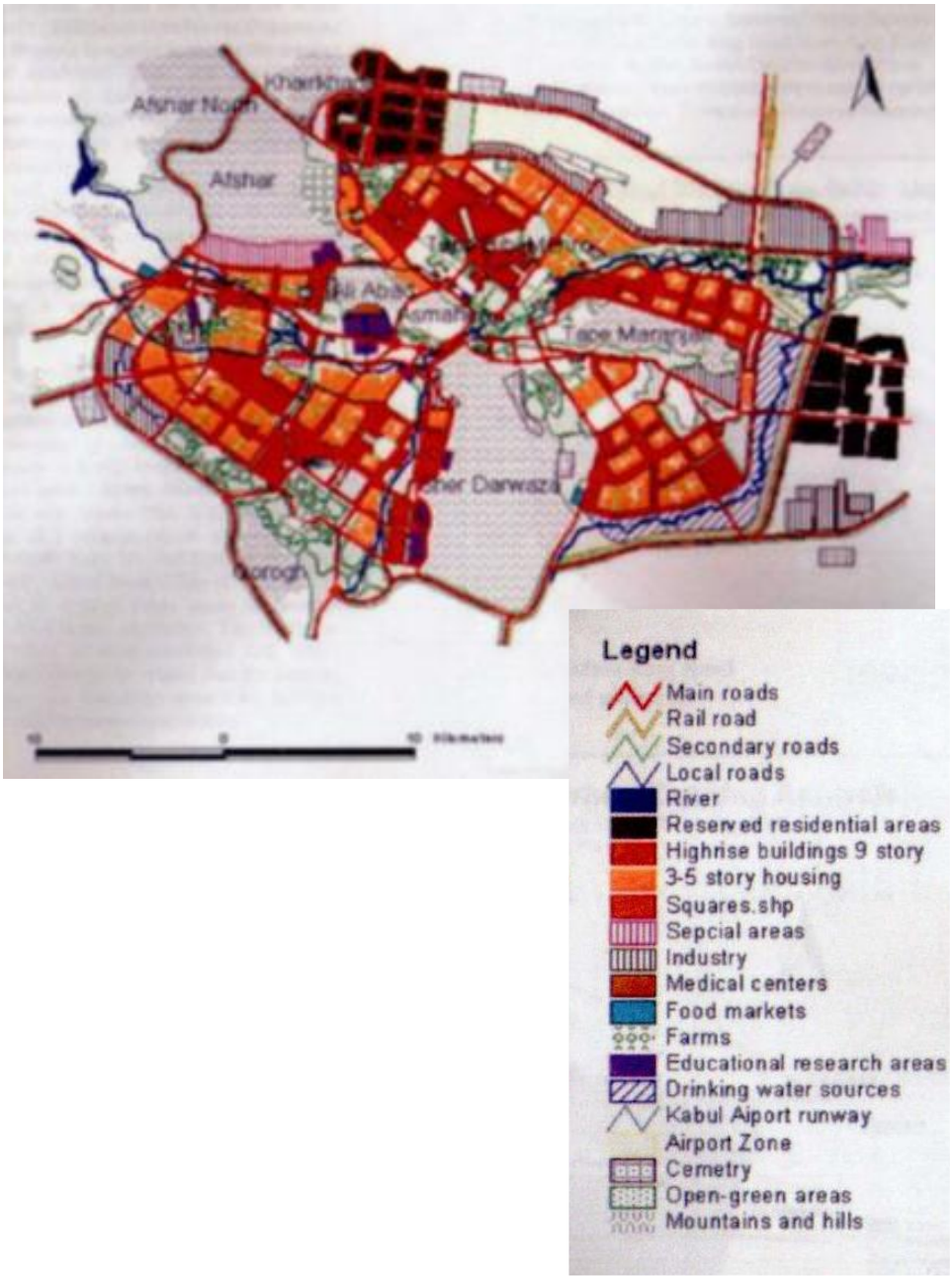

Figure 3-19: Third Master Plan-Land Use Analysis 1978, source: ICT, 2007.

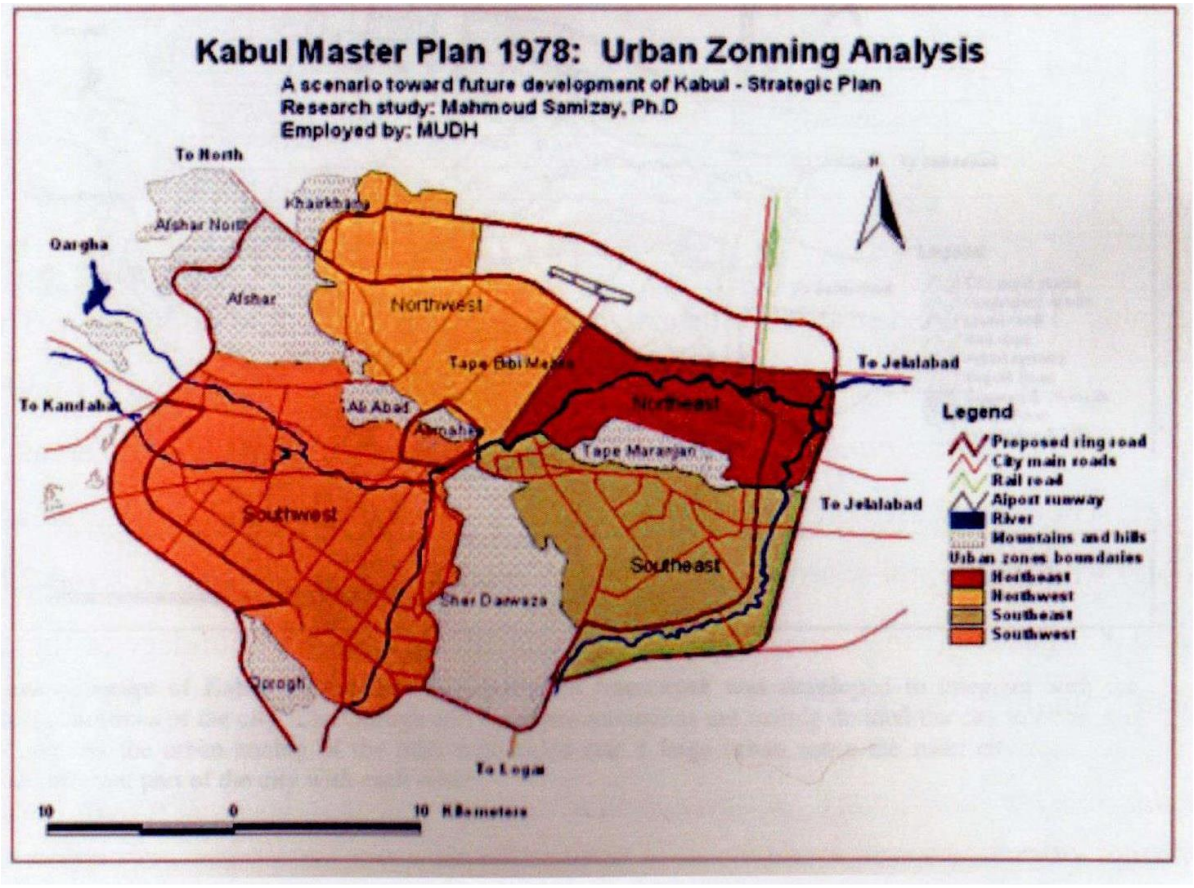

Figure 3-20: Kabul City Four Zones Map, source: ICT, 2007.

As a conclusion to the third Master plan, the following key concepts were identified:

1. Kabul City is divided into four zones for better land use classification.
2. Model of public services with multiple focuses.
3. Transport in its entirety (ring road and inner ring road).
4. Garden City has lots of greenery and green strips for a better environment.
5. Expansion of the city to the east (Ibid).

3.2.4 Fourth Master Plan

As previously stated, the 1978 Master Plan was suspended by presidential decree in 2005. Because Kabul City lacked a working master plan, there was no shared vision or direction for reconstruction and future development. Because of the unsecured status of land and properties for living and business operations, the absence of a city master plan impacts citizens' lives and businesses' economic activities. Two planning studies for Kabul are underway. Intercontinental Consultants and Technocrats Pvt. Ltd. are providing Consultancy Services for the Preparation of a Development Plan for Kabul, Afghanistan, supported by the World Bank. ICT (2007) conducted a planning study that proved to be incredibly popular.

The Kabul Metropolitan Area Urban Development Master Plan is the other (KMAUD). This planning study was funded by the Japan International Corporation Agency and conducted in 2008 and 2009. The primary goals of these studies differ. The results of these studies failed to establish a master plan for Kabul City. ICT identified development projects for Kabul. The KMAUD Master Plan, on the other hand, was to develop a regional development plan centered on the coordinated development of the existing city and surrounding cities adjacent to it

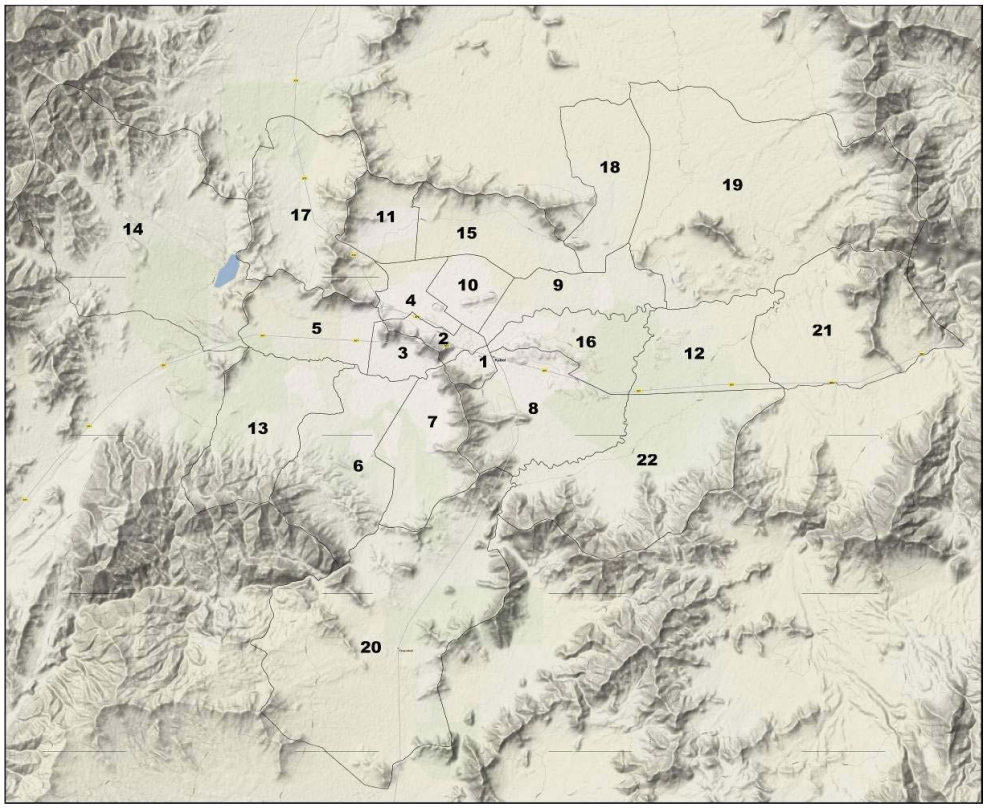

Figure 3-21: Target Area of Kabul City Master Plan for 2025, source: JICA, 2011.

The master plan's goal was to establish the city master plan by utilizing all of the supplementary analysis and planning work from both planning studies. The purpose of the master plan was to replace the third Kabul city master plan, which was approved in 1978. Figure 3-22 depicts the master plan's target area, which consists of 22 districts. The area is approximately 1023 sq. Km. The Square, which is part of the upcoming city development area, overlaps with districts 18 and 19. According to the KMAUD master plan, the target year for revising the master plan is 2025. Key figures for the development framework will be established for the years 2015 and 2020, as well as the target image of land and major infrastructure development.

Kabul province's population has grown significantly since 2006, owing to a large influx of returning refugees and other immigrants. Kabul province's population increased from 3.14 million in 2006 to 4.3 million in 2008 (JICA, 2011). Meanwhile, the urban population increased from 2.55 million to 3.6 million during this time. During the same time period, the rural population increased from 0.58 million to 0.7 million. According to ICT, the gross population density is 4,432 persons per km2. The JICA Master Plan was finally completed in 2011 and approved in 2012.

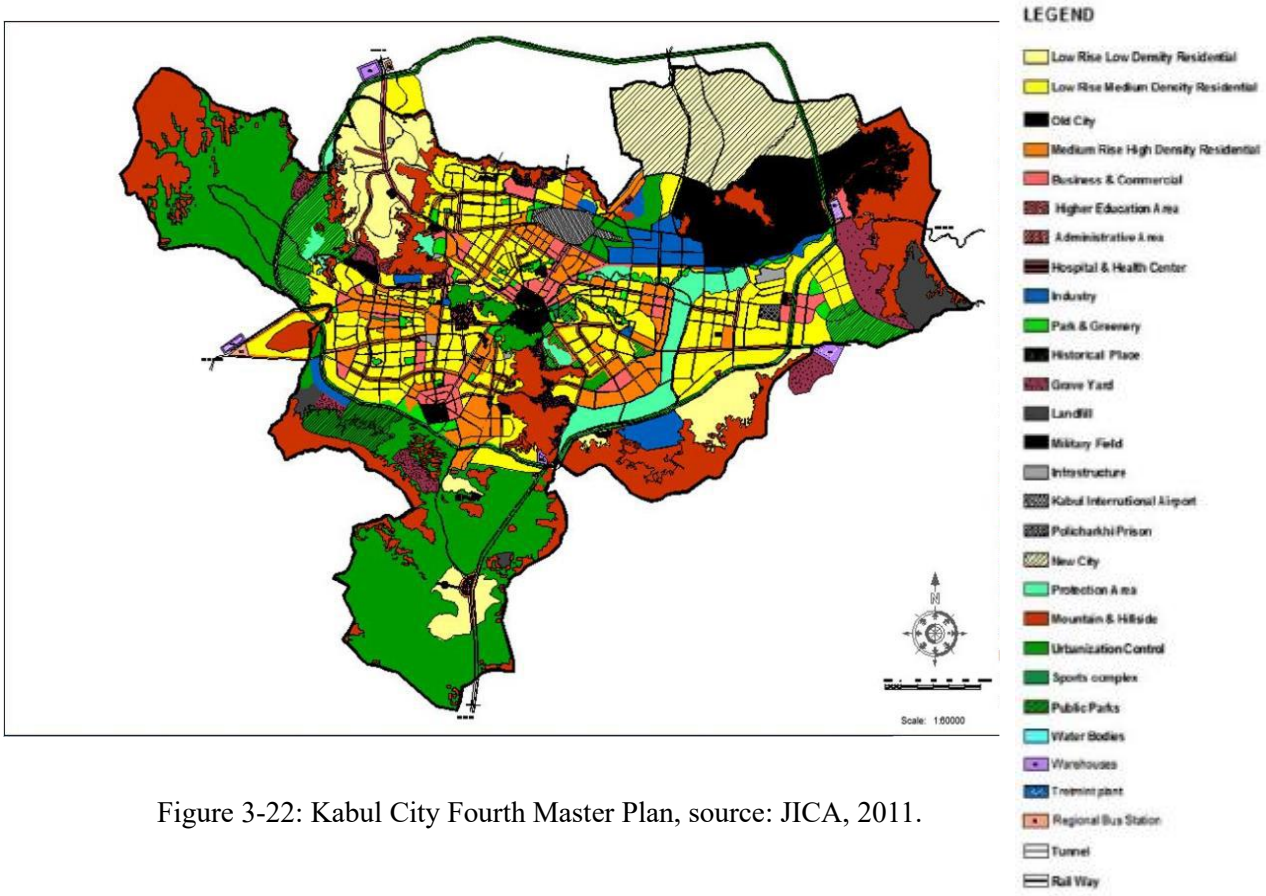

Figure 3-22: Kabul City Fourth Master Plan, source: JICA, 2011.

JICA's master plan recommended several key points for Kabul's future urban planning and management system. The master plan identified various types and levels of urban problems in Kabul. Citizens face difficulties in their daily lives as a result of traffic jams, unstable water and power supplies, a lack of access to education, health, and other public services, and so on. These are primarily due to infrastructure and urban development project delays.

In the case of Kabul City, however, rapid population growth has occurred, on top of the need for rehabilitation of existing infrastructure, almost all of which was heavily damaged during the conflict. As a result, unplanned settlements now cover the majority of the city's built-up area, complicating infrastructure development even further. It is clear that the current urban planning and management system is ineffective at addressing these vast and serious urban development issues. Here are some highlights from the JICA master plan analysis:

1. The formal building permission procedure is based on a system developed in the former Soviet Union. The master plan is developed first, followed by the structure and detail plans. Before any buildings could be built on this officially acquired land, the building permit process would be followed.

2. The issue with the conventional system is that most policies were developed based on the third master plan (1978), which was ignored because it did not correspond to the current situation. All structure and detailed plans are rendered obsolete and impractical. These plans need to be revised, but doing so will take a significant amount of time and money.

3. Need to deal with market mechanisms: Rapid population growth is expected to continue for some time. The government should shift its policy from direct preparation of developed land to control and guidance of land use practices practiced by private entities and citizens. In the municipality's current and future urban areas, a set of land use control systems must be implemented in the urban planning and management system.

Proposed Urban Planning and Management: Many cities around the world have developed and implemented two types of land use control systems:

1) A Master Plan.
2) A Zoning Plan.

Kabul city is currently utilizing Kabul Urban Design Framework (KUDF), which is the fifth acting master plan. Besides, nowadays work is ongoing to prepare zoning plans for each district. The first draft for each district is completed and provisional extension of road is under assessment.

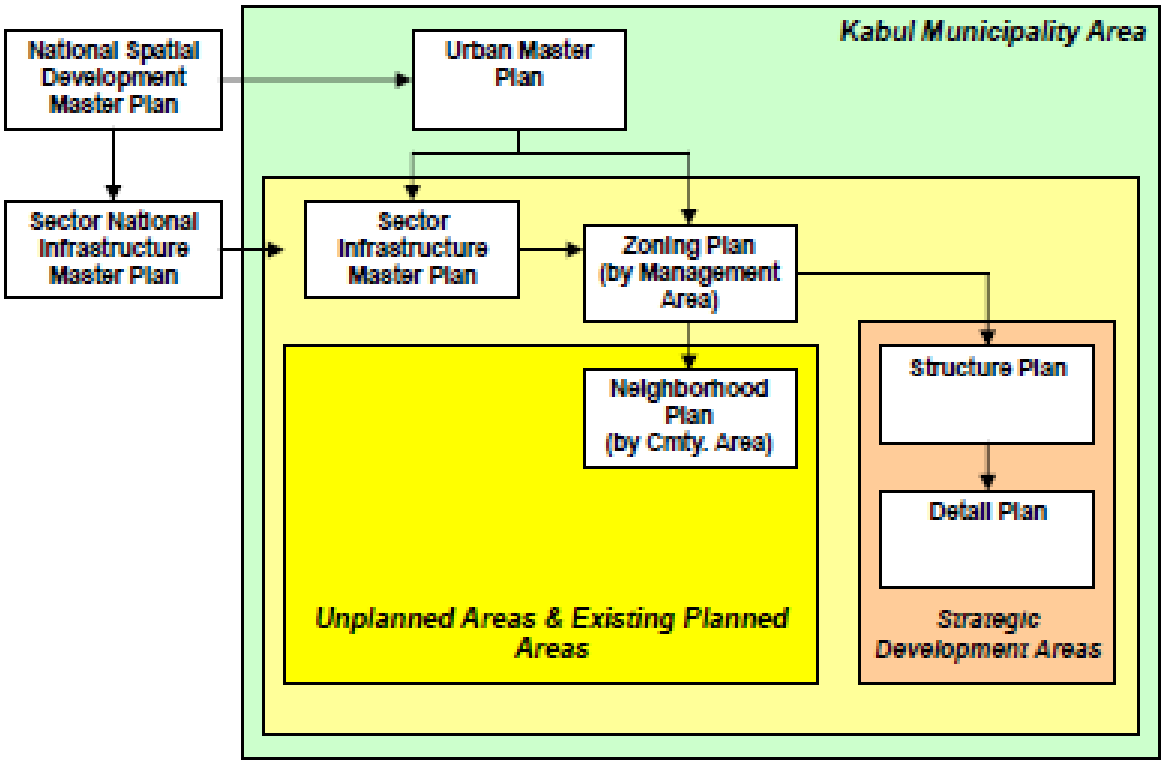

Figure 3-23: Proposed Urban Planning and Management Structure, source: JICA, 2011.

In general, the master plan depicts the city's future vision. In contrast, the zoning plan provides information on regulations that apply to a portion of land within its coverage area. Figure 3-23 shows that the structure plan and detailed system are only allocated to strategic development areas.

3.2.5 Kabul Urban Design Framework (Acting Fifth Mater Plan - 2018)

Kabul's Urban Design Framework establishes a vision for Kabul's future growth and evolution. This framework provides strategies and design guidance across multiple scales and topics to help Kabul move forward. The framework is extremely informative and useful, and the chapters serve as supplementary sources alongside one another. It is a citywide framework in which strategies have been proposed primarily on the basis of corridor scale, spines, and small-scale roads. The KUDF's documents acknowledge that it is intended to be a framework for growth and development rather than the final word on Kabul's future.

This Urban Design Framework establishes the vision, provides key development strategies, and articulates a future path for Kabul's growth and evolution. It is a more inclusive, ecologically resilient, and economically prosperous city. The Ministry of Urban Development and Housing (MUDH), Kabul Municipality, the Central Regional Independent Development Authority (CRIDA), and all other relevant agencies have been tasked with further developing and assisting with the effective implementation of this plan and its accompanying documents. The framework, which includes six chapters, has been officially signed by the President of the Islamic Republic of Afghanistan. As a result, all contradictory urban plans and documents are deemed invalid as legal documents for development control. They should only be regarded as technical resources.

This updated vision for Kabul will guide its future development. As recent events paved the way for the kind of society and city envisioned by King Amanalluh many years ago, the twenty-first century will be a watershed moment for Kabul. This plan updates that vision for modern use and offers strategies to make it a reality. The corridors should also be the first to receive major infrastructure investments. These three layers of investment, when combined, will transform corridors into catalysts for regeneration. Corridors are already an important part of the urban fabric of Kabul. They define the structure and image of the city, along with mountains and water. However, corridors can become much more than just major roads; they can become places where the city gathers, where substantial commercial activity occurs, and where neighborhood gateways are defined. Corridors, as essential components of the urban experience, necessitate a comprehensive approach to cultivating transportation options. Extensive transit services should be built into the design of these roads, with dedicated lanes and sturdy station shelters. The public realm should be designed to meet the needs of pedestrians, including active ground floors, minimizing conflicts with drivers such as curb cuts and dangerous intersections, and incorporating elements such as tree canopies, street furniture, and gathering places.

Many of Kabul's major thoroughfares serve as both urban and regional highways. Because there is no convenient way to bypass the central city, they funnel both traffic and commuters into the city,

causing a major bottleneck. A planned ring road connecting each of Kabul's major highways on the outskirts of the city will relieve some of the congestion and pressure on the corridors. The adjacent urban fabric on the city's outskirts is typically made up of low-density housing and light industrial uses.

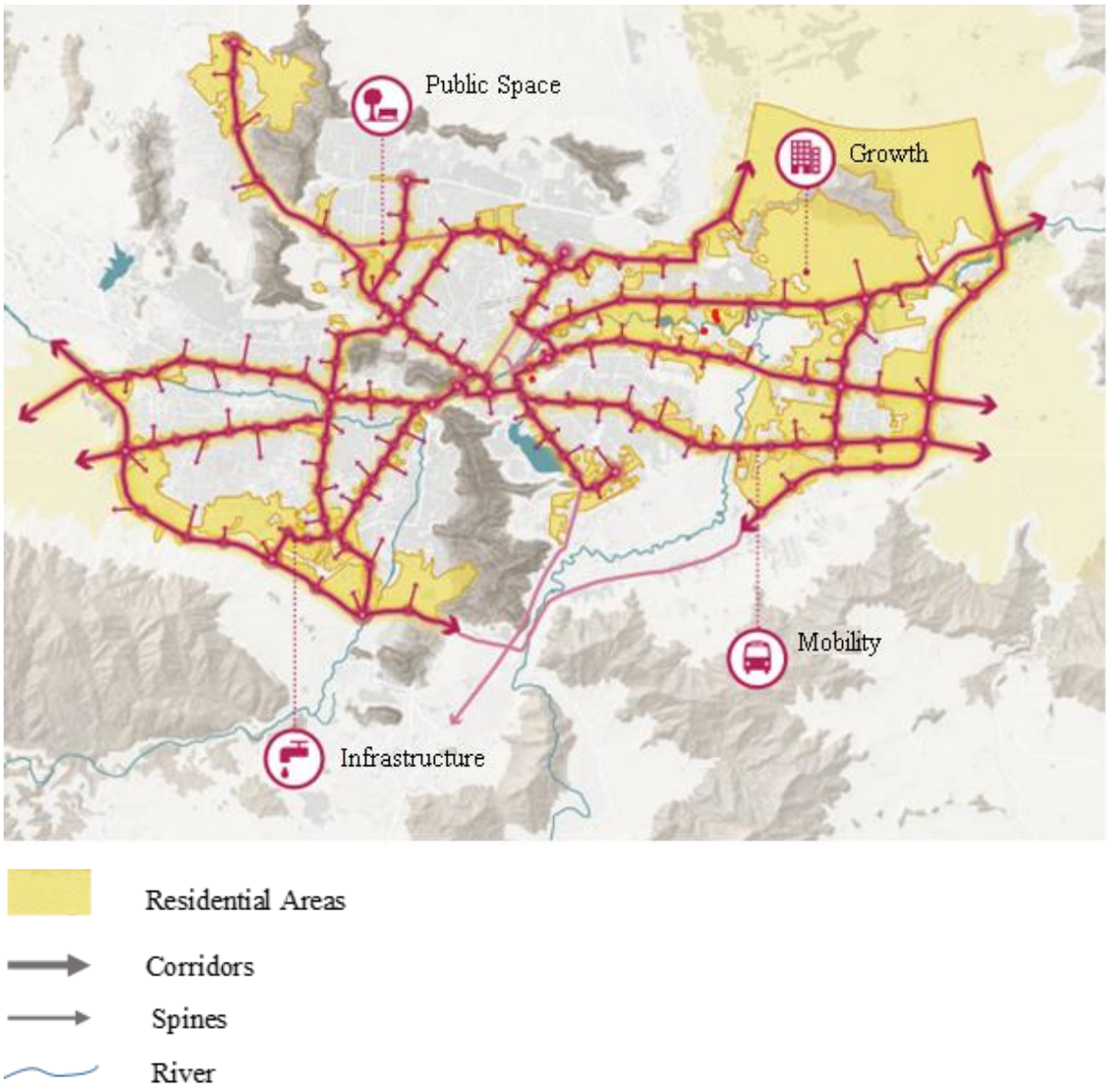

Figure 3-24: Kabul City Corridors, source: Sasaki Associates, Inc., 2018.

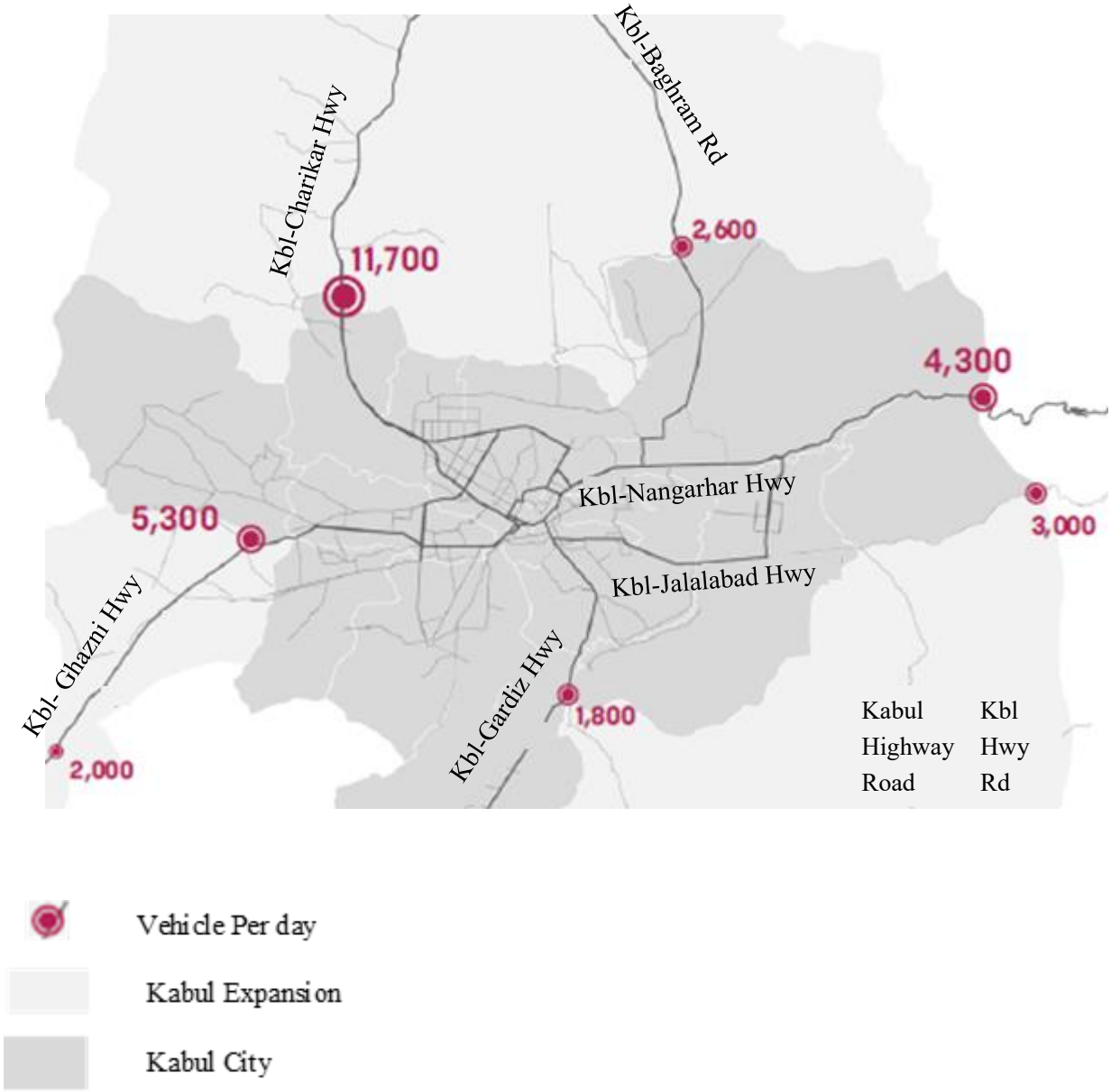

Figure 3-25: Regional Travel Corridor, source: Sasaki Associates, Inc., 2018.

Kabul Urban Design Framework consists of 6 chapters as a supplementary source for technical planning including a Citywide framework, infrastructure, implementation strategies, and two corridors. As already mentioned, corridors will be the primary location for growth and development within the existing city. The mixed-use development, with active ground floors and office and residential on upper

floors, will provide economic opportunity, make daily needs more accessible throughout the city, and establish legibility and density complemented by high-quality transit. Along each corridor, nodes are located at key intersections. These nodes will provide high-density development with transitions to Neighborhood scale development.

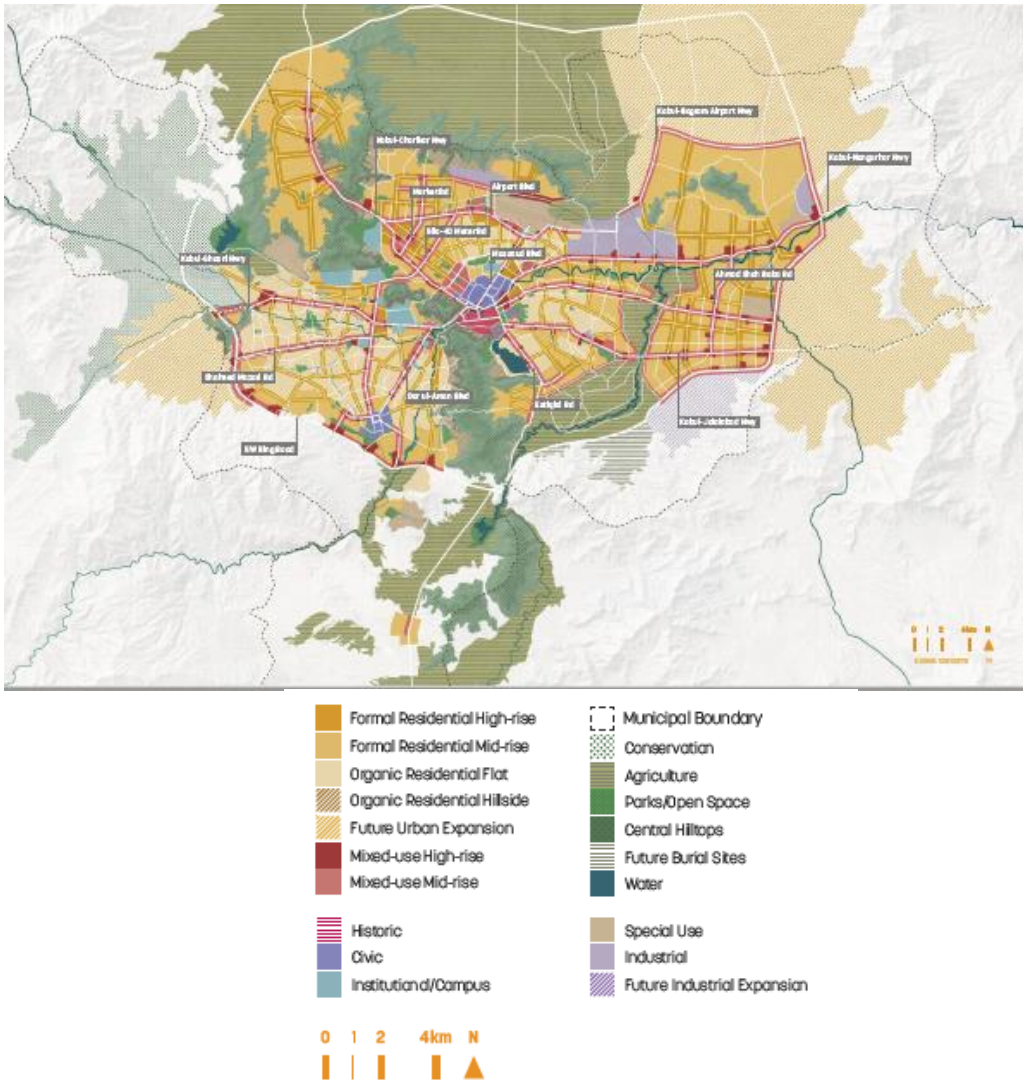

Figure 3-26: Kabul City Future Development Plan, source: Sasaki Associates, Inc., 2018.

Design Principles:

Corridors should be integrated into the city's fabric to be effective. Key intersections should not only serve as locations for high-density development and transit stops but also as entry points into neighborhoods. Corridors are already defining parts of Kabul's urban fabric. Together with mountains

and water, they define the city's structure and image. But corridors can become much more than major roads; they can become places where the city gathers together, where major commercial activity occurs, and where gateways into neighborhoods are established. As integral parts of the urban experience, corridors require a comprehensive approach to transportation options. Expansive transit services should be built into these roadways, with dedicated lanes and robust station shelters. Corridors should also become the primary place for intensive growth. Land adjacent to these corridors should be actively developed for high-density housing, mixed-use development, and public-facing institutional uses. These corridors should also be the first places to invest in major infrastructure.Taken together, these three layers of investment will turn corridors into catalysts for regeneration.

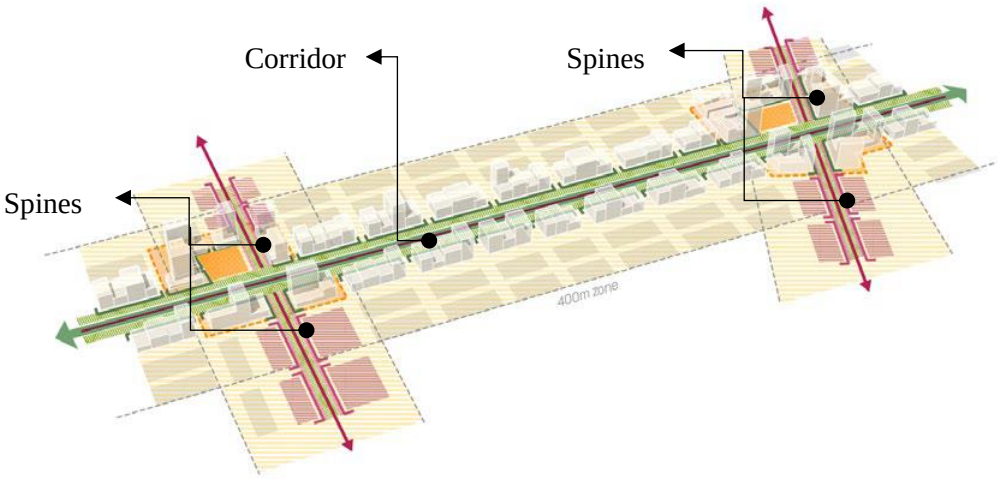

Figure 3-27: Corridor and Spines Sample, source: Sasaki Associates, Inc., 2018.

The secondary spines that connect these gateways to the neighborhoods allow for low-intensity commercial development as well as the development of secondary infrastructure networks. Finally, the height and mass of development should gradually decrease as one moves away from the corridor. This is so that it matches the scale and character of neighboring neighborhoods. Matching the scale of existing development can often leave opportunities for architectural and programmatic innovation. A network of secondary spines serves as main streets and auxiliary connections within and between neighborhoods. Finally, local roads remain modest in scale, primarily focused on slow neighborhood traffic.

Phasing and Implementation:

Catalytic corridors are complex systems, experiences, and opportunities. This level of complexity necessitates a methodical approach to implementation and phasing. In general, corridor development should begin with determining the best location for key nodes. These nodes serve as hubs for transportation, commerce, and neighborhood access. Construction on infrastructure and transit improvements can begin once nodes are identified and public land is assembled. As a result of these investments, private development can take place within a regulatory framework based on the regulatory framework established by this and other planning initiatives. Initial investments in corridors will eventually serve as the building blocks for the city's regeneration. The following steps are the phasing strategies:

1. Land acquisition and readjusting for Nodes and Strategic Sites
2. establishing regulatory standards for the areas along the corridors
3. Construction of BRT and corridor infrastructure
4. TOD for Strategic Nodes
5. TOD for Remaining Nodes
6. Infrastructure Spines
7. Spine formation

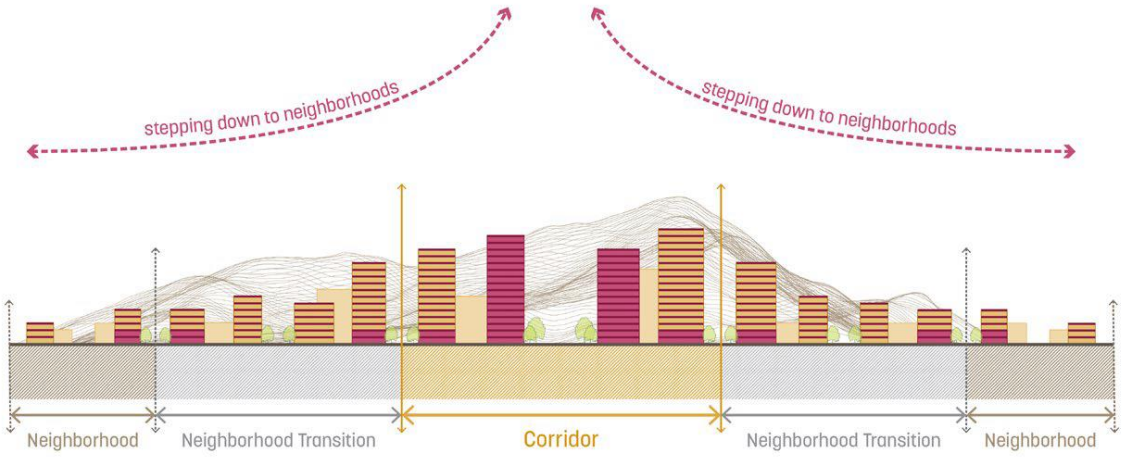

Figure 3-28: Skyline, height, and massing development, source: Sasaki Associates, Inc., 2018.

Land Use and Housing Typology

Typology, as the definition makes clear, is a method of categorizing the built environment in accordance with common traits like population density, building height, land use, or street network. Development typologies classify a development based on its physical form, unlike traditional land uses. Development typologies can make much more specific recommendations about the character and urban design quality of the city by taking the physical form into account. This is at a level where it can be applied across the entire city. In this regard, it's helpful to consider typologies as a collection of urban design principles rather than specific design specifications, data analysis, and urban planning. This is in significant urban areas. This gave us a basis for regulatory and policy controls and improved our understanding of Kabul's development dynamics. Land use, urban character, and design tactics combine to form typologies. Meanwhile, regulating design typologies provide general design guidelines that can be translated into detailed zoning planning.

