

Assessment of Informal Settlement in Central Kandahar: A Case Study of Area Within Four Historic Gateways

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ABSTRACT

Afghanistan's post-war recovery, commencing in 2001 following the cessation of hostilities, precipitated rapid urbanization, notably witnessed by a substantial proliferation of informal settlements, primarily concentrated in Kandahar Province. This phenomenon, exacerbated by significant rural-to-urban migration and population expansion, has emphasized the imperative for exhaustive research aimed at comprehensively understanding its definitions, associated types and potential impacts of informal settlement. The proliferation of informal settlements in Kandahar's historic gateways presents a complex challenge necessitating meticulous and nuanced analysis. The research endeavors to undertake a comprehensive exploration of the definitional constructs of informal settlements, encompassing diverse typologies and their ramifications on urban settings. Central to this endeavor are key objectives aimed at scrutinizing squatter settlements, discerning their typologies, including Spontaneous Sheltering, Homeless Encampments, Nomadic Tents, Refugee Camps, Carts and Wagons, Squatter Settlements, Slums, Self-Help Housing, Shantytowns, Informal Subdivisions and Tenement Housing. Furthermore, the research aims to assess the effects associated with informal supplementary settlements, which encompass a broad spectrum of socioeconomic and environmental ramifications, such as Overcrowding, Poor Living Conditions, High Levels of Poverty, Limited Basic Services, Social Marginalization, Health Risks, Inadequate Sanitation Facilities and Vulnerability. Employing a mixed-methods approach integrating field observations, surveys, Case Studies and literature review, the research seeks to comprehensively understand the complexities of informal settlement dynamics, thus providing insights for informed policy formulation and interventions in urban planning.

Keywords- Informal, Settlements, Definitions, Types, Effects, Urban, Region, Central Kandahar and Gateways.

I. INTRODUCTION

In recent decades, Afghanistan has experienced a swift increase in urbanization attributed to the nation's recovery from war. Following the conclusion of the conflict in 2001 and the subsequent fall of the Taliban regime, a considerable number of Afghan refugees resettled in urban areas, particularly in Kandahar. This

surge in urbanization, coupled with migration from rural regions and population growth, has led to the emergence of informal settlements in Kandahar. Informal settlement in this context encompasses housing and residential areas that have been established in contravention of Kandahar's master plan, as well as settlements that have arisen without meeting the formal requirements for land access (A.R., Bismill, 2014).



Informal settlements pose a significant challenge to urban development, characterized by inadequate housing and infrastructure, which undermine the quality of life and exacerbate social and economic disparities (Wakely and Buckle, 2019). Kandahar City, like many Asian urban centers, grapples with rapid informal settlement due to urbanization and civil conflicts, aggravated by resource shortages and outdated city planning (A.R., Bismill, 2014). These settlements, fueled by suburban and rural migration, lack essential amenities and proper planning, leading to encroachment, poverty and inefficient waste management (Carlos, 1970). The city's master plan fails to meet current demands, resulting in inadequate housing and urban sprawl (Memuna Iddrisu Abu, 2015).

Despite these challenges, there are promising solutions on the horizon. Upgrading transportation infrastructure and zoning regulations can help manage informal settlement expansion (Memuna Iddrisu Abu, April, 2015). This ongoing research aims to understand and address the root causes of illegitimate occupancy, including displacement and inadequate infrastructure, by promoting accessible transportation and enforcing building regulations (Wakely and Buckle, 2019). By analyzing the impacts and influences of informal settlements, such as local conflicts and deprivation, this study seeks to transform urban environments into more equitable and sustainable spaces through improved waste management and adherence to zoning laws (A.R., Bismill, 2014). Ultimately, these efforts aim to create inclusive urban environments that prioritize the well-being of all residents while mitigating the adverse effects of informal settlement proliferation (Memuna Iddrisu Abu, 2015).

Informal settlements, commonly referred to as slums or shantytowns, are areas where residents live in substandard conditions without access to basic services such as clean water, sanitation and healthcare (UN-Habitat, 2019). These neighborhoods lack proper planning, infrastructure, and tenure security. Various typologies of informal settlements exist, including Spontaneous Sheltering, Homeless Encampments and Squatter Settlements. In Kandahar City, informal settlements lead to overcrowding, poor living conditions, and social marginalization (Maqsood Rezayee, 2020).

While previous research has explored the definitions, types and effects of informal settlements, there is a gap in understanding the specific issues related to informal settlements in Kandahar Province. This study aims to fill that gap by examining the definitions, types and effects of informal settlements in Kandahar City, focusing on the four historic gateways of the city. These gateways, covering four districts, are selected due to their significant and influential role in exacerbating the physical problems associated with informal settlements in Kandahar (KNOEMA, 2005 - 2007).

II. LITERATURE REVIEW

2.1 Definitions of Informal Settlement

Informal settlements, also known as slums or shantytowns, are residential areas where residents live in substandard buildings without access to basic services like clean water, sanitation and healthcare (UN-Habitat, 2019). Lacking proper planning and infrastructure, these neighborhoods pose significant obstacles to sustainable urban development. The prevalence of informal settlements is particularly high in developing countries like South Africa, India, Brazil, Kenya and Afghanistan due to rapid urbanization and population growth (Wakely and Buckle, 2019). Living conditions in these settlements are associated with various health and social issues, including crime, poverty and disease (Moser and Holland, 1997).

Efforts to improve living conditions in informal settlements face challenges such as inadequate access to basic services, lack of tenure security and limited economic opportunities (National Housing Code, Department of Housing, 2009). Case studies in countries like South Africa, India, Brazil and Kenya highlight the complex dynamics and challenges faced by residents in these areas (Davis, 2006; Perlman, 2010; Mitlin and Satterthwaite, 2013). In Afghanistan, Kandahar City has experienced significant unplanned growth, with approximately 80% of its population living in informal settlements (UN-Habitat, 2016). Conflict, economic instability and rural-urban migration have contributed to the proliferation of informal settlements in Kandahar, where residents lack access to basic services like clean water, sanitation, and electricity (UN-Habitat, 2016). Despite efforts by the Afghan government to improve living conditions, many residents continue to endure precarious circumstances in informal settlements (UN-Habitat, 2016).

2.2 Categories of Unsanctioned Growth

Informal settlements, commonly known as slums or shantytowns, are urban areas where residents live in structures lacking government approval. According to the United Nations, one in eight people worldwide resides in such settlements and this number is expected to increase. These settlements vary in size, location and characteristics, with squatter settlements being one of the most common types. Squatter settlements start with a few families building makeshift homes on vacant or public land and grow over time as more families move in. They lack basic services like water, sanitation and electricity, and are prevalent in urban areas facing a shortage of affordable housing (UN-Habitat, 2015). Examples include Dharavi in Mumbai, India, known for its complex social and economic dynamics (Davis, M., 2006).

Slums, another type of informal settlement, are densely populated areas lacking access to basic services such as water and sanitation. They are often located on the outskirts of cities and are characterized by makeshift

structures constructed from scrap materials. Over 1 billion people worldwide live in slums, facing challenges like poverty, inadequate housing and limited access to healthcare (World Bank, 2021). Kibera in Nairobi, Kenya, exemplifies the struggles faced in slums and the innovative community-driven initiatives aimed at addressing them (Mitlin, D., and Satterthwaite, D., 2013).

Favelas, commonly found in Brazil, are informal settlements characterized by unplanned housing and inadequate infrastructure. Over 11 million people in Brazil live in favelas, deprived of essential services (IBGE, 2019). The favela of Rocinha in Rio De Janeiro has been extensively studied, highlighting issues of poverty, violence and community resilience (Perlman, J., 2010). Each type of informal settlement presents unique challenges, underscoring the need for tailored interventions to address the complex issues of urban poverty and inadequate housing.

2.3 Impacts of Make-Shift Placement

The multifaceted impacts of informal settlements, also known as slums or shantytowns, extend across various domains, including health, economics, environment, social dynamics and urban planning. These settlements, characterized by a lack of formal planning and inadequate infrastructure, predominantly house low-income households marginalized from formal housing markets. The consequences of such unplanned growth are extensive, affecting public health significantly. Inadequate sanitation, limited access to clean water and overcrowded living conditions contribute to the spread of diseases like cholera, typhoid, and respiratory infections (WHO, 2020). Furthermore, economic challenges arise from substandard housing, leading to limited employment opportunities and perpetuating cycles of poverty (Durand-Lasserve and Royston, 2002). Environmental challenges, such as improper waste management, result in pollution and degradation of the local environment, further exacerbating health risks (Davis, 2006).

Moreover, social consequences include social exclusion, education disparities, socioeconomic inequalities and increased levels of insecurity and violence. Residents of informal settlements often face social exclusion and marginalization, leading to a sense of disempowerment and lack of social cohesion (Perlman, 2010). Additionally, inadequate access to quality education perpetuates disparities and socioeconomic inequalities, exacerbating the cycle of poverty for residents (Mitlin et al., 2013). The prevalence of crime and violence in these areas further contributes to insecurity and social unrest, hindering community development and well-being (Rodgers, 2011).

Furthermore, urban planning challenges arise from the rapid and unplanned growth of informal settlements, posing difficulties for city development and

affecting the aesthetic appeal of urban areas. The integration of these settlements into urban planning strategies becomes crucial to address residents' needs and create sustainable communities (UN-Habitat, 2003). Additionally, the visual disruption and deterioration caused by informal settlements can have profound effects on the overall aesthetic quality of a cityscape, impacting tourism and investment potential (Smith et al., 2018). Inadequate infrastructure and services further compound these challenges, leading to environmental degradation, pollution and social stigma (Lee and Chen, 2020). Despite the multifaceted nature of informal settlements and their attendant ramifications, addressing these issues requires comprehensive strategies and collaborative efforts across various sectors to promote sustainable development and improve the well-being of residents (Buckley and Kettle, 2008).

III. RESEARCH METHODOLOGY

3.1 Study Area

Nestled in the scenic southern region of Afghanistan, Kandahar Province stands as a vibrant hub of culture, economy and politics. With a population of around 614,118 people as of 2021, Kandahar faces significant challenges in terms of poverty, health, education and overall welfare, reflected in its low Human Development Index (HDI) value of 0.358 (UNDP). The province has been marked by conflict and violence in recent years, further exacerbating its development challenges. However, amidst its historical prominence, such as the iconic "Char Chatta" or four olden gateways, Kandahar embodies a rich cultural heritage that attracts tourists from around the world, despite the multifaceted aspects of informal settlements pervading its landscape, (Figure.1) shows Four Historic Gateways or Four Districts of Kandahar Province.

Informal settlements, often characterized by inadequate infrastructure and limited access to basic services, pose significant challenges for Kandahar's urban development. With over 75% of the city's populace residing in such settlements, the rapid growth of makeshift dwellings is driven by population increase, political instability and a shortage of affordable housing (UN-Habitat). Despite facing numerous constraints, interdisciplinary research methodologies have shed light on the living conditions and challenges faced by marginalized urban inhabitants, providing insights for sustainable urban development strategies. Challenges such as limited data availability, complex social dynamics and inadequate infrastructure underscore the need for comprehensive approaches to address the multifaceted dimensions of informal settlements in Kandahar, paving the way for inclusive and sustainable urban development in the province.

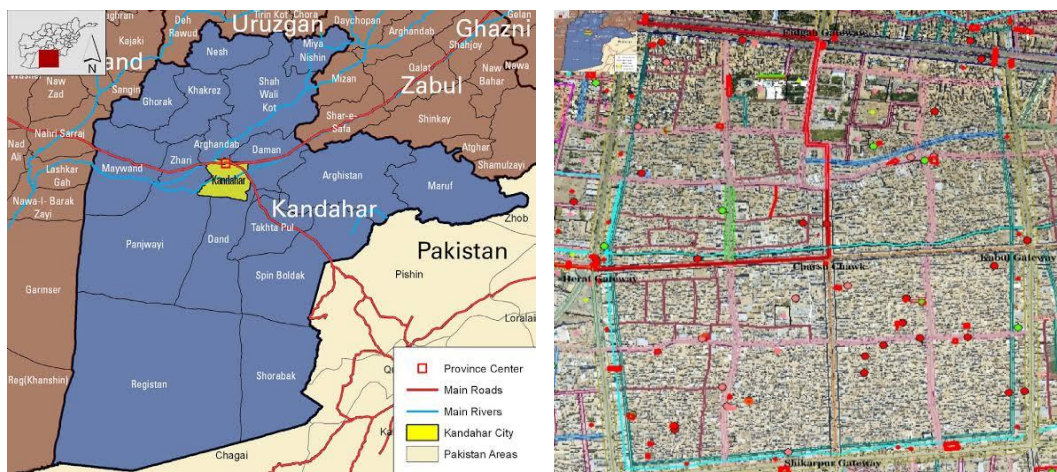


Figure 1: Study Area Kandahar, Afghanistan. Source: KNOEMA, 2012; GIS, 2023

3.2 Methodology

The research conducted on informal settlements in Kandahar employed a meticulous approach to data collection and analysis, encompassing a variety of methodologies to gather, analyze and interpret information. This comprehensive process began with direct and indirect observations to gather data on the physical environment and living conditions prevalent within these settlements. Subsequently, surveys with questionnaires and interviews were conducted to obtain insights into the opinions and attitudes of the residents, while several case studies were employed to gain an in-depth understanding of the dynamics within these communities. Additionally, historical and contextual evidence was gathered from various sources to provide valuable context to the present-day realities faced by these communities.

These data collection methods provided a comprehensive picture of informal settlements in Kandahar, shedding light on their challenges and potential solutions. Direct and indirect assessments offered focal insights into the physical environment and living conditions, while surveys and interviews retrieved statistics on socio-economic and demographic characteristics, as well as needs and priorities. Case studies identified patterns and trends in the expansion of settlements, highlighting challenges and opportunities, while historical evidence broadened the context and historical perspective on their development.

Furthermore, the research design and methods section played a pivotal role in studying informal settlements by establishing a framework for the research, ensuring data reliability and validity, addressing ethical considerations and facilitating the practical application of findings. The integration of quantitative and qualitative methodologies was crucial in conducting data analysis, with quantitative methods employed to analyze numerical data and inferential statistics used to establish correlations between different factors. Qualitative analysis techniques, on the other hand, facilitated the identification of common themes and patterns, as well as

in-depth insights into the experiences and perspectives of residents.