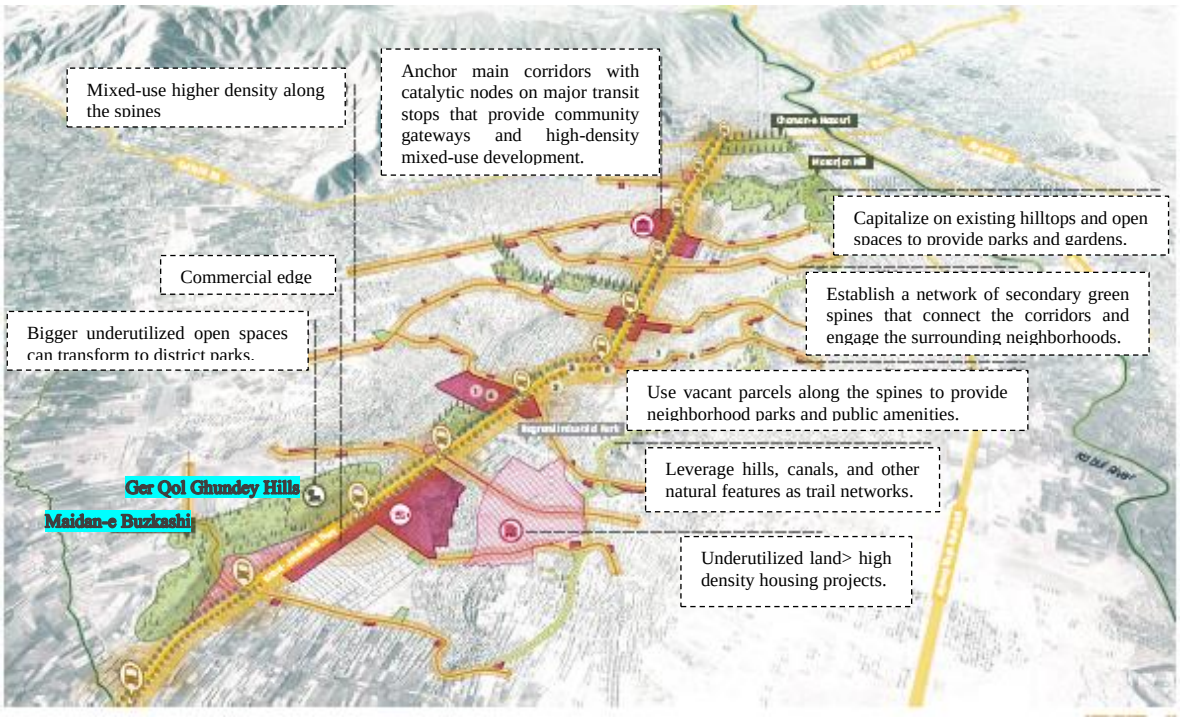

Figure 3-29: Phasing and Implementation Strategy, source: Sasaki Associates, Inc., 2018.

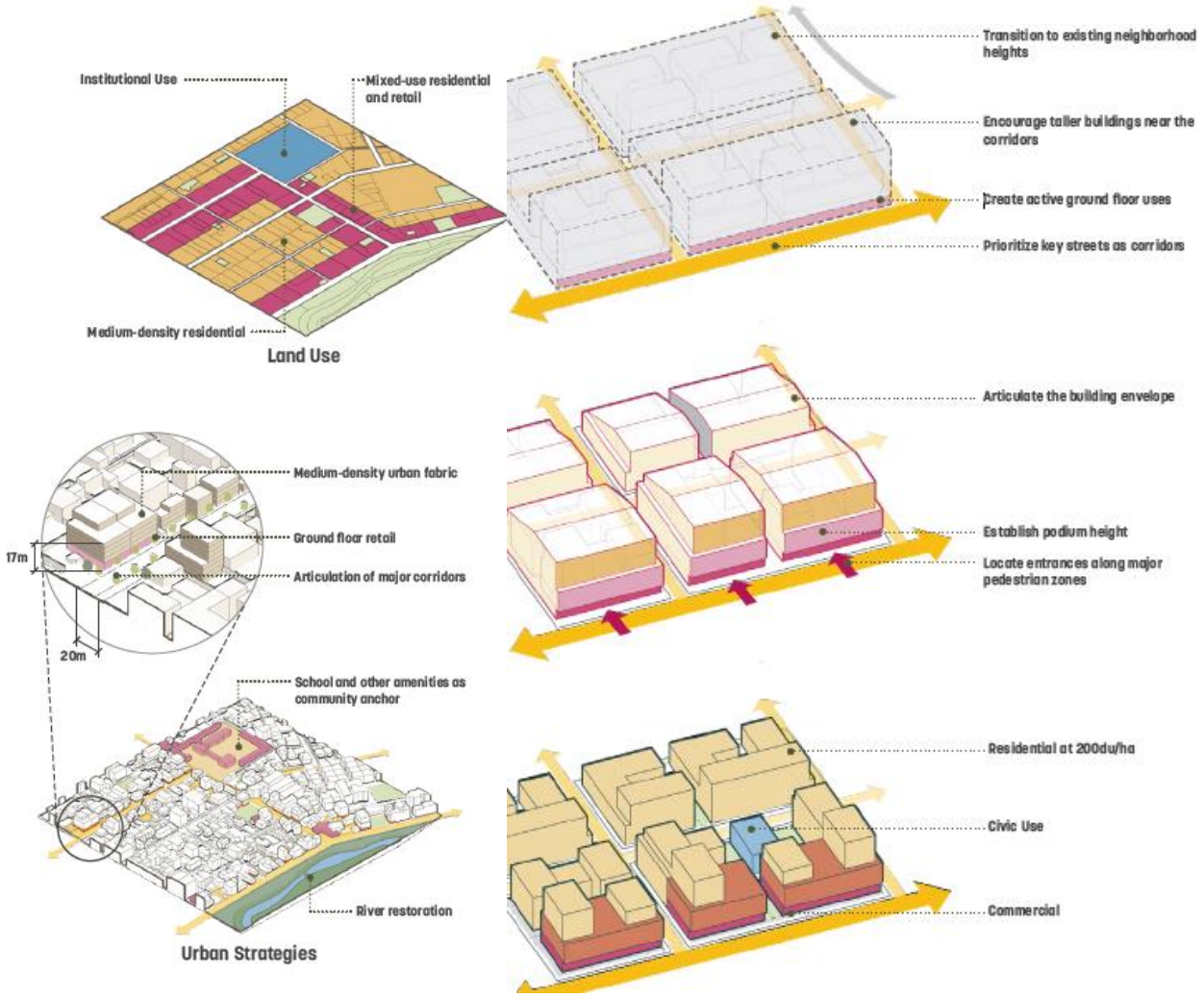

Figure 3-30: Elements of Typology and Regulating Design, source: Sasaki Associates, Inc., 2018.

As we previously discussed, the city's primary development is based on the development of corridors, pines, and nodes. Based on the evolution of these phenomena, the typology of development is also organized. The most heavily developed commercial mixed-use areas are typically found along major transit routes. Multifamily housing should be the default. Meanwhile, areas with a heavy commercial and mixed-use focus are typically found near important thoroughfares and central hubs. Residential areas typically have multiple dwellings and public open spaces. Formal residential high rises include multifamily residential neighborhoods when referring to pure residential structures. With ground floor retail, bigger parks and open space, and community services, they are situated along major thoroughfares and important central locations. A mix of private and public open spaces, neighborhood-

serving retail, and community services make up medium-rise formal residential areas, in contrast. On the other hand, low-rise residential areas are divided into four categories: intuitional or large parcels, organic residential, organic hillside residential, and agricultural lands. Organically grown housing has neighborhoods that are primarily residential, with natural street grids, a mix of taller neighborhood spine development, and traditional courtyard housing. Hillside residential is a term used to describe a neighborhood with open space and public amenities centered around it that is situated on steeper terrain. Construction of low-rise structures with traditional villages and farm-focused housing is permitted in agricultural areas. Kabul Urban Design Framework is currently acting as source of urban planning and being referenced for all urban planning activities.

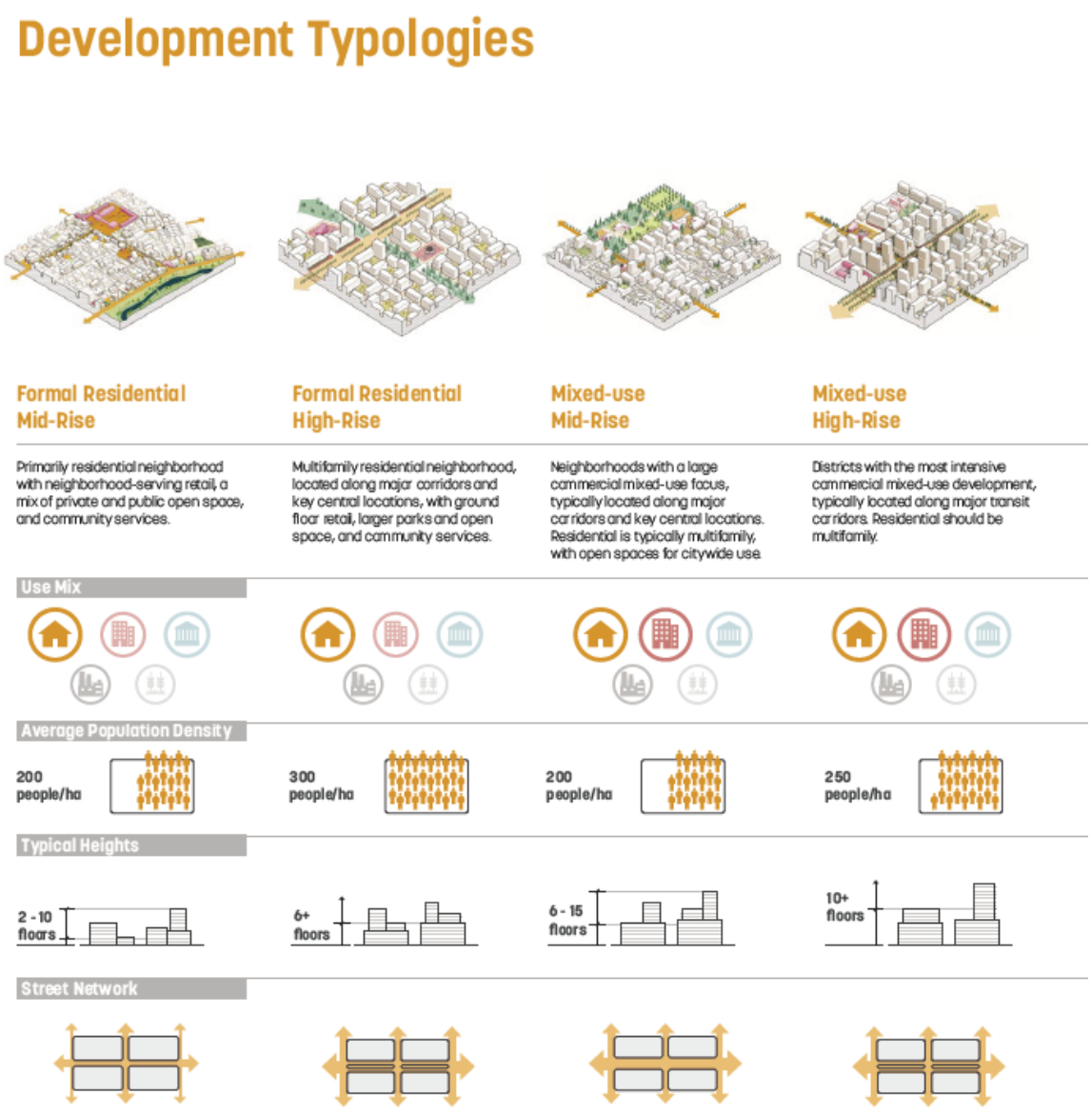

Figure 3-31: Development Typology High Density, source: Sasaki Associates, Inc., 2018.

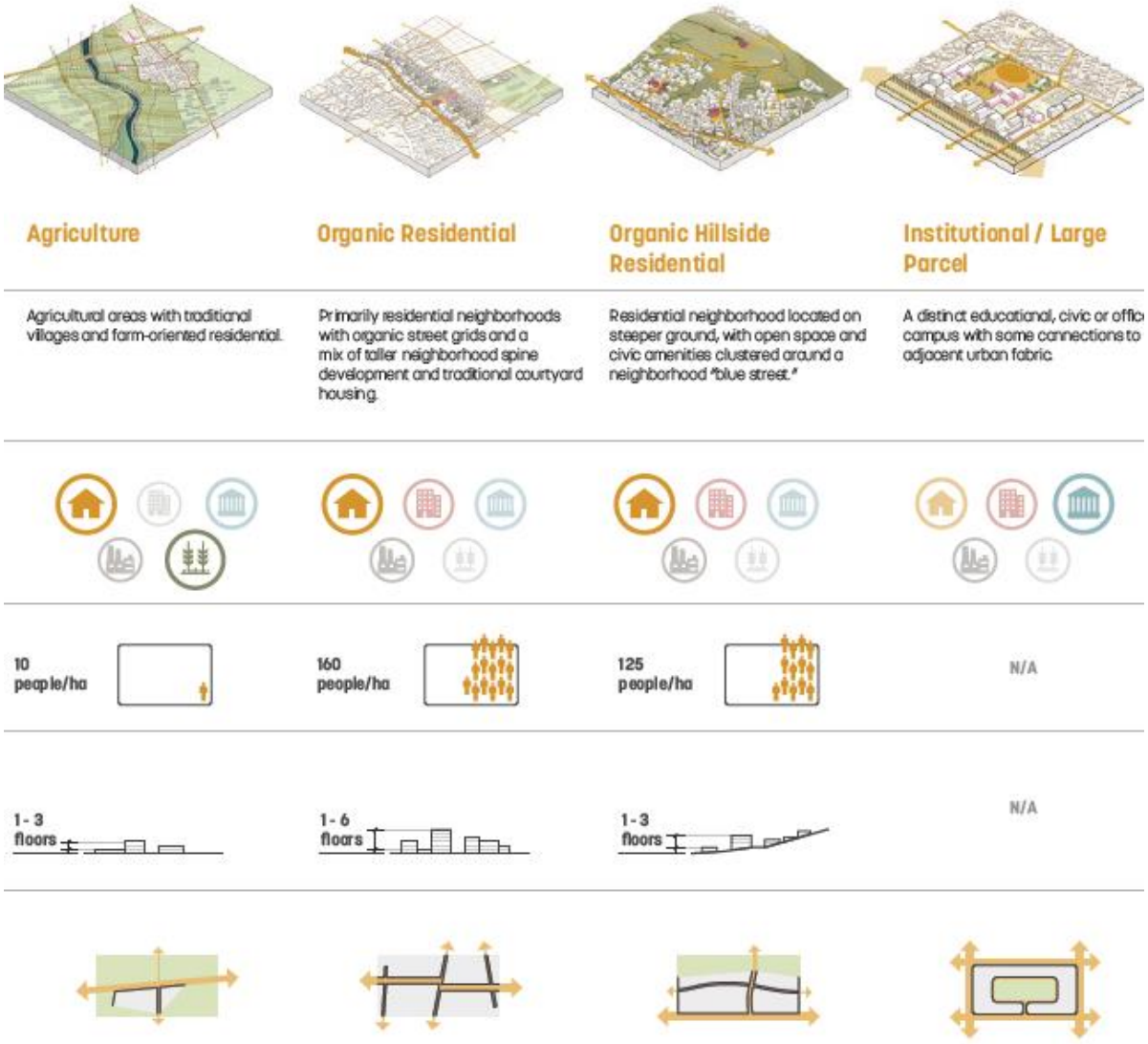

Figure 3-32: Development Typology High Density, source: Sasaki Associates, Inc., 2018.

3.3 Kabul City Settlements

3.3.1 Planned Settlements (Formal Neighborhoods)

Since 1960, Kabul City has been the owner of numerous master plans. The structure of Kabul has been built and expanded in accordance with the 1978 master plan. Numerous structure plans and detailed plans were created considering the third master plan's structure plan 1978. Numerous reports state that about 30% of Kabul's urban areas are planned residential neighborhoods (JICA, 2011, World Bank, 2006). The planned neighborhoods with the highest level of finished detail are Districts 3, 4, 5, 11, and 12. Districts like 8, 9, 10, 16, and 22 have some implementation. Despite the fact that many of these districts have detailed plans in the archive, according to our analysis, they have not been put into action because of rapid urbanization and numerous other issues. There are specific zoning laws and zoning maps for the planned residential area.

A variety of land uses, including residential, mixed-use, parks, open spaces, roads, and industrial, are broken down into sections of the master plan. Low, mid, and high-rise residential neighborhoods are divided into these categories. The architecture and design package for the building owners was created by the planning department. The site must be modified by the owners to accommodate the approved design package. When the building is finished and approved by the relevant departments, the owner is anticipated to receive title deed and occupancy. Apart from that, ownership records are kept in all district and sub-district offices, land organizations, the Kabul Municipality's property department, and the city's archives. Noting that they are being referred to as formal settlements is also important.

3.3.2 Unplanned Settlements (Informal Settlements)

In developing countries, urbanization is essentially synonymous with the growth of informal settlements, particularly in cities like Kabul. Afghanistan's capital and largest city, Kabul, is now home to 41% of the nation's urban population. 82% of this area is thought to be unofficial. In Kabul City, there are 55 informal settlements with a combined population of more than 30,000. (Samuel, H. C., 2012). Although there are informal settlements in every district of Kabul City, the majority of them are concentrated in the Southwest's Districts 6, 7, and 13. These settlements house about 80% of the city's population and encompass about 70% of all residential areas today. They represent a total private capital investment of US$ 2.5 billion, not including land value. Unlike other informal settlements in developing countries, Kabul's informal settlement is well-designed and built with durable materials. Informal settlements are those built after 1978 without adhering to the Third Master Plan and Detail Plans.

The types of settlements vary. Due to a lack of shelter, the majority of them are constructed on public land. The other type of settlement is one built on stolen land. These lands could be public or private, and the gunman created them for their benefit and business. Meanwhile, the houses are being

built on private land because they do not comply with the rules and regulations. There are also settlements where the legal situation is unclear. Not to mention that many of these types of settlements have formal title deeds, even if their status as settlements is unplanned. Their title deed is based on the same legal principles as formal settlements.

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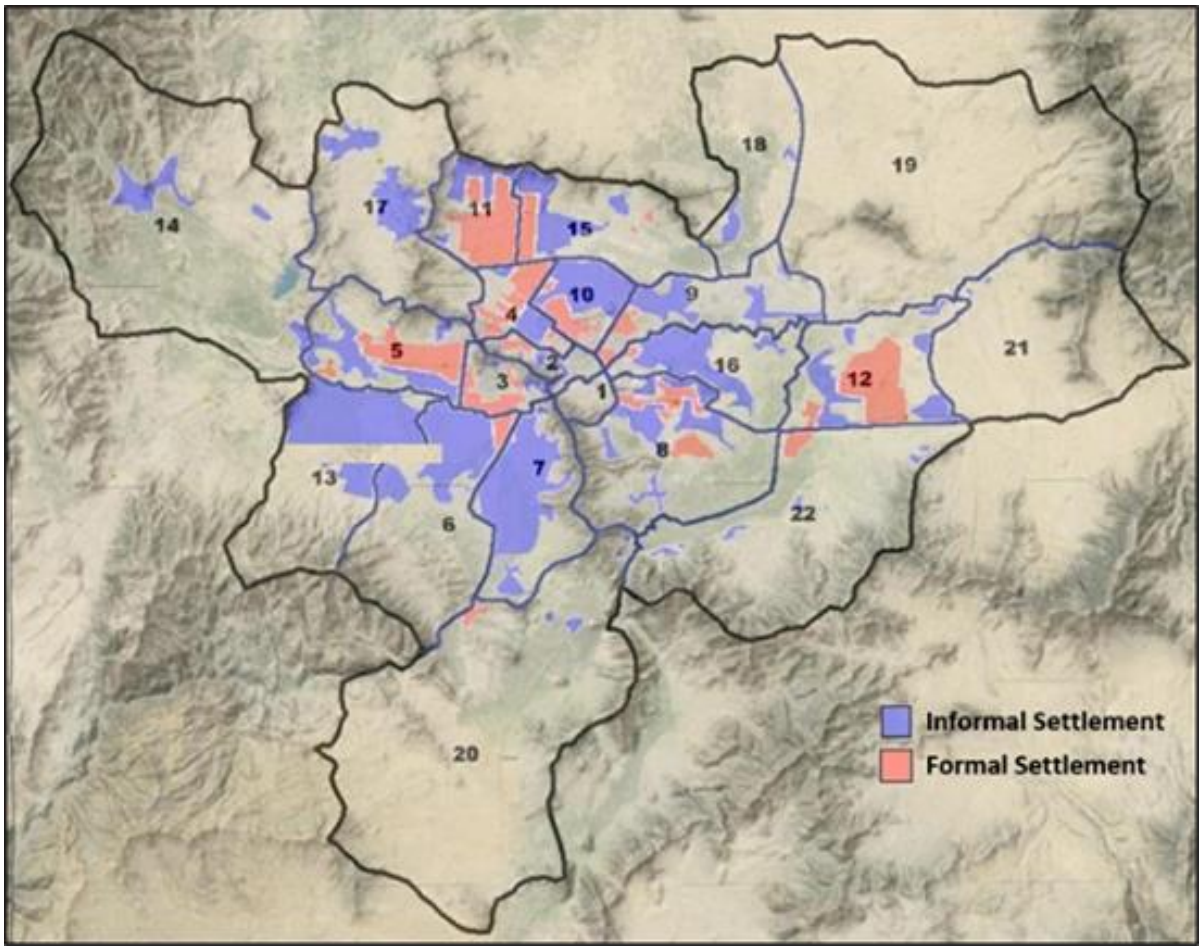

Figure 3-33: Formal and informal settlements, source: Habib, H., & Amiri., 2018.

Table 3-6 shows the details of planned and unplanned residential areas. According to our findings, the majority of the area is built on flat ground. This is evident in our study areas of districts 4, 11, and 15. The Khiarkhana micro-districts are mostly concentrated in Dist11, which is heavily populated and categorized as an urbanized area. Khairkhana has the highest proportion of planned areas compared to other districts. The fifth part of the Khairkhana district, on the other hand, is developed informally and extends to the mountains, along with many unplanned areas.

Table 3-6: Characteristics of Planned and Unplanned Areas in Kabul City.

District	Planned Area (m^2)	Planned Area Ratio (%)	Unplanned Area (m^2)	Un planned Area Ratio (%)	Mountain Area (m^2)	White land (m^2)	Total (m^2)	Urbanization Phase
1	0.0	0.0	1,653,998.0	48.8	1,456,906.0	1,739,096.0	4,850,000.0	Unplanned Urbanization Area
2	1,057,345.0	21.7	871,015.0	17.9	1,961,229.0	2,940,411.0	6,830,000.0	Medium Urbanized Area
3	2,688,207.0	37.8	1,273,414.0	17.9	2,007,794.0	3,140,585.0	9,110,000.0	High Urbanized Area
4	4,977,724.0	42.5	2,891,917.0	24.7	0.0	3,840,359.0	11,710,000.0	High Urbanized Area
5	5,648,850.0	22.5	6,382,916.0	25.4	3,324,849.0	13,103,385.0	28,460,000.0	Medium Urbanized Area
6	928,140.0	2.4	12,790,828.0	32.4	9,698,298.0	25,772,734.0	49,190,000.0	Unplanned Urbanization Area
7	180,601.0	0.7	2,245,519.0	8.1	5,726,095.0	25,197,785.0	33,350,000.0	Un-Urbanized Area
8	4,071,298.0	9.9	11,609,686.0	28.2	7,187,369.0	25,371,647.0	48,240,000.0	Urbanizing Area
9	1,320,472.0	5.4.0	6,782,823.0	27.9	0.0	16,236,705.0	24,340,000.0	Urbanizing Area
10	2,812,022.0	21.8	7,441,949.0	57.6	105,975.0	2,670,054.0	13,030,000.0	Urbanizing Area
11	7,659,716.0	52.8	4,020,249.0	27.7	2,922,774.0	2,817,261.0	17,420,000.0	High Urbanized Area
12	7,825,252.0	22.4	7,281,658.0	20.9	0.0	19,793,090.0	34,900,000.0	Medium Urbanized Area
13	59,226.0	0.1	21,829,281.0	63.3	12,717,327.0	12,584,166.0	47,190,000.0	Unplanned Urbanization Area
14	0.0	0.0	9,566,761.0	11.1	32,561,102.0	76,882,137.0	119,010,000.0	Un-Urbanized Area
15	2,312,907.0	8.1	6,086,502.0	21.4	4,114,531.0	20,026,060.0	32,540,000.0	Urbanizing Area
16	336,337.0	1.3	6,663,702.0	26.6	0.0	18,089,961.0	25,090,000.0	Unplanned Urbanization Area
17	227,745.0	0.5	8,195,799.0	17.8	9,901,778.0	37,704,678.0	56,030,000.0	Un-Urbanized Area
18	68,455.0	0.2	1,752,112.0	5.2	399,396.0	31,660,037.0	33,880,000.0	Un-Urbanized Area
19	164,121.0	0.1	45,959.0	0.1	21,455,000.0	119,764,920.0	141,430,000.0	Un-Urbanized Area
20	631,012.0	0.5	1,664,214.0	1.4	24,542,747.0	116,102,027.0	142,940,000.0	Un-Urbanized Area
21	0.0	0.0	261,674.0	0.6	23,599,218.0	40,089,108.0	63,950,000.0	Un-Urbanized Area
22	1,150,774.0	2.3.0	2,302,966.0	4.6	28,923,707.0	46,862,553.0	79,240,000.0	Un-Urbanized Area
Total	44,120,204.0	5.21.0	123,614,942.0	14.6	192,606,095.0	662,388,759.0	1,022,730,000.0	Un-Urbanized Area

Note: Highlighted Rows refer to the districts chosen for research area. Districts 4 and 11 have high urbanization rates. The extension of Khairkhana is counted as a highly urbanized area in District 15, but the district itself is an Urbanizing Area.

3.4 The Planning System

3.4.1. Formal-Governmental Approaches

In Kabul City, three paradigms guide urban planning from a historical juncture. The first is bio-power planning, which is followed by a complementary planning paradigm comprised primarily of two supranational Cold War powers from the East and West blocs. Because of the competition between the capitalist and communist blocs, some scholars refer to this paradigm as competitive planning. The competition arose as a result of their superiority over planning expertise, which began in the 1950s. Following the invasion of the country by the United States in 2002, the third paradigm began. In fact, this paradigm is known as sporadic planning because it consists of un-collaborative planning organizations working for rehabilitation that are guided by centralized national powers and decentralized supranational powers (Rashid, A. M., & Ono, H., 2022). A historical examination of the urban planning stream reveals that civil participation was not basic and fundamental for any of the paradigms mentioned above (Watson, V., 2009). In the 19th century, participation was not felt, whereas there were only a few minimal participatory approach practices in the 20th century. The urban planning paradigm, which relies on community involvement and decision-making, was completely standardized across the majority of industrialized countries beginning in the 1960s. In addition, communitive planning, a parallel advocacy strategy, and a trans-active advocacy strategy were all employed at the time (Allmendinger, P., 2017 & Innes, J. E., 1995). A new planning theory that emphasizes decision-making, consensus-building, and communicative rationality is currently being widely applied across the nation.

In light of the aforementioned paradigms, Afghanistan experienced both highs and lows during these transitional periods. In many nations around the world, participation in the urban planning process is required (Moghaddam, S. N., & Rafieian, M., 2020). In the previous century, Afghanistan's political system included monarchy, pro-communism, theocracy, and republic (Nasimi, S., et al., 2021). Although some of them engaged in democratic practices, it is still unclear how much urban planning and public participation took place. Several studies are being done on urban planning in post-Taliban Afghanistan. In 2011, Calogero examined the politics of urbanization and various planning techniques. Numerous planning methods, including formal planning with concrete, informal planning with clay, and exceptionalism planning with mirror glass, were covered in his dissertation. He emphasizes how these three plans were rational in light of various intersections between sovereign power and bio-power. He concluded that three decades of political violence and a century of modernization greatly weakened sovereignty. In 2012 and 2019, Beyer conducted two studies on Kabul, considering the Soviet town planning and housing project. Her studies both concentrated on the technical connection between Kabul and the Soviet Union. She reasoned that the first master plan and the foresight of international planners

in the 1960s provided minority residents with an average experience of modern urban life. The structure of the city was altered in any way, and in the years that followed, progress was halted by internal strife and foreign invasion. Pushpa, 2011 discussed how, in order to achieve sustainable urbanization in Kabul, many reforms are needed to clarify institutional authority, municipal boundaries, and spatial jurisdictions. Additional efforts are needed to improve inter-agency cooperation and coordination, as well as to institutionalize citizen participation in urban management through bylaws. She concludes that, following 2001, Kabul made significant progress through project-based development approaches. This should be accompanied by a citywide program that gradually moves away from project-based planning and toward broader governance reform.

Furthermore, as a result of the high pressures of urbanization and poor governance, the city's development in the form of informal settlements was very rapid. Following in 2001, there was an opportunity for international not only to fund many projects and build capacity, but also to initiate many participatory programs. The initiatives to begin civil participation in urban development processes were the National Solidarity Program and the Citizen Charter. A collaborative effort between the Afghan government and the World Bank to expand the reach of government services, spur development, and foster civil society participation through the establishment of gender-equal neighborhood-level community development corporations. The National Solidarity Program, which began in 2003, aims to broaden the reach of government services, spur development, and encourage civil society participation. The goal of the NSP was to establish gender-equal neighborhood-level community development corporations (CDCs) to allow local communities to participate in the development of the country's infrastructure, promoting local accountability and ownership of the development process. These and similar measures were hoped to help strengthen Afghanistan's historically weak civil institutions.

The Citizen's Charter National Priority Program, on the other hand, is the government of Afghanistan's flagship program for national unity. The program was proposed in 2016 for a 10-year period. This Operations Manual (OM) will establish operational policies, procedures, guidelines, and forms for the CCNPP's first phase. Its primary audience will be communities, Community Development Councils (CDCs), Cluster CDCs (CCDCs), Gozar Assemblies (GAs), and Facilitating Partners (FPs), as well as MRRD and IDLG Provincial Management Unit (PMU) field staff. Its secondary audience will consist of donors and funding agencies, other ministries, and agencies of the government at the central and sub-national levels, as well as external evaluators and auditors of the Program. For the first phase, the World Bank, the International Development Association, and the Afghanistan Reconstruction Trust Fund are funding the Citizens' Charter Afghanistan Project. The paradigms listed below are thoroughly explained. Each paradigm represents a planning epoch. The primary paradigm is Bio-power planning, while the second and third paradigms are contemporary and sporadic planning, respectively.

The Bio-power Planning

The first paradigm spans the nineteenth and twentieth centuries. Afghanistan's borders were delineated during the reign of Abdur Raham Khan (1801-1901). During his reign, the process of administrative construction in cities began. Simultaneously, he appointed a governmental provincial representative to collect revenue and forward it to Kabul (Kakar, H., 1979). When he introduced government officials like Kotwal and Kalantar, the actual administrative evolution in urban matters began. Kotwal was appointed directly by his own decree. The Kalantar, on the other hand, was supposed to be elected by the people. Kalantar was responsible for maintaining civic order, influencing people positively, and administering their lives through inclusive regulations (Kakar. H, 1979, & Rubin. B. R 1988). The most significant effects of Abdur Rahman were confined to Kabul. He was successful in creating an urban class of intellectuals (Esser, D., 2012, Rubin, B. R., 1988 & Kakar, H., 1979). Kabul was enlarged by his son Habibullah (1901–1919), who built new neighborhoods for residents in districts two and three. He preferred Renaissance European architecture, which was reflected in most construction techniques. The urban elite at this time favored villa-style residences.

Afghanistan gained independence from the British Empire in 1919. Amanullah, son of Habibullah, seized power. He advocated for radical development. His first accomplishment was the adoption of the first constitution. Then, using European State loans, he carried out structural investment, tax harmonization, land reform, and educational system upgrading in accordance with international standards (Johnson, C., & Leslie, J., 2004, & Rubin, B. R.,1995). To promote urban-related projects, Kabul established the Baladya (district-level administrative unit), which was later renamed Sharwali or Municipality (Viaro, A., 2004). Baladya served as the municipal service and tax collection center. This was going on through Wakil-Gozar (Neighborhood Representative). During this time, a law is enacted under which municipal officials will be elected by residents. However, this law was never implemented in practice, possibly due to political considerations (Esser, D., 2013). During this time, there was a significant amount of development. A large number of roads, public spaces, buildings, and electoral power were built. A new town was built southwest of Kabul's old city, as well as the Darul Aman palace and residential neighborhoods.

Following the long reign of King Zahir (1933-1973), the urbanization process gained traction with an urban-friendly vision. Eight newly created districts with separate municipal districts were added to the three existing districts between 1942 and 1976. Legislation authorizing land expropriation was enacted in 1935 and incorporated into the constitution in 1964. Kabul Municipality was in charge of all city affairs and services in 1948. Kabul Municipality made significant changes to the fabric of the old city in response to the pressures of rapid urbanization. The city was divided into two sections: old traditional buildings and more modern buildings, which were built around Jade Maiwand. The

government imposed New Western urbanism on citizens without their consent. Residents' demands and sociocultural conditions were excluded. Parallel to this paradigm, urban stream planning in Western countries was based on technical rationality, which also excluded civil participation processes. To sum up, during this paradigm era, laws took the participatory approach into consideration. However, it was never used in reality.

The Contemporary Planning

The discovery of sea routes to the East Indies by Afghanistan held the most significant position in its geopolitical environment. It was an essential link in the silk road, which served as a conduit for trade between the East and the West. For Afghanistan, the nineteenth century was a crucial time period. During this time, Russian and British interests in Afghanistan's location in central Asia increased. The cold war revived the argument for the nation's geopolitical importance in the middle of the 20th century. Afghanistan sought to establish a technical and financial partnership by the end of World War 2. But Russia was the one that made the first move, ushering in an exclusive era known as competitive coexistence. Both capitalist and communist bloc development aid missions competed to demonstrate their superior knowledge (Beyer, E., 2012 & Calogero, P., 2011b). In contrast to earlier streams, Nikita Khrushchev's plan (1955–1960) aimed to encourage urbanization. He started urban development based on the principles of the City of Socialist Man at the beginning of the 20th century. From 1955 to 1992, communist bloc policies guided Afghanistan's urban planning and technological assistance (Calogero, P., 2011a).

In 1956, Afghanistan also began a five-year economic plan. By securing loans from the state bank, this plan—along with all other five-year plans—was focused on encouraging industrial investment and agriculture. Additionally, it was intended to boost revenue by encouraging the clarification of landownership records and improving the management of private income (Esser, D.,2013, Goodhand, J., & Sedra, M., 2016). The Constitution was ratified in 1964. In the interim, a parliament was created, and the state's legislative, judicial, and executive branches were established. Elections have started in major cities, signaling the start of a revolution that will give locals more power (Esser, D., 2009). It is established that participation in national government is important. The executive and legislative branches of government were not altered, but the roles of representatives were described as consultants (Kakar, H., 1979, & Adamec, L., 1974). There was still voting in 1992. Governmental changes also affected civic engagement and the planning process. According to (Calogero. P., 2011a) the mayors, and deputies were directly appointed by the president after the election process was suspended in 1992. Like in the modern era, the state was in charge of urban planning in this era for capitals and other cities. The only distinctions that affected institutional development in fields related to urban planning, such as architecture, urbanism, education, and governance strategies, were those relating to supranational

powers (Beyer, E., 2019).

Through direct and indirect collaborations, competition between the USSR, the US, and numerous other actors resulted in the development of numerous projects, including the Kandahar and Kabul airports. Ariana Afghan Airlines was established. The USSR created a survey map of Kabul for the 1963 master plan, which was first used. Many social residential micro-regions (micro-rayon) were built as a result of the construction of a prefabricated factory in 1965. They built the polytechnic university at the same time, providing resources and information to help students understand their ideas. In addition to this, a number of other projects were built as a result of rivalry between the aforementioned actors, such as the electrical network and stations built by Germany and the USSR, the water supply planned by Japan and funded by Germany, and later extended by USRR. There was no Kabul master plan in Afghanistan during the bio-power planning paradigm. However, this issue was resolved in the modern planning paradigm. In collaboration with Soviet urbanists, regional planners, and UN technicians, the first Master Plan was created.

West Germany and the USSR each constructed a station and a network of power lines in Kabul City. Japan designed the water supply, West Germany provided funding, and the USSR built and expanded it. Even Afghanistan's military was receiving instruction and supplies from the US and the USSR for the army, police, and air force (Maley, W., & Schmeidl, S., 2014). In 1965, King Zahir's endorsement led to the first Master Plan's approval. As we've already mentioned, Kabul was rapidly urbanizing, necessitating regular and inevitable updates to the city master plan. The first update was performed in 1970, the second in 1978, and the third in 2012. (Arez. G.J., & Dittmann. A., 2005, JICA, 2009, Sasaki Associates, Inc., 2018 & MUDH, 2019).

The master plans included functional zoning, motor vehicle road networks, a network of public parks, and updated water supply, electricity, and public transportation systems (Calogero, P., 2011b). The development concept was largely influenced by a stream of urban planning garden city and new town movements from abroad. The main focus was to replace the old city with high-rise buildings, commercial buildings, and a massive central business district with the city center near the ARG. Government administrations and businesses were expected to drive the employment growth rate. Consumer goods and construction material production would be the focus of industrial growth on the city's outskirts (Beyer, E., 2012). As a whole, the master plan envisioned developing Kabul on the basis of a hierarchical matrix that was more oriented toward political centrality than economic or social centrality. As a result, projects framed in this paradigm can be characterized as authoritarian urban planning, because none of these technical cooperation projects involve residents' participation at the decision-making and vision formation levels. By systematizing Kabul's future development on the basis of technical rationality, these cooperative instances relied on both decentralized supranational and

centralized national powers. At the time, the most common approaches to urban planning in Western countries were advocacy, incremental, and synoptic planning methods, in which public participation is essential (Lane, M. B., 2006).

Assistance from the communist and capitalist camps decreased for the first time during the 1970s as a result of the Cold War's freeze, and then it abruptly ceased as political unrest began to develop at the end of the decade (Paul, D., 2010, Shahrani, N., 1986). Kabul underwent a retrograde transformation for the following two decades, going from a comparatively modern urban hub to a ghost city (Calogero, P., 2011b, Esser, D., 2009). Due to war-related rural migrations, Kabul's unplanned settlement growth during the subsequent war (1979–1989) after the Soviet invasion was paralleled (Arez. G.J., & Dittmann. A., 2005, Goodhand, J., & Sedra, M., 2016). Urban modernity was destroyed under the Taliban regime (1995–2001), which had an anti-urban ideology, as the political unrest worsened, and the civil war broke out in Kabul in 1992. (Calogero, P., 2011b).

The United Nations Human Settlements Program UN-Habitat launched the urban rehabilitation program during a relatively stable period of the Taliban's rule by setting up community forums and placing an emphasis on promoting the use of indigenous methods to aid in urban recovery (Esser, D., 2009, French, M., et al., 2018). Utilizing a participatory approach, the program tried to plan, carry out, and institutionalize urban recovery. The population of the city was drastically reduced, and those who remained relied heavily on the World Food Program for assistance to survive. Kabul was the world's most tightly regulated society at the start of the twenty-first century, with the residents' "right to the city" being the most constrained (Arez. G. J., & Dittmann. A., 2005, Barakat. S., & Larry, P., 2001).

The Sporadic Planning

Various stakeholders supported urban planning during this era, and often the relationship between these stakeholders was not defined; stakeholders were conducting their own business. Unlike the contemporary era, which was a competition between the US and the USSR, the post-2001 period was marked by the intervention of many countries (Rashid, A. M., & Ono, H., 2022). Population growth fueled Kabul's rapid unplanned urbanization, which was accompanied by a lack of any type of citywide urban framework, weak urban-related institutions, unclear institutional authority, the absence of municipal boundaries and spatial jurisdictional issues, and less inter-agency cooperation and coordination (Hidayat, O., & Kajita, Y., Pushpa, P., 2011).