The study was conducted with meticulous precision and thoroughness, employing four distinct methods and sampling procedures to ensure comprehensive representation. A combination of random and purposive sampling techniques was employed to select participants, ensuring representation from different demographic groups and perspectives. The selection process was guided by several criteria, including residency status, vulnerability, financial situation, community impact, household composition, living conditions, documentation and gender equality.

A detailed description of the sample size and composition was provided, reflecting the diverse demographics of the population in informal settlements. This encompassed gender distribution, age range, educational levels, occupational categories, income levels, place of residence, duration of residency, house ownership and housing typology. The study also presented a comprehensive analysis of the demographic framework, delving into the overarching demographic profile of participants, specific characteristics of survey respondents and attributes of interviewees.

The provided research offers an extensive exploration of the demographic backgrounds, sampling methodologies, data collection techniques and challenges encountered in studying informal settlements in Kandahar in according to (Table. 1) Surveys and interviews carried out. It is organized into three distinct segments, each focusing on different facets of the research endeavor.

The first segment delves into the demographic backdrop of the study, meticulously examining various attributes of the survey participants. These attributes include gender, age, occupation, educational attainment, monthly income, place of residence, duration of residency, house ownership and housing typology. With a total of 550 respondents, the study provides a comprehensive overview of the demographics within the sampled population. Notably, the majority of

respondents were male, with varying levels of education and income. The segment also sheds light on the distribution of respondents across different districts within Kandahar and the types of housing they inhabit, offering valuable insights into the socio-economic landscape of the region.

Table 1: Surveys and Interviews Participants' Profiles

No:	Positions:	Name of the Agencies:	Totals:	Percentages (%):
1	Site Engineers:	Kandahar Municipality	9	1.551724
2	Civil Engineers:	Department of Urban Development	6	1.034483
3	Multi-Disciplinary Engineers:	Public Work Department (PWD)s	4	0.689655
4	Engineers:	Construction Firm	42	7.241379
5	Multi-Disciplinary Engineers:	Meli Engineering Services	19	3.275862
6	Designing Engineers:	Helal Engineering Services	9	1.551724
7	Multi-Disciplinary Engineers:	Mashallah Engineering Services	17	2.931034
8	Different Kind of Teachers:	Schools	18	3.103448
9	Senior Students:	Zaher Shahi High School	22	3.793103
10	Senior Students:	Taimoor Shahi High School	20	3.448276
11	Senior Students:	Afghan Academy	16	2.758621
12	Different Kind of Teachers:	Wissa Academy	10	1.724138
13	Employees of The Firms:	Tourism Firms	14	2.413793
14	Employees of The Firm:	Uzair Tourism Firm	11	1.896552
15	Employees of The Firm:	Fayk Salamat Tourism Firm	3	0.517241
16	Employees of The Firm:	Qays Hosseini Tourism Firm	5	0.862069
17	Managers and Other Employees:	Non-Governmental Organization (NGO)s	6	1.034483
18	Chairmen of Businesses:	Businesses	9	1.551724
19	In Charge of Restaurants:	Restaurants	3	0.517241
20	Staffs of the Restaurant:	Shahi Restaurant	7	1.206897
21	Staffs of the Restaurant:	Mirwaiss Restaurant	6	1.034483
22	Staffs of the Restaurant:	Lal Azar Restaurant	5	0.862069
23	Staffs of the Restaurant:	Shandiz Restaurant	6	1.034483
24	In Charges of Hotel:	Hotels	9	1.551724
25	In Charges of Hotel:	Pamir Hotel	1	0.172414
26	In Charges of Hotel:	Tadin Hotel	2	0.344828

27	In Charges of Hotel:	Khurasan Hotel	3	0.517241
28	Chairmen of Firms:	Firms	9	1.551724
29	Shopkeepers:	Wholesale and Retail Shops	140	24.13793
30	Self-Employees:	No Occupancies	149	25.68966
31	Total:		580	100

In the second segment, the focus shifts to the profiles of interviewees, drawing parallels with the demographic attributes explored in the first segment. However, the sample size is notably smaller, comprising 30 male participants. Despite the smaller sample size, the segment highlights key demographic trends and acknowledges potential limitations associated with the sample, such as age range restrictions and biases in occupation and education representation. Additionally, the segment addresses the challenges of generalizing findings beyond the research zone, emphasizing the need for cautious interpretation due to sampling constraints.

The third segment delves into the methodologies employed in the study, providing a detailed overview of the data collection process. The study utilized a combination of primary and secondary data collection methods, including observation, surveying, case studies and references. Various tools and techniques, such as questionnaires, interviews, and field visits, were employed to gather information on urban settlements and living conditions in Kandahar. Despite facing numerous challenges, such as data scarcity, language barriers, security issues, and resident reluctance to share information, the research design carefully considered sampling, data collection, analysis techniques and ethical considerations to ensure the validity and reliability of the findings.

The study on informal settlements in Kandahar employed meticulous data collection and analysis methodologies, combining observation, surveying, case studies and references to gather comprehensive insights. Despite challenges such as data scarcity and security issues, the study provided valuable demographic profiles and methodological insights, contributing to urban development discourse.

The process of data analysis involves sequential steps, ensuring accuracy, reliability and ethical considerations. Beginning with data cleaning and transformation, information is analyzed using statistical and visual methods to draw insights. Validity and reliability checks are conducted to confirm credibility. Ethical considerations are essential, especially when dealing with data related to individuals or communities. The analysis yields significant results presented through tables, diagrams and visual aids, despite limitations. The purpose is to understand residents' living conditions and identify areas for improvement, aiding policy decisions and interventions. A variety of data analysis methods, including spatial analysis, quantitative analysis,

qualitative analysis, data mining, machine learning and GIS tools, contribute to understanding settlement patterns, socio-economic indicators and cultural aspects of unauthorized housing. A comprehensive analytical framework integrates social, economic, and environmental factors, enabling evidence-based strategies for sustainable development. Quantitative methods, such as descriptive and inferential statistics, analyze data from informal settlements, while qualitative methods evaluate the experiences and perspectives of inhabitants. The analysis identifies various informal settlement types and underlying issues contributing to their growth, facilitating interventions to improve access to basic facilities. Ensuring validity and reliability through inter-rater checks, validity checks and triangulation enhances the legitimacy of data, resulting in accurate outcomes and recommendations. Overall, rigorous data analysis provides valuable insights for future planning and research endeavors, guiding inclusive urban planning and sustainable development efforts.

Certainly, with regard to Anika Nishat Remesher in 2021, the "Sampling Magnitude" was found by calculating and estimating; (N) for Population Size, (Z) for Z-Score; how confident you are, it has three categories: first 90%= 1.86, second 95%= 1.96 and third 99%= 2.58, (e) for Margin of Errors; for instance, 3% or 5% and (P) for Standard of Deviation; measure how much individual sample data points deviate from the average population, the standard deviation is 0.5; variables which were very necessary to be found for the formulas and can be put through these two equations as

follows: Known Population Sample Size=
$$\frac{Z^2 \times P(1-P)}{e^2}$$
 and Unknown Population Sample Size=
$$\frac{Z^2 \times P(1-P)}{e^2}$$

Furthermore, "Means" in Likert Scale were calculated by following the equation of $\mu = \frac{\sum x}{n}$ in which (μ) is the sample mean, ($\sum x$) is the sum of each value in the sample and (n) is the numerical value of total respondents. Not to mention, "Standard Deviation" in Likert Scale is calculated through the formula of $S = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$; in this formulation (S) is the sample standard deviation, (\sum) is sum of $x - \bar{x}$, (x) is each value, (\bar{x}) is the arithmetic mean of the observations and (n) is the number or numeral of values in that sample that is to say in this research it refers to questionnaires.