From 2001 to 2017, the urban growth analysis proves a 4.5 times growth rate for unplanned settlements, which are mostly concentrated on the urban fringe and hillsides, and a 1.25 times growth rate for officially planned settlements, which are mostly concentrated in the urban center (Chaturvedi, V., et al., 2020). Population density has had an impact on both types of planned settlements. This is

primarily due to the influx of refugees from neighboring countries, as well as the presence of foreign and domestic military bases. The accessibility of land and the advantage of urban life have fueled the growth rate of planned settlements, whereas security and the availability of a certain level of infrastructure have increased the rate of growth of unplanned settlements (Chaturvedi, V., et al., 2020, Habib, H., & Amiri, 2020). Due to the above challenges, the international community and donors invested significantly in mobilizing residents into CDCs and urban upgrading projects through coproduction processes (Turkstra, J., & Popal, A. B., 2010). In general, these projects are planned and implemented by non-state actors using extra-budgetary funds, with funding and timeframes provided by foreign donors. Recently, the government institutionalized participatory upgrading of unplanned settlements, backed by reliable data and improved land tenure security (French, M, et al., 2018).

A management dispute has split out between Kabul Municipality and the Ministry of Urban Development and Housing over the capital city. Within the existing situation, the ministry sought to implement participatory planning and urban neighborhood upgrading, as well as the private sector-led development of new towns on the urban outskirts. By implementing the second revision of the master plan in 1964, the municipality attempted to demolish unplanned settlements and rebuild a modern city in some ways. In 2005, President Karzai issued a decree formally suspending the 1978 master plan until a replacement plan could be developed (Calogero, P., 2011b). According to statistics, the city had grown twice in size in 2007, the majority of which was unplanned expansion and comprised approximately 70% of the urban area (Setchell, C.A., & Luther, C.N., 2009). The competition was still ongoing, and both governmental authorities were associated, Kabul municipality with the status of illegality of unplanned settlements, and the ministry with only a few projects. This entanglement resulted in the blocking of infrastructure provisions and land-tenure security for two-thirds of the city's residents. Meanwhile, various participatory planning methods were rapidly expanding around the world. Participation of residents in decision-making and planning processes was a key component of emerging and flourishing communicative, transactive, and inclusive planning methods (Lane, M. B., 2006, Mir Aftab, F., & McConnell, E., 2008).

In the midst of the debates and struggles, Kabul Municipality asked the Japan International Cooperation Agency to intervene and revise its Master Plan 1978. The previous master plan was updated utilizing materials and data from two studies, the Intercontinental Consultants and Technocrats study (2007-2008) and the Kabul Metropolitan Area Urban Development Master Plan (2008-2009) and was finally approved by Afghanistan's president. The master plan was designed to last until 2025, with revisions scheduled for 2015 and 2020. The population was estimated to be around 3.7 million people. Furthermore, while this plan provided macro-level development guidelines, zoning ordinances, and road and infrastructure networks, it also anticipated neighborhood-level public participation in the

planning process. The municipality needed to create detailed plans for each neighborhood in close collaboration with the residents (Omar, M., 2018). The municipality took too long to prepare and implement the neighborhood-detailed plan. This was due in part to a lack of institutional authority and political will, the absence of required urban regulations, outdated land expropriation laws, a lack of technical expertise, and the predicament of warlords (Abdullaev, 2004., GPC, G. I., 2019; Habib & Kidokoro., 20). Despite the fact that the master plan received little participation, it undermined technical rationality and paved the way for citizen power (Omar, M., 2018).

Because of Afghanistan's stability, the first decade of the twenty-first century was very different. The new city was to be considered in the northern part of Kabul as Kabul Jadid (Dehsabz district) as the only area with development potential. This concept was the only viable solution to the current challenges. As a result, in late 2006, Karzai established the Dehsabz City Development Authority (DCDA), an executive agency tasked with overseeing the development of Kabul New City (Habib, A. J., & Kidokoro, T., 2015). JICA prepared a master plan for the developed city in collaboration with German and French firms, which was later approved by the national cabinet in early 2009. The new city is intended to house three million people by 2040, and it promises one million new jobs as well as favorable educational, industrial, and commercial environments (JICA, 2009). However, land tenure, infrastructure provisions, and a lack of political will pose significant challenges to the plan's implementation, and it remains an idea in the paper (GPC, G. I., 2019).

DCDA was renamed the Capital Region Independent Development Authority in 2016 as a result of a presidential decree (CRIDA). Since its inception, CRIDA has built roads, schools, and industrial parks, and it is frequently entangled in spatial jurisdictional and institutional authority entanglements with the Kabul municipality, whereas the Kabul New City initiative has long been forgotten. Post-2001, the community forums established by UN-Habitat to mobilize urban communities in the face of limited resources, conflict, and the absence of functioning urban governance in Kabul and other major cities evolved into locally known CDCs: an area-based system of elected male and female community members responsible for leading the process of planning and implementing development projects at the local level while receiving external support (French. M., el., 2018).

CDCs are the lowest level of urban governance in Kabul City, followed by Gozars and Nahias (Districts), which cover a larger area than the CDCs. In turn, Nahias reports to the municipality, which reports to the president (Turkstra, J., & Popal, A. B., 2010). Following major in situ upgrading programs such as the National Solidarity Program (2003-2016), Kabul Urban Reconstruction Program (2006-2011), and a number of other projects funded by various foreign actors and implemented by UN-HABITAT and other agencies, the Kabul Municipal Development Program (2014-2021) was launched to integrate community contribution toward unplanned settlement upgrading through CDCs (French.

M., et al., 2018). Furthermore, based on the evaluation of the results of the mentioned projects, the national government institutionalized the participatory approach through CDCs for unplanned settlement upgrading under the supervision of the Independent Directorate for Local Governance. As a result, in 2016, the Citizens Charter in Cities was launched to strengthen CDCs and infrastructure provisions (Ibid). However, in the context of Afghan government institutionalization, this does not imply that the government will solely implement all relevant activities, as several external facilitating partners were involved in the aforementioned projects (GPC. G. I., 2019).

There are individuals who criticize the participatory planning model, especially in the context of unplanned settlement improvements. This technique is frequently undermined by a lack of funds and follow-ups, which strengthens the community's inequitable power and social dynamics, occasionally leading to a privileged seizure of resources and gender disparities (Pushpa, P., 2011; Jean-François., et al., 2014). Overall, post-2001 rehabilitation efforts focused on establishing a strong central state in Kabul for the rural population (Burhanzoi, A., 2020). Cities' planning and investment were largely ignored, and the consequences are still visible today. As a result, local-level participatory urban upgrading cannot be limited to paving streets and building drainage without taking economic and environmental factors into account. Even though foreign actors played an important role, the city's sporadic nature and sectoral rather than citywide approach to urban development did not mitigate the unfavorable effects of rapid urbanization (French. M et al., 2018, Najimi, B., 2018). Kabul, on the other hand, has made significant progress since 2001 as a result of projects funded by foreign aid (Pushpa, P., 2011).

In 2018, Sasaki Associates, Inc., a Boston-based American firm, collaborated with MUDH to create the Kabul Urban Design Framework. Based on President Ashraf Ghani's vision for the National Unity Government, this was done to guide the city's growth more sustainably and attract private investment. Kabul Urban Design Framework is the name of the framework. The urban framework will serve as the president's vision for Kabul's growth and evolution in the coming years. It includes designs for two major roads, Dar ul-Aman Boulevard and Massoud Boulevard, in addition to the citywide framework (Ibid). The framework is viewed as a step primitive from the 2012 master plan in terms of public participation throughout the planning, designing, and decision-making process. Specifically, the proposed design for two major boulevards completely disregards the existing built environment components by proposing tearing down the buildings facing the streets and reconstructing the envisioned corridors while residents are unaware (Sasaki Associates, Inc., & MUDH, 2018).

3.4.2 Customary –Traditional and Cultural Approaches

State or non-state, formal or informal (customary), has always been both a part of the problem and

a potential solution. Afghanistan has long been a hotbed of conflict between official and informal systems. Many governments have always emphasized the formal system, despite its shortcomings in providing accessible and inclusive services. Kabul has been imposing centralized code-based judicial institutions for the past 120 years on local communities that have historically had non-state institutions for regulating behavior and resolving problems (Thomas, B., 2003) despite the presence of centralized code-based judicial institutions for the past 120 years. In Afghanistan, the legal system is divided into three competing components: the state legal code, Islamic religious law, and local customary law. Customary, religious, and state sectors define their own exclusive shares of authority while also allying with other actors. In contrast to most countries, where state power has pushed all other contenders for legal authority to the margins or eliminated them, power in Afghanistan has fluctuated over time. The religious or customary sector has been dominant in some periods and places, while the state has forcibly imposed its power on others. In the school of thought, each sector declares itself an autonomous or even exclusive legal authority, but in practice, none has ever completely displaced the others. All have had to accept limits on their power and ranges of authority. Because the systems continue to interact, any single legal dispute has the potential to migrate from one sphere to another. This has a significant impact on how they are resolved (TILF, 2003).

Afghanistan has a long history of using customary alternative dispute resolution (customary ADR) to resolve disputes, an approach that is heavily used in rural areas and areas where the state has little control. Traditions and customs are all aspects of human life that have existed since the beginning of time. In general, customary law is the means by which local communities resolve disputes in the absence of (or in opposition to) state or religious authority. Customs and traditions are a set of unwritten rules that have been passed down from generation to generation; these norms are based on a mix of principles, each of which can be traced back to a different historical period. The human conscience is fundamental to these principles, and social acceptance is proportional to their level of implementation.

These norms are in fact reactionary, imposed by society on a specific group or community, and can thus be linked to an individual's relationship with society. To put it simply, traditional regulations are a collection of traditions, customs, beliefs, and practices that vary from place to place or tribe to tribe. When it comes to ethics and tribes, traditions in Afghanistan differ. However, in the end, they all have the same agenda and mechanism for resolving community disputes and problems. Meetings and consultations involving day-to-day problems and conflict resolution are part of these traditions. Such gatherings and consultations are known as Jirga-marakah in Pushto. Jirga refers to the board of elders who serve as members of the Jirga, and marakah refers to a discussion, conversation, and consultation. In fact, the system is not limited to Afghanistan's specific geographical location. The agora was the place where people gathered for consultation in Greek cities, and the comitia curiata served as an

advisory council in Rome (Sherzaman, T., 2007). Such meetings and consultations are referred to as shuras in the Arab tribal community. Through consultations and sessions mentioned in the Holy Quran, Islam emphasizes cohesion and collaboration. Majlis is the Persian word for it. The Aryan tribes practiced two types of councils, Simite and Sabha, which came down in intermittent waves from Central Asia to present-day Afghanistan and then moved to India (5000 - 1500 BC). Elders and tribal chiefs, as well as Kings, attended the simite (summit). Sabha functioned as a rural council (ibid).

Informal dispute resolution occurs in Majlis, or Jirgas, whose members primarily serve as mediators or arbitrators. The mediators or arbitrators must follow rules that have been approved by the disputants before they can hold such sessions. Both parties must accept the parties' approved decisions from this session. They must ensure that the verdict of the JJirga is accepted and implemented. The outcome is usually recorded (Julia, P., 2011). Copies remain with the Jirga and the parties are sometimes sent to the local government (Liaison Office, 2011). The duration of the Majlis or Jirga is not specified and is determined by the parties' disagreement. The number of Jirga members and the length of the trials is determined by the cases to be resolved. Members are typically well-known and powerful men from the community; they are either chosen by their tribes or appointed by the district governor. These Majlis/Jirgas, in some cases, serve as a link between the government and the people of the region (Liaison Office, 2011). The Majlis or Jirga, in general, seek reconciliation rather than punishment. Instead of defining the guilty party, the Jirga members strive for community harmony and a final resolution of the dispute. As a result, the Jirga is simply confirming the power dynamics between the parties, implying that the more powerful party will profit from the case. The decision of the Jirga must be accepted by all parties in order to restore peace and harmony within the community, even if the decision is unfair (Julia, P., 2011). People accept informal dispute resolution more than an order of punishment by the state without consent or compromise because peaceful cooperation is the highest priority. The formal government system is often too expensive, corrupt, and inaccessible to people, especially in rural areas (Bashratullah, S., 2017). These Jirga practices are most prevalent in Afghanistan's eastern and southern regions. Due to the presence of Persian-speaking tribes in northern and western Afghanistan, the session is known as Majlis or Jalasa. In a Jalasa, similar to a Jirga, decisions are reached pertaining to a dispute or problem. People regard the members as powerful, well-known, and trustworthy. Typically, decisions are made by the elderly, particularly the oldest, who have extensive knowledge and experience of life and community (TILF, 2003). Typically, decisions are made by the elders, particularly the oldest, who have extensive knowledge and experience of life and community.

Unresolved disputes are bad for the reputation of villages or communities; thus, settling a dispute means preserving the personal honor of the Jalasa's members. Some cases are taken from villages to the

district level for resolution, specifically to the district governor (Woliswal) and the Ulama shura (Religious Scholars sessions). On the one hand, the Woliswal acts as a link between other state actors, such as the police, courts, and prosecutors, and transfers cases to those institutions (Julia, P., 2011). On the other hand, he may be involved in dispute resolution as a decision-maker and is also in charge of registering the outcomes of the Jalasas in the villages. Again, corruption is a major issue, preventing poor families from entering the formal sector because they lack the funds to pay bribes. Disputes are also settled in a Jalasa thanks to the white beards' knowledge of the village and community. This helps us to understand the context of the dispute. Many believe that because district-level institutions lack this knowledge, the judges will have to rely on the opinions of white beards (Ibid).

Furthermore, sensitive cases, such as family disputes or cases involving women, are frequently returned to the Jalasa by governmental actors because the state actors fear that any decision made by a formal institution will increase animosity between the disputants, leading to an expansion of the conflict to other relatives, and thus the community. Both of these sessions, Jirga, and Jalasa, aim to settle disputes and maintain community harmony. The Jalasa uses either Shari'a or customary law to settle disputes. Members of a Jalasa may disagree on whether Shari'a law (Islamic References) or customary law should be applied, with customary law being the more flexible option. However, the disputants are said to have the option of making decisions based on customary law or Shari'a law. Because of its flexibility and affordability, customary law is frequently preferred over Sharia law. Given the people's culture, these two types of sessions are extremely common in Afghanistan, a country with rural areas.

Additionally, delicate cases like family disputes or cases involving women are frequently sent back to the Jalasa by government actors out of concern that any decision made by a formal institution may increase animosity between the disputants, resulting in an expansion of the conflict to other relatives and ultimately the community. In both of these meetings, the Jirga and the Jalasa, participants search for a resolution that will end the conflict and preserve community harmony. The jalasa uses either Shari'a or customary law to settle a dispute. Members of a Jalasa may disagree about whether to apply Shari'a law (Islamic References) or customary law, with customary law being viewed as the more flexible choice. However, it is claimed that the disputants can decide whether to base their decisions on Shari'a law or customary law. Customary law is frequently preferred over Sharia Law because it is more adaptable and less expensive. These two types of sessions are frequently used in Afghanistan, which has a rural structure, considering the people's culture.

These meetings are known by different names in the city area, such as Gozar Assembly or Gozar Shura. The small subdivision units are called gozars, and each one is represented by a Wakil (representative) and has a unique set of boundaries (Sofia, S., 2015). A GA is a collection of CDCs that includes at least five CDCs, or between 1,000 and 1,250 households (MUDH, 2017). People's councils,

GAs, and CDCs all perform a similar function, but at different planning levels and on different regional scales. GAs coordinate municipal development plans and deal with local administrative and management issues like land registration and property sales (Ibid). Contrarily, CDCs act as decision-making bodies that oversee and carry out development projects as well as create connections between local communities and the government (NSP, 2009). Neighborhood representatives Gozar and Wakil

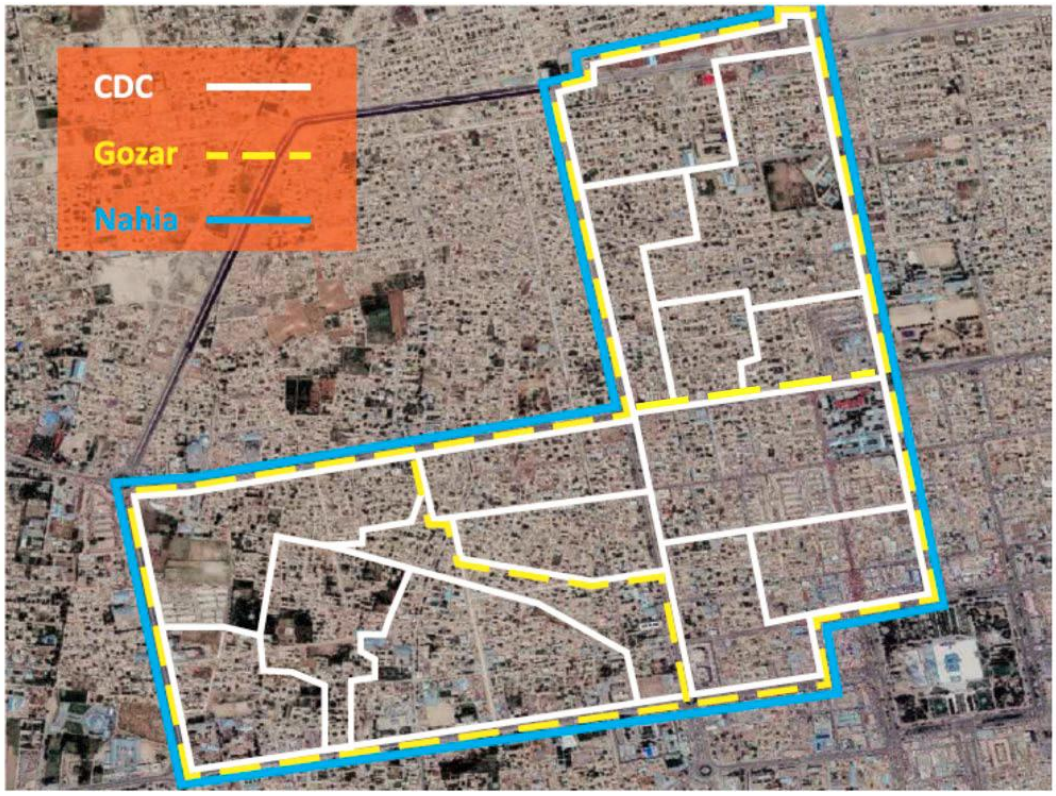

Figure 3-34: Territorial structure of a CDC, Gozar and Nahia, source: UN-Habitat, 2016.

Gozar were recently mentioned in an article on municipal law (GoIRA, 2018).

Wakili Gozars are the traditional neighborhood representatives (Gozars). Residents will put forth his name, and the mayor will approve it. Among a group of Gozars is a Nahia (sub-district). Wakil Gozar serves as a go-between for a variety of tasks and services that call for attestation between the government and local communities. Being a resident and connected to the government for these purposes and services is a requirement for becoming a Wakil Gozar. An effective, legitimate, and efficient way for citizens to participate in municipal governance as a substitute for democratically elected representation.

Wakil Gozar has a long history of overseeing local Afghan community affairs. The traditional system of Kabul was dismantled and replaced after the fall of the Kabul Shahan Kingdom in 1065

because Kabul was cut off from the Islamic Era Khurasan, which included Balkh, Bukhara, Ghazni, Hirat, and Kandahar. Due to this, Kabul residents had to develop a custom system to maintain social order (Integrity, W. A., 2013). Since the central power's representatives primarily served as tax and public dues collectors rather than fulfilling their obligations to uphold social order (Alama, H., 1983). The residents of Kabul established a group on their own to organize their social lives. This compelled the people of Kabul to develop their own system to maintain social order (Integrity, W. A., 2013). Since the central power's representatives primarily served as tax and public dues collectors rather than fulfilling their obligations to uphold social order (Alama, H., 1983). The residents of Kabul established a group on their own to organize their social lives.

Important to adhere until the start of Shaheed Mohammad Daud's administration in 1953, this group was still in operation in its original configuration. In terms of people's social lives, it was useful. The Kalantar-e Gozars, who were chosen by the communities themselves from within, were the most effective form of organization. There were only a few places where this type of traditional urban democracy was practiced (Integrity, W. A., 2013). Each Gozar, or neighborhood, had a unique Kalantar. These Kalantars were chosen due to their superior wisdom, knowledge, devotion, piety, and reputation among community members. As long as the people liked them, they would keep performing their duties. Being a Kalantar entailed voluntary obligations and responsibilities without any tangible benefits. The Kalantars helped the people in their neighborhoods with their sage advice on the organization of ceremonies held for celebrations or mourning and gathered help for them whenever needed.

The Kalantars also helped the people in their communities by mediating disputes between members of their communities, organizing community members to participate in national events, and encouraging and preparing the youth to defend their homeland in the event of a war. They took on prominent roles in these situations, caring for orphans and low-income families. They served as a conduit between the people in their communities and the government. It follows that the Kalantar-e Gozars either solved societal issues themselves or assisted in doing so. However, they had to go to the Kotwali (police station) and Sharia courts if they had a problem involving buying and selling property, murder, theft, robbery, or any other more serious issue. To sum up the traditional Wakil gozar's responsibilities, we should note the following:

1. That the role of a Wakil or neighborhood representative was to serve as a liaison between the local population and the government. The Wakils would go to the authorities to advocate for their communities in order to meet the needs of the people who came to them for assistance. Therefore, it wouldn't be incorrect to say that the Wakil-Gozars were the first people or organizations to speak out in their favor. They would use lobbying and advocacy to address the issues and requests of their neighbors. Even today, they still fulfill this obligation. Wakils also act as a conduit between local

governments and public service agencies. Wakils can offer arbitration and facilitation services in corruption cases thanks to the confidence of both parties.

2. In situations involving the buying and selling of homes and other property. When it comes to purchasing, registering, or selling homes and other property, a Wakil has the most sway. In order to continue processing the case, including an endorsement of property transfers, it is then referred to the courts.

3. Reporting a mortgaged or rented property under the Gozar territory is a newly added obligation under Municipality law. Helping local governments implement urban policies and legislation. getting ready the residents' records for the municipalities. cleaning, landscaping, and maintenance are coordinated with the district office.

Mechanism of Selecting a Wakil Gozar

Typically, men make up the members who choose a neighborhood representative, with women playing a less important role. Traditionally, the selection is held in a mosque or at the home of a prominent member of the neighborhood. The majority of the Wakil Gozar, also known as the Wakil Zone, are chosen by the most powerful people in some locations. Wakil Gozar is chosen in the following three ways:

Method one: Public selection

In some places, this model is used. A candidate must gather the signatures of interested parties in order to become a Wakil. Residents have signed the documents, which are then sent to the appropriate districts for approval. The person in charge of Wakil Gozar in the neighborhood is chosen by the district office. Because it is not particularly democratic in nature, this method is not only open to abuse but also inconvenient. This is due to the fact that no one would decline if a Wakil reached out to them and requested their signature under normal circumstances.

Method Two: Verbal Votes

People from the neighborhood congregate at an influential person's home, a mosque nearby, or the home of an elder to cast their open votes for the Wakil-e Gozar by raising their hands. The likelihood of abuse is conceivably lower with this strategy than with the previous one and it has fewer flaws. The candidate's participation in the process and its openness, however, have a detrimental effect on the voting procedure. This limits voters' ability to cast unfavorable votes.

Method Three: The Secret Ballot

In some regions, a secret ballot is used to elect the Wakil-e Gozar. In these places, voters cast their ballots for their preferred candidates in ballot boxes that have been placed in a specific spot. Transparency is achieved with this method because people can select their preferred option free of any

pressure.

There are a few requirements that must be made clear to applicants. It is inappropriate for a government official to take an individual position on Wakil Gozar's candidacy. He should be illiterate and possess some management abilities to deal with locals as well as government representatives. The privilege of inheriting something from an ancestor for selection can occasionally exist. They draw on the knowledge they gained while performing ancestral duties. If his father or grandfather had been present when the incident occurred, many cases might have been solved.

In recognition of Afghanistan's chronic instability and conflict throughout its modern history, which has caused its economy to suffer, the government's flagship development program, the Citizens' Charter Afghanistan Project (CCAP), provides innovative ways for communities to promote inclusive development according to their own goals, through the CDCs. CDCs develop multifaceted community development plans using participatory development tools. Participatory community-driven exercises are used to prepare the plans by the 13,005 community development corporations (12,155 rural and 850 urban).

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Islam emphasizes cohesion and collaboration. Majlis is the Persian word for it. The Aryan tribes practiced two types of councils, Simite and Sabha, which came down in intermittent waves from Central Asia to present-day Afghanistan and then moved to India (5000 - 1500 BC). Elders and tribal chiefs, as well as Kings, attended the simite (summit). Sabha functioned as a rural council (ibid).

Informal dispute resolution occurs in Majlis, or Jirgas, whose members primarily serve as mediators or arbitrators. The mediators or arbitrators must follow rules that have been approved by the disputants before they can hold such sessions. Both parties must accept the parties' approved decisions from this session. They must ensure that the verdict of the Jirga is accepted and implemented. The outcome is usually recorded (Julia, P., 2011). Copies remain with the Jirga and the parties are sometimes sent to the local government (Liaison Office, 2011). The duration of the Majlis or Jirga is not specified and is determined by the parties' disagreement. The number of Jirga members and the length of the trials is determined by the cases to be resolved. Members are typically well-known and powerful men from the community; they are either chosen by their tribes or appointed by the district governor. These Majlis/Jirgas, in some cases, serve as a link between the government and the people of the region (Liaison Office, 2011). The Majlis or Jirga, in general, seek reconciliation rather than punishment. Instead of defining the guilty party, the Jirga members strive for community harmony and a final resolution of the dispute. As a result, the Jirga is simply confirming the power dynamics between the parties, implying that the more powerful party will profit from the case. The decision of the Jirga must be accepted by all parties in order to restore peace and harmony within the community, even if the decision is unfair (Julia, P., 2011). People accept informal dispute resolution more than an order of punishment by the state without consent or compromise because peaceful cooperation is the highest priority. The formal government system is often too expensive, corrupt, and inaccessible to people, especially in rural areas (Bashratullah, S., 2017).

These Jirga practices are most prevalent in Afghanistan's eastern and southern regions. Due to the presence of Persian-speaking tribes in northern and western Afghanistan, the session is known as Majlis or Jalasa. In a Jalasa, similar to a Jirga, decisions are reached pertaining to a dispute or problem. People regard the members as powerful, well-known, and trustworthy. Typically, decisions are made by elders, particularly the oldest, who have extensive knowledge and experience of life and community (TILF, 2003). Typically, decisions are made by elders, particularly the oldest, who have extensive knowledge and experience of life and community.

Unresolved disputes are bad for the reputation of villages or communities; thus, settling a dispute means preserving the personal honor of the Jalasa's members. Some cases are taken from villages to the district level for resolution, specifically to the district governor (Woliswal) and the Ulama Shura (Religious Scholars sessions). On the one hand, the Woliswal acts as a link between other state actors,

such as the police, courts, and prosecutors, and transfers cases to those institutions (Julia, P., 2011). On the other hand, he may be involved in dispute resolution as a decision-maker and is also in charge of registering the outcomes of the Jalasas in the villages. Again, corruption is a major issue, preventing poor families from entering the formal sector because they lack the funds to pay bribes. Disputes are also settled in a Jalasa thanks to the white beards' knowledge of the village and community. This helps us to understand the context of the dispute. Many believe that because district-level institutions lack this knowledge, the judges will have to rely on the opinions of white beards (Ibid).

Furthermore, sensitive cases, such as family disputes or cases involving women, are frequently returned to the Jalasa by governmental actors because the state actors fear that any decision made by a formal institution will increase animosity between the disputants, leading to an expansion of the conflict to other relatives, and thus the community. Both of these sessions, Jirga, and Jalasa, aim to settle disputes and maintain community harmony. The Jalasa uses either Shari'a or customary law to settle disputes. Members of a Jalasa may disagree on whether Shari'a law (Islamic References) or customary law should be applied, with customary law being the more flexible option. However, the disputants are said to have the option of making decisions based on customary law or Shari'a law. Because of its flexibility and affordability, customary law is frequently preferred over Sharia law. Given the people's culture, these two types of sessions are extremely common in Afghanistan, a country with rural areas.

Additionally, delicate cases like family disputes or cases involving women are frequently sent back to the Jalasa by government actors out of concern that any decision made by a formal institution may increase animosity between the disputants, resulting in an expansion of the conflict to other relatives and ultimately the community. In both of these meetings, the Jirga and the Jalasa, participants search for a resolution that will end the conflict and preserve community harmony. The jalasa uses either Shari'a or customary law to settle a dispute. Members of a Jalasa may disagree about whether to apply Shari'a law (Islamic References) or customary law, with customary law being viewed as the more flexible choice. However, it is claimed that the disputants can decide whether to base their decisions on Shari'a law or customary law. Customary law is frequently preferred over Sharia Law because it is more adaptable and less expensive. These two types of sessions are frequently used in Afghanistan, which has a rural structure, considering the people's culture.

These meetings are known by different names in the city area, such as Gozar Assembly or Gozar Shura. The small subdivision units are called Gozars, and each one is represented by a Wakil (representative) and has a unique set of boundaries (Sofia, S., 2015). A GA is a collection of CDCs that includes at least five CDCs, or between 1,000 and 1,250 households (MUDH, 2017). People's councils, GAs, and CDCs all perform a similar function, but at different planning levels and on different regional scales. GAs coordinate municipal development plans and deal with local administrative and

management issues like land registration and property sales (Ibid). Contrarily, CDCs act as decision-making bodies that oversee and carry out development projects as well as create connections between local communities and the government (NSP, 2009). Neighborhood representatives Gozar and Wakil Gozar were recently mentioned in an article on municipal law (GoIRA, 2018).

3.4.3 Kabul Urban Actors and Stakeholders

In Afghanistan, the urban sector is governed by a number of institutions at both the national and sub-national levels. In general, the Ministry of Urban Development and Housing is in charge of the entire country's urban areas. The responsibility of MUDH is to maintain a sound urban system and to provide housing for all citizens. MUDH is responsible for developing urban and housing policy, as well as developing five-year urban master plans and appropriate housing programs and projects, as well as Urban Management. MUDH is also in charge of coordinating, monitoring, and evaluating all urban sector projects, as well as reporting to donors, the Cabinet, and the Ministry of Finance.

Municipalities are established at the local and sub-national levels in accordance with Afghanistan's 141 constitutions. The newly ratified municipal law establishes a mandate for municipal administration (GoIRA, 2018). Municipal administrations are responsible for developing cities in a way that is acceptable to citizens and for providing urban services in an efficient and cost-effective manner (MUDH, 2017).

Furthermore, many independent government agencies have established parallel entities to handle urban affairs. The Independent Directorate of Local Governance (IDLG) and the Deputy Ministry of Municipalities (DMM) are tasked with improving subnational governance. DLG's responsibilities include policy development, institutional development, inclusive governance, and facilitating the effective subnational implementation of national programs. The Afghanistan Independent Land Authority (ARAZI) is another organization in charge of managing state lands throughout the country and providing land-related services to the government, institutions, municipalities, and individuals. This organization is primarily involved in the inventing, registration, and settlement of rights (Tasfia), land transfer and exchange, land leasing, and land dispute resolution. ARAZI's mission is to be a one-stop shop for land administration services such as survey cadaster, clearance, registration, and dispute resolution (CSO, 2016).

The Capital Region Independent Development Authority (CRIDA) was formed to manage the growth of the capital cities and a few surrounding cities. It is mandated to do so in collaboration with relevant urban sector agencies through development project planning, design, and implementation. Meanwhile, the Afghanistan Urban Water Supply and Sewerage Corporation (AUWSSC) is tasked with providing the Afghan people with affordable, dependable, and long-term urban water supply and

sanitation services. At the same time, Da Afghanistan Breshna Sherkat (DABS) operates and manages commercial electric power generation, import, transmission, and distribution throughout Afghanistan as an autonomous limited liability company (GoIRA, 2018). Furthermore, many private sectors, associations, and international donors support the government.

Kabul Municipality houses the majority of Afghanistan's urban population. Unlike the other municipalities, Kabul Municipality has the status of a ministry and has been given special authority to operate. The president, in particular, appoints the mayor and senior staff without consulting the Independent Directorate of Local Governance (Beall, J., & Schütte, S., 2006). The majority of the director's appointments are also considered by presidential offices such as land acquisition, urban planning, construction control and inspection, sanitation and water supply and micro-rayon, and district offices. Kabul Municipality is in charge of carrying out the city's master plan, allocating land for residential and commercial development, building, and maintaining apartments, and collecting taxes. The Ministry of urban development and Affairs and Kabul Municipality have always clashed over the administration of the capital city. According to Article 7 of the revised law on urban planning and housing, it is the Ministry of urban planning and Affairs' responsibility to prepare or coordinate the preparation of urban plans for municipalities with more than a hundred houses. Kabul Municipality is not exempt from this provision of the law. The planning will be supervised and approved by the high urban council, which is the highest level of decision-making under the president and includes ministers from the relevant ministries (MUDH, 2017). This high council is headed by the minister of urban development and housing affairs, while the mayor and other relevant ministries are board members. It is responsible for supervising and approving urban plans that extend beyond the mandate of an organization.

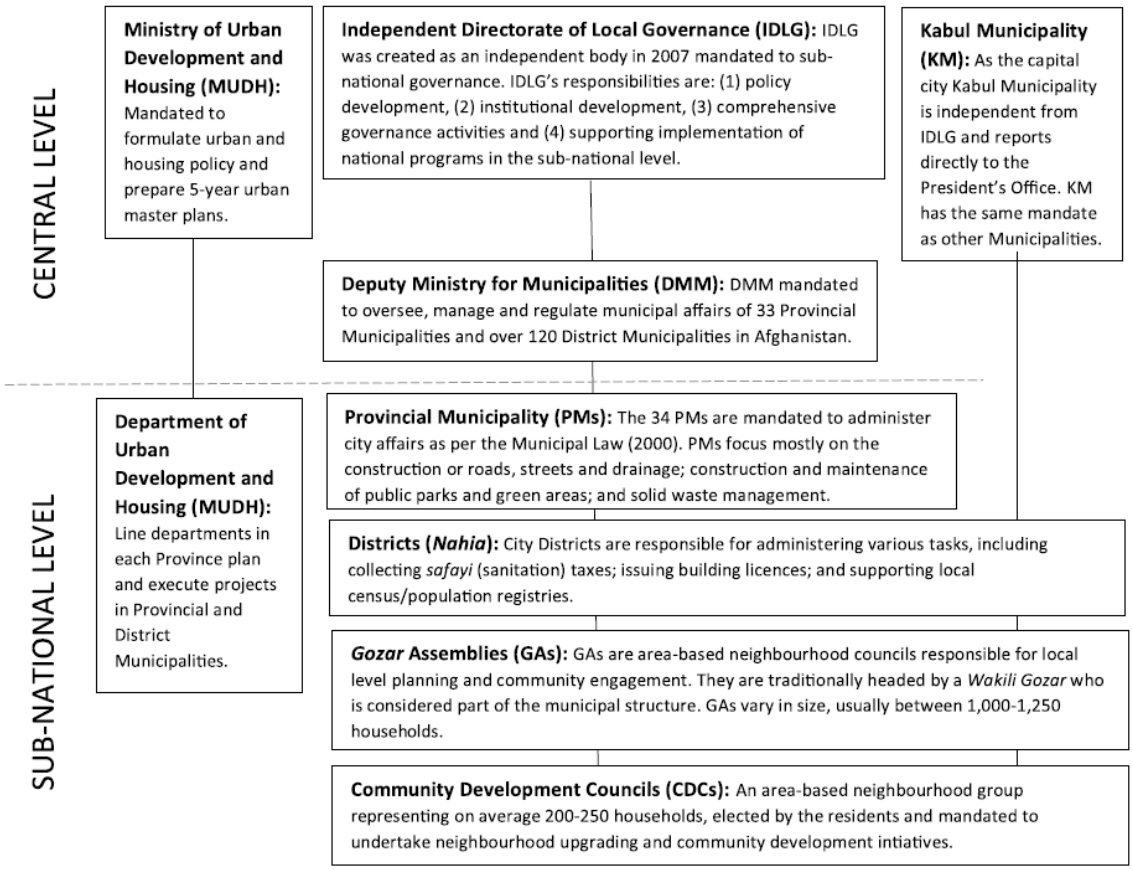

Figure 3-35: The Structure of Urban Governance in Afghanistan, source: MUDH, 2017.

Figure 3-35 depicts the governance structure of urban areas at the national and sub-national levels across the country. Kabul Municipality ranks alongside the Ministry of Urban Development and Housing, as well as the IDLG and DMM. Kabul Municipality is separate from IDLG and reports directly to the president. It is important to note that Kabul Municipality has the same mandate as other municipalities. The Kabul Municipality is divided into 22 districts. Each has its own office as well as its own geographical boundaries. These city districts are in charge of a variety of tasks, such as collecting the cleaning and sanitation tax, issuing building permits, and facilitating consensus processes and population registration (French. M., et al., 2018). Kabul Municipality currently has a mayor and five deputy mayors, including those in charge of Planning and Development, Social and Cultural Affairs, Urban Services and Environment, Transportation, and Technical. As a result of the establishment of these deputy mayor's offices, there are now 28 directorates in operation. In addition, each of the 22 district offices has its own staff and services. The mayor of Kabul also employs six consultants in

revenue and economics, legal and technical issues, international affairs, procurement, and women's issues. The following chart, taken from the Kabul Municipality website, explains the updated structure.

In 2018, the total number of permanent Kabul Municipality employees was 1814. Furthermore, there are over 6,430 daily laborers who perform various municipal tasks. The KM organization as a whole is responsible for the following major tasks related to urban management information systems.

- Improve access to essential services.
- Urban planning and implementation.
- Revenue collection and management.
- Construction project quality control and assurance.

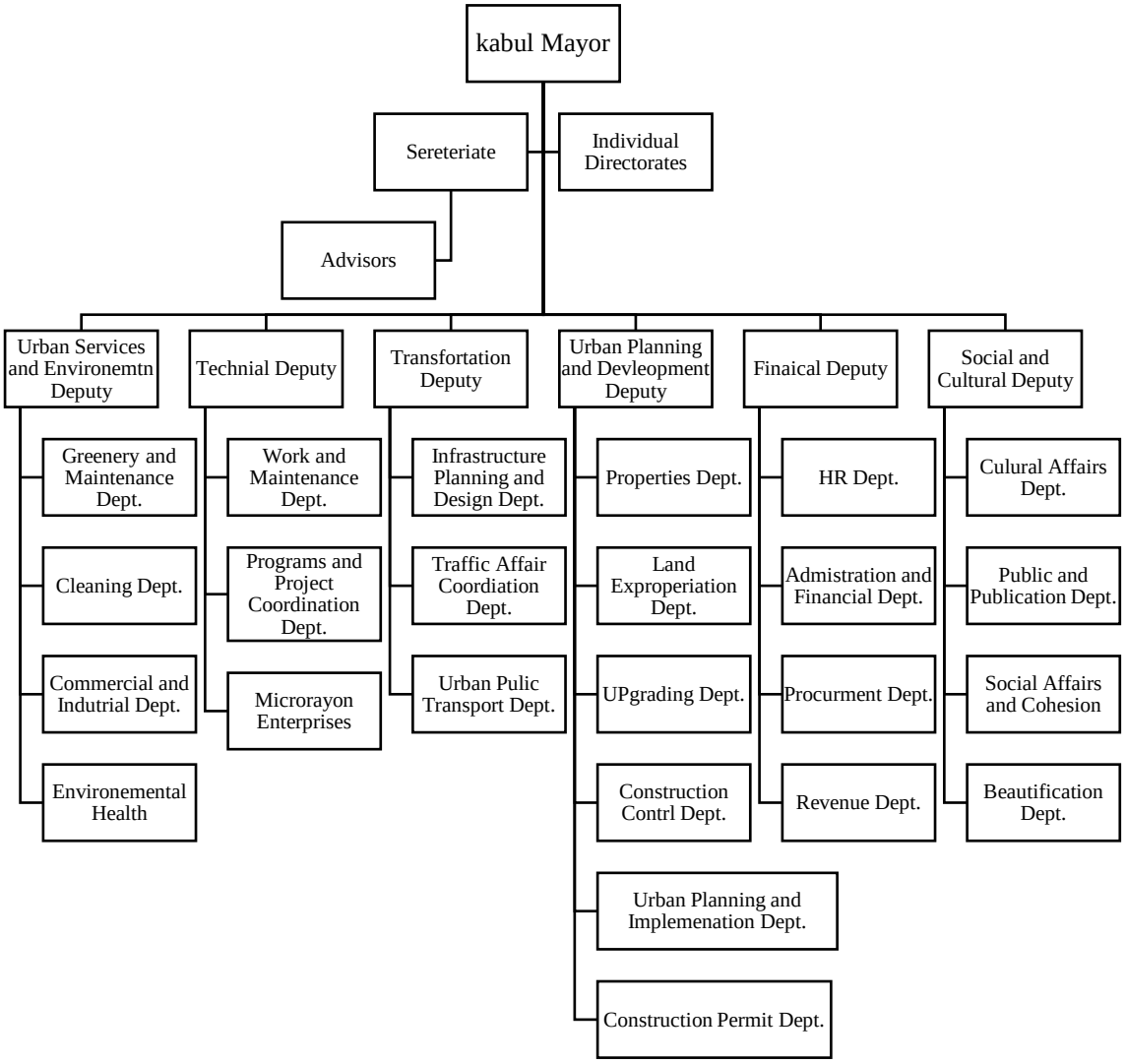

Figure 3-36: Kabul Municipality Organizational Chart, source: KM.

Our investigation regarding the chart of organizational under the Taliban regime revealed that the same number of deputy offices are active. One of the six deputy offices was commonly allocated for women. Social and Cultural deputy office was governed by a woman since its establishment. However, there is no option now. Taliban regime is preferring not only avoiding women to manage a key chair, but also declining women hiring in lower responsibilities too.

Design and Implementation Department

The design and development of detailed plans for selected areas based on the JICA 2012 master plan and the updated design frameworks are included in the design and implementation of urban plans. These plans include the implementation of detailed plans with concerned organizations, the provision of building permits, land acquisition, and substitution, and the provision of building plans to the concerned public.

Development of Detailed Plans

- First, a plot of land is selected. Residents and government officials are invited to participate in the selection process, which is then refined and improved by the Department of City Planning and Implementation. Higher-ranking KM will then review the plan for additional comments and instructions, which may result in a more comprehensive plan (MUDH, & GPC, G.I., 2019).
- Survey management investigates the topography, existing houses and structures, and population. Hard copies are typically used to collect data (Ibid).
- The implementation of the detailed plan will be coordinated with the Ministry of Communication and the Firefighter Department. The plans also consider all aspects of streets, water supply and canalization networks, green spaces, and sports fields.
- The city planning and implementation department creates the specific plans on paper, signs them, and then submits them to the mayor's office for final approval. The report will be preserved and made accessible.

Implementation of Detailed Plan

The execution of thorough plans is the second step. In general, the steps are as follows:

- The distribution of homes to those in need will fall under the purview of the property department. Each owner of the plot will receive property ownership (Qabala).
- The land is allocated, and the plan is put into action after the district office distributes the form and pays the construction permit fee. The application is forwarded to the department of property consolidation. The land consolidation process then begins after this department sends the form to four organizations.
- The committee is held after the form is sent to the KM authorities. After that, it's necessary to keep

an eye on the ownership document that the Cleanness department provided.

- All relevant organizations, including those in charge of the water supply, firefighting, electricity, and other services, will approve the final sketch or final draft.
- The Construction Control Department then begins monitoring and supervising the building construction processes based on the final draft plan that has been approved.

Quality Control and Quality Assurance

Construction project quality assurance and control are handled by two teams. Building codes must be taken into consideration during the implementation stage, and this is the responsibility of the construction control department and the PMO (Project Management Office). Second, quality control in the district is the responsibility of the engineering division. They make sure construction is done in accordance with the authorized design and building permit. This includes keeping an eye on and confirming the quality of the building materials being used. Field agents visit the structures and take samples. The implementer is then required to check the quality in a registered lab. The results of these tests will also be used for quality control. The construction control department also makes sure that the right standards of behavior are followed during construction, including laws governing worker health and safety and public safety. The project will be submitted to the Municipality Mayor's office for final approval once all inspections have been finished and accepted. After the project is finished, a delegation is assigned for additional inspections, and once all problems have been resolved, the owner must complete the formal procedures to take possession. Construction monitoring management identifies and documents construction violations with the help of the technical team from the district office. The local police departments are informed of any unauthorized construction. Demolition of construction projects that don't adhere to codes and standards is then carried out in coordination with the district office.

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Chapter 4: Community Centers and Situation of Activities

4.1 Introduction

The chapter presents the results of the first case study described in Chapter 2. It investigates the physical characteristics and historical disappearance of community centers and their changes in use as a result of urbanization. It also compares their capacity to the increased population, transformed community center patterns, and the effects of land use changes on community centers. The research focuses on planned residential neighborhoods provided by Russian technical planners and local experts. Residential areas are divided into five parts. In our calculation, we used the sum of each part's micro-rayons. Each component contains two to four micro-rayons. All planned residential districts were designed and structured according to Russian planning concepts and principles. Their neighborhood concept and layout are based on micro-rayons.

The micro rayon is commonly understood to be a micro-district or micro-region. However, in the Russian system, this is a neighborhood part of the Kabul city structure. Often, its meaning is misinterpreted as an apartment building construction zone. To be clear, a micro-rayon is also an area that includes apartment buildings or a mix of low-rise houses and apartment buildings. In general, a cinema, theater, school, or other cultural centers are considered when planning a community center based on Russian culture and urban planning. However, the same concept was considered when the first micro rayon apartment building was built. Prefabricated components were prepared in a factory built by the Russian government for rapid development and housing.

Because Afghanistan is an Islamic country, Islamic urban planning theory focuses on mosques or mosques. As a result, rather than focusing on the planning in Moscow, the Russian expert and Kabul planner considered the context and culture of the people. Masjids, schools, and kindergartens were also considered at the next stage. As a result, the low-rise micro-rayon was designed with the needs of the community in mind, considering the masjid (mosque), school, and kindergarten. The data plans and aerial photographs were compiled from Kabul Municipality and the Ministry of Urban Development and Affairs' planning departments. A systematic literature review is also conducted to gain a better understanding of the Community Center's role in the long-term viability of a residential community.

4.2 Disappearance of Community Centers

During the last few decades, Kabul City experienced rapid and unprecedented population growth, particularly in planned residential districts with vertical development. The need for community centers to build and develop the community was essential. Most community centers lost their function as community centers due to rapid urbanization and people's rush to planned residential districts. Instead, they became stand-alone buildings and useless land. They've even gone missing. Community centers have been converted into homes for other uses. As the population grew rapidly, the population density

increased to around 347 people per hectare. This is the highest level in the history of the KhairKhana residential district (JICA, 2011). Aside from increasing the population through vertical development, as several buildings were built in violation of rules and regulations, community centers are also occupied by impoverished people. These people mostly consist of poor people as they have no other option to reside.

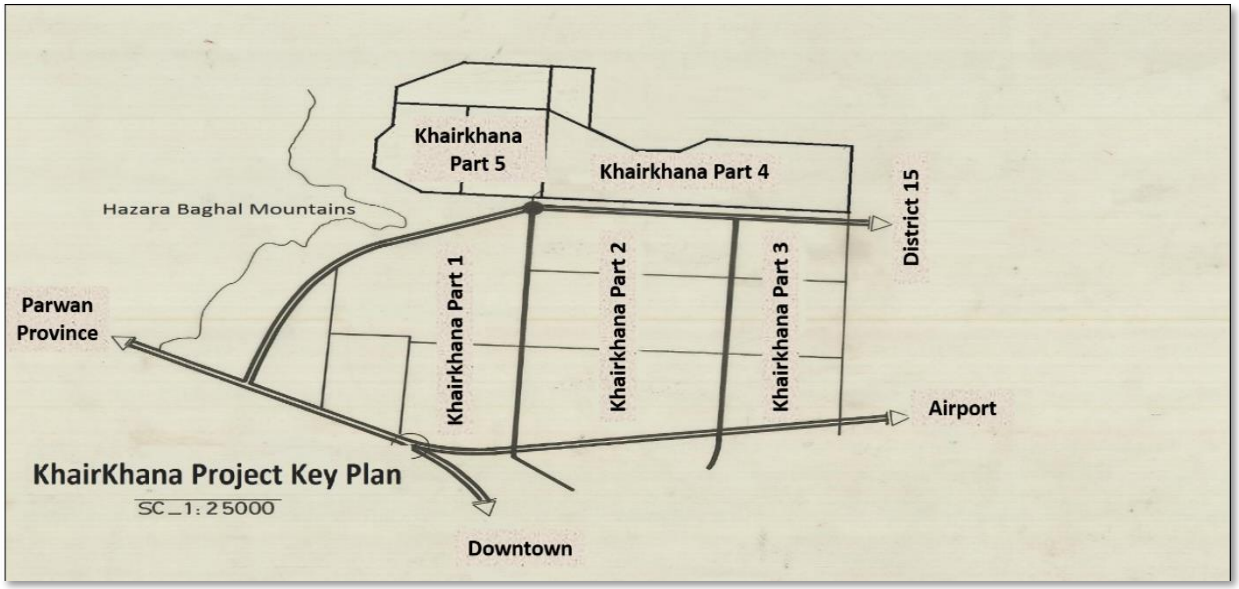

Figure 4-1: Structure Plan of Khairkhana Residential Neighborhoods, source: KM.

The population growth rate in Khairkhana is calculated from 1982 to 2013, taking into account natural growth and immigration rates. The first phase of these residential neighborhoods was implemented in 1982, and the fifth phase began in 1993. The population statistics organization provided this information.

Table 4-1: increase of the population in different Periods.

Name	Density	Khairkhana Parts						
		1982	1984	1986	1988	1993	2008	2013
Part 1	P/Ha	130					601	745
Part 2	P/Ha		121				289	432
Part 3	P/Ha			108			330	411
Part 4	P/Ha				123		239	298
Part 5	P/Ha					116	230	328
Total	P/Ha						338	443
P-Person, H-Hectares								

Community Centers can be traced back to the 1980s and 1990s when the structure plan of Khairkhana residential neighborhoods was provided according to Figure 4-1. Their numbers are derived from Kabul Municipality's detailed plans. The number of community centers from previous eras is derived from digitized satellite images and a document called the District Passport. This document includes all information about properties, parcels, and residents. When the number of community centers in each period is considered, the results reveal a significant difference.

Table 4-2 shows the number of community centers and population size over time. Preliminary population figures for each area are presented in detailed plans based on master plans developed under Russian influence. The JICA Master Plan supplementary chapters calculated population growth in 2004, 2008, and 2013. Between 1999 and 2004, the annual growth rate was 2.3 percent. As urbanization rates increased due to stability and refugees' return, the next period had an urbanization rate of around 4. Chapter 3 and Table 3-1 detail rates.

Apartment buildings and low-rise detached houses are typologies in residential neighborhoods. The majority of areas have detached courtyard houses. Each component is calculated separately to better understand the differences between the population and the number of community centers. Table 4-2 shows that the population grows regularly. While the number of community centers has changed over time. In the early 1980s and 1990s, 75 community centers, including 21 schools, 20 kindergartens, and 34 mosques, were considered for these residential districts. This number of community centers was used to calculate a total of 132400 in five areas of Khairkhana Rayon (Region). In these areas, the population increased to 344,712. The number of community centers has shrunk to 50, with the majority of closures occurring in kindergartens, schools, and mosques. Population and community centers grew at this time. A number of schools and mosques have seen an increase in community centers. The kindergarten, on the other hand, still has the same number of buildings as it did in 2004. The total rose from 50 to 53. The period between 2008 and 2013 was good for the Masjid, as the number increased to 37. Meanwhile, the number of schools has increased to 16. Kindergarten was the only thing undervalued and eventually disappeared. The rise in mosques (masjids) reflects cultural values.

About 18 community centers disappeared between these periods. Table 4-2 shows the greatest loss of community centers occurred in parts 1 and 2, each with six. During these times, the mosque was not affected, and only schools and kindergartens were. Part 5 of Khairkhana shows the next community loss, with five losses. Parts 3 and 4 were ranked second and third in disappearance, with 2 and 3 respectively. In part 5, two mosques disappeared. However, the number of parts continued to increase. In total, five schools and sixteen kindergartens were destroyed. To summarize, the total number of mosques increased, while the total number of schools and kindergartens decreased. Figure 4-2 shows the graphical fluctuation of community centers.

Table 4-2: Population Increment and Community Centers.

Khairkhana Residential District													
Part 1													
NO	Community Centers	Pop 1982	CCs 1982	Pop 2004	CCs 2004	Diff	Pop 2008	CCs 2008	Diff	Pop 2013	CCs 2013	Diff	Total Dis-App
1	School	41,500	7	93,089	4	3	110,959	4	0	137,661	4	0	3
2	kindergarten		5		1	4		1	0		2	1	3
3	Mosque		11		10	1		11	0		12	1	0
Sub-total			23		15	7		16	0		18	2	6
Part 2													
NO	Community Centers	Pop 1984	CCs 1984	Pop 2004	CCs 2004	Diff	Pop 2008	CCs 2008	Diff	Pop 2013	CCs 2013	Diff	Total Dis-App
1	School	36,000	7	73,664	4	3	87,176	6	2	130,228	5	-1	2
2	kindergarten		6		2	4		2	0		2	0	4
3	Mosque		11		11	0		11	0		11	0	0
Sub-total			24		17	7		19	2		18	-1	6
Part 3													
NO	Community Centers	Pop 1986	CCs 1986	Pop 2004	CCs 2004	Diff	Pop 2008	CCs 2008	Diff	Pop 2013	CCs 2013	Diff	Total Dis-App
1	School	16,300	3	41,335	2	1	49,261	2	0	61,364	3	1	0
2	kindergarten		2		0	2		0	0		0	0	2
3	Mosque		4		5	-1		5	0		6	1	0
Sub-total			9		7	2		7	0		9	2	2
Part 4													
NO	Community Centers	Pop 1988	CCs 1988	Pop 2004	CCs 2004	Diff	Pop 2008	CCs 2008	Diff	Pop 2013	CCs 2013	Diff	Total Dis-App
1	School	19,500	2	35,519	2	0	39,295	2	0	48,969	3	1	0
2	kindergarten		3		0	3		1	0		0	1	3
3	Mosque		4		4	0		4	0		5	1	0
Sub-total			9		6	3		7	0		8	1	3
Part 5													
NO	Community Centers	Pop 1993	CCs 1993	Pop 2004	CCs 2004	Diff	Pop 2008	CCs 2008	Diff	Pop 2013	CCs 2013	Diff	Total Dis-App
1	School	19,100	2	27,078	1	1	32,044	1	0	45, 712	1	0	1
2	kindergarten		4		0	4		0	0		0	0	4
3	Mosque		4		2	2		3	1		4	0	0
Sub-total			10		3	7		4	1		5	0	5
Total All Parts													
1	School	132,400	21	274,671	13	8	344,712	15	2	423,934	16	1	5
2	Kindergarten		20		4	16		4	0		4	0	16
3	Mosque		34		33	1		34	1		37	3	-3
Total			75		50	25		53	3		57	4	18
Pop: population, CCs: Community Centers, Diff: Differences, Dis-app: Disappearance													

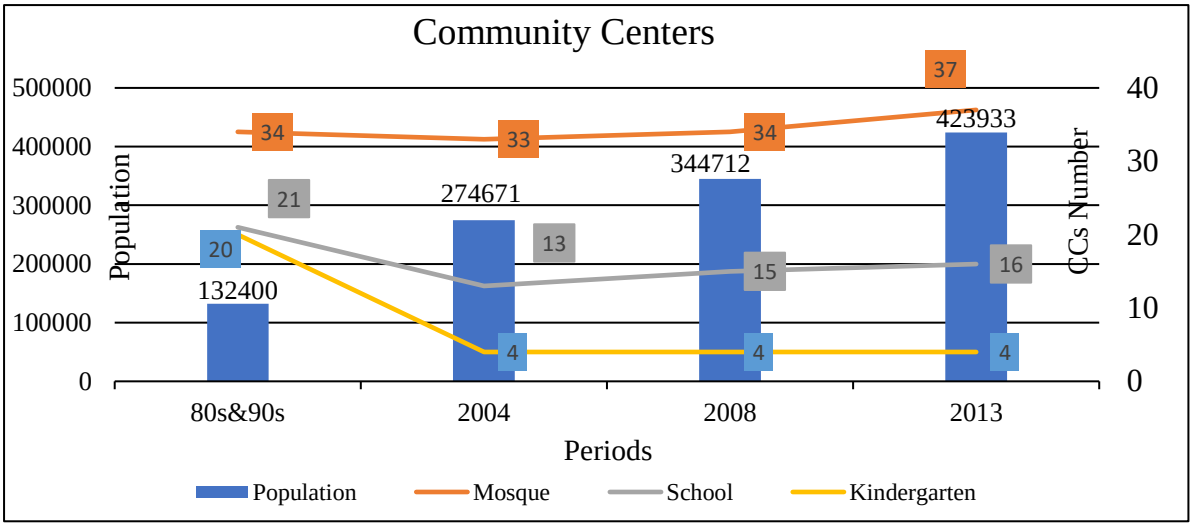

Figure 4-2: Fluctuation of Community Centers.

To sum up, populations increased continuously throughout each period. The community center's quantity fluctuates during these periods. The most desirable community centers were mosques as the number soared at the end. However, the total number of community centers decreased. As the population continues to grow, the demand for community centers is also increasing. A total of 75 community centers were considered for 132,000 residents. It means a community center was allocated for 1760 inhabitants. However, 57 community centers serve 423,933 residents. It means each community center serves about 7437 individuals, which is more than fourfold the previous time. As a result, community centers are not sufficient for the current number of residents. Table 4-3 illustrates the exact population number based on each part and micro-rayon. Each part of Khairkhana has a certain number of micro-rayons (micro-districts), each with a different area size.

Table 4-3: Micro-rayon and Current Population.

Residential Neighborhoods				
No	Parts	Micro-rayon	Inhabitants	Area (Ha)
1	Part 1	M1, M2, M5, M6	137,661	224.9
2	Part 2	M3, M7, M9	130,228	301.7
3	Part 3	M4, M8, M10	61,364	149.3
4	Part 4	M11, M12	48,969	164.1
5	Part 5	M13	45,712	175.6
		Total	423,934	1,015.6
M-Micro-rayon				

.

Figure 4-3: Residential Micro-rayons of Khairkhana.

4.3 Functional Change of Community Centers

Urbanization not only caused urban sprawl in many parts of Kabul, but also changed the uses of many lands (Hidayat, O., Kajita, Y., 2019, Nazire, H., & Kajita, Y., 2016). Land use change has harmed urban areas, including formal and informal settlements. Settlement demand was too overwhelming, and people occupied vast amounts of public land (World Bank, 2015 & Wildermuth, P., 2015). Community centers in these planned areas were also accessible to illegal settlers. As a result, many community centers have changed their shapes and modes of operation. Several of them have been transformed into residential lots. Residential lots are occupied by people who moved in from outside and have no other living option. Some are converted into standalone buildings with no discernible boundaries. These buildings are used for different functions such as administrative, social, etc. Other community centers are converted to barred land or unused land with no specific uses.

To understand how much the number of these community centers changes to a variety of functional patterns or barred land, the various periods are compared. Two samples (A and B) were considered in different locations in these residential neighborhoods to gain a better understanding of community centers' transformation. Both samples compare images from different years such as 1982, 2004, 2008, and 2013. In the absence of a new image or an update to Google Maps, we can concentrate on the data we have enhanced. This analysis was designed to transform patterns. The following patterns are transfigured community centers extracted from satellite images.

One-Stand-Alone Buildings (SB): This is the pattern of community centers being converted into one. These community centers also lost their boundaries. However, the community residents were the reason they were not transformed into residential houses.

Pattern Two-Bared Land (BL): This is the pattern left over from community centers' deterioration. During this time, both the boundary and the buildings disappeared. In 2013, the pattern was no longer used.

Pattern Three-Different Functional (DF): These are the community centers that have been transformed to a different functional status, such as houses, administration offices, etc. There is a tendency for these users to be temporary and easy to return to their original state.

Figures 4-4, 4-5, 4-6, and 4-7 show the disappearance of community centers when the original layout is compared to 2004, 2008, and 2013. The original layout was digitized and drawn according to a detailed plan. Following that, extracted maps and digitized aerial photographs were used to calculate the number of community centers in each period. In addition, high-resolution aerial photos were examined to better understand transformed community center patterns. A period-to-period comparison determines the number of transformed community centers. The types are then specified based on our definition of three community center patterns.

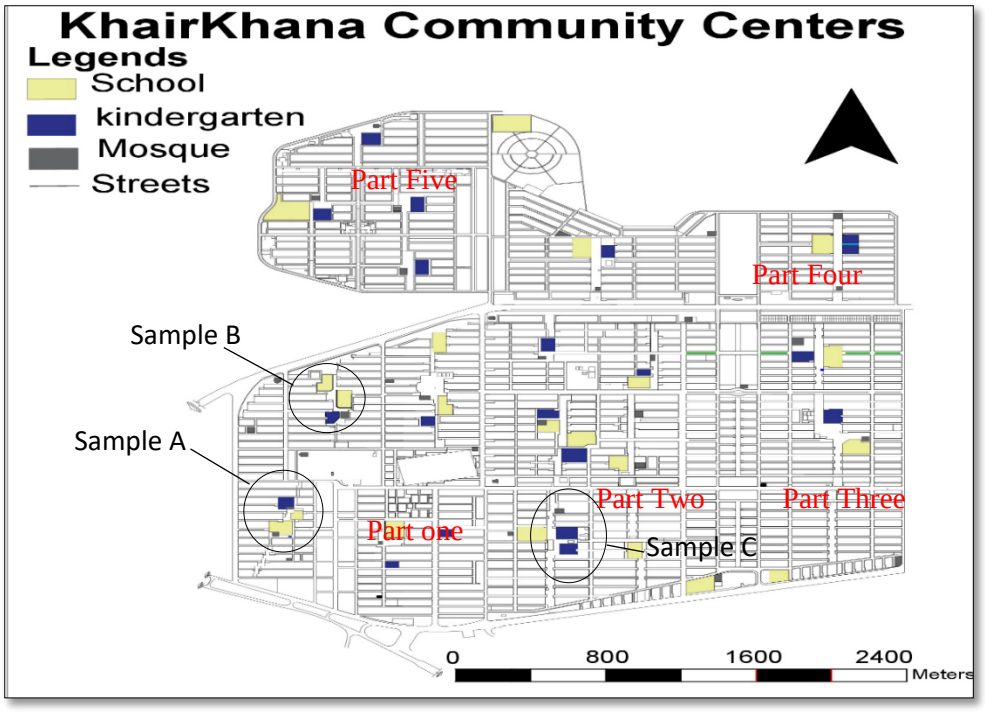

Figure 4-4: Khairkhana Original Layout based Community Centers.

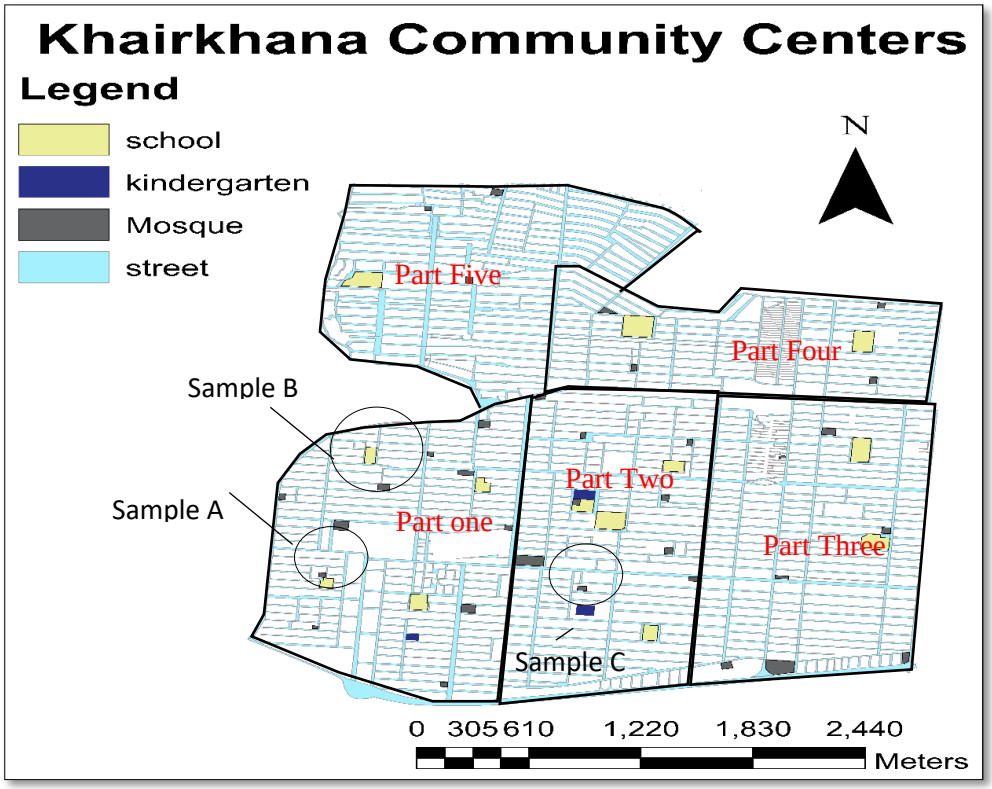

Figure 4-5: Availability of Community Centers in 2004.

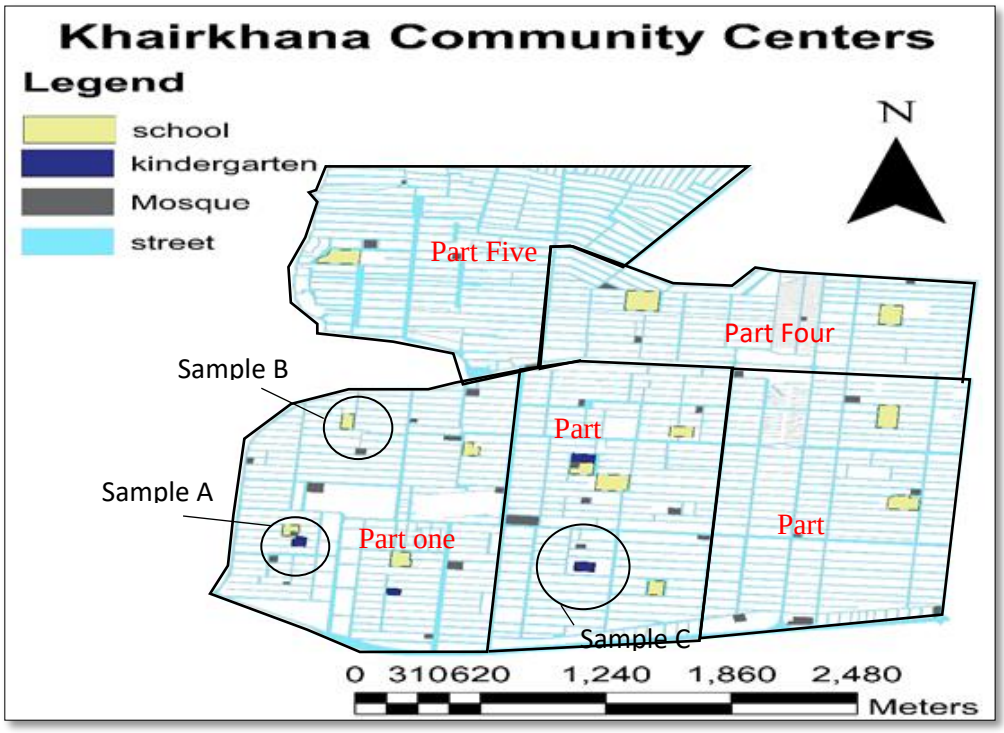

Figure 4-6: Availability of Community Center 2008.

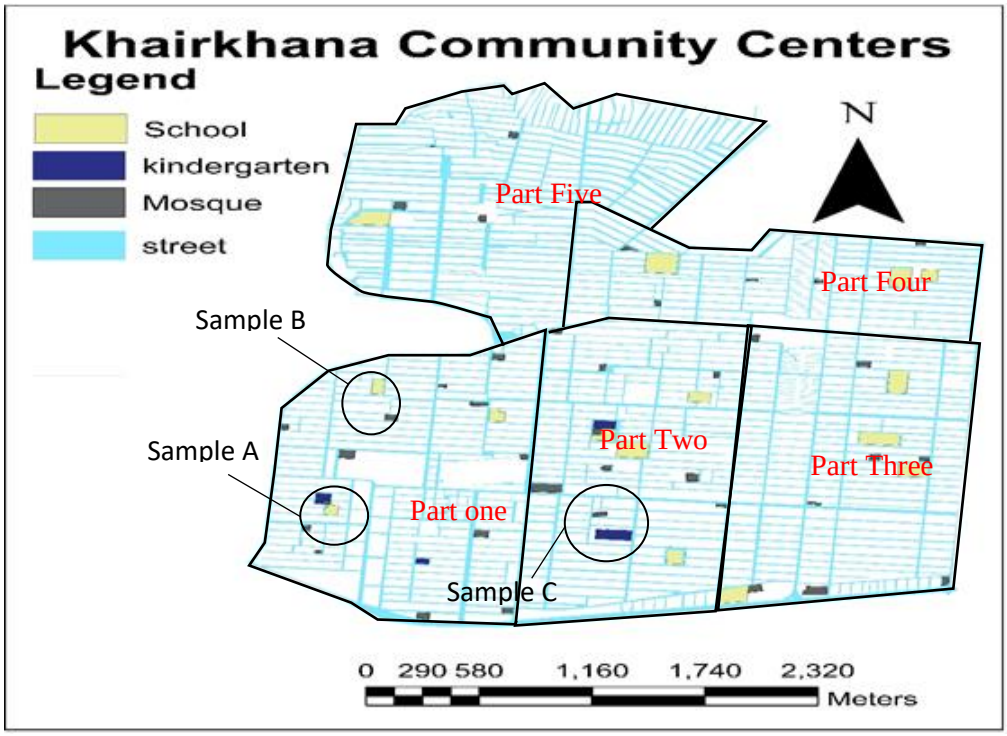

Figure 4-7: Availability of Community Center in 2013.

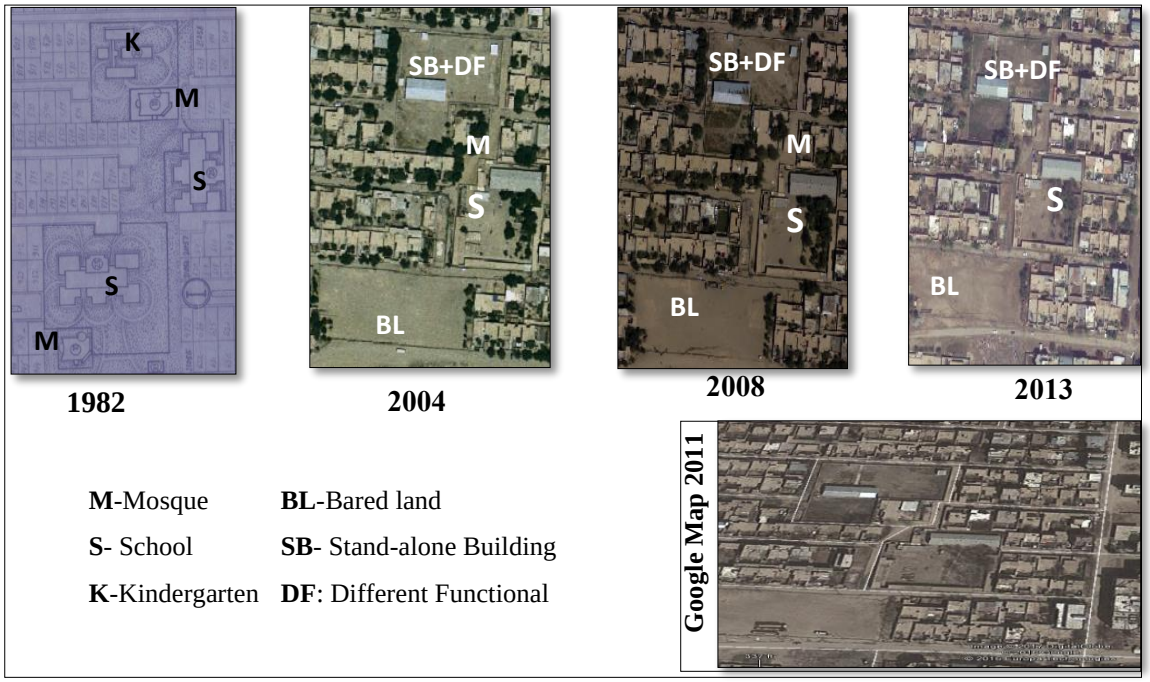

Figure 4-8: Sample A- Arial photography from Different Periods, source: MUDH, & KM.

Figure 4-8 depicts a detailed plan from 1982 as well as aerial photographs from other times. There are two schools, two mosques, and a kindergarten in the area. In 1982, a detailed plan established specific boundaries for community centers. The buildings of community centers have typical regular shapes. When the other periods, 2004, 2008, and 2013, are compared to the original layout of the area, the other images are significantly different. The kindergarten has been converted into a Stand-alone Building which serves as an office. Two schools are downsized as one is converted to Bared land. Mosques were also lost in the area. It seems that each community center in the area has a type of transfigured pattern.

In 1986, there are four community centers, two schools, one mosque, and one kindergarten for community guttering, as shown in Figure 4-9. Despite the fact that the sample is from Part One, this section was implemented in 1986. Likewise, Sample B Community centers, like Sample A, have typical building shapes and specific boundaries. We also have a loss of community centers when comparing the original layout to the years later. We can see that one school and one kindergarten have been converted into a row of houses. The school is still available in the study area. However, its specific boundary is not in place. Meanwhile, the school is recognizable as a pattern of Stand-alone Buildings. As a result, this area underwent two types of transformations: Sand-alone Building and Different Functional patterns.

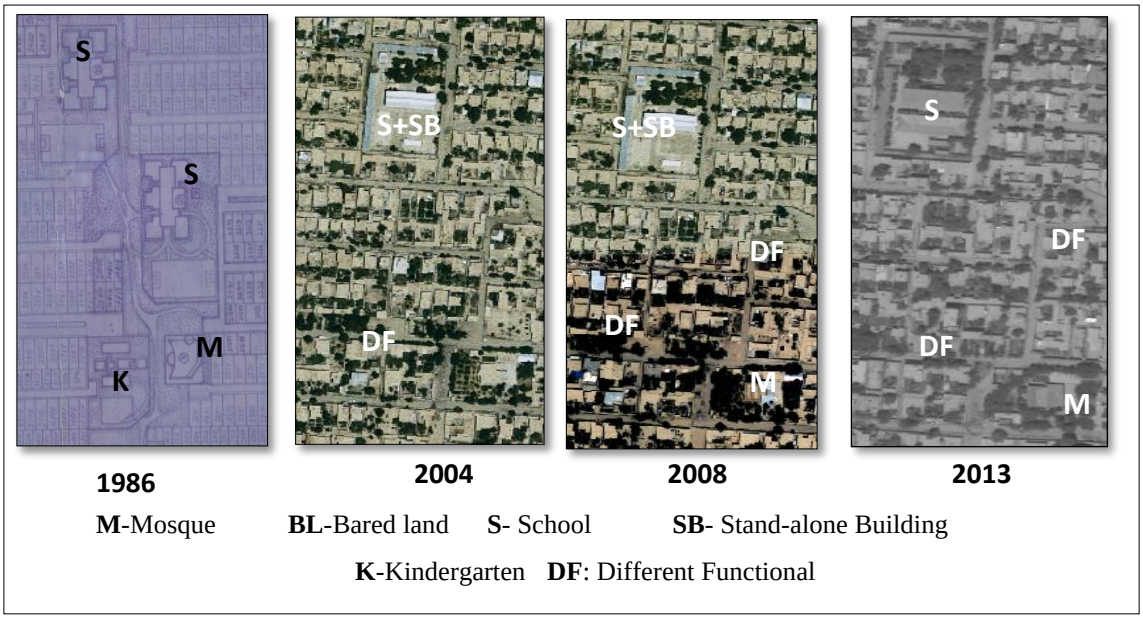

Figure 4-9: Sample B- Arial photography from Different Periods, source: MUHD & KM.

Above, the entire transfigured pattern of community centers is extracted by comparing all parts in different periods according to Figures 4-4, 4-5, 4-6, and 4-7. Table 4-4 depicts the number of each pattern for different periods. The results show that community centers have been transformed into one of the three patterns. The highest number of community centers can be found in the Different-Functional Patterns. The patterns of barren land and stand-alone buildings are ranked second and third, respectively. According to the comparison results, between 1986 and 2004, there were approximately 37 transformations of community centers. The number increased to 38 in 2008, which is the highest number of transformations since its establishment. On the other hand, community centers increased in the area between 2008 and 2013 as some transformed patterns reversed their original function.

Table 4-4: Transfigured Patterns of Community Centers in Target Area.

Transfigured Patterns of Community Centers in Target Area										
No	Name	SB	BL	DF	SB	BL	DF	SB	BL	DF
		2004			2008			2013		
1	Part 1	2	3	5	1	3	6	1	2	6
2	Part 2	3	3	4	4	3	4	1	2	4
3	Part 3	1	3	1	0	3	2	0	2	2
4	Part 4	0	2	1	0	2	1	1	2	2
5	Part 5	1	1	7	1	1	7	0	1	6
Sub-total		7	12	18	6	12	20	3	9	20
Total		37			38			32		
SB: Stand-alone Building, BL: Bared-Land, DF: Different Functional										

4.4 Physical Structure of Study Area

These planned residential districts' layout models are based on community centers and the elements surrounding them. Residential districts are made up of community centers and green strips that separate neighborhoods. They are critical to the concept of Khairkhana residential districts, as well as all other planned residential districts. Their availability, location, and position, as well as their quality, are critical to preserving the Russian Model's uniqueness in the study area. In fact, community centers are located in the center and separate residential areas. These picturesque community centers are linked with cul de sac (a) streets to avoid traffic intervention for children's safety. There are open green spaces.

Unfortunately, the layout model's quality has not succeeded. Traffic surrounds community centers. Furthermore, the cul de sac streets are linked and converted into direct streets. The layout model that kept traffic out of community centers and created a safe environment for children has now been lost. The green strips have been converted into useless land that can no longer be used for playgrounds or open green spaces for children. We compared the qualitative changes in the current condition and the original layout to better understand the physical changes in the layout in the study area. As a result, we considered layout model elements. Because the layout's main elements are residential houses, community centers, green strips, and cul de sac streets, we compared them to current images of the study area. Sample C from Part Three of the Khair Khana residential district was considered for this study. The elements of the two eras are evaluated to determine the differences, as shown in Figure (4-10). The contrast between the two images from the 1990s and the Google Maps 2017 results is stunning.

To begin, community centers are replaced by houses. Consider the school(S) and kindergarten(K) that have been converted into a variety of houses to see the differences. This is completely contrary to the original 1990 planning layout. To maintain the balance between the two sides, these community centers served as separators between residential neighborhoods.

Second, the cul de sac street (a) was converted to Direct Streets, which was supposed to act as a barrier to direct traffic from major roads (DS). A close look at the current layout shows that the Cul de sac (a) streets are not present. Direct Streets (DS) connect residential parcels and community centers (CCs). Unfortunately, there seems to be no safe environment for children because they cannot get to community centers without crossing major roads.

Third, the green strips (G) that were designed as suitable and favorable places for residents to use as playgrounds and open spaces have changed shape. The streets ran through these green strips that separated them into sections. These components are extremely small and cannot be used in any way.

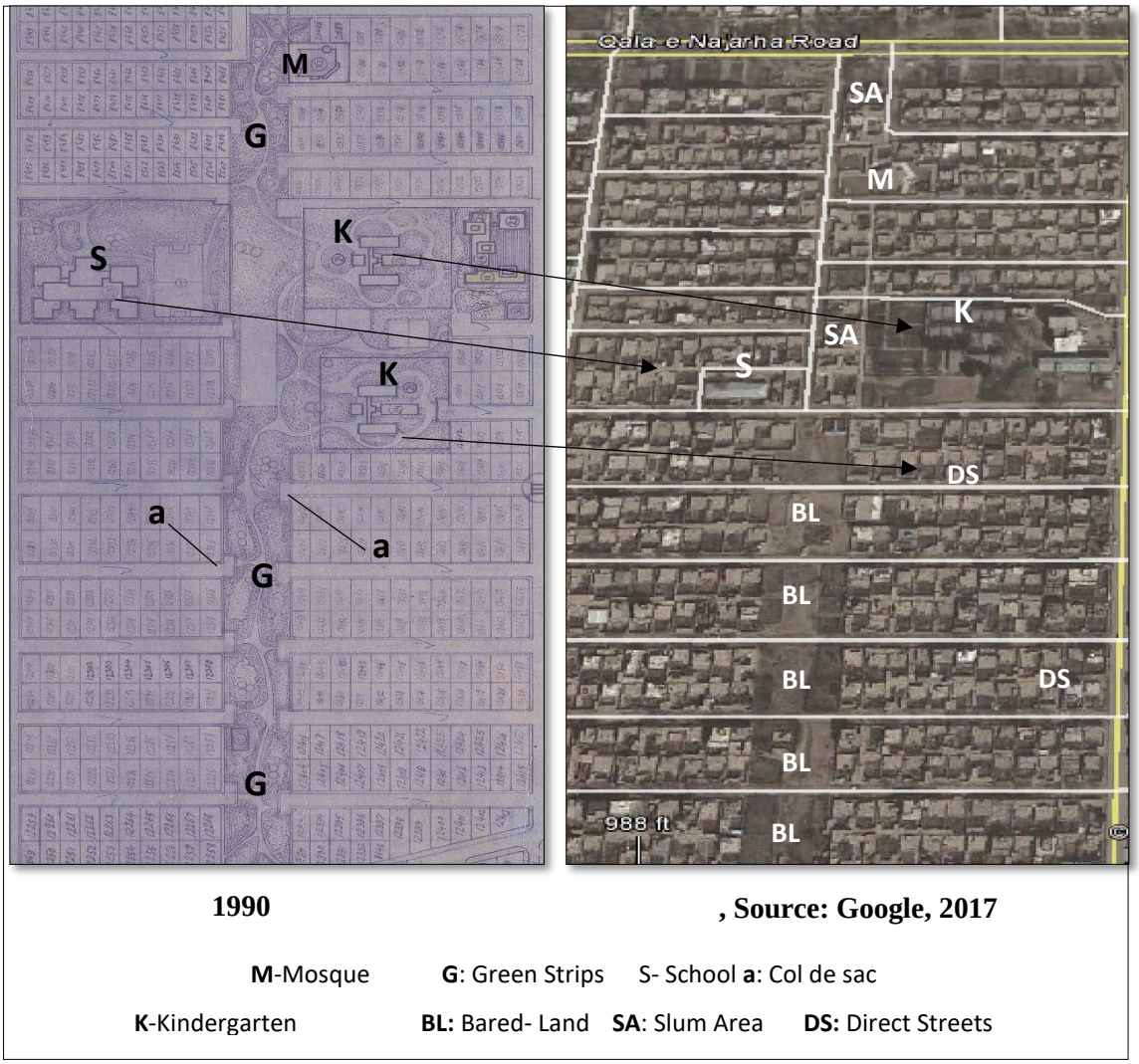

Figure 4-10: Sample C, The Layout Differences, source: KM & Google Map.