Thorough data cleaning and validation are imperative for ensuring the accuracy and consistency of research data related to informal settlements. This involves assembling data from various sources, including surveys, field visits, satellite imagery and internet and library sources. The initial step is crucial, as it sets the foundation for comprehensive and accurate information gathering. Surveys and field visits are conducted to collect data directly from settlement

residents, ensuring completeness and accuracy while mitigating issues like missing data, double counting and data manipulation.

Once the data is compiled, the next step is to identify and rectify errors and inconsistencies within the records. Statistical methods and computer programs like MS Excel and MS Word are utilized for this purpose, enabling researchers to address missing measures, rectify errors and standardize data formats. It's noteworthy that during this process, significant gaps in data may be discovered, such as incomplete statistics on existing and upcoming settlements or missing information about historical landmarks like the four ancient portals of Kandahar.

Standardizing the data is crucial to ensure consistency, considering architectural patterns such as building setbacks, sustainability, accessible infrastructure, building regulations and community participation. Additionally, duplicate entries within the dataset are identified and eliminated, acknowledging the presence of varying statistics and information reported by different sources, particularly regarding population rates and growth.

Moreover, the integration of quantitative and qualitative methodologies in data analysis provides a deeper understanding of informal settlements. Descriptive and inferential statistics analyze quantitative data, while content analysis and thematic analysis evaluate qualitative data. Visual aids like diagrams, tables, figures and maps facilitate the presentation of key findings, making the research more accessible and engaging for stakeholders.

Ethical considerations, including confidentiality and informed consent, are paramount, ensuring the privacy and well-being of settlement residents. Researchers must obtain informed consent and take measures to anonymize the dataset, particularly when dealing with sensitive information. Furthermore, it's crucial to conduct research in a culturally sensitive manner and utilize the findings to enhance the well-being of the community, while also acknowledging and addressing power dynamics between the researcher and the community.

IV. RESULTS AND FINDINGS

This segment of the research delineates the findings and outcomes derived from observations, encompassing both direct and indirect observations, alongside with case studies and survey method that included survey and Interview questionnaires.

4.1 Definitional Constructs of Informal Settlement

As in first place, throughout the observations of researcher by mean of (Direct observation means Site Visit and indirect observation means Geographic Information System "GIS" including Google Earth) definitions of informal settlement as follows: On top, unlawful placement refers to a residential area or

community that has emerged and developed without legal recognition or formal authorization from the relevant governmental authorities. In other words, this phenomenon also known as slums or shantytowns, are unplanned and unauthorized residential areas that develop spontaneously and often in an unplanned manner. This growth typically lacks adequate housing, basic infrastructure and essential services, such as clean water, sanitation facilities and electricity. Unsanctioned development is often characterized by overcrowding, poor living conditions, a lack of secure land tenure and there is no aesthetic in the cities because of this phenomenon. They are typically occupied by marginalized populations, including low-income households, migrant workers and displaced individuals. Makeshift progression can be found in both urban and rural areas and are a result of various factors, including rapid urbanization, poverty, inadequate housing policies, social exclusion, not enough intervention of municipality and inhabitants' carelessness.

Second of all, through studying numerous case studies, illegal colonization is defined as; generally, a make-shift enhancement, also known as a slum, shantytown or squatter settlement, refers to an inhabited sector that has emerged spontaneously and often illegally, without proper planning, infrastructure or formal land ownership rights. These settlements typically consist of makeshift dwellings constructed from locally available materials, namely wood, corrugated metal sheets and plastic tarps. They absence basic amenities such as clean water, sanitation facilities, electricity and proper roads. Often characterized by overcrowding, poverty and a lack of access to essential services; making their residents vulnerable to various social, economic and health challenges, (Smith, J. R., 2018). From an architectural perspective, substandard housing can be defined as self-constructed housing units within unplanned settlements, where residents design and build their own dwellings using limited resources and with little or no professional architectural intervention. The architectural elements in these settlements often reflect the socio-cultural practices and preferences of the community. The buildings are typically small-scale; with a mix of materials and styles influenced by local traditions and available resources. Due to the lack of formal planning, the urban fabric of informal settlements tends to be dense and irregular; with narrow and meandering pathways that connect the dwellings, in conjunction to Rodriguez, M. A. in 2020. Put differently, with regard to the case study of (Chen, L., 2019) mentioned that in the context of engineering, the issue will be defined as districts with insufficient engineering infrastructure and services. This kind of development frequently lack properly designed water supply systems, sewage networks, drainage systems and solid waste management facilities. Engineering challenges in illicit improvement include addressing the

complex terrain, unstable ground conditions and limited access for construction machinery. Engineers working in those societies face the task of retrofitting or providing appropriate engineering solutions to improve the living conditions and resilience of these placements and make more accessible public infrastructures and services for the citizens.

4.2 Typologies of Illegal Development

At the outset of the research endeavor, the researcher embarked on a thorough examination of various classifications of makeshift growth through both direct means, such as site visits and indirect methods utilizing Geographic Information System (GIS) tools like Google Earth. This approach revealed numerous types of informal settlements existing in Central Kandahar, as depicted in (Figure. 2). Among the myriad categories identified, several stand out as particularly significant:

1. **Refugee Camps:** These camps serve as crucial hubs providing shelter and services for individuals displaced by conflict, persecution, or disasters. Typically established by international organizations or governments, refugee camps comprise tents or temporary shelters along with communal facilities. However, they often face challenges such as overcrowding due to the influx of displaced populations.
2. **Homeless Encampments:** These makeshift shelters are inhabited by individuals experiencing homelessness, utilizing tents or tarps in public spaces or vacant land. Lacking permanent housing and basic amenities, homeless encampments may receive support from local governments and organizations, but they still grapple with the systemic challenges of homelessness and housing insecurity.
3. **Spontaneous Sheltering:** Also known as unauthorized developments, spontaneous settlements arise without formal government planning or approval. Driven by factors such as migration, population growth, and limited access to affordable housing, these settlements often lack proper infrastructure and basic amenities. Residents face challenges related to land tenure and legal recognition, relying on strong social networks for mutual support.
4. **Nomads Tents:** Used by nomadic communities who move with their livestock, these lightweight, portable dwellings are typically made from materials like animal skins or fabrics. Nomadic tents provide shelter while allowing adaptability to different environments, reflecting the traditional lifestyle and mobility patterns of nomadic populations.
5. **Carts and Wagons:** Mobile shelters utilized by itinerant or transient populations, constructed from repurposed materials. While providing basic shelter, carts and wagons often lack proper amenities and are commonly found in city centers among travelers, migrant workers, or impoverished individuals.



Figure 2: Typologies of Informal Settlement in Central Kandahar. Source: Site Observation and Survey, 2023

Through a combination of meticulously crafted survey questionnaires and carefully conducted interview protocols, the research obtained insights into the prevalence of various forms of precarious housing. Survey questionnaires administered to the general populace revealed the diversity of informal settlements within the area, with (Table. 2) showcasing respondents' and interviewees' profiles, including strongly agree percentages, means and standard deviations for different types of informal settlements as perceived by residents. Additionally, administering interview questionnaires to experts responsible for addressing this phenomenon unveiled a comprehensive exploration of diverse forms of vulnerable habitation.

These findings shed light on the multifaceted nature of prevailing shelter conditions, supplemented by data from experts indicating the percentage of respondents strongly agreeing with each type and their distribution across the site. Furthermore, an extensive analysis of multiple case studies facilitated the classification of slum areas into distinct categories, providing an academic perspective on the matter. Through an extensive analysis of multiple case studies and surveys, slum areas can be classified into distinct sorts as shown in (Figure. 3). This academic inquiry illuminates the complex dynamics of informal settlement and underscores the importance of holistic approaches to address the diverse challenges faced by marginalized populations.

6. Squatter Settlements: Also known as informal settlements, epitomize the unauthorized occupation of land and the construction of makeshift dwellings by individuals or families lacking legal ownership or

formal rights to the land. Emerging primarily in urban areas, these settlements are often home to low-income populations facing myriad challenges. Payne's (2007) case study on squatter settlements in Mumbai, India, commonly referred to as slums, highlights the prevalence of unofficial growth in Kandahar-City, where residents contend with poverty, inadequate infrastructure and limited access to basic services.

Table 2: Informal Settlement Types; Respondents' and Interviewees' Descriptive Results

No:	Informal Settlement Typologies:	Likert Scale:					Mean:	Standard Deviation:
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		
1	Spontaneous Sheltering:	316	145	100	14	5	1.70	1.413
		54.48%	25.00%	17.24%	2.41%	0.86%		
2	Homeless Encampments:	352	114	105	6	3	1.61	1.306
		60.69%	19.66%	18.10%	1.03%	0.52%		
3	Nomads Tents:	78	66	113	177	146	3.43	3.177
		13.45%	11.38%	19.48%	30.52%	25.17%		
4	Refugee Camps:	28	44	215	96	197	3.67	3.340
		4.83%	7.59%	37.07%	16.55%	33.97%		

5	Carts and Wagons:	332	204	33	9	2	1.5 3	1.1 40
		57.2 4%	35.1 7%	5.69 %	1.55 %	0.34 %		
6	Squatter Settlements:	296	213	36	21	14	1.7 0	1.4 23
		51.0 3%	36.7 2%	6.21 %	3.62 %	2.41 %		
7	Slums:	63	71	110	177	189	3.7 7	3.4 00
		10.8 6%	12.2 4%	18.9 7%	30.5 2%	32.5 9%		
8	Self-Help Housing :	366	106	49	39	20	1.6 9	1.5 39
		63.1 0%	18.2 8%	8.45 %	6.72 %	3.45 %		
9	Shantytowns:	53	69	78	217	163	3.6 3	3.3 40
		9.14 %	11.9 0%	13.4 5%	37.4 1%	28.1 0%		
10	Informal Subdivisions:	68	77	91	240	104	3.4 1	3.1 24
		11.7 2%	13.2 8%	15.6 9%	41.3 8%	17.9 3%		
11	Tenement Housing :	328	130	94	22	6	1.7 0	1.4 43
		56.5 5%	22.4 1%	16.2 1%	3.79 %	1.03 %		
12	Total:	580 (100 %)					27. 84	24. 646

7. **Slums:** Characterized by densely populated areas within cities, are marked by substandard housing and inadequate access to essential services such as water and sanitation, perpetuating cycles of poverty. Davis's (2006) case study on the slums of Nairobi, Kenya, underscores the dire living conditions endured by residents, who grapple with overcrowding and lack of basic amenities and infrastructure.
8. **Self-Help Housing:** Represents a form of informal dwelling construction wherein residents incrementally build and improve their homes over time, often with limited resources and without formal assistance from authorities. Gilbert and Gugler's (1982) case study on self-help housing in Lima, Peru, exemplifies how residents contribute to the gradual development and upgrading of slum zones through incremental construction efforts.
9. **Shantytowns:** Characterized by poorly constructed and improvised dwellings, typically lack basic infrastructure and services such as electricity, sanitation and clean water. Perlman's (2010) case study on shantytowns in Rio De Janeiro, Brazil, known as favelas, sheds light on the significant socio-economic challenges faced by residents living in precarious conditions.

10. **Informal Subdivisions:** Involve the unauthorized subdivision of land into smaller plots for housing purposes, often without complying with formal regulations or urban planning standards. Fernández and Varley's (1998) case study on informal subdivisions in Mexico City, Mexico, illustrates how residents establish such enhancements on vacant land and gradually develop housing and infrastructure through self-help initiatives.

11. **Tenement Housing:** Refers to multi-story buildings or apartment complexes in illegally settled sites, providing housing to low-income populations. Roy's (2005) case study on tenement housing in Kolkata, India, highlights the overcrowded and unsanitary conditions prevalent in densely populated slum areas occupied by impoverished residents.

These various forms of informal settlement underscore the complex socio-economic and spatial dynamics shaping urban landscapes globally. Despite their illegitimacy, these settlements serve as vital sources of shelter for marginalized populations, albeit amidst numerous challenges and hardships. Through in-depth case studies and analyses, researchers illuminate the lived experiences of residents and the systemic issues perpetuating informal settlement dynamics, paving the way for informed policy interventions and urban planning initiatives aimed at addressing housing insecurity and promoting social equity.

4.3 Effects of Informal Settlement

The consequences of unpermitted habitation are profound and multifaceted, revealing a complex web of challenges that impact individuals, communities and the broader urban landscape. Through an adept survey methodology encompassing both meticulously crafted survey questionnaires and thoughtfully conducted interview questionnaires, the study has shed light on these consequences, providing valuable insights into the lived experiences of residents in informal settlements. This pivotal juncture of the research journey facilitated a harmonious convergence of participants' eagerness to unveil their insights, resonating gracefully in the evocative portrayal of their profiles in (Table. 3). Simultaneously, throughout survey questionnaires toward the impacts of unofficial settling, a range of negative effects on residents emerged, as indicated by the strongly agree percentages, mean and standard deviation of various factors.

Delving into the heart of the matter, it becomes evident that informal settlements present a myriad of challenges that reverberate throughout the community. Here are some effects commonly associated with illegal occupation, often the cause of countless problems in various parts of cities in Kandahar Province, as gleaned through the evaluation of survey questionnaires of general residents of the site:

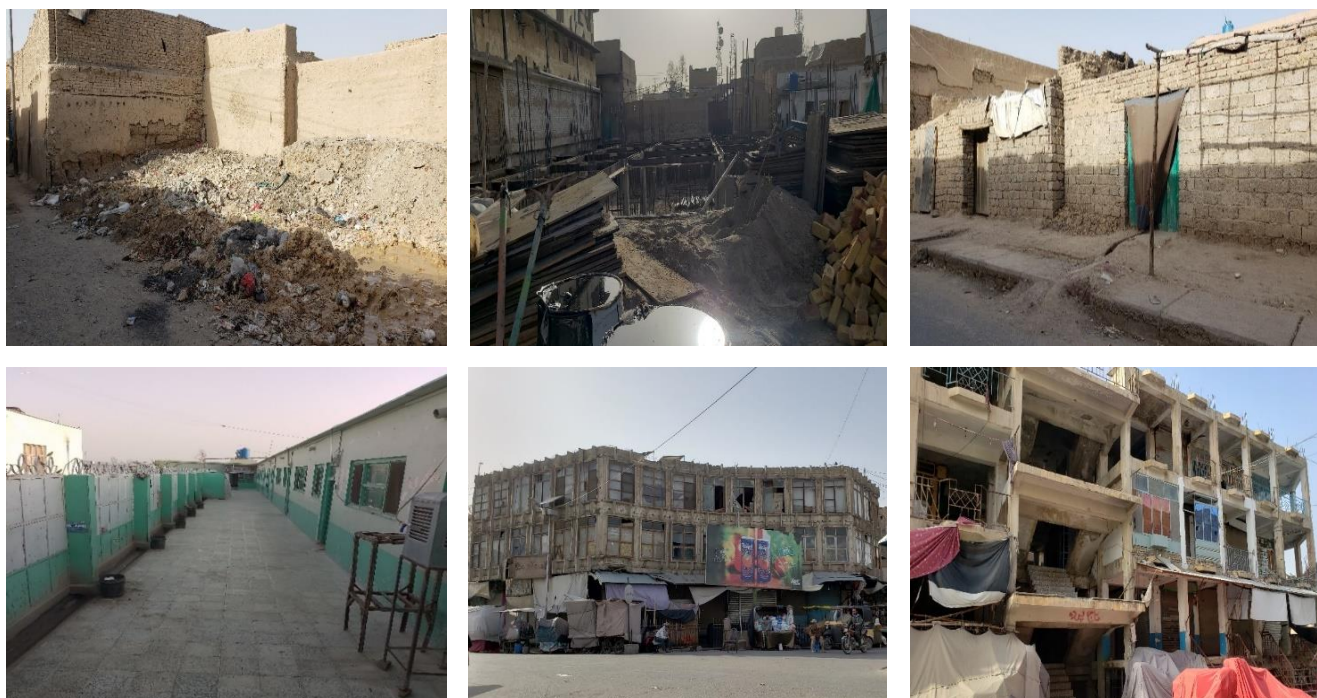


Figure 3: Types of Informal Placement in Central Kandahar. Source: Site Observation and Survey, 2023

1. **Poor Living Conditions:** Informal settlements typically lack proper housing structures and are characterized by makeshift shelters made from scrap materials. These structures often lack proper ventilation, sanitation facilities and access to clean water, leading to unhealthy living conditions that could cause many diseases in the localities. The absence of adequate housing exacerbates vulnerabilities, exposing residents to harsh environmental conditions and compromising their overall well-being.
2. **Overcrowding:** Illegal shelters are densely populated, with limited space available for each household. This overcrowding exacerbates the spread of illnesses and contributes to social and economic challenges. Families are forced to live in cramped quarters, leading to tensions and conflicts within the community. Moreover, overcrowding hampers efforts to maintain hygiene and sanitation standards, further exacerbating health risks for residents.
3. **Limited Access to Basic Services:** Residents of these sectors often face limited access to essential services such as electricity, clean water, healthcare, education and sanitation. The deficit of infrastructure hampers their quality of life and inhibits their ability to break out of the cycle of poverty. Without access to basic services, residents are unable to meet their fundamental needs, perpetuating socio-economic disparities and hindering their prospects for upward mobility.
4. **High Levels of Poverty:** Unofficial buildings are characterized by high levels of poverty and limited economic opportunities. Residents frequently engage in informal or precarious employment, facing low wages and unstable working conditions. This perpetuates the cycle of poverty and hinders social mobility, keeping the city in a state of deprivation. Economic insecurity further compounds the challenges faced by residents, making it difficult for them to access essential resources and services.
5. **Health Risks:** Make-shift growth is prone to health perils due to inadequate sanitation facilities, poor waste management and the dearth of clean water. In reality, these conditions increase the likelihood of waterborne diseases, respiratory illnesses and other health issues, particularly among vulnerable populations such as children and the elderly. Moreover, inadequate access to healthcare exacerbates these risks, further compromising the well-being of residents. The prevalence of health risks underscores the urgent need for interventions aimed at improving living conditions and promoting public health initiatives within informal settlements.
6. **Social Marginalization:** Substandard housing commonly faces marginalization and stigmatization from the wider society. The residents may experience discrimination, limited access to social services and reduced opportunities for social integration, leading to social exclusion and heightened inequality. This marginalization can deepen existing social divides and foster a sense of alienation and resentment within the community, potentially leading to social unrest and conflict. Therefore, addressing these issues requires comprehensive interventions aimed at improving housing conditions, enhancing access to basic services, promoting social inclusion and fostering economic empowerment within informal settlements.

The analysis of interview questionnaires offers valuable insights from an architect's skillful perspective, revealing a series of influential factors shaping informal settlements. These influences can be sequentially listed as follows:

7. Makeshift Construction: Informal settlements often feature makeshift structures built using salvaged materials, such as corrugated metal sheets, wood planks and tarpaulins. These structures are habitually temporary and lack proper foundations and stability, posing risks to residents' safety and well-being.

8. Densely Packed Buildings: Due to limited space and high population density, buildings in illicit progress are closely spaced, resulting in a crowded and congested environment. This overcrowding exacerbates social tensions and compromises residents' quality of life.

9. Irregular and Haphazard Layout: Makeshift shelters typically lack formal urban planning, leading to an irregular and haphazard layout with narrow and winding pathways. This lack of organization causes challenges in ventilation and sunlight access, contributing to unhealthy living conditions.

Table 3: Informal Settlement Impacts; Respondents' and Interviewees' Descriptive Results