Finally, we discovered that the layout model of these planned residential districts had lost its original identity due to the conversion of these elements. The loss of quality and modality is directly related to the original layout deterioration. To maintain its originality, availability is very critical for consistency and stability. Meanwhile, chapter 6 focuses on strengthening the community center and expanding its capacity in response to current population demand.

In this case, the originality and modality of the original layout must be reversed. This is for the efficiency and sustainable development of planned residential neighborhoods, particularly in our study area. This is possible whether the original detailed plan elements are reversed to the study areas. So, it is imperative to restore the quality of community centers. In addition, the number of community centers should also increase. On the other hand, the green strips should be connected to create a network of cul de sac streets. To solve this issue, detailed solutions are proposed in Chapter 6.

4.5 The Current Status of Activities

The majority of planned residential communities have religious and educational programming. Any other activities related to social-cultural and recreational activities, on the other hand, must reach beyond the neighborhood scale. This emphasizes the need for more Islamic socio-cultural centers to meet the community's growing needs and addresses the lack of social, cultural, and recreational services in the study area, particularly for women, youth, and children.

Residents typically attend mosques and participate in religious activities, both normal and unusual, over a year. These spiritual activities include five daily collective prayers, one weekly Friday prayer, and festive Eid prayers twice a year. Furthermore, once a year for one-month, late-night prayers for Ramadan are held. Quran recitation and Islamic practices are also performed in mosques. Because of the presence of numerous mosques and madrasas (Islamic schools) in the study area, these activities are carried out effectively.

Children and adolescents attend elementary, secondary, and high school. Classes are overcrowded due to lack of space and buildings. The majority of schools require students to study outside under a tent. They do not have chairs or desks and must sit on the ground. Furthermore, schools must be held three to four times per day to meet the needs of the current population. Wedding ceremonies are typically held in wedding halls, which are prohibitively expensive for locals to afford. Mourning services are performed in mosques due to the city's lack of mourning halls. There is a lack of proper execution of other activities in addition to Islamic activities. Residents usually congregate in the mosque after Friday prayers or at other times when residents are not permitted to attend. Residents' inability to hold meetings and sessions in schools due to time constraints increased community development activities. This issue was addressed by proposing an alternative solution in which not only meeting places but also missing activities would be handled.

4.6 Conclusion

Kabul's developed urban neighborhoods experienced strong and rapid urbanization unprecedented at the beginning of the twenty-first century. This resulted in an increase in the population across the city. The population boom not only resulted in informal settlements and urban sprawl. But also, illegal vertical development, especially in planned residential districts. The rush of people toward planned residential districts influenced the layout structure and its elements. Community centers disappeared and others changed their functions and land use. By comparing the number of community centers from the past to the present, we can see that there is a significant decline in the number of community centers. Community center numbers are too often deducted in schools and kindergartens. On the other hand, the green strips used as recreation areas turned into unused land. These green strips provided sufficient

space for residents to enjoy their lives. Meanwhile, cul-de-sac streets were designed to prevent traffic flow to the residential areas. However, they were converted into direct streets. This resulted in the children not being able to play as they did previously. This situation made the children play indoors, which could have a lot of influence on their living conditions and health. Meanwhile, a place to bring residents together and promote unity among residents is lost.

To conclude, a change in structure layout, the disappearance of community centers, the development of apartment buildings, the loss of green areas, and the conversion of cul de sac streets to direct streets could have resulted in a loss of identity and the modality layout. The research discovered that the community center's capacity is insufficient compared to the current population. It is also realized that the existence of community centers is very essential to the originality of layout models. Because it plays a crucial role in the long-term development of residential areas and resident social cohesion. It is therefore crucial to revive and restore the transformed community and suggest a model that accommodates the current populace. Therefore, the importance of community centers for the long-term development of a residential neighborhood is emphasized in the subsequent chapter. We also emphasize ways to expand community centers. This could be accomplished by revitalizing and rehabilitating existing community centers and proposing an innovative model.

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Chapter 5: The Impacts of Housing Transformation on Living Conditions and Monitoring Mechanism

5.1 Introduction

This chapter contains the results from Case Study 2 focusing on the physical transformation of housing typology. It also focuses on their influence on residents' health and living conditions. Initially, the study areas were selected based on their physical characteristics. Detached houses were designated as low-density areas and converted into illegal apartment buildings. To understand the influences of housing transformation, social and environmental issues were analyzed. In addition, case study 3 is also included in this chapter. According to the study findings, the transformation of housing typology was accompanied by some significant violations of rules and regulations. These violations included building floors, building coverage areas, and setbacks. Furthermore, the study examined the reasons for the transformation, which included a faulty monitoring mechanism, a lack of human resources, and a lack of planning.

5.2 Examining Physical Forms

The evaluation of the layout plan and the number of stories of detached houses and apartment buildings in this article illustrates the transformation from detached houses to apartment buildings. To better understand the specific time and level of housing transformation in the study area, we analyzed them depending on different periods. These different periods are specified based on our enhanced aerial photos and site visit photography. Comparative analysis of aerial images is conducted using a few characteristics, such as the built-up area, the number of floors, setbacks, and photographs taken on-site from building views. These characteristics are followed by Kabul Municipality rules and regulations. In addition, households responded to questions about their housing transformation history.

Through checking the layout of buildings (built-up area) we found that the Building Coverage Ratio (BCR) and setback were drastically violated in the study area. Aside from its height, which is typically allowed for low-rise residential areas to have two stories and four floors maximum, the building's height was also cracked. The BCR of a detached house was typically between 40 and 50 percent and setbacks at a minimum were 1 meter from each side. However, the front view setback was different on all three sides and was about L/5 of the plot's length. We found that these transformed houses partially or fully occupied the plot area. This was notably witnessed in apartment buildings which violated setback rules from all sides. In addition, buildings were constructed higher than the maximum number of floors permitted. The number of floors was usually determined based on the size of the plot. As big as it was, the number of floors increased to 4. Therefore, land that would have been used for detached houses was converted into apartment buildings.

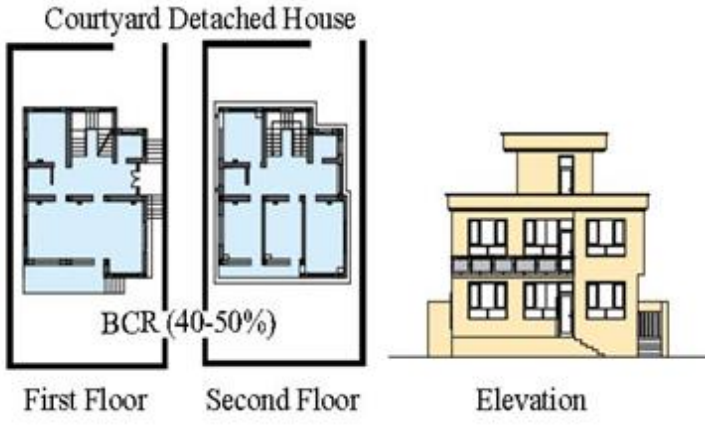
(a)

(b)

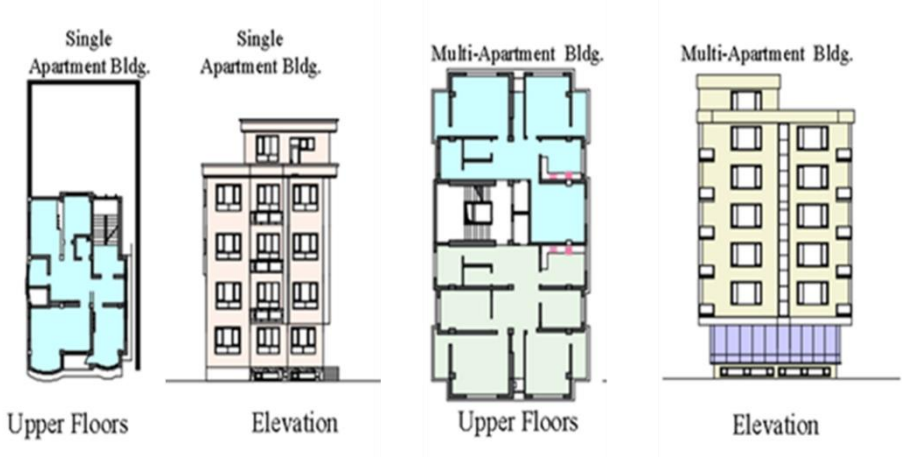
Figure 5-1: Aerial photos of Study Areas, source: KM.

(a)Parwan-2: a study area located in southern part of district 4; (b) Taimani: a study area located in northern part of district 4.

Our study areas underwent many changes between 2006 and 2021. According to the observations we made in the study area, many apartment buildings emerged in Taimani and Parwan-2. Originally, these two areas were intended to be low-rise, detached courtyard houses, as shown in Figure 5-2.



(a)



(b) (c)

Figure 5-2: Taimani and Parwan-2.

(a) Detached Houses; (b) Single Apartment Building; (c) Multi-Apartment Building

Any other typology use, on the other hand, must be approved by the Kabul Municipality Board. Despite this, many apartment buildings have been built to replace detached houses. Changes in housing typology have led to significant changes in household numbers. The current condition of the houses is shown in the top view and in three dimensions in Figures 5-3 and 5-4. Both areas of focus were intended to have 97 households in total. This quantity has since increased to 395. Taimani is home to 219 households, while Parwan-2 is home to 176.

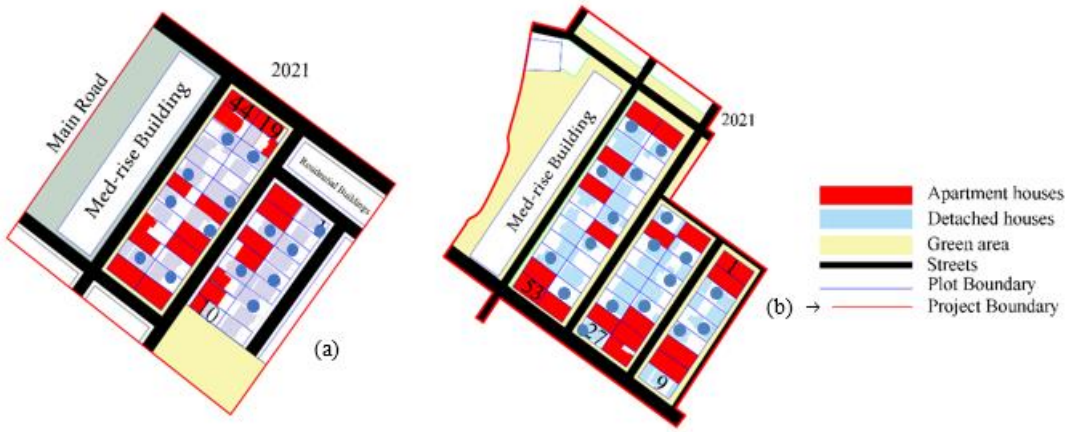


Figure 5-3: Current Condition &Surveyed Houses: (a) Parwan-2; (b) Taimani.

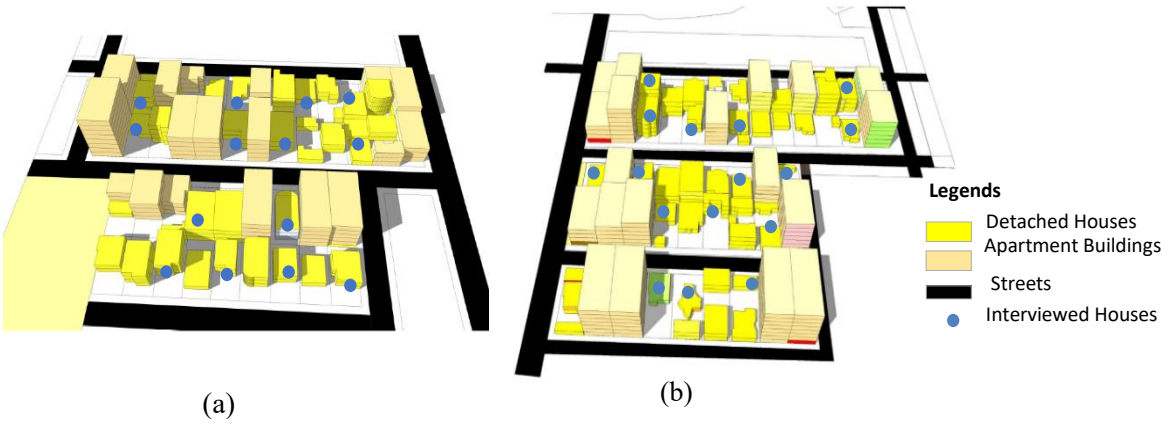


Figure 5-4: Three-Dimensional Version of Current Condition and Surveyed Houses, (a) Parwan-2; (b) Taimani.

Figure 6-5 shows detached houses built of concrete and local materials. Our field visit and photography revealed that these buildings are made of expensive materials. Transformation buildings are made of concrete and modern materials.

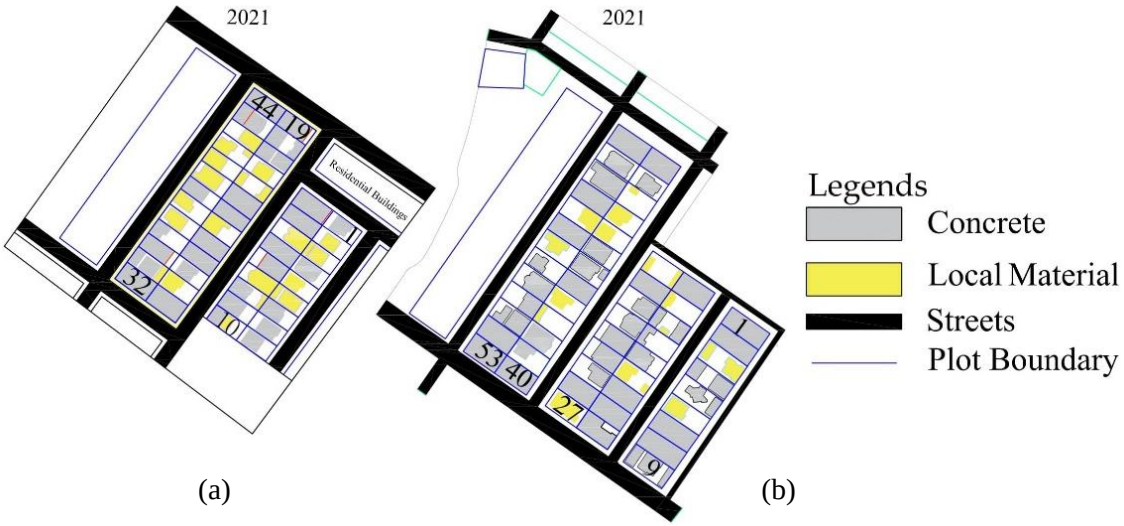


Figure 5-5: Housing Material in Study Areas: (a) Parwan-2; (b) Taimani.

Table 5-1 indicates material information about the houses in the study area. About 53 houses are in Taimani and 44 in Parwan-2. A number of the houses interviewed were made of concrete and local materials. In all, 10 respondents reported detached houses made of concrete, with 8 made of local materials in Taimani. The number of respondents in Parwan-2 with concrete detached houses is 8, while local material is 6.

Table 5-1: Statistic of Houses in Study Areas.

No	Content	Taimani		Parwan-2		Total
1	Number of Plots	53		44		97
2	Housing Material	Concrete	Local	Concrete	Local	
3	Interviewed Houses	10	8	8	6	32
4	Study Area	40	13	31	13	97

5.2.1 Study Area One (Taimani Project)

The study area consisted of 53 plots. The total number of households varied from one plot to another plot based on the type of house. Over the last decade, 18 detached houses have been transformed into apartment buildings ranging from 4 to 8 stories. Each floor contains two apartment units.

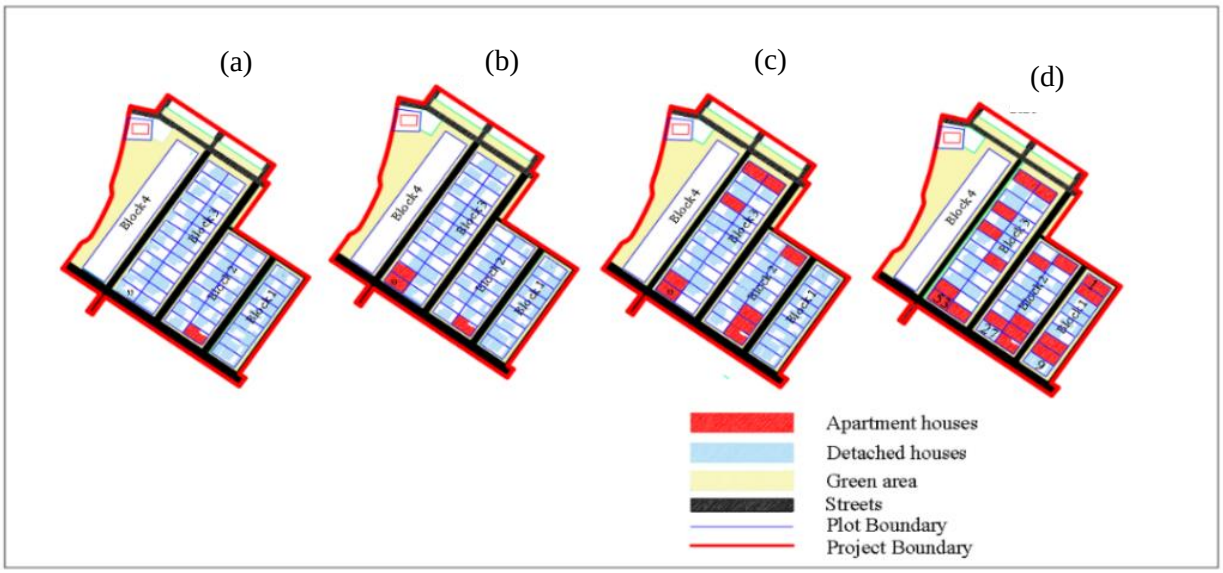


Figure 5-6: Transformation of Housing Typology in Taimani.
(a) 2006; (b) 2013; (c) 2018; (d) 2021

Based on the field survey, every floor has two apartments apart from the first floor of some buildings, which are used for commercial purposes. This makes for a total of 183 apartments. Taking the number of detached houses into consideration, the total number of households becomes 219 in the study area as shown in Table 5-6. As of 2021, 48 buildings are being used as residential, 4 as mixed-use, and one is under construction. A majority of the residents are owners, approximately 66 %. A third rent their homes, and 4 % have a mortgage as stated in Table 5-2.

Table 5-2: Status of Land Use and Residents in Taimnai.

No	Land Use			Residents		
	Status	Number	Percentage (%)	Status	Number	Percentage (%)
1	Residential	48	90.0	Owners	35	66.0
2	Mixed-Use	4	8.0	Tenants	16	30.0
3	Under Construction	1	2.0	Mortgage	2	4.0
	Total	53	100	Total	53	100

Before 2006, almost all of these houses were built from local materials, such as bricks and mud. Apartment buildings began to replace single-family detached homes at the beginning of the second decade. Three apartment buildings were constructed in 2013, resulting in 22 newly formed households in the study area. Five years later, in 2018, the area became denser as the apartment buildings were three times more numerous. Recently, we surveyed the study area and found that the number of apartment buildings has doubled over the past three years. This demonstrates how quickly the transformation took place as shown in Figure 5-7. All transformed homes except plot number 18 occupied 100% of the plot area, violating the requirement for building coverage ratios. In a check of 53 buildings for which the KM has granted permits, only 8 plots, 5 detached houses, and 3 apartment buildings were discovered based on the geodatabases. Despite permits being granted, they later changed the volume of the building to suit their interests.

Figure 5-7: Current Condition of Taimani based on Field Visit Photography, source: author.

5.2.2 Study Area Two (Parwan-2)

It is located in the southern part of District 4. We focused on 44 plots in this area. In this area, the highest apartment building has 8 floors while the lowest has 3. Depending on the area covered by the plot, the number of apartments varies. Our field visit allowed us to notice an obvious point: some plots are made up of both apartment-style buildings and detached houses. Based on their responses, they built new apartments beside their old home to accommodate their growing family. In contrast, the other apartment buildings were constructed for business. There is only one apartment on each floor of these buildings for residential purposes, as the layout and its view can be seen in Figure 5-8.

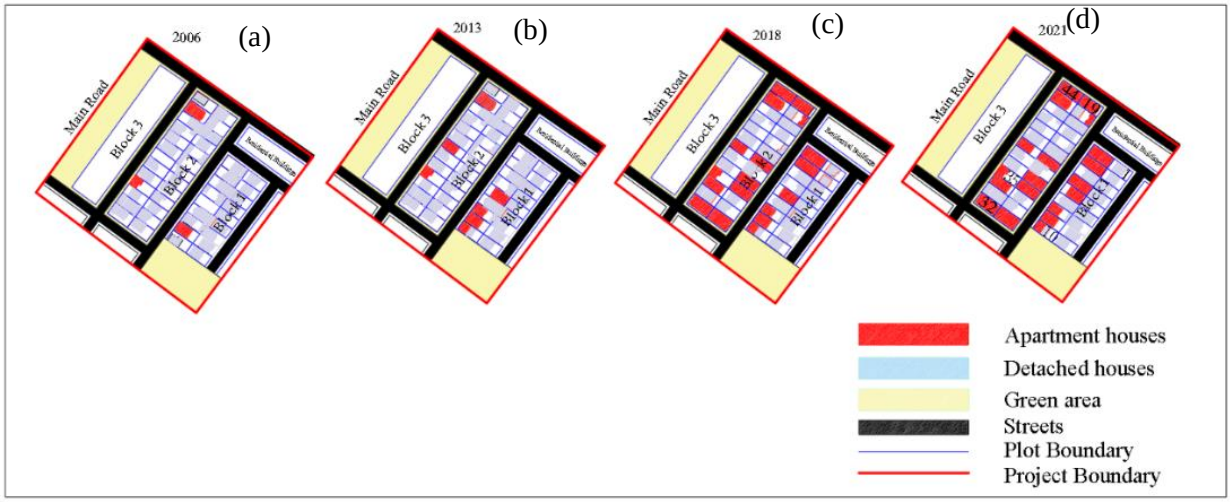


Figure 5-8: Transformation of Housing Typology in Parwan-2.

(a) 2006; (b) 2013; (c) 2018; d (2021)

Considering the housing typology in the area, the housing transformation dates back to 2006. Before the emergence of apartment buildings, detached houses were made of local materials. As we see in Figure 5-8, residents have shown interest in living in apartment buildings in the first decade of the 21st century. While the major transformation happened in the second decade as many apartment buildings replaced detached houses. In 2013, there were about 7 apartment buildings in this area, but this number increased to 18 in 2018. However, in the last three years, only 1 transformation has happened based on our site visit. According to our observations on the site, the majority of the converted buildings were built for residential purposes, with only two being used for commercial purposes. Most of the occupiers were owners while the tenants constituted almost one-tenth of the residents.

Table 5-3: Status of Land Use and Residents in Parwan 2.

No	Land Use			Residents		
	Status	Number	Percentage (%)	Status	Number	Percentage (%)
1	Residential	42	95.0	Owners	38	87.0
2	Mixed-Use	2	5.0	Tenants	4	9.0
3	Under Construction	0	0.0	Mortgage	2	4.0
	Total	44	100	Total	44	100

Figure 5-9: Current Condition of Parwan-2, Field Visit Photography, source: author

Apartment buildings were constructed illegally by landowners in both study areas. It means that these landowners built the building in violation of regulations, whether or not they obtained a building permit. These landowners are those who purchased the land from Kabul Municipality in the 1970s. In addition, some new landowners have purchased the land from these original landowners. The landowners then sold these apartment units to others who had decided to move in from other areas. The apartment unit's owners have a customary deed (1). Meanwhile, tenants are residents who move into these areas from different locations on a contract basis for short periods. They are paying the monthly fee to the landowners or the apartment unit owners. In addition to these two types of residents, many people obtain their homes through a mortgage. Landowners or apartment owners enter into a long-term contract with this resident (mortgager). The landowner or apartment unit owner received a large sum of money from these residents, which he was then required to repay to reclaim possession of his housing unit. The document does not constitute ownership; however, the resident may continue to live until the full amount of money is returned to him.

This should be stressed to emphasize that residents are only dealing with paying apartment rent and that there is no payment for land whatsoever. In our interviews, we asked about 40 apartment owners and tenants in both study areas why they decided to live there. We received different responses from them. Several owners argued that these apartments were cheaper and had a lower price than the formal market. In addition, security and good service were also significant factors for many of them. According to tenants, reasonable fares, proximity to their jobs and families, and security were among the factors attracting them to this area. In both study areas, the availability of reliable security was cited the most frequently by owners and tenants. Therefore, these factors directly contributed to the transformation of detached houses into apartment buildings. Although the area is congested and the buildings are crowded, security is relatively high, according to our investigation. This is due to paved roads, streetlights, the

presence of security checkpoints and their periodic patrols, resident awareness, and cooperation with the police. In the meantime, the buildings are also safer than other types of housing. These structures are constructed with a variety of materials such as reinforced concrete, steel doors, aluminum, un-plasticized polyvinyl chloride windows, and so on. Some buildings are simple to manage because they use codes to enter. To summarize, both the area and the buildings are safe and secure.

Table 5-4: Factors Attracted Residents to Taimani and Parwan-2.

No	Transformation Factors		
	Choices	Respondents	Percentage (%)
1	Good Service	6	15.0
2	Proximity to Job	10	25.0
3	Lower Price	28	70.0
4	Reasonable Fares	32	80.0
5	Security	36	90.0
40 Respondents			

Both study areas had major violations of regulations due to the housing transformation. Apartment buildings violated the building coverage ratio drastically. As a result, the setback rules were ignored in the transformed houses of the Taimani project, as shown in Figures 5-10 and 5-11. The setback rules violation can be seen more clearly in a case in Taimani (Plot 20 and 21). The right-hand side, which is a detached house (Plot 21) follows the rules. This plot met the setback rules from every side, which amounts to approximately 1 meter. Compared to (plot 20) which is located on the right side of this plot, the setback rule was drastically violated. The building footprint was extended and coincided with the boundary of the plot on four sides. It means there is no free space around the building in the plot area as all of the outdoor spaces have been converted into the building area. Concerning the number of floors in each plot, only six plots with four floors comply with the revised regulation. All the rest of the transformed houses have violated the regulations according to Table 5-6.

Since the transformation began, the study area in Parwan 2 has seen a total of 19 conversions of detached houses into apartment buildings. Figure 5-10 and Table 5-5 demonstrate this. The building coverage ratio and the number of floors were considered according to the rules in some of these transformed houses. For example, in plot 35, both the number of floors and the building coverage ratio were determined using predefined rules, but the setback was ignored. The combination of apartment houses and courtyard houses was the most notable feature that distinguished this project from the Taimani project. Some apartment complexes did not take up the entire plot. They can be built as a standalone structure or in conjunction with a detached house. The number of floors was considered in nearly half of the house renovations. The setbacks and building coverage ratios, on the other hand, have been severely violated in the Parwan 2 project.

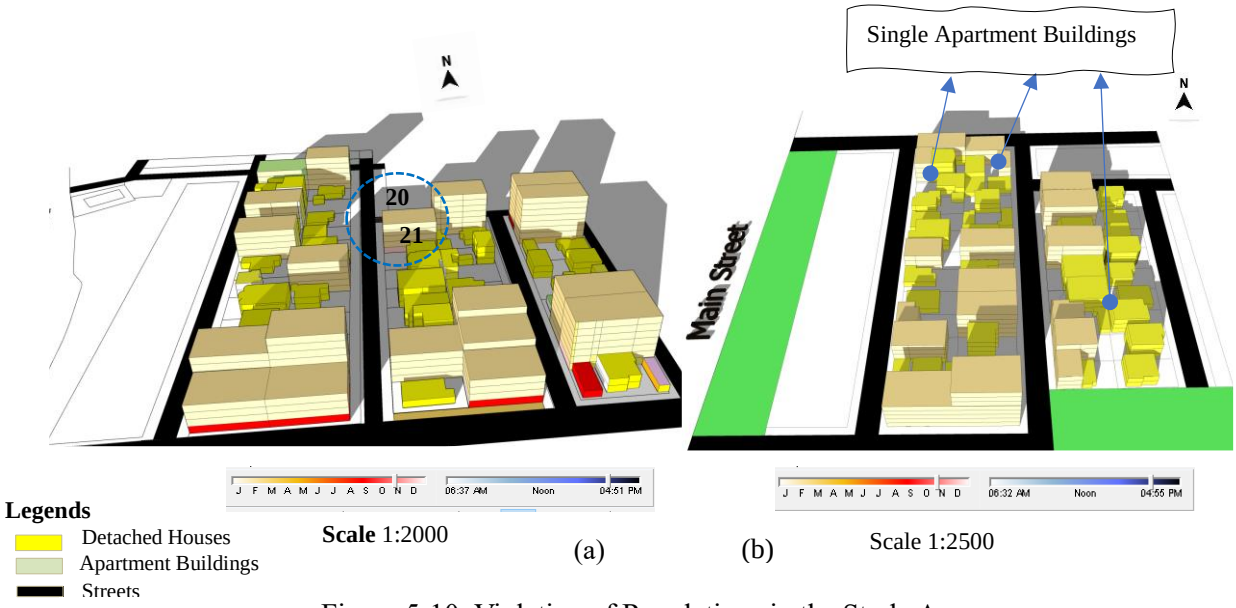


Figure 5-10: Violation of Regulations in the Study Area.
(a) Taimani; (b) Parwan-2

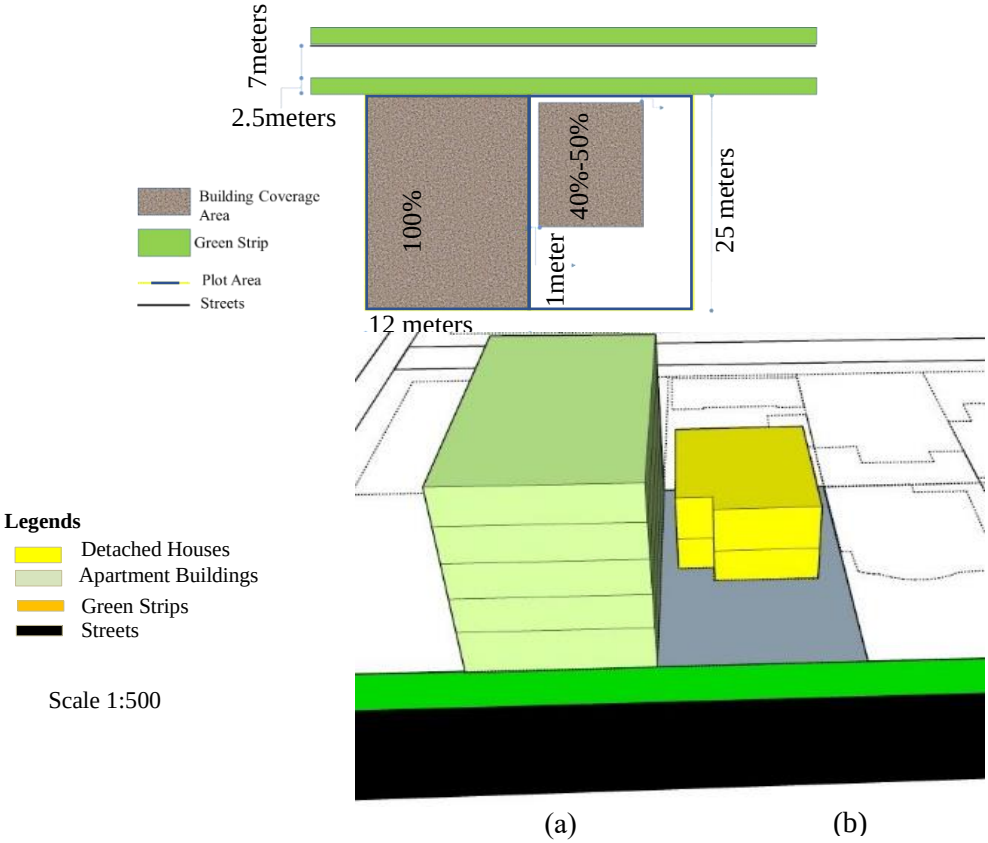


Figure 5-11: Setbacks Violations Case (Plot 20 and 21) in Taimani.
(a) Apartment Building (b) Detached House

Table 5-5: Information of Houses in Taimani Project.

Houses Characteristics				Bldg. Quality		Regulations Violation			Housing Information				Transformation Periods (DH to AP)				Current Housing Typology				
House No	Plot Area(m2)	Built up Area(m2)	Floors	Concrete	Local Material	Number of Floors	Building Coverage Ratio	Setbacks	Ownership	Occupier	Construction Permit	Living Duration	2006	2013	2018	2021	Detached	Apartment	underwork	Building Usage	Households
1	430	430	8	●		x	100.0%	x	ND	O		-				●		●		Mx	16
2	400	400	8	●		x	100.0%	x	FD	O		-				●		●		R	16
3	470	210	1		●				FD	T		-					●			R	1
4	420	262	2	●					FD	O		-					●			R	1
5	485	169	2	●					FD	R		5+					●			R	1
6	430	150	1		●				FD	O		15+					●			R	1
7	450	450	7	●		x	100.0%	x	FD	O	●	-				●		●		R	14
8	450	450	7	●		x	100.0%	x	FD	O	●	-				●		●		R	14
9	475	297	2	●					FD	T		-					●			R	1
10	360	360	7	●		x	100.0%	x	FD	O		-			●			●		R	12
11	360	238	1		●				FD	M		-					●			R	1
12	370	206	3	●					ND	O	●	-					●			R	1
13	370	84	3	●					ND	O	●	-					●			R	1
14	350	207	1	●					FD	O		-					●			R	1
15	360	133	1		●				ND	O		-					●			R	1
16	370	370	6	●		x	100.0%	x	FD	O		10+				●		●		R	12
17	365	365	5	●		x	100.0%	x	FD	O					●			●		R	10
18	375	325	4	●		○	87.0%	x	FD	T		-	●					●		R	8
19	365	83	1		●				FD	T		15+					●			R	1
20	330	330	5	●		x	100.0%	x	FD	T	●	-				●		●		R	10
21	360	143	2	●					ND	O		-					●			R	1
22	360	171	3	●					FD	T		-					●			R	1
23	335	262	3	●					FD	O		-					●			R	1
24	350	252	2	●					FD	T		15+					●			R	2
25	370	129	2	●					FD	T		1+					●			R	2
26	360	360	4	●		○	100.0%	x	FD	O		-			●			●		R	8
27	370	207	1		●				FD	T		-					●			R	1
28	355	355	6	●		x	100.0%	x	FD	O		-			●			●		R	11
29	315	135	1	●					FD	T		-					●			R	1
30	370	26	1	●					ND	T	●	-					●			R	1
31	330	141	1		●				FD	T		-					●			R	1
32	320	108	1		●				FD	O		15+					●			R	1
33	325	190	1	●					FD	O		-					●			R	1
34	360	125	1	●					FD	O		15+					●			R	1
35	330	330	5	●		x	100.0%	x	ND	M		-			●			●		R	8
36	370	114	2		●				FD	O		-					●			R	1
37	350	90	1		●				FD	T		-					●			R	1
38	370	227	1	●					FD	T		1+					●			R	1
39	370	370	1	●					FD	O		15+					●			R	1
40	380	380	4	●		○	100.0%	x	ND	O		-				●		●		Mx	7
41	400	400	4	●		○	100.0%	x	ND	O		-				●		●		R	7
42	370	192	3	●					FD	T		15+					●			R	1
43	440	310	5	●					FD	O		-					●			R	1
44	350	350	5	●		x	100.0%	x	ND	O		-			●			●		R	8
45	370	145	2		●				FD	O		15+					●			R	1
46	350	350	8	●		x	100.0%	x	FD	T		-				●		●		R	8
47	380	138	1		●				FD	O	●	-					●			R	1
48	340	90	0	●					FD	O	●	-							●	R	0
49	380	250	2	●					FD	O		15+					●			R	1
50	335	165	2	●					FD	T		-					●			R	1
51	385	245	5	●					FD	O		15+					●			R	1
52	375	375	4	●		○	100.0%	x	FD	O		-		●				●		Mx	7
53	380	380	4	●		○	100.0%	x	FD	O		-		●				●		Mx	7
Total				41	12	12	18	18					1	2	6	9	35	18	1	48	219

DH-Detached Houses, AP-Apartment Buildings FD-Formal Deed, CD-Customary Deed-, ND-No Deed-, O-Owner, T-Tenant , M-Mortgage, R-Residential, Mx-Mixed Uses, X-Violated, ○- Not Violated

Note: 1. Regulation violation is calcualted by ignorance of rules; 2. Building Usage is calculated based on Residential Status;

Table 5-6: Information of Houses in Parwan-2.

Houses Characteristics				Bldg. Quality		Regulations Violation			Housing Information				Transformation Periods (DH to AP)				Current Housing Typology				
House No	Plot Area(m2)	Built up Area(m2)	Floors	Concrete	Local Material	Number of Floors	Building Coverage Ratio	Setbacks	Ownership	Occupier	Construction Permit	Living Duration	2006	2013	2018	2021	Detached	Apartment	underwork	Building Usage	Households
1	325	325	2	●					ND	O		-					●			R	1
2	325	250	1		●				FD	O		-					●			R	1
3	300	300	2		●				FD	O		-					●			R	1
4	325	325	3	●					FD	O		-					●			R	1
5	300	100	2		●				FD	O							●			R	1
6	325	170	1	●					FD	O	●						●			R	1
7	325	110	3	●					FD	O		-					●			R	1
8	300	150	3	●					FD	O		-					●			R	1
9	300	300	3	●					FD	O		-					●			R	3
10	300	175	3	●		○	58%	x	FD	O		-		●				●		R	3
11	300	205	4	●		○	68%	x	FD	O		15+	●					●		R	8
12	300	180	3	●		○	60%	x	ND	M		15+		●				●		R	3
13	325	230	3	●					FD	O		15+					●			R	1
14	325	225	3	●					FD	O		15+		●				●		R	3
15	300	300	5	●		x	100%	x	FD	O		15+			●			●		R	10
16	300	180	1	●					ND	T	●	15+					●			R	1
17	300	300	5	●		x	100%	x	FD	O		-				●		●		R	10
18	300	300	5	●		x	100%	x	ND	T		-			●			●		R	10
19	300	260	3	●		○	87%	x	FD	O					●			●		R	6
20	300	220	4	●		○	73%	x	FD	O		-			●			●		R	8
21	300	230	1	●					FD	O	●	-					●			R	1
22	325	160	2		●				FD	O		5+					●			R	1
23	300	260	1		●				FD	O		15+					●			R	1
24	325	240	2	●					ND	O		5+					●			R	1
25	300	300	5	●		x	100%	x	FD	O					●			●		R	10
26	350	0	2		●				FD	O		5+								R	1
27	300	300	5	●		x	100%	x	FD	O		-			●			●		R	10
28	325	325	5	●		x	100%		FD	O		-			●			●		R	10
29	300	180	4	●					FD	O		-					●			R	1
30	300	180	1		●				FD	O	●	1+					●			R	1
31	300	300	8	●		x	100%	x	FD	O		1+			●			●		Mx	14
32	300	300	5	●		x	100%	x	FD	O					●			●		Mx	8
33	300	200	2	●					FD	O		1+					●			R	1
34	300	230	4	●		○	77%	x	FD	O		15+			●			●		R	8
35	300	100	3	●		○	33%	x	FD	T		1+	●					●		R	6
36	300	210	1		●				FD	O		1+					●			R	1
37	300	160	1		●				FD	O		15+								R	1
38	300	210	3	●		x	70%	x	FD	O				●				●		R	6
39	300	150	3		●				ND	T		1+					●			R	1
40	325	180	1		●				FD	O		-					●			R	1
41	300	140	2		●				FD	O		-					●			R	1
42	300	130	2		●				FD	O										R	1
43	300	260	4	●		○	87%	x	FD	O		-	●					●		R	8
44	300	300	4	●		○	100%	x	FD	O		-			●			●		R	8
Total				31	13	9	18	19					3	4	11	1	25	19	0	42	176

DH-Detached Houses, AP-Apartment Buildings FD-Formal Deed, CD-Customary Deed-, ND-No Deed-, O-Owner, T-Tenant , M-Mortgage, R-Residential, Mx-Mixed Uses, X-Violated, ○- Not Violated

Note: 1. Regulation violation is calcualted by ignorance of rules; 2. Building Usage is calculated based on Residential Status;

A summary of the data presented in Tables 5-5 and 5-6 is given in Table 5-7. These tables highlight the houses that have been transformed. There are four columns in the Transformation Period Section, titled 2006, 2013, 2018, and 2021 in Tables 5-5 and 5-6. The transformed houses are marked in black and circled and the total is shown in red at the bottom of Tables 5-5 and 5-6. Meanwhile, those numbers are marked and listed in subsections (2-1, 2-2, 2-3, and 2-4) of Table 5-7. Moreover, to verify the number of transformed houses, they are also highlighted under Current Housing Topology. The total number is highlighted in red at the bottom of Tables 5-5 and 5-6. Accordingly, the houses that are categorized and marked by the name of an apartment in the Current Housing Typology section, are transformed houses. Table 16 indicates that this number is 18 in Taimani and 19 in Parwan 2.

When these study areas were compared, they yielded nearly identical transformed building numbers, as seen in Table 5-7. The number of houses transformed varies for each period. Taimani had only one transformed house in 2006, whereas Parwan 2 had three. In 2013, Taimani had two transformed houses, whereas Parwan 2 had doubled the number. By comparing the housing transformations in these two research areas in 2018, Parwan 2 witnessed approximately double the number of Taimani-transformed buildings. Between 2018 and 2021, Taimani experienced 9 housing transformations from detached houses to apartment buildings. Surprisingly, Parwan 2 only had one house transformation, according to our data. Despite having fewer houses, Parwan 2 showed a significant transformation rate when comparing areas.

Table 5-7: Housing Transformation and Regulation Violation in Taimani and Parwan-2.

No	Content	Taimani		Parwan 2		Total	
1	Number of Plots	53		44		97	
2	Transformed Houses	18		19		37	
2.1	2006	1		3		4	
2.2	2013	2		4		6	
2.3	2018	6		11		17	
2.4	2021	9		1		10	
3	Transf. Rate (%)	34.0		43.0		38.5	
4	Households	219		176		395	
Regulations							
	Rules and Regulations	Considered	Ignored	Considered	Ignored	Total Considered	Total Ignored
5	Building Coverage Ratio	0	18	1	18	1	36
6	Setbacks	0	18	0	19	0	37
7	Number of Floors	6	12	9	10	15	22

On the other hand, when the rules and regulations in both study areas were compared, the building coverage ratios were violated by the same number, which is 18 in both study areas. Similarly, the entire

transformed building did not meet the setback requirements in these areas. Despite this, when the differences in the number of floors were considered, it had become clear that Parwan-2 was slightly more favorable according to Table 5-7. In general, both study areas violated numerous rules and regulations. These two study areas were expected to house 97 families. However, the number of families increased to 395 as a result of changes in housing typology. As of today, these apartment buildings are home to 219 households in Taimani and 176 households in Parwan-2.

5.3 Impact of Housing Transformation on Living Condition of Residents

Housing typologies transformation and violations of regulations have created a number of social and environmental problems. Following the emergence of apartment buildings, the number of households increased unexpectedly. The proliferation of apartment buildings in the study area has created negative impacts on the living conditions of residents. For this reason, we collected the opinion of residents through questionnaires. We targeted a total of 40 houses for our research; however, 32 houses supported us by giving their opinions.

5.3.1 Environmental Impacts

Ventilation

Natural ventilation contributes to the health of living spaces by ensuring adequate airflow through every room's external opening. As the building has windows formed on the perimeter, wind can circulate through these areas. Buildings surrounding these houses obstructed their external openings, resulting in a lack of air inside the houses. Based on our questionnaires, only one-third of the houses in our study area can be ventilated normally. However, about 66% of these respondents' houses rely on mechanical apparatus for ventilation. In addition to shortness of breath, constant headaches, and fatigue caused by inadequate ventilation, more than 59% of respondents indicated having experienced those symptoms as shown in Table 5-8.

Table 5-8: Ventilation Status.

NO	Ventilation	Taimani	%	Parwan-2	%	Total	Yes (%)
1	Can you normally get ventilation in your house?	4	22.0	7	50.0	11	36.0
2	Do you use mechanical apparatus to ventilate houses?	14	78.0	7	50.0	19	64.0
3	Have you ever experienced any illness (asthma, fatigue, headaches) due to lack of ventilation?	13	72.0	6	43.0	19	58.0
	Total Respondents	18		14		Frequency N = 32	

Energy Consumption and Shadow Impact

Lack of natural light as a result of constant shadow and inadequate ventilation directly contributes to an increase in energy consumption. According to 56% of respondents, they have access to sunshine for less than 3 hours during the day. The only time they see direct sunlight is during the morning hours, as indicated by their responses. As Kabul is cold in winter, the shading of these apartment buildings severely affects the residents' quality of life. The lack of sunshine has led to double combustion for heating according to 47% of affected residents in these study areas. A number of these affected owners even tried to leave the area, but because of these impacts, the cost of the plot has dramatically decreased. The majority of those interviewed, on the other hand, said summer was hot because of airflow disruptions. It is impossible to live without air conditioning or other forms of cooling. In these study locations, cooling costs represent a burden for 47% of the affected households as depicted in Table 5-9. The rise of apartment buildings boosts heating and cooling costs while also causing major bone ailments. As a result of consecutive shadow effects, 59% of respondents expressed concerns about orthopedics.

Table 5-9: Status of Energy Consumption and Shadow Impact.

NO	Energy Consumption and Shadow Impact	Taimani	%	Parwan-2	%	Total	Yes (%)
1	Did the shadow effects increase your heating cost during the winter?	8	44.0	7	50.0	11	47.0
2	Did the exterior openings blockage increasing cooling cost during summer?	8	44.0	7	50.0	19	47.0
3	Have your experienced illness(orthopedic) due to lack of sunshine?	13	72.0	6	43.0	19	58.0
4	How many hours the sun shining in your houses? (In case of less than 3 hrs)	11	61.0	7	50.0	18	56.0
	Total Respondents	18		14		Frequency N = 32	

Air pollution

During the field visit, we learned that residents utilize coal and oak to heat their homes since electricity is scarce and gas is expensive. The heating system is decentralized, and different tools are used to heat the houses. In both study areas, these materials burned, adversely affecting the lives of the residents. The affected residents claim that the emergence of apartment buildings contributes to the maximum amount of smoke being emitted in winter. Moreover, public baths contribute to air pollution in large quantities due to burning tires and coal. They need to shut the windows frequently in winter in order to avoid smoke coming into their houses. During winter, when smoke is most abundant, they

sometimes cannot see each other at close distances, especially at night. In an analysis of questionnaire responses, residents stated that air pollution severely impacts their quality of life. Table 5-10 shows that 97% of residents suffer from respiratory diseases. Residents in both of the study areas were complaining about the deteriorating quality of life due to air pollution. Based on our survey, we found that only two houses in Taimani and one house in Parwan-2 use an air purifier. This was not very common yet. The rapid pace of housing transformation in the future will cause residents to suffer more without consideration.

Table 5-10: Air Pollution Status.

NO	Air Pollution	Taimani	%	Parwan-2	%	Total	Yes (%)
1	Does air pollution due to local material combustion affected quality of your life in winter?	18	100.0	14	100.0	32	100.0
2	Have you ever been ill from air pollution? (Respiratory diseases)	18	100.0	13	93.0	19	97.0
3	Do you use air purifier for your house?	2	11.0	1	7.0	3	9.0
	Total Respondents	18		14	Frequency N = 32		

Sound Pollution

We are constantly surrounded by noise, whether it is natural sounds such as bird sounds, or human activities such as vehicles and crowds. Unwanted sounds can trigger anxiety and stress when loud and frequent. As a result of continued exposure to noise pollution, sensitivity increases, and human mood and behavior are affected negatively. Unfortunately, many residents in our study areas were also unsatisfied with the effects of noise. These two study areas were supposed to house 97 families in total. However, because of changes to the housing typology, the number of families grew to 395. The most annoying sources of sound pollution, according to our site visit, are traffic noise, children's voices, and human activity. As a result of our analysis of the questionnaires from these study areas, we have concluded that the noisy environment is present from eight in the morning until four in the evening. In the daytime, 88% of residents regularly close their windows to avoid noise entering their homes. Meanwhile, about 56% of them experienced tempering behaviors due to noisy environments. Even so, about 18% of them had physical and verbal conflicts in these study areas, as shown in Table 5-11.

Table 5-11: Resident Response to Sound Pollution.

NO	Sound Pollution	Taimani	%	Parwan-2	%	Total	Yes (%)
1	Do you close windows to decrease the sound pollution due to over-crowdedness during the day?	15	83.0	13	93.0	28	88.0
2	Have you experienced harsh temper and debates with neighbor due to noisy environment?	4	22.0	2	14.0	6	18.0
3	Does the noisy environment affect your mentality and health?	10	56.0	8	57.0	18	56.0
4	What time of the day do you feel much noisy? (In case of 8–16 pm)	10	56.0	12	86.0	22	71.0
	Total Respondents	18		14	Frequency N = 32		

Natural Light

Ignorance of setback rules and floor number increments distorts natural light, which is one of the most significant aspects of display, prestige, and mood. Based on our interviews, we found that 53% of respondents experienced visual discomfort due to a lack of natural light as shown in Table 5-12. Over half of these respondents use artificial light in their homes during the day. In addition, the shadiness of apartment buildings and the resulting daytime darkness caused about 56% of residents to feel fatigued and nostalgic. Eventually, this issue resulted in mental and visual impairment.

Table 5-12: Responses of Residents to Natural Light.

NO	Natural Light	Taimani	%	Parwan-2	%	Total	Yes (%)
1	Does emergence of apartment buildings affect your visual discomfort?	10	56.0	7	50.0	17	53.0
2	Do you feel fatigue and nostalgic due to lack of natural light?	11	61.0	7	50.0	18	56.0
3	Do you switch on artificial light during the daytime?	10	56.0	8	57.0	19	56.0
	Total Respondents	18		14	Frequency N = 32		

5.3.2 Social Impacts

Privacy Issues

Creating houses is a way to hide your personal views. The high level of privacy in a space promotes a sense of satisfaction among its occupants. As long as the parties respect each other's rights, privacy is maintained. However, inadequate privacy provisions in rooms can cause social conflict and irritation among residents. In the study areas, the building height varies, and the proximity of the buildings makes most residents feel uncomfortable with their privacy being respected. Increased apartment construction led to an increase in population. As a result, the house lacks privacy in its rooms. Table 5-13 shows that 88% of residents have to continually pull down their curtains to hide their houses from their neighbors. In addition to these issues, residents say it is difficult to have normal family conversations because of the proximity of the buildings. Based on questionnaire results, we concluded that women and girls in outdoor spaces of detached houses cannot spend their time as they used to. This led residents to feel depressed due to the lack of outdoor space. Our realization has led us to realize that the current living conditions are not optimal for most residents in terms of privacy.

Table 5-13: Residents view regarding privacy.

NO	Privacy	Taimani	%	Parwan-2	%	Total	Yes (%)
1	Do you often pull you curtains to hide the house from neighbors?	15	83.0	13	93.0	32	88.0
2	Is it possible for you to use the open space in your house conveniently?	7	39.0	7	50.0	14	44.0
3	Can you talk and make conversation with your family conveniently due closeness of buildings?	8	44.0	6	50.0	14	44.0
4	Have you experienced any depressed due to privacy issue?	10	56.0	8	57.0	18	56.0
	Total Respondents	18		14	Frequency N = 32		

Stepping outside and enjoying their leisure time is difficult for women in Afghanistan's conservative society. When there is a male partner, they tend to hang out. We spoke with several individuals about their access to parks and recreational amenities. Despite their availability, many respondents indicated that neighborhood parks and playgrounds were unsuitable for women and children. Parks are usually overcrowded, and the view of the inside is not protected. Non-residents from the local neighborhoods and from outside typically crowd the parks. Our inquiry into why this is happening discovered that the parks are managed by Kabul's municipal government, which does not

include the city's people. The Kabul Municipality is now experiencing a human resource and technical labor deficit. As a result, they have a great deal of difficulty controlling the administration of parks and playgrounds.

Psychometric techniques are used to measure traits such as abilities, perceptions, and qualities in social science and educational studies. Resist Likert developed the Likert technique, which has gained widespread popularity. To assess attitudes, the scale provides a range of responses to a given statement or question (Joshi, A., et al., 2015). In general, using this scale and the corresponding index number to measure people's opinions is a reliable method. Thus, by using the Likert scale, we determined the frequency of responses to each question. Alternatively, a range of numbers, such as 5, 4, 3, 2, and 1, is assigned to indicate strongly agree, agree, neutral, disagree, and strongly disagree. Each frequency is multiplied by its value to obtain the result. To obtain the result, each frequency is multiplied by its value. Each frequency is multiplied by its value to obtain the result. The satisfaction index was calculated based on the results and the number of respondents. The satisfaction index for each question is calculated using the equation below.

$$Satisfaction = \frac{Total\ Score\ Weighted}{Responses\ Total}$$

Table 5-14 clearly shows the association between residents' responses and social and environmental issues. The satisfaction indexes interpret the Likert scale results. The lowest satisfaction points are highlighted in red color. According to the results, air pollution has the lowest satisfaction rate among other questions. Privacy has the highest disagreement rate, while sound pollution ranks third in terms of disagreement. Other elements, such as ventilation, energy consumption, shadow effects, and natural light, are positioned in the final step. The majority of questions received less for the required level of satisfaction. These variables were either neutral or in disagreement domain. Meanwhile, as shown in Table 5-14, respondents expressed their satisfaction with only a few questions. Therefore, we conclude that based on the respondents' opinions, those living in detached houses are adversely affected by apartment buildings. As a result, we infer that, in the opinion of residents, apartment buildings are detrimental to those who live in detached houses. Residents have major health problems due to apartment buildings, and their quality of life has decreased. Residents' perspectives are critical to the accuracy of our research. On the other hand, we would assess the current environmental and social repercussions based on physical feature analysis. This would ensure the validity of our research and confirm respondents' opinions.

Table 5-14: Satisfaction of Residents.

Variables		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Liker Interpretation	
Likert Scale Score		5	4	3	2	1	Weighted Total	Satisfaction Index
		4.3–5	3.5–4.2	2.7–3.4	1.9–2.6	1–1.8		
Ventilation	Q1	0	48	18	24	2	92	2.88
	Q2	0	36	9	38	1	84	2.63
	Q3	0	28	15	38	1	82	2.56
Energy Consumption & Shadow Effects	Q4	0	56	21	22	0	99	3.09
	Q5	0	20	24	38	0	82	2.56
	Q6	0	20	24	38	0	82	2.56
	Q7	0	36	15	36	0	87	2.72
Air Pollution	Q8	0	0	0	28	18	46	1.44
	Q9	0	36	9	34	3	82	2.56
	Q10	0	116	0	6	0	122	3.81
Sound Pollution	Q11	0	12	3	56	0	71	2.22
	Q12	0	72	24	12	0	108	3.38
	Q13	0	28	21	36	0	85	2.66
	Q14	0	24	12	44	0	80	2.50
Natural Light	Q15	0	12	36	34	0	82	2.56
	Q16	0	36	15	36	0	87	2.72
	Q17	0	36	12	38	0	86	2.69
Privacy	Q18	0	0	0	44	10	54	1.69
	Q19	0	56	36	10	1	103	3.22
	Q20	0	56	39	10	0	105	3.28
	Q21	0	32	18	36	0	86	2.69

Q-Question

5.4 Environmental and Social Analysis

Apartment buildings are sprouting up all around the city. Less than 30% of the total urban area is constituted of planned residential districts. These areas were mostly designed and implemented in accordance with Russian Master Plans produced during the 1960s and 1980s. District 4 was one of the city's first residential districts, built according to the designs stated above. The design relied on a regular distribution system and detached housing. Moreover, three-quarters of the district's land area is developed. The district is attractive due to its centrality and accessibility, as well as its affordable illegal apartments. An overwhelming level of urban growth has resulted in multiple apartment buildings in these places. As a result, overcrowding, transportation congestion, building congestion, and a transformation in housing typology have occurred. Due to these challenges, several issues, including environmental and societal issues, have arisen. Poor ventilation, shadowing, air pollution, sound pollution, and privacy are just a few of the issues. Our paper's time and capacity constraints precluded us from focusing on numerous additional concerns related to the rise of apartment buildings.

High-density residential ventilation is heavily influenced by urban morphology and street-to-building interaction. As wind circulates around and between buildings and built-up areas, it increases pedestrian comfort, thermal comfort, and pollutant dispersal (Maing, M., 2022). Reduced wind velocity, urban heat, noise, and pollution all impede the urban environment (Ghiaus, C., et al., 2006). As a result of reduced airflow between buildings, human health is being targeted. In our case, apartment complexes also obstructed airflow in the study locations. The wind hit most buildings from two sides or less. This indicates that the majority of detached houses have Fair to Critical Conditions.

Meanwhile, a building's orientation, window ratio, and wall ratio all have an impact on energy efficiency. Urban energy consumption is widely acknowledged as an essential component of daily life and economic activity (Ürge, V. D., et al., 2015). Buildings are adjacent to shade the residences in the targeted region, lowering cooling demand in the summer and increasing heating demand in the winter (Ichinose. T., et al., 2017). South-facing rooms receive a lot of sunlight in the winter. In the morning and evening, the east and west sides are the brightest. Because detached houses are bordered by apartment buildings, they generate long shadows during the day. Figure 5-12 shows how thoroughly the research areas were assessed in terms of the shadow effect. In winter, the effects of shadow are closely tied to energy usage. At the same time, consumption is also strongly related to ventilation when the wind direction is blocked by apartment buildings. Therefore, energy consumption is considered in two cases, winter, and summer. In addition, the material of the house also plays a role in heating and cooling costs. Reinforced concrete is made of metal and stone and these two materials are efficient conductors of heat. In our study areas, there are more affected houses made of reinforced concrete.

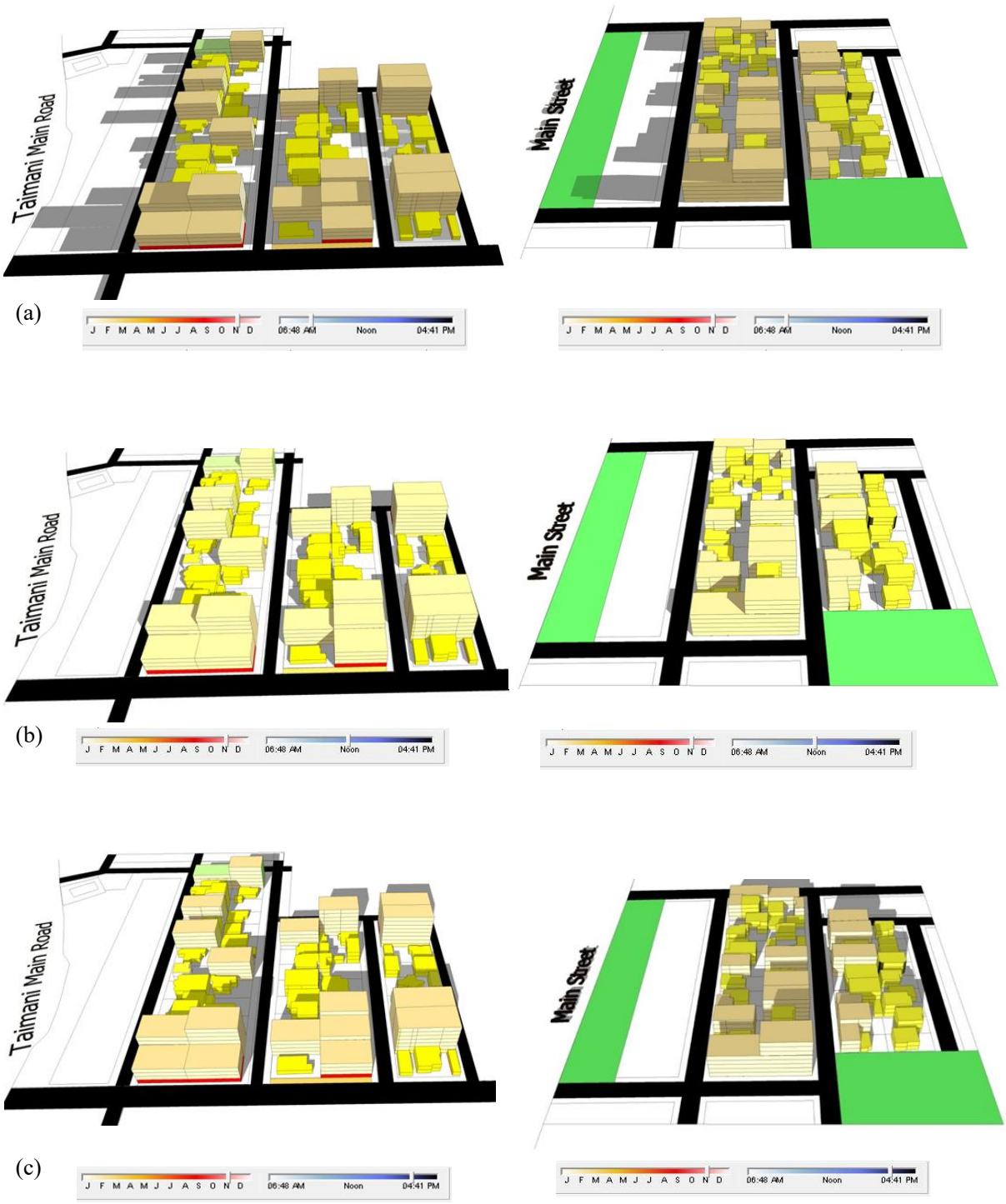


Figure 5-12: Shadow impact analysis projection of study areas.

(**a**) morning times; (**b**) noon times; (**c**) afternoon times

Consequently, they suffer more from heating and cooling aspects. Another consequence of urbanization is an increase in noise pollution. Because cities' land use is more prone to produce road traffic and other human activities, noise pollution has a severe influence on public health, particularly for urban residents (Yuan, M., et al., 2019). Noise is psychologically annoying and can trigger strong feelings such as rage, disappointment, anxiety, and melancholy (Moudon, A.V., 2009). As a result of changes in the body system, long-term exposure to high-level noise damages the cardiovascular system, brain system, and endocrine system (Münzel, T., 2018). Our research analyzed this concern based on the types of streets and traffic.

As the population grows, food production, transportation, and housing demand may increase, which could further contribute to air pollution (Zhai, T., et al., 2020). The issue of air pollution is one of the most pressing concerns for residents. Almost all respondents expressed concerns regarding air pollution. In our research, we also found that apartment building owners complain about pollution during winter. We, therefore, evaluated the air pollution in both study areas based on the report of the National Environment Protection Agency (NEPA, 2021). This report indicates that their focus was on the main air pollutants (PM2.5, PM10, NO2, O3, and SO2) according to Table 5-15. In addition, we also considered the Average National Standards for Air Quality in Kabul city (Ibid) according to their evaluation, which was conducted in two districts around our study areas in February 2021. All the above pollutants were higher than the NEPA standard. The report confirms that the responses are accurate and match the report of the National Environmental Protection Agency.

Table 5-15: Air pollutants status

Pollutants	**ANAQS (Avg.)**	**NEPA**	**Period (h)**
PM 2.5	75 μg/m^3	272 μg/m^3	24
PM 10	150 μg/m^3	344 μg/m^3	24
NO_2	80 μg/m^3	147 μg/m^3	24
SO_2	50 μg/m^3	76 μg/m^3	24
O_3	100 μg/m^3	123 μg/m^3	8

ANAQS: Afghanistan National Air Quality Standard NEPA; Afghanistan Environmental Protection Agency.

According to various definitions, privacy is mainly the need for space for visual, physical, and psychological separation (Gove, W.R., & Altman, I., 1975). In essence, privacy serves three main functions: limiting social interaction, developing strategies for managing it, and maintaining identity (Lang, J., 1987). Urban areas often suffer from uncontrolled construction, including the difference in

building heights, and the close proximity of buildings, especially in developing countries. We researched privacy in the context of unexpected buildings constructed at varying heights and distances.

As a result of the above evaluation, we classified the effects of various issues on detached house conditions into different categories. This is illustrated in Figure 5-13. In Figure 5-14, the type of impact on a detached house is shown. Type-A, for example, indicates that all variables such as ventilation, natural light, energy consumption, shadow impact, noise pollution, and privacy are marked with negative marks. Likewise, the B-type received the second-lowest score for these variables after Type-A. Therefore, Type A and B are in Critical Condition. The effects of these issues are classified as Type C when three or four of the aforementioned variables are acceptable to residents. However, Type D and E have consensus from residents in no fewer than five variables. Determining the number of variables determines the types of impacts as shown in Figure 6-3. There are many subtypes embedded in each type, based on the similarity and closeness of effects. Depending on where the detached houses are located in relation to apartment buildings, they are classified into these sub-types.

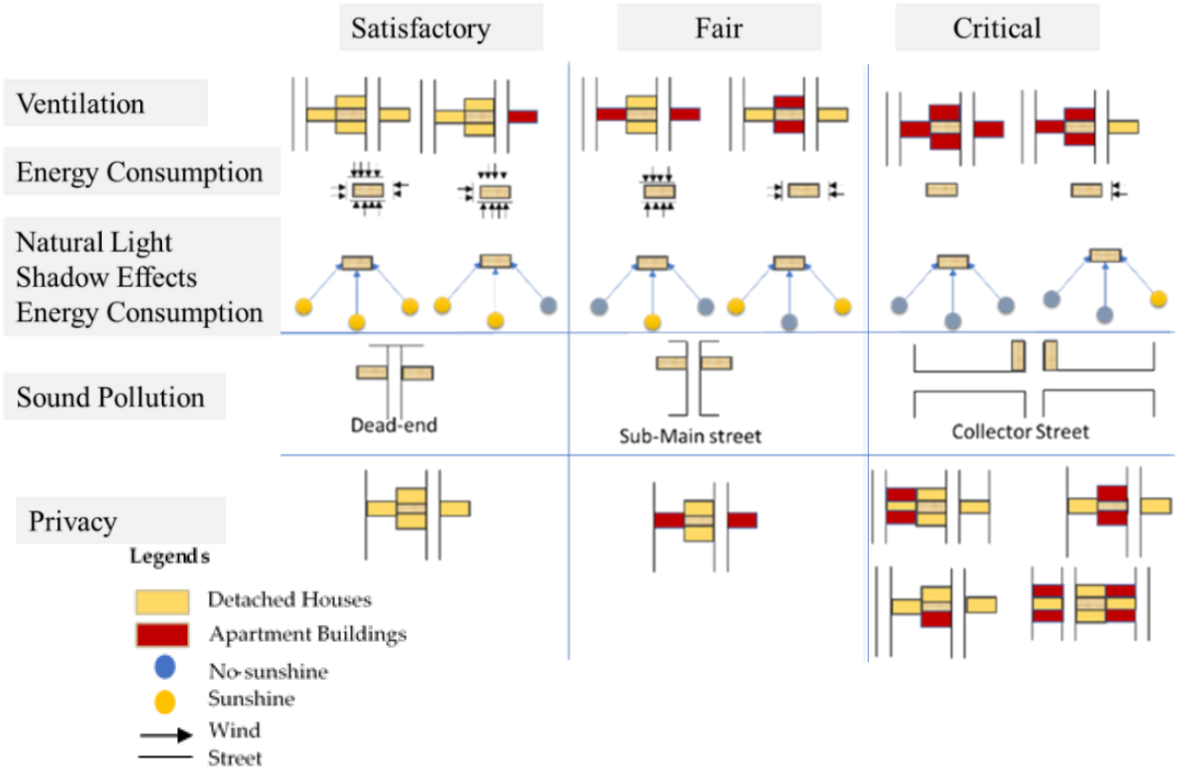


Figure 5-13: Categorizing of issues based on single impacts.

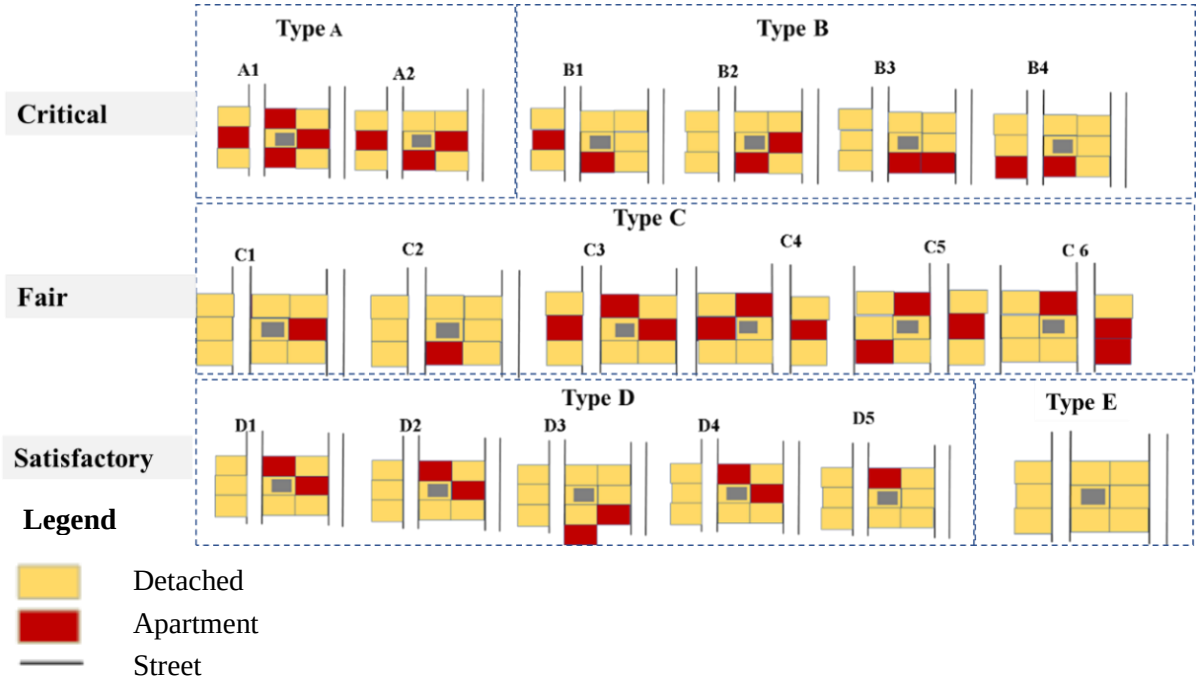


Figure 5-14 Categories for location layout of living environmental and social influences.

Tables 5-16 and 5-17 summarize the findings from both study areas, considering Figures 5-13 and 5-14. The issue of the impact of apartment buildings on detached houses is clearly stated. As shown in Table 6-4, the majority of houses in Taimani are of types A and B. As a direct consequence, the majority of detached houses in our study area are in Critical Condition. The status of two detached houses in the same table is now Fair and is heading toward Critical, as shown in light blue. Table 6-3 in Parwan-2 depicts the impact of apartment buildings on detached houses. Nearly half of the houses are classified as Type A or Type B, according to an analysis.

However, 50% of the houses were rated as being in acceptable condition. Based on the current rate of development, Satisfactory Condition is likely to worsen to Fair Condition in the coming years. The most major issue, according to our analysis of the variable effects, was air pollution. Noise pollution came second, and privacy came in third. Residents in both study areas provided fair to good marks for other variables. The parties' privacy and identities are protected as long as they respect each other's rights. Finally, the emergence of apartment buildings has had a significant impact on both study areas.

Table 5-16: Result of Taimani Analysis.

Taimani Project														
No	Affected Plots	Plot Position				Building Material	Issues							
		Front	Back	Left	Right		Ventilation	Natural Light	Shadow Effect	Energy Consumption	Air Pollution	Sound Pollution	Privacy
1	3	St+DH	Open	St+DH	Ap	Local	O	O	O	O	X	X	Δ
2	5	St+DH	Open	DH	DH	Concrete	Δ	O	O	O	X	X	X
3	6	St+DH	Open	Ap	DH	Local	Δ	Δ	Δ	Δ	X	X	X
4	11	St+Ap	Ap	Ap	DH	Local	X	Δ	Δ	Δ	X	X	X
5	13	St+DH	DH	DH	Ap	Concrete	O	O	O	O	X	X	Δ
6	15	St+DH	DH	DH	DH	Local	Δ	Δ	Δ	Δ	X	X	X
7	19	St+DH	Ap	Ap	St+DH	Local	Δ	Δ	X	X	X	X	X
8	21	St+DH	DH	DH	Ap	Concrete	O	O	O	O	X	Δ	O
9	25	St+DH	Ap	Ap	DH	Concrete	Δ	X	X	X	X	X	X
10	27	St+Ap	Ap	St+DH	Ap	Local	X	Δ	Δ	Δ	X	X	X
11	29	St	Ap	Ap	DH	Concrete	Δ	O	O	O	X	X	Δ
12	31	St+DH	DH	Ap	DH	Local	Δ	O	O	O	X	X	Δ
13	34	St+DH	Ap	DH	DH	Concrete	Δ	Δ	Δ	X	X	X	Δ
14	36	St+DH	DH	Ap	DH	Local	O	O	O	O	X	X	Δ
15	38	St	DH	DH	DH	Concrete	X	X	X	X	X	X	X
16	42	St	DH	Ap	DH	Concrete	Δ	Δ	Δ	Δ	X	X	X
17	45	St	DH	Ap	Ap	Local	Δ	Δ	Δ	Δ	X	X	X
18	51	St	DH	Ap	DH	Concrete	Δ	Δ	Δ	Δ	X	X	X

St: Street, DH: Detached Houses, Ap: Apartment Buildings	Poor	**X**	Type A (Critical)
			Type B (Critical)
	Moderate	Δ	Type (Fair)
	Good	O	Type C&D (Satisfactory)

Table 5-17: Result of Parwan-2 Analysis.

Parwan-2 Project													
NO	Affected Plots	Plot Position				Building Material	Issues						
		Front	Back	Left	Right		Ventilation	Natural Light	Shadow Effect	Energy Consumption	Air Pollution	Sound Pollution	Privacy
1	1	St+DH	Ap	St+DH	DH	Concrete	Δ	O	O	O	X	Δ	Δ
2	3	St+DH	DH	DH	DH	Local	Δ	Δ	Δ	Δ	X	O	Δ
3	5	St+DH	Ap	DH	DH	Local	O	O	O	O	X	Δ	Δ
4	7	St+DH	Ap	DH	DH	Local	O	O	O	O	X	Δ	Δ
5	13	St+DH	DH	Ap	DH	Concrete	Δ	X	Δ	Δ	X	X	X
6	16	St+Ap	DH	Ap	Ap	Local	X	X	Δ	X	X	X	X
7	21	St+DH	DH	Ap	DH	Local	O	O	O	O	X	X	Δ
8	24	St+DH	DH	DH	Ap	Concrete	O	Δ	X	Δ	X	X	X
9	26	St+DH	DH	Ap	Ap	Concrete	X	X	Δ	Δ	X	X	X
10	30	St	DH	DH	Ap	Concrete	X	X	X	X	X	X	X
11	33	St	Ap	Ap	Ap	Concrete	Δ	x	x	x	X	X	X
12	37	Stt+Ap	DH	DH	Ap	Local	Δ	Δ	Δ	Δ	X	X	X
13	40	St+Ap	Ap	Ap	DH	Concrete	O	O	O	O	X	X	Δ
14	42	St+Ap	DH	DH	DH	Local	O	O	O	O	X	X	Δ

St: Street, DH: Detached House, Ap: Apartment Buildings	Poor	**X**	Type A (Critical) / Type B (Critical)
	Moderate	Δ	Type (Fair)
	Good	**O**	Type C&D (Satisfactory)

Based on Table 5-18, the results of the above tables indicate that these issues are significant in our study areas. We discovered that our study areas were most influenced by the factors that had the lowest scores. A Type-B assessment earned the highest scores for both Poor (X) and Moderate (Δ) with 54 and 37, respectively. There is no Good(O) score for Types A and B. However, Type-C also achieved moderate to poor scores. This type has a higher incidence of mutations than Type B. Our evaluation

gave Type D the mark of Good (O) score of 47. Based on all of the factors that have the greatest impact, the Critical condition obtained the highest score. The Satisfactory Condition takes second place, while Fair Condition takes last place.

Table 5-18: Total issues results.

	Name	Good	Moderate	Poor	%	Condition
Type	A	0	0	14	100.0	Critical
	B	0	37	54	59.3	
	C	0	10	11	52.4	Fair
	D	47	21	23	25.3	Satisfactory
	E	5	1	1	14.3	
	Total	52	69	103	46.6	

The results of each study area are shown separately in Table 5-19. Taimani has a lower satisfaction rate than Parwan-2, according to our physical analysis. In both study areas, however, the number of residents who are satisfied with the minimum condition is similar. Meanwhile, our physical inspection revealed that there are more houses in Taimani with Fair conditions than in Parwan-2. Three houses are classified as being in Fair Condition, two in Taimani and one in Parwan-2. Even so, since the level of satisfaction in Parwan-2 is nearly 10% higher than in Taimani, Critical Condition is lower. Our research discovered that both study areas in District 4 are vulnerable; however, the northern area is the most likely to be impacted.

Table 5-19: Result of Study Areas.

Condition	Taimani	%	Parwan-2	%
Satisfactory	7	38.9	7	50.0
Fair	2	11.1	1	7.0
Critical	9	50.0	6	43.0
Total	18	100.0	14	100.0

We can confirm that the residents' concern about the critical condition is accurate based on the physical analysis and our findings. The identity of these areas as low-rise housing areas has been lost. Despite the fact that these areas were preferred for our study, District 4 and all other residential neighborhoods confront the same challenges. Current trends in housing development appear to suggest

that the issues will get worse in the future. In such a case, early intervention against apartment building developments in low-rise residential neighborhoods is truly unavoidable.

This study has enormous practical significance. The emergence of apartment buildings increased the number of housing units from 97 to 395. The difference between the actual number of houses at the back and the current number is approximately 295. Consequently, there was overcrowding and heavy building congestion in the study area. However, it also caused numerous environmental and social issues. The transformation of the housing typology from a replacement perspective has left half of the area in critical condition from a health and living standpoint.

Overpopulation, pollution, and the use of fossil fuels are just a few of the ways humans harm the environment. Human interactions with the environment have resulted in climate change, land degradation, air pollution, poor ventilation, and housing congestion. This environmental transformation is the result of people meeting their own needs. Drilling holes, building dams, and constructing new houses can all have a significant impact on the environment, either positively or negatively. This relationship between human activity and the environment was theoretically justified by Hammond in 1995 (Hammond, A.L., 1995). As a result of this interaction, human health is impacted by polluted air and water, degraded services, and a number of other factors (Akintunde, E., 2017). As a consequence of our research, we have concluded that housing transformation has a profound impact on society. These adjustments (Morris, E.W. & Winter, M., 1975) may make a substantial difference to our living and health conditions.

Many factors encourage the transformation of housing typology in a planned residential district. The exclusion of residents from planning and decision-making processes resulted in the unawareness of residents of laws and regulations. The failure of monitoring and inspection mechanisms resulted in an increase in apartment buildings in the study areas. Along with these, there were many other issues accompanying housing transformation including mismanagement, the long-term construction permit process, and lack of coordination between internal departments and external organizations. In view of the limited capacity, this paper focuses exclusively on monitoring mechanisms, whose improvement indirectly helps to improve other issues too. Therefore, in the next section, the chapter focuses on monitoring mechanisms, stakeholders, capacity, and capability.

Certain remedies to the problems listed above are only applicable in certain circumstances; however, in order to reverse the situation, the source of the problem must be removed. One solution is to reverse the main layout in the study area based on the primary design in a detailed plan. Community centers are essential components of the main structure of planned residential districts. They must be rearranged in the structure layout to achieve the quality and modality of the original concept of planned residential neighborhoods. The main layout of the study area should be based on cul-de-sac streets, as shown in

the detailed plan. In this case, the green stripe returns to its original shape. As a result, a significant area for recreation and other uses will be provided.