No:	Informal Settlement Effects:	Likert Scale:					Mean:	Standard Deviation:
		Strongly Agree:	Agree:	Neutral:	Disagree:	Strongly Disagree:		
1	Informal settlements typically face poor living conditions such as weak ventilation, health care or clean water?	373	101	50	15	11	1.53	1.281
		67.82 %	18.36 %	9.09 %	2.73 %	2.00 %		
2	Illegal colonization is densely populated, with limited space available for each household?	360	107	69	8	6	1.53	1.239
		65.45 %	19.45 %	12.55 %	1.45 %	1.09 %		
3	The residents of these sectors frequently face limited access to essential services for example sanitation?	381	117	27	13	12	1.47	1.200
		69.27 %	21.27 %	4.91 %	2.36 %	2.18 %		
4	Unofficial buildings are characterized by high levels of poverty and limited economic opportunities?	393	94	30	18	15	1.49	1.268
		71.45 %	17.09 %	5.45 %	3.27 %	2.73 %		
5	Make-shift growth is prone to health perils due to inadequate sanitation facilities or poor waste management?	380	99	47	14	10	1.50	1.242
		69.09 %	18.00 %	8.55 %	2.55 %	1.82 %		
6	Substandard housing commonly faces marginalization and stigmatization from the wider society?	0	413	0	137	0	2.50	2.119
		0.00 %	75.09 %	0.00 %	24.91 %	0.00 %		
7	Due to limited space and high population density, buildings in illicit progress are closely spaced?	0	503	0	47	0	2.17	1.690
		0.00 %	91.45 %	0.00 %	8.55 %	0.00 %		
8	Makeshift shelters typically dearth of formal urban planning, leading to an irregular and haphazard layout?	0	460	0	90	0	2.33	1.907
		0.00 %	83.64 %	0.00 %	16.36 %	0.00 %		
9	To accommodate growing populations, buildings in this kind of occupation a lot expand vertically?	0	391	0	159	0	2.58	2.212
		0.00 %	71.09 %	0.00 %	28.91 %	0.00 %		
10	Total:	550 (100 %)					17.09	14.16
11	These sorts of constructed buildings repeatedly face the deficiency of basic infrastructures, like transportation?	22	4	2	1	1	1.50	1.317
		73.33 %	13.33 %	6.67 %	3.33 %	3.33 %		
12	Unlawful dwellings commonly suffer from limited access to natural light and ventilation?	23	5	1	1	0	1.33	0.966
		76.67 %	16.67 %	3.33 %	3.33 %	0.00 %		
13	Unofficial placement typically lacks designated public spaces, namely parks or community gathering areas?	21	6	2	0	1	1.47	1.211
		70.00 %	20.00 %	6.67 %	0.00 %	3.33 %		
14	These kinds of structures often have buildings with weak or insufficient structural stability and systems?	21	4	2	1	2	1.63	1.549
		70.00 %	13.33 %	6.67 %	3.33 %	6.67 %		
15	Buildings in unlawful placements mostly non-existence of appropriate foundation systems with no durability?	25	3	2	0	0	1.23	0.775
		83.33 %	10.00 %	6.67 %	0.00 %	0.00 %		
16	Informally built buildings repeatedly scarcity of suitable sewage and drainage systems?	23	5	1	0	1	1.37	1.095
		76.67 %	16.67 %	3.33 %	0.00 %	3.33 %		
17	Illegally improving the neighborhoods are located in high-risk areas, like floodplains or unstable slopes?	18	10	2	0	0	1.47	1.033
		60.00 %	33.33 %	6.67 %	0.00 %	0.00 %		
18	Substandard housing often deficiencies of appropriate healthcare facilities and	15	11	0	2	2	1.83	1.693
		50.00 %	36.67 %	0.00 %	6.67 %	6.67 %		

	face challenges?							
19	Social impacts are adversely linked with informal settlement in a particular region and society?	0	27	0	3	0	2.20	1.732
		0.00 %	90.00 %	0.00 %	10.00 %	0.00 %		
20	The economic effects are correlated to unsanctioned growth supplementarily?	0	21	0	9	0	2.60	2.236
		0.00 %	70.00 %	0.00 %	30.00 %	0.00 %		
21	Politics influence precarious sheltering in the area where it is rising?	0	19	0	11	0	2.73	2.380
		0.00 %	63.33 %	0.00 %	36.67 %	0.00 %		
22	Generally, are there any related consequences of unlawful housing?	0	17	0	13	0	2.87	2.517
		0.00 %	56.67 %	0.00 %	43.33 %	0.00 %		
23	As an architect, effectuations have part in unwarranted accommodation where this issue has emerged?	0	15	0	15	0	3.00	2.646
		0.00 %	50.00 %	0.00 %	50.00 %	0.00 %		
24	From the point of view of an engineer, are there any effects of unofficial placement?	0	23	0	7	0	0.02	0.208
		0.00 %	76.67 %	0.00 %	23.33 %	0.00 %		
25	Total:	30 (100 %)					25.26	21.36

10. Vertical Expansion: To accommodate growing populations, buildings in informal settlements often expand vertically. Additional floors are added incrementally, leading to taller and structurally unstable structures that are vulnerable to environmental hazards and risks.
11. Lack of Infrastructure: Informally constructed buildings frequently lack basic infrastructure, including proper roads, drainage systems, sewage networks and access to utilities such as electricity, clean water, sanitation and waste management networks. This deficit hampers residents' access to essential services and exacerbates socio-economic disparities.
12. Inadequate Sanitation Facilities: Illicit constructions often lack proper sanitation facilities, such as toilets and waste management systems, resulting in unhygienic conditions and increased health risks for residents. These conditions pose significant challenges to public health and well-being.
13. Informal Street Networks: Informal settlements often lack formal road networks, leading to the emergence of improvised and meandering pathways that connect different parts of the settlement. This informal street network complicates navigation and makes service delivery more challenging for residents and authorities alike.
14. Limited Natural Light and Ventilation: Due to the densely packed and haphazard nature of buildings, unlawfully constructed dwellings commonly suffer from limited access to natural light and ventilation. This results in dark and poorly ventilated living spaces, compromising residents' comfort and health.
15. Lack of Tenure Security: Residents in illegally built buildings often lack legal ownership or tenure rights to the land they occupy. This absence of formal recognition can lead to insecurity, as residents may face eviction threats or be unable to invest in improving their dwellings. Tenure insecurity undermines community stability and inhibits long-term planning and development efforts.
16. Lack of Public Spaces: Informally constructed housing typically lacks designated public spaces,

such as parks or community gathering areas. This limits opportunities for social interaction and recreation, hindering community cohesion and well-being. Access to public spaces is essential for fostering social connections and promoting residents' overall quality of life.

17. From an engineering scholarly perspective, the impacts assessment of unsanctioned development reveals critical challenges that warrant attention and intervention. Through the analysis of interview questionnaires, the intensity and importance of these impacts can be documented as follows:
18. Inadequate Structural Stability: Unsanctioned structures often lack proper structural systems due to the use of substandard materials and lack of professional engineering expertise. This compromises their stability and increases vulnerability to collapse, particularly during natural disasters, leading to significant property damage and loss of life.
19. Lack of Proper Foundation: Buildings in unlawful placements frequently lack appropriate foundation systems, compromising their stability and durability. The absence of proper foundations increases the risk of structural failure, posing safety hazards to residents and exacerbating the potential for damage to property and infrastructure.
20. Limited Access to Safe Drinking Water: Unsanctioned developments face challenges in providing residents with access to safe and clean drinking water due to a shortage of infrastructure. This often results in reliance on contaminated water sources or insufficient supply sources, exposing residents to waterborne diseases and health risks.
21. Absence of Adequate Sewage and Drainage Systems: Informally built buildings often lack suitable sewage and drainage systems, leading to improper disposal of wastewater and increased risk of waterborne diseases. The absence of proper sanitation infrastructure compromises public health and exacerbates environmental pollution.
22. Vulnerability to Natural Disasters: Illegally developed neighborhoods are frequently located in

high-risk areas such as floodplains or unstable slopes, making them more susceptible to natural disasters. Events like floods, landslides, or earthquakes pose significant risks to residents' safety and well-being, highlighting the need for robust disaster preparedness and mitigation measures.

23. **Insufficient Waste Management:** Informal settlements often struggle with proper waste disposal and management, resulting in environmental pollution and health hazards. The lack of adequate waste management infrastructure contributes to unsanitary living conditions and exacerbates public health risks within the community.
24. **Limited Access to Electricity:** Illegitimate shelters typically have limited or no access to reliable electricity, leading to reliance on unsafe and makeshift electrical connections. This poses fire and electrocution risks, endangering the lives and property of residents and underscoring the importance of improving access to electricity in informal settlements.

25. **Lack of Proper Road Infrastructure:** Slum-upgrading initiatives often face challenges related to poorly constructed or non-existent road networks. Inadequate road infrastructure hinders transportation, emergency response efforts and access to essential services, impeding socio-economic development and community resilience.

26. **Insufficient Stormwater Management:** Due to the lack of adequate infrastructure, makeshift shelters struggle to manage stormwater effectively. This results in flooding and waterlogging during heavy rainfall, exacerbating environmental degradation and posing risks to public health and safety.