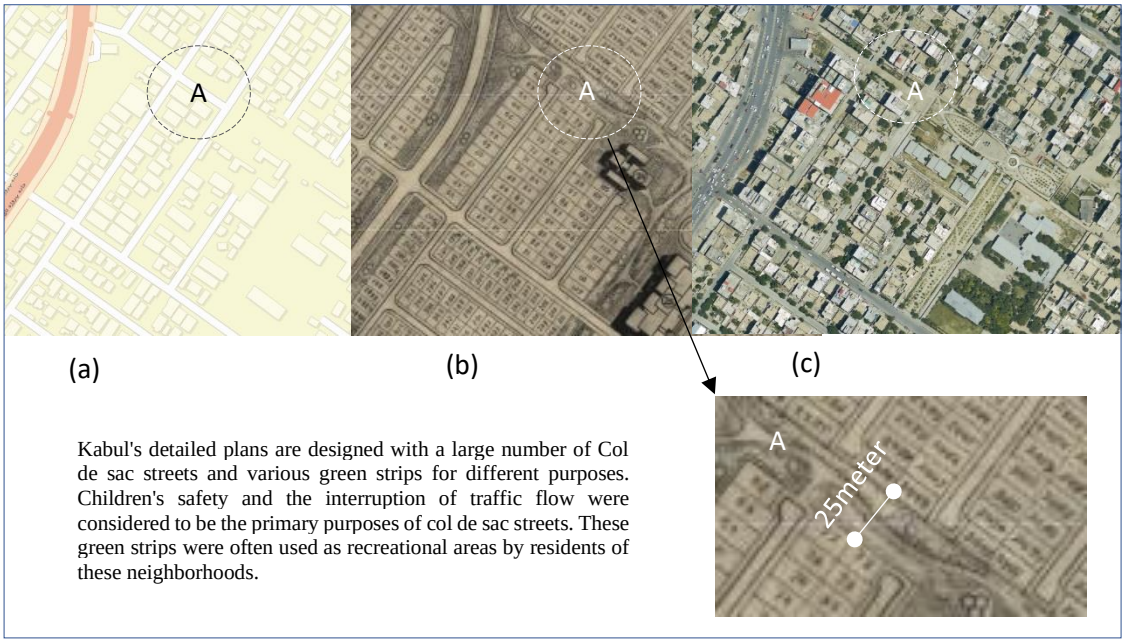


Figure 5-15: Green strips in planned residential areas, source: MUDH, &KM.

(a) Focused Map Road (b) Detailed Plans designed in late 1970s (c) Aerial Photograph

The space can also provide children with a specific area to play in, and the sound they create will be concentrated in a specific area. Such a space may be helpful in houses that do not normally receive direct sunlight during the day. The width of the green stripe in Figure 8-1 should be approximately 25 m. These types of green strips are frequently included with detailed plans for Kabul.

Meanwhile, to reduce the smoke that contributes to air pollution, emissions from a heating system could be minimized through a filtration system. It is critical to remove wood particles and charcoal smoke from the air. This can be achieved by deploying an effective filtration system for small particle removal. In apartment buildings, filtration systems can reduce smoke leaving the building.

Privacy as a significant social issue is difficult to address. The detailed plan concept is used in most of the zone plans around Kabul. One of the strictest rules in the past was to keep the house interior out of sight. As apartment buildings emerged, it became evident that those rules were ineffective. Today, any changes to the area would not make a significant difference. As an alternative, residents may install invisible windows to block the view of the inside of the apartments during the day. The municipality of Kabul might provide a small amount of relief by limiting the size of human-headed windows on the direct sides of the buildings.

At the same time, residents continue to require artificial lighting to alleviate visual discomfort. Kabul receives plenty of sunlight, allowing for rooftop solar panel installation. Renewable energy sources continue to be the most efficient way to meet electricity demand. According to (Momand. R., & Mohan., 2020) research, Afghanistan has the most solar energy capacity in South Asia (Slimankhil. A. K., et al., 2020). Solar energy is the most efficient way of producing artificial light while reducing the use of wood and coal. The aforementioned solution could improve residents' health and living conditions. However, removing the impact will be possible only if the underlying cause of the problem is addressed.

5.5 Monitoring Mechanism

5.5.1 Capacity and Capability

To understand the existing status of the monitoring mechanism, we analyzed the document records of the Kabul Municipality. We also solicited feedback from monitoring officers and policymakers through questionnaires regarding the current mechanism of monitoring. The collected documents revealed that only 40 technical officers are responsible for inspecting and monitoring construction activities. Among the 40 monitoring officers in Kabul City, just 22 are assigned to residential buildings monitoring in 22 districts of Kabul city. We distributed our questionnaires to all districts, though we only received responses from 15 of them.

Kabul's urban area consists of 359,178 residential plots, of which 291,948 need to be monitored by monitoring officers, according to KM data. The buildings will be monitored in four stages: the footprint, the foundation, the footings and frames, and the roofs. According to the above rules, the number of times a building needs to be monitored is the following formula [(2)]:

$$\textbf{MF= 2+N x 2,}\ \textit{(M-Number of Floors, MF-Monitoring Frequency),} \qquad (3)$$

To determine whether the current task force can monitor the houses in Kabul, we calculated the minimum development rates of the urban areas in Kabul. According to a report by the Ministry of Urban Development and Housing, the urban extension rate is about 4 % each year (MUDH, 2017). Meanwhile, the Atlas of Urban Expansion reported an urban expansion rate of about 3.7% (Atlas, 2014). On the other hand, based on KM records, urban growth was estimated at 3%. To assess the ability and capability of KM, we used the urban growth rate that was calculated by KM. Therefore, if 3% of 291,948 housing plots start building their homes, this would result in 8758 probable house constructions in a single year. To figure out how many buildings a monitoring engineer will monitor, we need to divide the probable construction of houses by the total number of monitoring engineers.

Each Individual=8758/22=398/Year

Assuming that these upcoming residential buildings are going to be two-floor buildings, which are permitted for every house in the city.

Therefore… **MF=2+2*2*398= 1594/year**, *(Each Individual)*

The number above is the maximum number that a monitoring officer needs to monitor buildings with a minimum number of floors in residential areas. This means that a monitoring officer needs to check about 5 buildings a day to meet the expectation, which is almost impossible. Consequently, with the current number of staff, many buildings are not being monitored. It's also pertinent to note that the addition of new residential lots that will be built each year was not considered in this computation. However, in that situation, the monitoring frequency for each individual would be raised.

5.5.2 Key Stakeholders in the Current Monitoring Mechanism

Kabul Municipality

The Construction Control Department and the District Office collaborate closely to monitor construction activities. They are in charge of coordinating with central departments, district offices, the police headquarters, and other stakeholders involved in the Kabul master plan's implementation. The Construction Control Department provides weekly, monthly, and yearly monitoring schedules and guidelines to district office engineers. Furthermore, the Construction Control Department is preparing transportation and other necessary tools for the monitoring process to district offices. This department is also in charge of preparing the content of the protocol agreed upon with the owner of the district office. In most cases, issues are not resolved in the district offices; instead, this department handles and communicates with KM authorities. The Construction Control Department is in charge of all leadership and management of district offices related to construction affairs. This includes the arrangement of bills, regulations, and instructions regarding the progress of work.

In particular, the monitoring officers should always accommodate the construction permit department's approved design package. These monitoring officers, according to them, must visit the site every day to stay informed about violations. They must instruct the supervisor-engineer and other personnel to abide by the rules and regulations. They are responsible for inspecting the quality of construction materials as well as safety regulations. The monitoring engineers have the authority to issue warning letters, impose fines, halt construction, and demolish the infringing parts of the building. The district office manages the environment for monitoring officers while they are on site. A set of guidelines must be created for supervisors, site engineers, and construction workers by this department. Supervisors and site engineers will be officially introduced to related departments and organizations after being registered in the KM database. To coordinate monitoring efforts, the Construction Control

Department collaborates with the Ministry of Interior. This department has occasionally organized police officer awareness campaigns, including training sessions and workshops on topics like addressing construction violations of the law and demolition strategies. In addition, there is a section of this department in KM where affected residents complain about construction activities. The construction control team is in charge of documenting the issue and resolving it through pertinent channels. In most cases, the situation is being handled by the Construction Control Department and the District Offices, but in some serious cases, police intervention may be required.

Ministry of Interior (Police Station)

Police stations are the executive power responsible for responding to requests coming from KM. In most cases, the police enter into action when there is an intense case. As part of their efforts against violations, these monitoring officers stated they needed the full assistance of the police to demolish illegal buildings. However, the police response appears to have been unsatisfactory in these residential districts as demonstrated in Table 5-20. In response to the increase in construction violations, KM established a Special Force under the Ministry of Interior to support the enforcement of regulations. However, the special force duty lasted just one year and was abrogated in 2020. The abrogation of these special forces was influenced by a few factors, including corruption, misuse of responsibilities, and disagreement of residents with their behavior (Pajhwok, 2020).

Supervisor Engineer

Owners introduce a supervisor engineer to KM to take responsibility for project implementation. The project manager is responsible for managing the project activities and accommodating the approved design on site. He has to report the progress of the project and violations to the Construction Control Department. Supervisors must attend meetings of the district office and the construction control department that are held in relation to the construction project. Unfortunately, most of their performances are below average as shown in Table 5-20.

Table 5-20: Status of Police Station and Supervisor Performance Level.

No	Level	Police Support		Supervisor Performance	
		Number	Percentage (%)	Number	Percentage (%)
1	High	0	0.0	2	13.0
2	Medium	6	40.0	4	27.0
3	Low	7	47.0	7	47.0
4	Very Low	2	13.0	2	13.0

Total	15	100	15	100

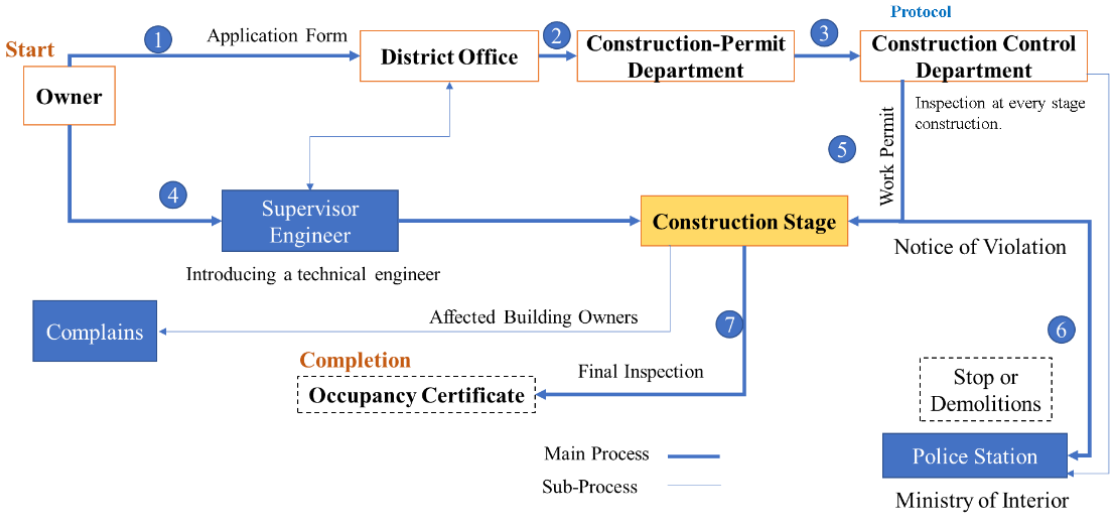


Figure 5-16: Current Monitoring Mechanism and Stakeholders.

5.6 Conclusion

Our physical examination of the houses in the study areas revealed that the transformation occurred in the form of single apartment buildings and multiple apartment buildings. The transformation outbreak dates back to 2006 in planned residential neighborhoods. Each of these buildings is made of expensive materials such as reinforced concrete and ranges from 4 to 8 floors. During the transformation, not only was the typology changed, but rules and regulations were also violated. Rules and regulations such as building coverage ratio, number of floors, and setback rules were drastically broken. The study area houses were designed for low-rise detached houses and courtyard houses. The transformation, however, brought many apartment buildings to the study area. The emergence of illegal apartment buildings in the study area brought a variety of social and environmental problems. Social and environmental issues directly affected residents' health and living conditions. Nowadays, due to constant shadow and height differences between buildings, many residents burn coal and oak to heat their homes. The heating system makes smoke in the air, and residents suffer a lot from air pollution diseases. Residents complain about respiratory problems. In addition, due to the constant shadow, bone, and arthritis diseases often accompany residents. The differences in building height also influence the indoor lives of residents. They cannot use and sit in their houses' yards as they did before. The closeness of the buildings also affects houses and residents' privacy. According to our investigation, inefficient monitoring

mechanisms, exclusion of residents from planning and decision-making, and a lack of human resources have contributed to the transformation of the buildings.

We realized there was an incredibly low level of monitoring mechanisms. This not only enabled violations of regulations to remain uncontrolled but also allowed housing typologies to change. The exclusion of residents from planning and decision-making resulted in residents' unawareness of laws and regulations. The monitoring mechanism failed, increasing apartment buildings in the study area. One of the reasons the monitoring mechanism did not respond well to violations and the transformation of housing typology was the lack of monitoring officers. Furthermore, the monitoring mechanism needs modern technology and tools for law and regulation enforcement. Along with the monitoring mechanism, there were many other issues associated with the housing transformation. These issues included mismanagement, the long-term construction permit process, and a lack of coordination between internal departments and external organizations. Because of limited capacity, this paper focuses exclusively on monitoring mechanisms, whose improvement indirectly improves other issues too.

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Notes

(1) The KM and the Ministry of Interior came to an agreement on creating a special force to enforce rules and regulations and prevent violations. Approximately 409 members of this special force were allocated based on the needs of construction activities in 22 districts. Their professional abilities weren't at the level they should have been, and they were often accused of corruption and misusing their jobs. The situation deteriorated, and the special force was soon abolished.

(2) In KM, the formula MF= 2+M x 2 is currently used to determine how many monitoring times apply to a building. This formula is derived from the Procedure for Construction Control and Monitoring Construction Activities and is applicable to residential buildings of all types.

(3) Formal Deeds and Customary Title Deeds are the two types of deeds owned by residents in planned residential areas. Ownership is approved through formal deeds, and both land and buildings

are registered in government records. Customary Deeds are approved based on formal title deeds. However, there is no government registration.

Chapter 6: Community Activity Analysis and Multipurpose Centers

6.1 Introduction

This chapter is devoted to analyzing case study 1 and case study 3, which are concerned with community activities and monitoring mechanisms. The first section focuses on the state of activities in planned residential neighborhoods. The per capita difference between the two periods is calculated to understand the need for community centers in the current condition. In addition, the capacity of each community center is analyzed based on the 90s and current conditions. It focuses on community centers' significance through a systematic literature review. This is to support our idea about restoring residential neighborhoods' identity.

In the second section, we conducted a SWOT analysis of the monitoring mechanism. We focus on Kabul Municipality's capability and capacity and other stakeholders involved in construction activities through this analysis. As part of the monitoring mechanism evaluation, information about these stakeholders' capabilities and capacities is gathered. In the final section, a novel participatory monitoring mechanism is proposed that prevents further housing transformation and violation of rules and regulations but also increases technical deficiencies.

6.2. Community Centers in Planned Residential Neighborhoods

6.2.1 The Activities Analysis

As the population grows by the day, so does the demand for places to conduct daily activities (Missie, T., 2020). Since the industrialization revolution, urbanization has been rapid, and the majority of people have moved to cities. As previously stated, KhairKhana micro-districts were designed to be low-rise, with a maximum of two stories. However, the emergence of apartment buildings transformed the neighborhoods' appearance. Today, these residential neighborhoods lack specific places to engage in daily social and cultural activities, as well as educational and religious practices (Nazire, H., et al., 2016). In terms of activities, the majority of community centers offered religious and educational programming but were much less active in sociocultural and recreational programming. This highlights the need for more Islamic socio-cultural centers to meet the community's growing needs and addresses the study area's lack of social, cultural, and recreational services, particularly for women and youth.

Islamic activities are fulfilled in an appropriate manner, as mentioned previously. Educational activities are also not well conducted in schools. Children from these residential communities, on the other hand, attend school and preschool on a regular basis. However, the number of these educational centers has declined, and students continue to suffer from a lack of educational facilities. The demand for education is at an all-time high. Weddings, pre-weddings, and other events are typically held in special ceremony halls, which may have a negative impact on the resident's future economy. Meanwhile, mourning takes place in a mosque or a mourning hall. These bereavement centers are also insufficient

in comparison to the current population size.

Although there are some Islamic and educational activities, there is a paralyzed system of social activities among community members. It is critical to strike a balance between Islamic principles, obligations, and society. It is critical to include social activities (both common and unusual), such as community gatherings and networking, marriage, and birth celebrations, festive celebrations, Ramadan dinners Iftaar and Islamic gatherings, halal food catering, women, youth, and seniors' activities, family counseling, and funeral facilities. Most of these activities are either ignored or performed elsewhere, resulting in a significant loss of community cohesion among community residents.

Meanwhile, cultural activities to enrich residents' minds and strengthen their knowledge are severely lacking. Cultural activities, like social activities, are overlooked in this area. Cultural activities such as the Islamic library and resource center, art and culture exhibitions, weekend and holiday Islamic classes, Arabic classes, interpreting and translation services, sports and recreation services, media representation, seminars, and guest speakers are still lacking in society. As a result, the existence of these activities encourages community members to be active and energetic.

Between 2001 and 2021 many international non-profit organizations came to Kabul and other cities. However, due to the growing population in Kabul, learning centers have also increased. For example, rising in the face of four decades of war has left a huge population of Afghan women illiterate and several generations deprived of education. The City of Knowledge is an education center for girls and women that offers courses in Computers, Science, Literacy, Arts, English, and Women's Rights. Graduates pursue university and the careers of their choice, becoming the future doctors, engineers, lawyers, scientists, artists, and technical experts of Afghanistan, and inspiring countless others to do the same (V-Day, 2021). Since the change of regime, many other NGOs are no longer functioning. However, this could resurgence its previous demand considering freedom of activities. Therefore, our research significance is still high and community centers are still in demand.

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Figure 6-1: Community Education Center, source: V-day.

In order to analyze the demand for community centers in the current situation, it is necessary to determine the per capita amount of each community center. Therefore, we calculated the per capita capacity of each community center according to the 90s population. The population given in the detailed plan for each part is considered in our calculation. Then, the number of communities is calculated based on the digitized map in previous chapters. The number of populations is divided by the population to find the per capita capacity of each community center. To begin with, schools are calculated for each part, followed by kindergartens and mosques. Table 6-1 illustrates the details of each part and population.

Table 6-1: Capacity of per community centers in 90s.

Parts	School	Per capita	Kindergarten	Per capita	Mosque	Per capita	Population 90s
Part 1	7	5,929	5	8,300	11	3,773	41,500
Part 2	7	5,143	6	6,000	11	3,273	36,000
Part 3	3	5,433	2	8,150	4	4,075	16,300
Part 4	2	9,750	3	6,500	4	4,875	19,500
Part 5	2	9,550	4	4,775	4	4,775	19,100
Average	4	7,161	4	6,745	7	4,154	132,400
Per Capita	1,705		1,686		611		

Considering the per capita demand for each community center, the mosque had the highest demand at 611. In the second stage, the number of kindergarten students per capita was 1686. At about 1705, the school will be at its final stage. Comparing the previous condition with the current condition there is a huge difference between them per capita. It is due to the increase in population and the loss of community centers. Table 6-2 provides details about the current situation.

Table 6-2: Capacity of Community Centers in 2021.

Parts	School	Per capita	Kindergarten	Per capita	Mosque	Per capita	Population (2021)
Part 1	4	47,359	2	94,718	12	15,786	189,435
Part 2	5	30,358	2	75,894	11	13,799	151,789
Part 3	3	27,993	0	61,364	6	13,996	83,978
Part 4	2	22,232	0	16,323	5	13,339	66,697
Part 5	1	62,675	0	11,428	4	15,669	62,675
Average	3	40,347	1	51,945	8	14,518	554,575
Per Capita	13,449		51,945		1,910		

The per capita capacity of each community center has increased several times. In this period though the mosque was the only community center with stable numbers. However, per capita, it is increasing.

On the other hand, community centers including schools and kindergartens are totally different. Per capita school enrollment is raised to 11914. In the meantime, the per capita number of kindergartens increased to 51945. These two community centers, however, had the highest demand for activities but had fewer numbers of active ones. Table 6-3 illustrates the differences between per capita and exact population. The result shows that per capita there is a difference of 11744 for schools. This number is very high for kindergarten, about 50259. However, the difference per capita between mosques is about 1299.

Table 6-3: Per capita of each Community Center.

Period	School	Kindergarten	Mosque	Population
90s per capita	1 1,705	1 1,686	1 611	132,400
2021 per capita	1 13,449	1 51,945	1 1,910	554,575
Differences	11,744	50,259	1,299	
Per capita / 2 &3	6,724	17,315	Stable	422,175

The increase in the number of community centers is not particularly applicable due to the lack of space. Besides increasing the number of community centers, we decided to increase capacity as well. Accordingly, we divided school and kindergarten per capita by two and three in 2021. As a result, the per capita for school and kindergarten is changed to 6724 and 17315. On the other hand, there is no need to increase mosque numbers. The increase in capacity through building reconstruction is a response to the current situation.

Table 6-4: Demand of Community Centers in Current Condition.

Demand of Community Centers			
Parts	School	Kindergarten	Mosque
Part 1	7	5	12
Part 2	5	4	11
Part 3	4	4	6
Part 4	5	1	5
Part 5	9	1	4
Total	30	15	38

Based on analysis of the maps there is a possibility of increasing the number of schools from 15 to 30. On the other hand, kindergarten possibilities are from 4 to 15. As a result, we found that, with the exception of religious activities conducted constructively, the other activities were either less active or inactive. Finally, there are two thoughts. The first step is to reinforce these community centers, followed by rehabilitation of the replaced community centers and their associated elements. This will be discussed in Chapter 6.

6.2.2 Importance of Community Centers for Sustainability of Development

As a place for community interaction and social relationships, community centers are essential components of many communities. These spaces can help communities build their social capital, sense of belonging, and sense of community (Craig, C., et al., 2019). Community centers are open spaces where people from the neighborhood, including men, women, boys, and girls, congregate for group activities, information for the general public, community support, and other uses (Matas, J., 2010). Community services are often considered effective remedies for social and economic issues (Xu, Q., et al., 2005). A community center (CC, 2005) offers spaces for people with similar interests, but who frequently come from different social, religious, and political backgrounds, to play, learn, or collaborate to improve themselves or their community (Yasmin. F, & Parvin. G, 2008). It can really be a space designed to encourage fair and impartial participation from everyone in the neighborhood. They aim to provide activities that respond to the needs of the local community, are inclusive and accessible, and encourage active participation and involvement in the community (CC, 2005).

Creating a space that can be fully utilized requires community participation. Participation in the community is a central component of responsive design (Shin, S., 2004). In order to create responsive design, it is essential to take this into consideration. Involving users in the planning and design processes benefits not only the users because it produces customized results, but also the planners and designers because it maximizes user satisfaction with the product (Toker, Z., 2006). All parties benefit from the development of a communication channel. It can be achieved through participation, collaboration, consensus, and action (Ibid). This approach has resulted in the successful reconstruction of both buildings and a community in order to bring about changes to planned residential neighborhoods.

Sustainable development is defined as development that meets the needs of the present without jeopardizing future generations' ability to meet their own needs. At the same time, it maintains a balance of economic growth, environmental stewardship, and social well-being (United Nations, 1987). As a result, community centers are critical for a community's long-term development and progress because they foster strong relationships among residents. Currently, a decline in social cohesiveness in urban communities is a significant concern for city development and sustainability (Riffat, S., et al., 2016).

The primary goal of the community is to mobilize residents whose participation in the community is noticeably declining (Mattessich, P.W., & Monsey, B.R., 1997). This is also a significant concern for the Khairkhana district because the majority of residents do not participate in community activities and events. As a result, several CCs have deteriorated and disappeared dramatically over time. Residents may be excluded from planning and decision-making, as well as from governance. Community centers vary in nature and function depending on the nature and uniqueness of the community. Acceptance of community centers by a community is closely related to an Islamic state's social, cultural, and political

processes. Afghanistan has seen many planning concepts influenced by various external actors and donors. The competition of planning between international actors for Kabul City may result in the exclusion of social needs, as well as a lack of consideration for cultural aspects and religious demands, leading to the dispersal and loss of the community living in Kabul City's residential neighborhoods.

Indeed, Islam has triumphantly spread around the world and dominated vast swaths of land, resulting in social, cultural, and political progress. It is argued that an "Islamic city reflects religious ideas, representing Islam in all aspects, particularly the relationship between Islam and urban life" (Mohammad. H. S., et al., 2014). Mosques in Islamic cities are examples of community centers. It is usually placed in the center of the neighborhood so that every member from a distant point can easily access it. People usually congregate in the mosque for weekly Friday prayers to discuss the significant issues confronting the community. Residents form bonds as a result of their participation in this particular day (Rabah, S., 2001). In addition to the Masjid, there is an attached part known as the Madrasa (Ibid). The madrasa (school or college) is a religious and scientific education center for children. As a result, the mosque is used not only for religious purposes but also for consultation and education.

Western Neighborhood Centers, on the other hand, range from schools to libraries, parks, gardens, sports centers, universities, halls, childcare centers, mental clinics, and churches. Community centers have different goals. However, they all aim to eliminate social injustice and bring community residents closer together. As an alternative word to community centers, neighborhood centers, and settlement houses are also used. Riverdale Neighborhood House in the Bronx, New York, for example, was a library for neighborhood workers that served the community through childhood programs, teen enrichment, and volunteer assistance for elders (Unhny, 2005). At the same time, Toynbee Hall in London aimed to bring about radical and social change (John, S., 2010). Greenwich House in New York City provides services in several areas, including art, senior services, an education program, and mental health (John, E. H., 2010). As a result, because they bring community residents closer together through various activities, we can strongly argue that their existence contributes to the development and sustainability of a neighborhood.

Finally, the section emphasizes the importance of community centers for resident cohesion and community development viability. A review of the literature on Western and Islamic community centers helped the chapter understand the importance of community centers. It is argued that the community center is crucial to residents' unity.

6.3. Strengthening and Rehabilitating Community Centers

6.3.1 Strengthening the Community Centers

It is necessary to consider alternatives in order to strengthen the community. As a result, we propose

comprehensive multi-functional or multi-purpose centers with spaces for all of these activities. Then, for replaced community centers, we propose a rehabilitation strategy. For this multi-functional center, we designed specific architectural zones that include spaces for all of the aforementioned activities, such as spiritual, social, cultural, educational, recreational, and even commercial, as well as a conceptual design scheme for a comprehensive Islamic center according to Figure 6-2.

Social spaces:

A large multipurpose hall and its services such as a storage room and a large kitchen could host community gatherings and networking. It could also host marriage and birth celebrations, festive celebrations, Ramadan dinners Iftar and Islamic gatherings, halal food catering, women, youth, and seniors' activities, family counseling, and childcare facilities. It is positioned in the south part of the main mosque building. The center can also be used for many practices and celebrations related to school and kindergarten.

Educational spaces:

Separate and well-connected buildings are considered for schools and kindergartens. The multipurpose center supports these buildings, especially during some festivals. The demand for educational purposes is high, therefore, two shifts such as morning and noon times can be considered for students. Meanwhile, consideration of kindergarten can solve the problems of residents for their preschool children.

Cultural spaces:

An Islamic library and resource center, art and cultural exhibitions, weekend, and holiday Islamic classes, interpreting and translation services, seminars and guest speakers, and interfaith dialogues. These are all planned to be conducted by community members. Boys and girls are going to have a specific for their study and their quality time spent.

Spiritual/religious spaces:

A large multipurpose hall and its services such as a storage room and a large kitchen is considered for these residential neighborhoods. This could host community gatherings and networking, marriage and birth celebrations, festive celebrations, Ramadan dinners Iftar and Islamic gatherings, and halal food catering. In addition, the areas can be used for women's, youth, and seniors' activities, family counseling, and childcare facilities.

Sports and recreation spaces:

A gymnasium and a café shop are considered for sport and a social hub is considered for community members. Since outdoor activity is less due to lack of spaces, this could be an initiative for the

engagement of youths.

Commercial Spaces:

To generate financial income, and self-sufficiency, and to ensure ongoing center operation well, a cafeteria and some shops are considered.

Evacuation Area:

In some critical situations, we can also use these centers as evacuation areas in times of natural disasters. Basically, there is no specific evacuation for these areas, and in most cases, the government cannot afford it. The availability of these centers and their self-sufficiency of them makes the area powerful to be ready in such times. For the multipurpose center, we propose two spaces in each part of the study area.

1. The land from the two transfigured patterns of community Centers (stand-alone building and Bared land). Besides this, we can include some spaces in the green strips.

2. The private landowners who are ready to share the ground floor plan in exchange for incentives such as free gas, water, and electricity expenditures and an increase in Floor Area Ration.

Lack of land prevents multipurpose centers from being applicable to all populations. It is also necessary to concentrate on individual community centers' rehabilitation programs. We already mentioned that a range of houses replaced community centers.

Rehabilitation programs could be conducted targeting these kinds of areas. We are proposing the following cases for bringing back the community centers to the areas as follows:

1. The ground floor of the houses (Different Functional Pattern CCs) will be remodeled to become community centers. The top floors are assigned to houses with a specific contribution rate by homeowners. The contribution (money) and the remaining houses on the top floors (financial floors) cover the total cost of the project.

2. Relocation of residents to another project with full compensation from the government and Non-Governmental Organizations.

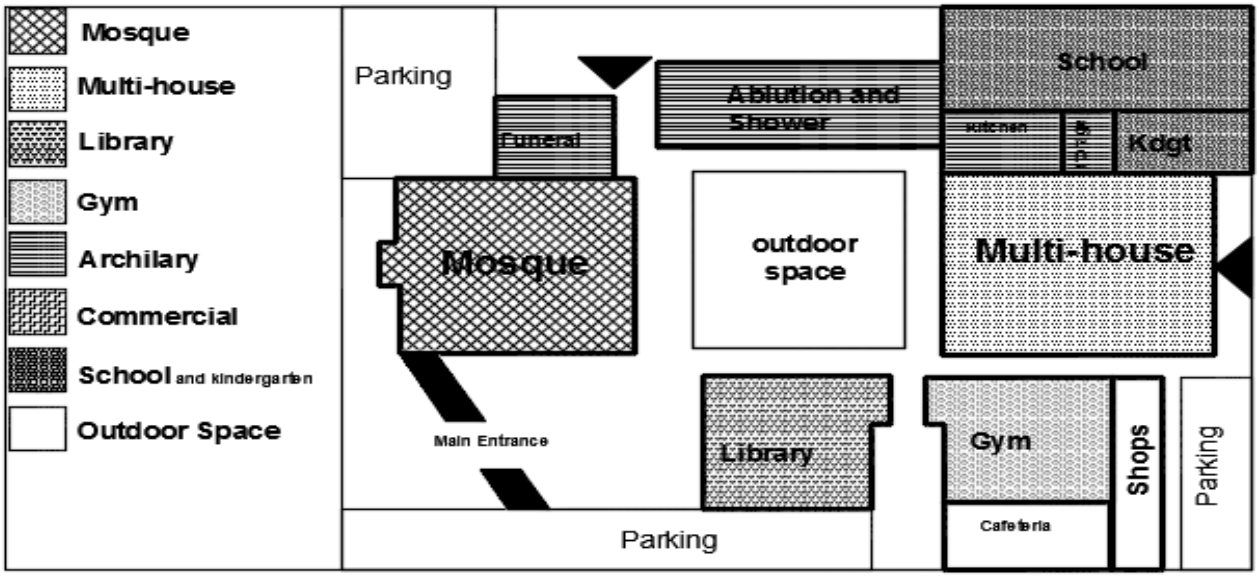

Figure 6-2: Proposed Multipurpose Center.

6.3.2 Rehabilitation of Layout (Original Model)

As we discussed in our previous post, community centers, green strips, and cul-de-sac streets are the main elements of the layout of the model of these planned neighborhoods. Because of these factors, the community provides a safe living environment for children and is free of direct traffic flow. In order to accomplish this, the government and owners must make many efforts. Local government support is very critical, especially financial support for providing materials and for ongoing maintenance. However, community self-initiative is absolutely essential. Therefore, we propose a rehabilitation program as follows:

1. To connect the bare-lands segments, we need to restore the original green strips with some supplementary features in the middle of the residential quarters. As a result, the following points are going to be enhanced:

a. Playgrounds including children's facilities.
b. Residents' interaction with the environment.
c. Places for multi-purpose centers.

2. Secondly, cul-de-sac streets have to be rehabilitated. Besides restoring the oriental green strips, the area should also have cul-de-sac streets for better traffic flow. Meanwhile, the streets that are created

around community centers should be converted into green areas. Thus, children are protected from accidents due to the direct flow of traffic. To do this we need to conduct the following steps:

a. A plan should include a preliminary survey to determine how the streets will be converted.
b. Remove dangerous streets near community centers.
c. Connecting the original cul-de-sac streets to the green strips.

6.4 Conclusion

To better understand the need for community centers, the current activities of the planned residential neighborhood are reviewed. The activities are analyzed based on the population and community centers. The per capita of community centers comparing between two periods is calculated and evaluated. Then, based on the per capita analysis, the current capacity through population differences and the number of communities is conducted. The need for community centers is enhanced by analyzing the evaluation of the differences. Then, using a systematic literature review, we focused on the significance and importance of community centers. This was to support our idea of restoring residential neighborhood identity.

According to our research, community centers are critical to the long-term viability of community development. Finally, a multi-purpose center is designed not only increases the community centers and their capacity. But also, it increases the conduction of various activities which are in need in the community. The proposed community centers offered the chance to practice their missing activities. Based on our proposal many spaces should be provided. It includes spaces such as educational, cultural, social, spiritual, religious, sports, recreation, commercial, and evaluation. Lack of land prevents multi-purpose centers from applying to all populations. Therefore, it is also concentrated on individual community centers' rehabilitation programs. Individual community centers are occupied by a range of houses. However, a systematic redevelopment process is proposed so that community centers are also reconstructed. Based on this redevelopment process the houses are destroyed. The first and second floors are going to be used for community centers. The other floors are going to be used for residential purposes and distributed to current residents.

To conclude, the community center is crucial for sustainable development. Currently, planned residential neighborhoods are lacking in community centers due to rapid urbanization and unprecedented population growth. However, our proposal not only increases the number of community centers but also their capacity. In addition, various activities that were lacking in their practice will be increased. As a result, a comprehensive and multipurpose community center provides spaces for residents' councils to conduct their meetings.

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Chapter 7: Analysis of Current Monitoring Mechanism and Novel Monitoring Mechanism

7.1 Introduction

This chapter is dedicated to the analysis of the monitoring mechanism which is the third case study. To better understand strengths, weaknesses, opportunities, and threats is conducted. Realization of internal and external factors allows a number of strategies. In general, the first step towards enhancing our strengths is to utilize our opportunities. Secondly, our opportunities help us fill the gap sensed by system weaknesses. Thirdly, available strengths are utilized to dismantle the thread the system faces. And finally, a strategy based on weaknesses and threats is proposed. In the second section, a novel participatory mechanism is proposed to prevent further transformation and regulation violation. Through practicing this monitoring mechanism, future social and environmental issues shall be reduced. The monitoring mechanism is analyzed in terms of stakeholders' capacity and capability. Analysis of the monitoring mechanism is conducted based on evaluating the questionnaire responses.

7.2 Analysis of the Monitoring Mechanism

We analyzed the current monitoring mechanism and stakeholders' strengths, weaknesses, opportunities, and threats. As we discussed in the previous chapter, the Kabul municipality has less capacity to control development in the city. This capacity includes both human resources and machinery equipment. Based on our investigation the construction control department is unable to control the current development situation alone. Furthermore, related stakeholders are not properly supported in performing their duties. Based on our evaluations, we discovered that technical staff lacks in the monitoring and inspection of construction activities. As the construction activities have increased many times, monitoring officers also needed to be increased. Despite their experiences, engineers continue to monitor the development of buildings using old and basic techniques. Many places are not monitored due to a lack of monitoring officers. The lack of monitoring engineers also encourages illegal development in the city.

Residents are also excluded from the system, and their lack of knowledge of planning, rules, and regulations exacerbates the situation. The planning system is always approached and practiced through top-down Residents always support the government in decision-making. However, due to high corruption and ambiguity, authorities have found their own benefits. Despite all of these issues and flaws, there is considerable demand for illegal apartment buildings due to their lower cost than the formal market. The demand for illegal buildings has increased construction activity across the city. Higher development and construction activities necessitate more frequent monitoring and inspection.

The organizational structure's flexibility allows for the inclusion of staff from other departments to support the monitoring mechanism for short periods The monitoring mechanism is only used by construction control department employees and has not yet been outsourced. According to our findings,

improving the situation necessitates external organizations' involvement and support. To make it more inclusive and comprehensive, the parties against whom these rules and regulations are being enforced must be included. Residents' inclusion is critical.

Our proposed system will address both management and technical deficiencies. According to our survey, residents are willing to participate in the system. After 2001, there was some stability, and many residents were involved in development projects, either directly or indirectly, which increased their skills and expert experience. Meanwhile, the Engineers Association is ready to assist Kabul Municipality with technical issues. Today, Kabul Municipality receives a large amount of funding from international organizations that can help with the implementation of this system. Through funding the system, residents and engineering associations become a part of the system. As the threats and vulnerabilities are huge in the monitoring mechanism, it is imperative to make the maximum benefits of our strengths and opportunities.

Table 7-1: Analysis of Monitoring Mechanism.

	Internal		
External		**Strengths** • Experienced Monitoring Officers. • Updated zoning plans and regulations. • Flexibility of organization structure.	**Weaknesses** • Lack of technical personnel. • Exclusion of residents (top-down approach). • Old and basic technics.
	Opportunities • Residents and Engineers Associations' willingness to collaborate with KM. • Engineers Association has advanced. technical skills and modern equipment. • Abroad Fundraising and Training.	**SO** • Uniting monitoring officers, Engineers' associations, and residents. • Restructuring the organization. structure with Engineers Association technical capacity.	**WO** • Inclusion of residents (Bottom-up approach). • Exchange of old technics with advanced skills and modern equipment.
	Threats • Demand for illegal apartments (cheaper than the formal market). • High construction activity levels lead to a higher monitoring frequency. • Unawareness from regulations.	**ST** • Engaging other departments' staff in monitoring activities as a supporting team. • Awareness Programs.	**WT** • Partnership with Residents Representatives and councils. • Increase of taxes on illegal apartment buildings.

Strategy 1: Strength-Opportunities

Monitoring officers typically have experience and have been trained by international programs. In the meantime, the Engineers' Association is full of expert professionals with knowledge of project management on national and overseas projects throughout the country. On the other hand, several international organizations have organized projects in Kabul that involve residents through GAs and CDCs. Therefore, combining these three aspects in a triangle will improve the monitoring mechanism by considering human resources, management, and technical aspects. This will accommodate zoning plans based on urban regulations. In a partnership, construction activities will be harmonized, and no owner can begin construction without obtaining a permit.

Strategy 2: Weaknesses-Opportunities

Planning and decision-making for urban plans are conducted behind closed doors without involving the residents. Residents ignore these plans and build buildings to suit their needs. As a result, the housing transformation process is accelerating due to the lack of a KM task force. Kabul should take advantage of this opportunity in the short term and coordinate with engineers' associations as the private sector. In the long run, KM needs to swap this system for a bottom-up approach where construction activities are permitted based on collective decision-making. Due to the availability of funds and international organizations' support, it is easily applicable.

Strategy 3: Strength-Threats

The lack of technical monitoring officers puts KM in a critical situation. To meet the urgent need, the KM team engages a number of other departments' staff to assist by setting up some internal training modules. The transmission of knowledge and experiences through internal training programs will increase the chances of responsibility sharing and relieve the pressure of insufficient technical resources. Meantime, KM can raise the awareness of residents about rules and regulations through weekly meetings in mosques where people gather for Friday prayers.

Strategy 4: Weakness-Threats

As long as the monitoring system is weak, the transformation rate increases. Kabul's municipality needs to hire more staff to deal with the increased demand for monitoring construction activity in the city. Moreover, because illegal apartment buildings are sought after due to their cheap prices, imposing taxes on them decreases the number of deals between residents. As a result of their marginalization from the process, they are less likely to be aware of rules and regulations which also contribute to housing transformation. Therefore, engaging residents' representatives and their councils is an effective means of transferring knowledge to society.

7.3 Novel Monitoring Mechanism and Key Stakeholders

7.3.1 Novel Monitoring Mechanism

Based on the above strategies, we conclude our proposed mechanism as follows:

To support GAs and CDCs, the Engineers Association's technical expertise should be applied to the system. The Engineers Association, as a bridge, would connect the municipality and residents. The people who are members of these associations are the residents of these neighborhoods. They share a common identity with these people, as opposed to people who are not members of their society. Their background and the trust they enjoy among the people allow them to influence and persuade the people. There is no reciprocal relationship between residents and KM as of today.