27. **Restricted Access to Healthcare Facilities:** Substandard housing frequently lacks appropriate healthcare facilities and faces challenges in providing adequate medical services to residents. Limited access to healthcare exacerbates health disparities and places residents at greater risk of untreated illnesses and preventable health conditions.



Figure 4: Proposed General Plan. Source: Proposed Planning, 2023

In addition, the impacts of unsanctioned development on communities are far-reaching and multifaceted, affecting various aspects of residents' lives and well-being. Addressing these challenges requires comprehensive strategies that prioritize infrastructure development, disaster resilience, public health interventions and community empowerment initiatives within informal settlements.

V. DISCUSSIONS

The survey method employed, incorporating meticulously designed survey questionnaires and thoughtfully conducted interview questionnaires, provided valuable insights into the prevalence and

perception of various forms of precarious sheltering in the area. Through survey questionnaires administered to the general populace, we obtained an understanding of the prevalence of different types of informal settlements. In addition, (Figure. 4) depicted the most magnificent proposed plan as modified these kinds and all the matters that are related to this phenomenon. The data revealed the strongly agree percentage, mean and standard deviation for each type of settlement as perceived by residents.

For instance, Spontaneous Sheltering garnered a 55.09% strongly agree percentage, with a mean of 1.68 and a standard deviation of 1.378. Homeless Encampments received a 60.91% strongly agree percentage, with a mean of 1.61 and a standard deviation

of 1.299. Similarly, Nomads Tents obtained a 13.82% strongly agree percentage, with a mean of 3.39 and a standard deviation of 3.148. These figures shed light on the prevalence and perception of different types of informal settlements in the area.

Additionally, administering interview questionnaires to experts responsible for addressing this phenomenon provided further insights into the multifaceted nature of prevailing sheltering conditions. The results obtained from these interviews highlighted the challenges associated with informal settlements and the perceptions of experts regarding their prevalence.

For example, Spontaneous Sheltering garnered a 43.33% strongly agree percentage, with a mean of 2.10 and a standard deviation of 1.949 among experts. Homeless Encampments received a 56.67% strongly agree percentage, with a mean of 1.67 and a standard deviation of 1.438. These findings complemented the data obtained from survey questionnaires and provided a comprehensive understanding of the prevailing sheltering conditions in the area. However, the combination of survey questionnaires and interview questionnaires provided valuable insights into the prevalence and perception of various forms of precarious sheltering in the area. The data obtained from both sources shed light on the challenges associated with informal settlements and the perceptions of residents and experts alike.

The consequences of unpermitted habitation have been brought to light through a meticulous survey methodology, incorporating both survey questionnaires and interview questionnaires as showcased in (Table. 2 and 3). This methodology facilitated a comprehensive understanding of the negative effects of unofficial settling on residents, as evidenced by strongly agree percentages, means and standard deviations across various factors. Residents strongly agree (67.82%) that poor living conditions prevail in these settlements, with inadequate ventilation and healthcare and a lack of clean water (mean: 1.53, standard deviation: 1.281). Additionally, 65.45% agree that illegal colonization leads to densely populated areas (mean: 1.53, standard deviation: 1.239).

Moreover, experts corroborated these findings during interview questionnaires, highlighting the challenges associated with informal settlements in four historic portals of Kandahar-City. Experts strongly agree (73.33%) that constructed buildings often lack basic infrastructure like transportation (mean: 1.50, standard deviation: 1.317). Additionally, 76.67% agree that these dwellings suffer from limited access to natural light and ventilation (mean: 1.33, standard deviation: 0.966). Furthermore, 70.00% of experts strongly agree that informal placements lack designated public spaces (mean: 1.47, standard deviation: 1.211).

Structural stability emerges as a concern, with 70.00% of experts strongly agreeing that these buildings often lack it (mean: 1.63, standard deviation: 1.549).

Similarly, 83.33% agree that buildings in unlawful placements lack appropriate foundation systems (mean: 1.23, standard deviation: 0.775). Drainage and sewage systems pose recurring issues, with 76.67% of experts strongly agreeing on their scarcity (mean: 1.37, standard deviation: 1.095).

Additionally, 60.00% of experts strongly agree that illegally improved neighborhoods are often located in high-risk areas (mean: 1.47, standard deviation: 1.033). Healthcare facilities are insufficient, as 50.00% of experts strongly agree (mean: 1.83, standard deviation: 1.693). Social impacts are prevalent, with 90.00% of experts strongly agreeing on their adverse effects (mean: 2.20, standard deviation: 1.732).

Economic and political influences are significant, as reported by 70.00% and 63.33% of experts, respectively (mean: 2.60, standard deviation: 2.236; mean: 2.73, standard deviation: 2.380). Architects and engineers also acknowledge their role in unwarranted accommodation, with 56.67% and 76.67% of experts strongly agreeing, respectively (mean: 2.87, standard deviation: 2.517; mean: 0.02, standard deviation: 0.208).

VI. CONCLUSION

Embarking upon a comprehensive quest to unravel the intricate intricacies that characterize informal settlements in Central Kandahar, this scholarly endeavor has traversed a multifaceted terrain, meticulously delving into a myriad of research objectives. What is more, in the pursuit of comprehending the intricate dynamics of informal settlements in Central Kandahar, this research has addressed multifaceted aspects through a systematic exploration of various research objectives. These objectives encompassed definitions from a general, architectural and engineering perspective, delved into the diverse types of informal settlements, scrutinized the wide-ranging effects on social, economic and political impacts within the urban context. In view of that, this exploration comprehensively concluded the study, encompassing their definitions, varied types, extensive effects. Ultimately, culminating in a holistic approach to study implementation as a closing platform.

Commencing with the foundational bedrock of definitions, this scholarly investigation has ingeniously proffered an all-encompassing comprehension of informal settlements. Moreover, this contemplation has artfully encompassed not only their overarching significance but has delved into their intrinsic subtleties spanning the realms of general, architectural and engineering connotations. Although, this cardinal establishment has manifested as a pivotal edifice, serving to anchor subsequent inquisitions whilst adroitly unraveling the intricate strata that conjoin to mold these settlements in Midst Kandahar in order to improve the life of society.

Successively, the sagacious exploration into the diverse typologies of informal settlements, an ensemble ranging from Spontaneous Sheltering and Homeless Encampments to Nomads Tents, Refugee Camps, Carts and Wagons, Squatter Settlements, Slums, Self-Help Housing, Shantytowns, Informal Subdivisions and Tenement Housing, has effulgently illuminated the variegated silhouettes assumed by these human habitats. This typological exegesis has bestowed luminescence upon the heterogeneous tapestry of these communities, each exuding idiosyncratic challenges and attributes, thereby engendering a more nuanced and enlightened prism for the purposeful resolution of their predicaments in study area.

Additionally, the reverberations of effects, as they resonate within the ambit of this research, transcend the tangibility of mere physical structures, encompassing a tapestry that interweaves social, economic and political dimensions. The poignant reverberations upon the well-being, health and educational prospects of the inhabitants resound as a clarion call for imperative intervention. Furthermore, the reverberating ripples of economic repercussions and the reverberations of political implications reverberate to spotlight the more expansive systemic reverberations engendered by informal settlements upon the social milieu because these impacts are the ascended consequences of it in exploration scope.

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