These professional associations, as is their duty, inform KM of the situation in the area and the needs of society. These organizations, on the other hand, are kept informed about policies and political issues that affect the general public. As a result, the relationship between the KM and its residents strengthens in a way that has never been seen before through these associations. The engineering associations are acting as a catalyst in bringing the KM and the residents together. KM is thus establishing trust and credibility with its residents by letting them make decisions that affect their quality of life and health. As a result of the inclusion of residents in the system, KM shares responsibilities with residents and receives their cooperation.

Engineering associations can raise residents' awareness of the rules and regulations, the importance of their availability in the system, and the role they can play at an early stage. They can also train monitoring and construction management techniques such as safety and site quality care, as well as grant architecture and engineering licenses, as a professional association. Last, but not least, they assist KM by carefully reviewing construction activities and ensuring that issued permits correspond to improved plans. This led to the establishment of reciprocity coordination between KM and resident unity, with Engineers Associations filling the gaps.

Based on the above considerations, the goal of a robust control system is to achieve the highest success rate in reducing violation rates of housing and development regulations. In Figure 7-4, an overview of the Violation Control Mechanism with residents and the Engineers Association’s responsibilities is shown. The owner of the property must deal with many stakeholders in this system as opposed to the previous system where just one monitoring officer was responsible. Due to the sharing of responsibilities among stakeholders, owners cannot easily violate rules and regulations. Residents have the highest authority in this system, so it's very difficult for owners to ignore the collective decision. The owner makes two protocols. One is before getting a construction permit and one is before starting construction activities. Based on this, the GAs, CDCs, Engineers Associations, and Monitoring Officers

are doing their responsibilities. Through the establishment of this mechanism, transparency will be brought to the construction process and bureaucracy narrowed down to a minimum.

7.3.2 Key Stakeholder in Proposed Mechanism

Gozar Assembly & Community Development Council

Gozars are the smallest of the subdivision units, each of which is represented by a Wakil (representative) and has its own set of boundaries (Sofia, S., 2015). A GA is a group of CDCs consisting of at least five CDCs, or anywhere from 1,000 to 1,250 households (MUDH, 2017). People's councils, GAs, and CDCs both serve a similar function, but their levels of planning and region scaling differ. GAs handle local administrative and management matters, including land registration and property sales, and coordinate municipality development plans (Ibid). On the other hand, CDCs serve as decision-making bodies that monitor and implement development projects and establish links between communities and the government (NSP, 2009).

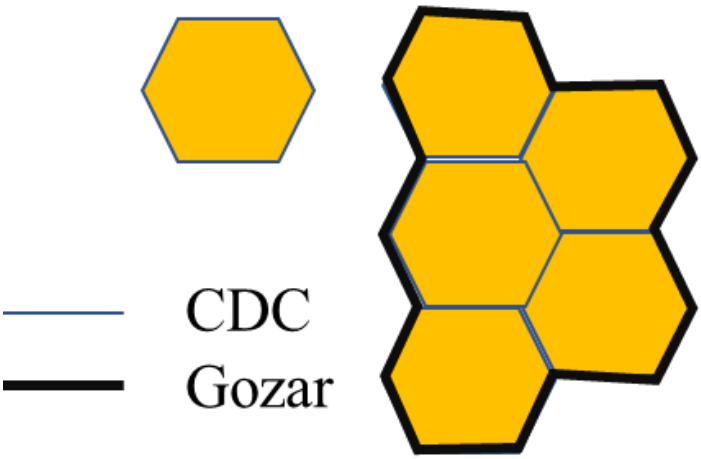

Figure 7-1: Proposed Multipurpose Center.

Engineering Associations

Founded in 2008, the Afghanistan Engineers Association represents over 2500 members, including experts and professionals. As part of our investigation, we examined their capacity building, social programs, structural design, and construction management activities. In the form of developmental assistance, curriculum development, consultancy, marketing, and monitoring, the organization has helped many national and international organizations. (Engineers' Association, 2022).

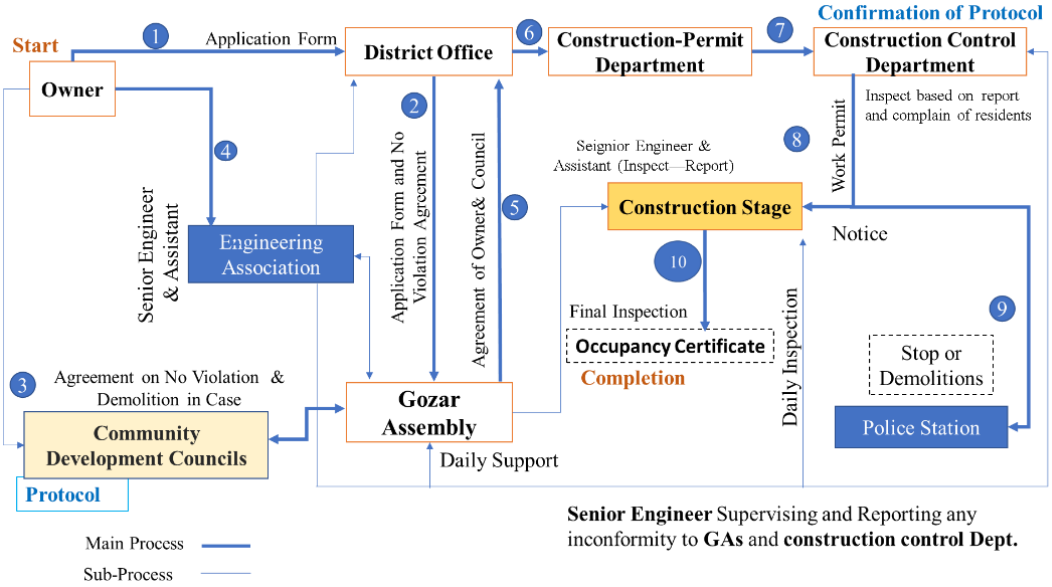

Figure 7-2: Proposed Mechanism and Stakeholders.

As violations occur at different levels during construction, KM cannot handle all complaints through just a single office. We shall be able to address complaints on time by decentralizing and localizing the complaints system to the neighborhood level through CDCs and Gozars.

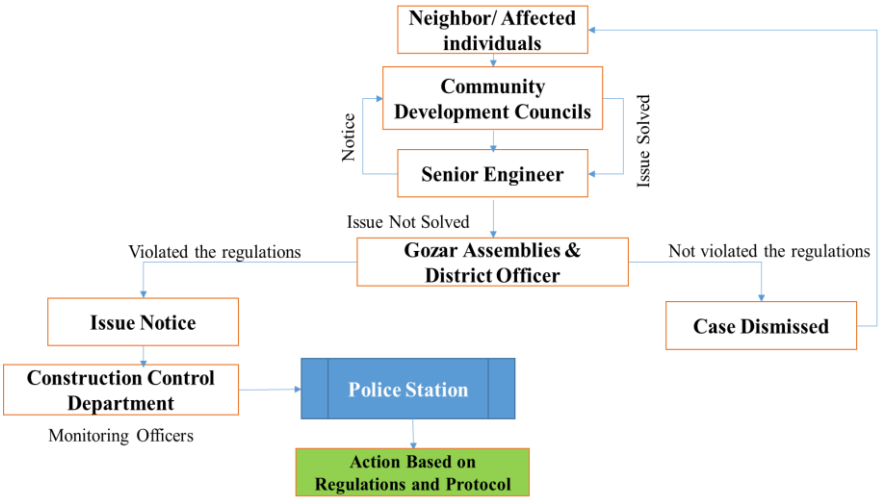

Figure 7-3: Proposed Complaining Mechanism.

We suggested a complaint mechanism in which the conflicts would be resolved by a resident's council. The affected property owners must submit a claim regarding the violation, as shown in Figure

7-4. In a CDC, the claim will be discussed; in deeper conflicts, the Gozar Assembly will be consulted. As soon as the problem exceeds the scope of the GA and CDC, the Construction Control Department and Police Station shall take over the case. In conclusion, the entire process is implemented on a participatory basis, with residents playing a significant role.

7.3.3 Evaluation of Stakeholders in Terms of Capacity and Capability

The inclusion of Stakeholders is critical to our proposed monitoring strategy. Their capacity and capability are critical for the proposed mechanism's credibility. Furthermore, we must acknowledge their willingness to participate as well as the factors that encourage them to participate in our proposed processes. As a result, the characteristics of related stakeholders must be thoroughly examined.

Kabul Municipality (Construction Control Department)

Kabul Municipality is a government body responsible for providing basic services to Kabul residents. There are 16 departments in the KM, including policy and planning. Designing urban plans and implementing them in the field are the responsibilities of the KM. The Construction Control Department is in charge of monitoring urban development activities. According to the KM site, the Construction Control Department contains five main monitoring sub-departments: Public Buildings Monitoring, Infrastructure Monitoring, Residential Monitoring, Commercial Monitoring, and Cost Estimation. Their staff was trained and capacitated regarding monitoring construction activities by international donors such as JICA and the World Bank. They are capable of collaborating with other organizations and operating as part of a group. The KM, on the other hand, is short on technical staff for monitoring activities. The Construction Control Department has 40 monitoring engineers among its five departments, which is insufficient for the current rate of urban development. Meanwhile, the monitoring mechanism is hampered by a lack of high-tech equipment.

We conducted a questionnaire survey to gauge other organizations' cooperation and inclusion in the system. The purpose of this survey was to determine the willingness of KM policymakers and experts to include residents and the engineering association. Although a total of 20 individuals were contacted, only 17 of them responded. Planning and Implementation, Land Readjustment and Urban Development, Plan and Policy, and Construction Control Department were among the departments that responded. Surprisingly, most respondents stated that residents' inclusion is critical. Resident councils, they believe, now have a significant influence on decision-making. According to 14 respondents, the addition of a residents' council and their support is effective in preventing construction violations. The Engineers Association, on the other hand, is backed by the ideas of 16 of these policymakers and experts. They believe that a technical shortage can be addressed by outsourcing. Nevertheless, they agree that the

integration of other entities requires solid policy and power management to coordinate interactions. Furthermore, they understand that funding is a significant difficulty in dealing with such a comprehensive mechanism.

NO	Opinions of Policymakers and Experts	Agree	Percentage (%)
1	Can the inclusion of local residents and councils be effective in preventing construction violations?	14	82.0
2	Do you believe involving engineer associations as a counterpart can strengthen the monitoring system?	16	94.0
	Total Respondents	Frequency N=17	

Table 7-2: Inclusion of Stakeholders in Monitoring Mechanism.

Engineering Associations

The Afghanistan Engineer Association is a social, cultural, and academic organization that delivers technical, cultural, and academic assistance to the people of Afghanistan. This organization has around 2500 members, including professionals, specialists, academicians, and permanent members. They have five agencies that provide engineering and capacity-building services in several provinces, including Kabul. Their ability to provide a place for every function makes them one of the most prominent organizations in the country. As a predominant technical organization, it is associated with most governmental organizations. Their effective leadership and management led them to improve their organization's fame year by year. It supports its members in every way, like an international organization. Even so, this organization is equipped with technical staff and machinery systems and has experience overseeing projects in Afghanistan. But they are focusing on profit. Their consistency and stability in the system are directly related to their income and benefits.

We enquired about some questions such as their willingness and ability to participate in the structure of the monitoring system. They stated that they are already working with KM on several projects, including transportation, canalization, and underground water. They also mentioned that the Afghanistan Engineers Research Center and Engineering Services are outstanding divisions within this organization that can deal with construction management and policy issues. Meanwhile, we investigated the issues and roadblocks that prevented them from entering the system. The Afghanistan Engineers Association seems to see no obstacles or challenges to being a part of the monitoring mechanism, particularly in terms of technical aspects and human resources. They argue, however, that this integration necessitates the establishment of a legal framework. They believe they can carry out these responsibilities with the full cooperation of the government and have a memorandum in place. However, based on our observations, financial and non-financial incentives, such as recognition, privileges, and

awards, are required for their participation in the system.

Residents (Councils)

As previously stated, residents have residential councils. The size of the councils varies, but they all perform tasks related to residential communities. The fact that these councils are united and that the decisions they make are accepted by all members of the community is a positive aspect of them. They select mosques for their meetings, which usually take place after Friday prayers. Members are appointed through community elections. Their lack of availability is a weakness. Residents on councils are usually preoccupied with their businesses. Typically, these residents do council-related tasks on a volunteer basis. However, they must be reimbursed, in order to devote their full time to the monitoring mechanism. Locally, these councils hold meetings with a demanding agenda and have no statute. The residents face numerous problems and obstacles. They are barred from participating directly in urban issues. When a decision is made about their community, they are usually excluded. Residents' relationships and trust in KM are deteriorating. This is due to KM's failure to provide the services necessary to meet people's expectations. They are not recognized and confirmed by any law, and their decisions are not officially recognized.

During our site visit, we asked about 32 residents living in the study areas some questions about their current cooperation with neighborhood activities and their willingness to participate in major decision-making and activities along with KM. Residents of detached houses were targeted for these questions. By analyzing the answers from the residents, we found that they are well involved in community activities. According to Table 7-3, nearly three-quarters of these residents are already involved in community activities. Meanwhile, they were ready to participate in decision-making as well as other neighborhood activities that improve their living conditions. This was evidenced by the 29 responses we received from these respondents. To summarize our findings, residents are eager to be part of the system through their local councils.

Table 7-3: Willingness of Residents for Participation in KM Related Affairs

NO	Willingness	Taimani	(%)	Parwan2	%	Total	Yes (%)
1	Are you currently participating in neighborhood activities?	13	72.0	10	71.0	23	71.5
2	Do you want to be involved in neighborhood activities and make key decisions with KM?	16	89.0	13	93.0	29	91.0
	Total Respondents	18		14		Frequency N=32	

7.4 Conclusion

In this chapter, we debated, examined, and suggested a novel participatory monitoring mechanism. The monitoring mechanism is subjected to a SWOT (strengths, weaknesses, opportunities, and threats) analysis. We concentrated on the capability and capacity of Kabul Municipality throughout this analysis as well as other stakeholders involved in construction activities and monitoring mechanisms. Information and data about these stakeholders' abilities and capacities are gathered as part of the evaluation of the monitoring mechanism. They make accurate information about their capabilities available to the public on their websites. But the capabilities come from our own research. An examination of the monitoring system revealed a dearth of human resources and a preference for machinery. The amount of illegal construction in the study areas increased as a result of a lack of human resources and monitoring frequency. Due to modern technology, many construction activities are not being watched.

Our discovery showed that the current monitoring system is composed of a system based on a top-down approach. The problems are beyond the control of the locals. Residents are not included and are not aware of the rules and laws. Many times, residents of KM programs were unaware of the rules and regulations, which led to violations. On the other hand, the response from relevant stakeholders was not what was anticipated. KM and stakeholders' relationship is also getting worse. Stakeholders frequently see how the situation will benefit them personally. Tension developed between Kabul Municipality and its citizens as a result of this situation. As a result, the monitoring system needs to be improved to include residents. As a result, we suggest a thorough monitoring system that incorporates a participatory approach as well as residents.

Additionally, by incorporating engineering associations, it strengthens technical capability. The Engineering Association is one of the most powerful resources in terms of both technical and human capacities. As a result, a triangle of interested parties with resident councils and engineering associations as key players will be established. Associations for engineers serve as a link between KM and locals. Engineering associations act as a catalyst, assisting KM to accommodate plans based on rules and regulations as well as to inform and educate the community. At the end, a strong system shall be enhancing that every step of construction going to be checked by details and no owner can ignore a collective decision. Finally, a robust system is created, ensuring that every stage of construction activities is carefully inspected, and that no owner can disregard a group decision.

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Chapter 8: Conclusion and Suggestions

8.1 Introduction

This chapter summarizes the major findings, community centers and their roles, housing and housing typology, housing transformation, the reason for transformation, social and environmental issues, and their effects on residents' living conditions and health. Furthermore, the level of participation and inclusion of stakeholder groups in the monitoring mechanism is highlighted. Meanwhile, social and environmental issues are briefed. They are analyzed based on the current condition of the study areas. Finally, the novel participatory mechanism is also discussed and concluded.

8.2 Research Summary

Rapid urbanization has resulted in a loss of identity for the city. A small portion of the city was constructed according to the 1978 Russian Master Plan and the 2012 JICA Master Plan. According to the master plans mentioned, roughly 30% of urban areas are accommodated. As a result of returnees from abroad and rural-to-urban migration after 2001, there was rapid urbanization and population growth. Kabul experienced unprecedented population growth and urbanization. There was both vertical and horizontal urban development. The majority of urban areas that have grown as a result of urban sprawl are unplanned settlements. Vertical development has occurred primarily in planned areas.

Vertical development influenced not only planned residential areas but also housing typology. Many green spaces and community centers have vanished as a result of urbanization due to changes in their functionality and use. The disappearance of community centers in planned residential neighborhoods caused a schism in coalitions and solidarity among residents. The detached houses have been illegally converted into apartment buildings. This shift in housing typology has caused a slew of environmental and social issues. These problems impact residents' living conditions and health. There are numerous points highlighted in the study regarding the transformation of housing typologies and the disappearance of community centers. Due to the failure of monitoring and inspection mechanisms, the number of apartment buildings in the study areas increased. Because they were excluded from the planning and decision-making processes, residents were unaware of laws and regulations. There were numerous other issues associated with housing transformation in addition to these. Mismanagement, a lengthy construction permit process, and a lack of coordination between internal and external organizations were among them. As a result, the following broad objectives guided this research:

1. The historical existence of community centers was investigated, as well as their role in community cohesion and sustainability.
2. The physical transformation of housing typology was investigated, as well as violations of regulations such as the number of floors, building coverage ratio, and setbacks.
3. The study centered on residents' perspectives on the social and environmental impacts of housing

transformation on their living conditions and health.

4. The study evaluated the current monitoring mechanism, participation level, and stakeholders.
5. Finally, other stakeholders such as residents (councils) and engineering associations are being investigated in order to improve mutual collaboration and increase technical staff capacity in the system.

Based on the procedures listed below, the following methods were used to collect data:

1. Physical measurement on the job site mostly through drawing, measuring, photographing, and observation.
2. Literature and records by reviewing and examining laws, regulations, statutes, and master plans.
3. Investigating residents' living conditions and health through interviews and questionnaires.
4. Examining the Monitoring Mechanism through questionnaires and interviews.
5. Analyzing community centers and their roles through literature review, digitizing, and examining aerial photography, and detailed plans of study areas.

8.3 Significant Research results

Rapid urbanization has resulted in a loss of identity for the city. A small portion of the city was constructed according to the 1978 Russian Master Plan and the 2012 JICA Master Plan. According to the master plans mentioned, roughly 30% of urban areas are accommodated. As a result of returnees from abroad and rural-to-urban migration after 2001, there was rapid urbanization and population growth. Kabul experienced unprecedented population growth and urbanization. There was both vertical and horizontal urban development. The majority of urban areas that have grown as a result of urban sprawl are unplanned settlements. Vertical development has occurred primarily in planned areas.

This study reveals significant findings about housing, typologies of housing, housing transformation, as well as community centers, layout models, and their influence on residents' health and living conditions. The factors contributing to the transformation from detached houses to illegal apartment buildings were also examined. As part of the study, we also analyzed rules and regulations and their violation rates, as well as actors and the relationships between each of them. This study found out how much the living condition and health of residents were affected due to the emergence of apartment buildings in the study areas. The study later revealed the reason behind the transformation. The most important factor which played a significant role was the monitoring mechanism which is lacking human resources and machinery. In addition, another factor was the exclusion of residents from the planning and decision-making process which kept residents from awareness of rules and regulations.

All of them resulted in impacting the lives of residents through a bunch of social and environmental

issues. Furthermore, the study proposed a comprehensive monitoring mechanism that not only prevents further transformation and regulations violations. But also bring many stakeholders together and share the responsibilities that were a burden for Kabul Municipality. As a result, the technical deficiencies shall be solved by the inclusion of engineering associations. Meanwhile, engineering associations have become a bridge between residents and Kabul Municipality. The combination of these factors brings a robust monitoring mechanism that can help to prevent the further transformation of housing and violation of rules and regulations. Here is a brief overview of the study.

8.3.1 Layout Model and Community Centers

Residential neighborhoods that were planned underwent significant changes. Rapid urbanization impacts the quality and design of planned residential neighborhoods. Community centers and the elements surrounding them serve as the basis for residential neighborhood layout models. To maintain the Russian Model's uniqueness in the research field, its availability, location, and position are crucial. These residential neighborhoods are organized based on the availability of community centers and green strips that separate the neighborhood quarters. Several of these community centers are linked to cul-de-sacs to prevent traffic from interfering with children's safety. To be sure, the layout model's quality was lacking. The community centers are surrounded by a constant flow of traffic. Cul-de-sac streets have also been connected and converted to direct streets. The layout model that kept traffic out of these community centers while keeping children safe was lost. The green strips have deteriorated to the point where they cannot be used as playgrounds or open green spaces for children.

Houses were built in place of community centers. This is in stark contrast to the original planning layout from 1980 to 1990. These community centers served as separators between residential neighborhoods to maintain the balance between the two sides. Second, the cul-de-sac streets were reshaped into Direct Streets to act as a deterrent to traffic from major roads. Unfortunately, there is no safe environment for children because community centers cannot be reached without crossing major roads. Green strips that were intended to be playgrounds and open green spaces for residents have evolved into new forms. The streets are divided into sections by green strips that run through them. Because these components are so small, they can't be used in any way. We eventually discovered that due to the conversion of these elements, the layout model of these planned residential districts had lost its distinct identity. The loss of quality and modality is proportional to the deterioration of the original layout. As a result, their accessibility is critical to the consistency and stability of the original layout model.

We proposed an alternative solution to the vanished community center based on our findings. As a result, we proposed multi-functional or multi-purpose centers with rooms for all of these activities. We

have outlined a rehabilitation strategy for community centers that have been replaced by houses. For this multi-functional center, we created architectural zones that include spaces for all activities, such as spiritual, social, cultural, educational, recreational, and even commercial, as well as a conceptual design scheme for a comprehensive Islamic center. Rehabilitation programs for community centers could also be implemented.

8.3.2 Housing Transformation

Kabul has a variety of housing typologies spread throughout the city. Low-rise buildings, such as detached houses and apartments, develop residential neighborhoods. Housing transformation has resulted in illegal apartment buildings. Building Coverage Ratio, setbacks, and floor numbers were all violated. The layout plan and a number of stories of detached houses and multi-family dwellings are analyzed to show the transformation from detached houses to apartment buildings. Typically, the plot size is around 300 square meters. Detached houses are permitted. Residents can construct a two-story building according to construction permit issuance. A detached house's building coverage ratio was typically between 40 and 50 percent, with minimum setbacks of 1 meter on each side. We discovered that these transformed houses partially or completely occupied the plot area. However, the setback rules were clearly broken in both cases. As a result, land that was previously used for detached houses has been converted into apartment buildings.

8.3.3 Impact of Housing Transformation on the Living Conditions of Residents

The rise of these apartment buildings in planned residential neighborhoods has caused a number of environmental and social problems. Various issues arose in the area due to the height difference, proximity of the buildings, and full use of the plot. The surrounding apartment buildings obstruct external windows, limiting airflow inside detached houses. Meanwhile, these structures blocked sunlight from reaching detached houses, resulting in shadows. The lack of airflow and sunlight increased energy consumption in the study areas. Because electricity is scarce and gas is expensive, Kabul residents heat their homes with coal and wood. As a result, the air is severely polluted, and residents suffer from serious health issues. Another critical issue is water scarcity and pollution.

The population has grown so quickly that the water supply is insufficient. Because these areas lack a centralized canalization system, most buildings have septic tanks that must be emptied on a regular basis. Despite this, some of these structures use absorption septic tanks, which have a direct impact on groundwater. As a result, the water has become contaminated, and residents of apartment buildings as well as detached houses must obtain potable water. The rise in apartment buildings has also resulted in noise issues in the surrounding areas. Our children's voices and human activity, according to our site

visit, are the most annoying sources of sound pollution. There are also social considerations to be made, such as privacy and outdoor space. A space with a high level of privacy promotes fulfillment in its occupants.

Because of the differences in building height and the proximity of the buildings, many residents are uneasy. They can't use their yard as much as they used to. Meanwhile, due to overcrowding, women and children are unable to use open spaces and facilities, such as parks. Parks are frequently overcrowded, and the view from inside is not safeguarded. Non-residents from the surrounding neighborhoods and elsewhere congregate frequently in the parks. Though the rise of apartment buildings exacerbated problems for detached homes, they were also impacted indirectly by water and air pollution, overcrowding, and a lack of privacy.

8.3.4 Factors and Reason of Transformation

According to our findings, the monitoring mechanism is the primary cause of housing transformation and regulation violations in planned residential neighborhoods. The level of monitoring mechanisms in place to inspect and monitor construction activities was shockingly low. The construction control department, which monitors and controls Kabul City's development, has only 40 members. According to the organization chart, the monitoring engineers assigned to monitor construction activities in planned residential neighborhoods number 22 people. Our findings revealed that the capacity for construction monitoring and the machinery to support monitoring processes are insufficient. One of the other significant factors driving the study area’s transformation is the exclusion of residents from decision-making and planning. As a result, residents did not follow laws and regulations, and their awareness of construction activities was low. The monitoring mechanism is plagued by outdated technology in addition to a lack of technical personnel. Mismanagement of the monitoring mechanism, the lengthy construction permit process, and a lack of coordination between internal and external organizations are all reasons for housing transformation.

8.3.5 Social and Environmental Issues

Due to the city's rapid growth, numerous apartment buildings have sprung up in these areas. Overcrowding, transportation congestion, building congestion, and a shift in housing typology have occurred as a result. As a result, environmental and societal issues have arisen. Poor ventilation, lack of natural light, constant shadowing, air pollution, sound pollution, and privacy are just a few of the issues.

Having a home allows you to conceal your personal beliefs. The lack of natural light caused by constant shadows and inadequate ventilation directly contributes to an increase in energy consumption. Natural ventilation enhances the health of living spaces by ensuring adequate airflow through each

room's external opening. The lack of sunlight in the study areas increased heating demand. As a result, people began to burn smoke-emitting materials. Residents use coal and oak to heat their homes. Affected residents claim that apartment buildings contribute the most to winter smoke emissions. Furthermore, public baths contribute significantly to air pollution due to tire and coal combustion. To prevent smoke from entering their homes, residents must close their windows. Residents cannot always see far away during the winter because of the thick smoke. As a result, respiratory diseases are becoming more prevalent in the city, particularly in areas where apartment buildings have recently been built. In contrast, disregard for setback rules and floor number increments distorts natural light. This is one of the most important aspects of presentation, prestige, and mood. Residents were in complete darkness during the day. They use artificial lights to combat darkness during the day. More than half of the residents said they were tired, both mentally and physically.

Meanwhile, the study area's increase in apartment buildings has resulted in overcrowding and traffic congestion. As a result, the study area experienced an increase in unwanted noise. Unwanted sounds, on the other hand, can cause stress and anxiety if they are loud and frequent. Noise pollution increases sensitivity, and human mood and behavior suffer as a result. Unfortunately, many of the residents in our study areas were unhappy with the noise effects. The most annoying sources of sound pollution, according to our site visit, are traffic noise, children's voices, and human activity. Many residents experienced temporary behaviors as a result of the noisy environment. Physical and verbal conflicts have been reported by some residents of planned residential neighborhoods.

In planned residential districts, the close proximity of buildings and the disparity in building heights create a social problem. By creating houses, you can conceal your personal opinions. The presence of a high level of privacy in a space promotes the satisfaction of the occupants. Privacy is maintained as long as the parties respect each other's rights. Inadequate privacy provisions in rooms, on the other hand, can lead to social conflict and irritation among residents. According to our findings, residents must constantly draw their curtains to hide their homes from their neighbors. Furthermore, residents claim that the buildings make family conversations difficult. Based on the questionnaire results, we concluded that women and girls in outdoor spaces of detached houses cannot spend their time as they used to. Residents became depressed due to their lack of access to outdoor space. Our realization led us to conclude that most residents' current living conditions are not optimal in terms of privacy.

Due to their conservative society, women in Afghanistan face difficulties when attempting to enjoy their leisure time outside. When there is a male partner, they tend to hang out. Many of the people we spoke with expressed concern about the accessibility of parks and recreation facilities. Despite their ease of access, many respondents felt that neighborhood parks and playgrounds were inappropriate for women and children. Parks are overcrowded, and the views from the top are dangerous. Non-residents

from nearby neighborhoods and elsewhere frequently congregate in the parks. The parks are managed by Kabul's municipal government, according to our investigation into why this is happening. This does not include the people of the city. Kabul Municipality is currently experiencing a shortage of human resources and technical labor. As a result, they struggle to maintain control over park and playground administration.

8.3.6 Monitoring Mechanism and Stakeholders

The Kabul Municipality regulates and monitors construction activities throughout the city. The Construction Control Department and the District Office collaborate closely to monitor construction activities. They are in charge of coordinating with central departments, district offices, police headquarters, and other parties involved in the Kabul master plan's implementation. Schedules and guidelines for related offices are regularly prepared by the construction control department. This department also develops construction protocols and enforces regulations. The Construction Control Department is in charge of all construction-related management and leadership in district offices. Bills, regulations, and workflow instructions are all organized in this way. Monitoring officers, in particular, must always accommodate the approved design package from the construction permit department.

Monitoring officers, according to them, must visit the site every day in order to stay informed of violations. They direct the supervisor-engineer and other personnel to abide by the rules and regulations. They inspect building materials in accordance with safety regulations. Monitoring engineers can issue warning letters and fines, halt construction, and demolish infringing parts of the building. The district office manages the environment while monitoring officers are present. The Construction Control Department collaborates with the Ministry of Interior to coordinate monitoring efforts. This department has held police officer awareness campaigns, including training sessions and workshops on topics such as addressing construction violations and demolition strategies. Furthermore, there is a section of this department in KM where affected residents can file complaints about construction. The construction control team documents and resolves the issue through the proper channels. The Construction Control Department and District Offices handle most cases, but in some serious cases, police intervention may be required.

According to our findings, only 40 technical officers inspect and monitor construction activities. In the city's 22 districts, only 22 of Kabul's 40 monitoring officers are assigned to residential building monitoring. According to Kabul Municipality, 291,948 housing plots need to be monitored. This number, however, is nearly four times greater than the number of construction monitoring officers, according to our analysis. Given the current number of monitoring officers assigned to residential buildings, many buildings are not being monitored. On the other hand, the system is entirely top-down,

with virtually no resident participation.

Nonetheless, we have proposed a modern and comprehensive monitoring mechanism that will not only monitor the entire city's buildings but will also involve other stakeholders. Residents' councils are one type of system actor. They are informal but powerful, and their decisions are well received by the community. There are two resident councils for urban neighborhoods. The Gozar Assembly is the first. This is responsible for local administrative and management issues such as land registration and property sales, as well as coordinating municipal development plans. A Community Development Council, on the other hand, serves as a decision-making body that monitors and implements development projects and connects communities and the government.

The Engineers Association, on the other hand, is one of the organizations with a large number of experts and professionals. According to our investigation, capacity building, social programs, structural design, and construction management activities are critical facts for system inclusion. Many national and international organizations have benefited from the organization's developmental assistance, curriculum development, consultancy, marketing, and monitoring. They currently have over 2500 members who help fill gaps in technical deficiencies in Kabul Municipality.

Based on the foregoing considerations, the goal of an advanced control system is to achieve the highest success rate in reducing housing and development regulations violations. In this system, the property owner must deal with many stakeholders, as opposed to the previous system, which only had one monitoring officer. Owners cannot easily violate rules and regulations due to the sharing of responsibilities among stakeholders. Residents have the most power in this system, so it's difficult for owners to disregard the collective decision. The establishment of this mechanism will bring transparency to the construction process while reducing bureaucracy to a bare minimum.

8.4. Conclusion

After analyzing strengths, weaknesses, opportunities, and threats, we realized that the monitoring mechanism needs to be revised to include a participatory mechanism. Residents were unaware of the rules and regulations because they were excluded from planning and decision-making. There are insufficient human resources and machinery to control the development of the urban area. Kabul municipal employees continue to use traditional methods and techniques for monitoring construction activities and development control. As of today, there is no reciprocal relationship between residents and the KM. To make a profit, people convert their low-rise detached houses into illegal apartment buildings. The conversion of detached houses into illegal apartment buildings spread quickly throughout the city. The emergence of apartment buildings in a planned residential district caused numerous environmental and social issues. People today suffer from a variety of illnesses as a result of

social and environmental factors. Respiratory disease is common among all Kabul residents, particularly in residential areas with a building type. Meanwhile, orthopedic illnesses are widely available due to the close proximity of buildings, which prevent sunlight from entering rooms. Asthma, fatigue, and headaches were also caused by a lack of ventilation. Residents use ventilation equipment to ventilate their rooms, especially during the winter due to smoke emissions from coal and oak burning for heating.

Adequate human resources and technical staff are required to prevent further conversion of detached houses into apartment buildings. Residents' and engineers' associations may be able to assist with this. The inclusion of these stakeholders is likely to benefit from a bottom-up approach. Responsibilities will be shared, and an extensive participatory system will be put in place. The Engineers Association serves as a link between residents and Kabul Municipality. Engineers Association will fill technical gaps. Residents, on the other hand, will lend their support to construction efforts through city councils and the engineers' association. The inclusion of the engineers' association would raise residents' awareness. Residents and Kabul Municipality will benefit from the collaboration of these stakeholders. As a result, a comprehensive monitoring mechanism based on civil participation is in place to prevent the transformation of housing typologies.

To successfully implement monitoring mechanisms, it is necessary to restore vanished community centers and find a better meeting location. Residents' councils do not have a suitable location to meet on a regular basis. Alternative multipurpose centers must be implemented to meet the needs of the current population. Making these centers multi-purpose will not only relieve pressure on current schools but will also increase social cohesion among residents. Building solidarity aids in the prevention of future transformations and violations of building regulations, as well as the strengthening of the link between knowledge and decision-making.

Finally, we discovered that all stakeholders are eager to form bonds with one another. Their triangle bond reduces rule and regulation violations and inhibits illegal apartment buildings in planned residential neighborhoods. Residents of detached houses believe that apartment buildings have harmed their living conditions and health.

Discussions with residents revealed that the rise of these apartment buildings contributed to a number of issues. Poor ventilation, increased energy consumption, constant shadow effects, air pollution, sound pollution, and other social issues such as privacy were among these issues. Some landowners have already decided to sell their homes in order to buy another. Several of these landowners believe that combining some of the remaining lands will benefit future development. This is done to eliminate the impact of shadows and a lack of ventilation. Furthermore, some of them believe that apartment buildings should be demolished because they violate the rules and harm other residents.

Furthermore, some landowners who are less or not affected by the housing transformation want to be a part of a monitoring system that prevents further changes.

Our entire housing typology must be preserved in planned residential neighborhoods to limit problems in planned neighborhoods. Despite existing laws and regulations, detached houses may still be converted into apartments in the future. Besides these laws and regulations, it is imperative to pay attention to the actors and stakeholders involved in construction project enforcement. According to our investigation, buildings are currently monitored, inspected, and enforced by just one organization, the Kabul Municipality. Recent figures indicate that there are too few engineers overseeing and inspecting construction work in Kabul compared with the number of houses. We learned from our interviews with Kabul Municipality officials that about 40 engineers monitor and check residential buildings. Kabul's urban area consists of 359,178 residential plots, of which 291,948 need to be checked by monitoring officers (Kabul Municipality).

As a result, many construction activities cannot be monitored due to a shortage of monitoring officers. Therefore, it is essential to involve many stakeholders to monitor demand. For this very reason, there is a huge need to change the top-down model to a bottom-up one. Engineering Associations and Residents' Councils (Gozar Assembly and Community Development Councils) are suitable from both a technical and social perspective. By including these stakeholders, rules, and regulations can be enforced more easily, as well as responsibilities can be shared more equally. Furthermore, because neighbors will be impacted, they should be involved in decision-making. As part of the agreement, owners should be obligated to comply with rules and regulations. In addition to the above points, the following could also prevent housing typology transformation:

1. Land use rules and regulations should be revised based on the current situation. In addition, zoning plans with detailed specifications should be prepared to control development in every Kabul district.
2. To prevent apartment buildings in the study areas, residents' councils should be part of the construction permit decision-makers. In this case, the violation of construction rules shall be minimized.
3. To obtain more effective results by involving stakeholders, Kabul Municipality should provide awareness programs such as training, workshops, and installing informative billboards in residential neighborhoods.
4. In order to discourage the further practice of apartment buildings in the planned residential districts, taxes should be increased, and disallowed floors should be confiscated.

To conclude, our study at all debated regarding the result of a rapid urbanization that could not be controlled due to many factors including a faulty monitoring system, lengthy construction permit process, mismanagement between internal and external departments. In addition, a top-down approach meant that residents were excluded from the planning and decision-making processes. The unawareness of residents of law and regulations, as well as the demand of illegal buildings in the city changed the identity of planned residential neighborhoods. Many low rises detached houses and courtyard houses swapped for apartment buildings. The differences of buildings height, and closeness of buildings resulted in many social and environmental issues. These issues directly impacted the health and living conditions of residents. Therefore, a comprehensive monitoring mechanism is proposed to prevent further transformation that not only residents take part in, but also engineering associations that satisfy the technical requirements.

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Appendixes

Table Ap-1: General Questions on Status of Residents

NO	General Questions
	House # ( )
1	What is the Residential Status of your house? 1. Owner 2. Tenant 3. Mortgage
2	How many years have you been living in these buildings? 1. More than 1 year 2. More than 5 years 3. More than 10 years 4. More than 15 years
3	What ownership document do you have? 1. Formal Deed 2. Customary Deed 3. No Deed
4	Did you apply for construction permit? 1. Yes 2. NO
5	Reason for choosing this area for living in Apartment Buildings? 1. Good Services 2. Proximity to Job 3. Lower Price (cheap) 4. Reasonable Fares 5. Security
6	Are you currently participating in neighborhood activities? 1. Yes 2. No
7	Do you want to be involved in neighborhood activities and make key decisions with KM? 1. Yes 2. No

Table Ap-2: Question regarding the Stakeholders 'performance and measurements

NO	Monitoring Officers Questionnaires			
1	What is the level of police support for enforcement of regulations of construction activities?			
	1. High	2. Medium	3. Low	4. Very Low
2	What is the level of supervisor engineers' performance for enforcement of regulations of construction activities?			
	1. High	2. Medium	3. Low	4. Very Low
3	What are the main Challenges while doing monitoring the construction activities?			
	Lack of Facilities to monitor construction activities	Lack of cooperation between related organization and departments	Lack of professional engineers	Exclusion of resident from planning and decision makings
4	What are the real measurements to prevent illegal apartment buildings?			
	Warning letter	Ceasing construction work	Fines and punishment	Demolition
5	What is the main reason behind increasing apartment buildings in low-rise residential area?			
	Long term construction permit process	High demand of apartment houses	Unawareness of residents from rules and regulations	Bureaucracy

Table Ap-3: Questions Regarding Social and Environmental Issues

No	Categories	Social and Environmental Questionnaires
1	Natural Light	Do you feel fatigue and nostalgic due to lack of natural light?
2		Do you feel nervous due to lack of natural light during the day?
3		Do you switch artificial light during the day?
4	Privacy	Do you often pull you curtains to hide the house from neighbors?
5		Is it possible for you to use the open space in your house conveniently?
6		Can you talk and make conversation with your family conveniently due closeness of buildings?
7		Have you experienced any depressed due to privacy issue?
8	Air Pollution	Does air pollution due to local material combustion affected quality of your life in winter?
9		Have you ever been ill from air pollution? (Respiratory diseases)
10		Do you use air purifier for your house?
11	Energy Combustions & Shadow Effects	Did the shadow effects increase your heating cost during the winter?
12		Did the exterior openings blockage increasing cooling cost during summer?
12		Have your experienced illness(orthopedic) due to lack of sunshine?
14		How many hours the sun shining in your houses?
15	Ventilation	Can you normally get ventilation in your house?
16		Do you use mechanical apparatus to ventilate houses?
17		Have you ever experienced any illness (asthma, fatigue, headaches) due to lack of ventilation?
18	Noise Pollution	Do you close windows to decrease the sound pollution due to over-crowdedness during the day?
19		Have you experienced harsh temper and debates with neighbor due to noisy environment?
20		Does the noisy environment affect your mentality and health?
21		What time of the day do you feel very noisy?

Table Ap-4: Questionaries' Analysis through Satisfaction

Questions	Highly Agree	Agree	Neutral	Disagree	Strongly Disagree
Q1					
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16					
Q17					
Q18					
Q19					
Q20					
Q21					

Table Ap-5: Likert Scale Scores

Status	Likert Scale Scores	
Strongly agree	5	1-1.8
Agree	4	1.9-2.6
Neutral	3	2.7-3.4
Disagree	2	3.5-4.2
Strongly Disagree	1	4.3-5.0