

CHALLENGES AND MITIGATION METHODS OF INFORMAL URBAN SETTLEMENTS IN ETHIOPIA: THE CASE OF ADAMA CITY



Milki Abuna Tafa

A Thesis submitted to the Department of Architecture

Presented in Partial Fulfillment of the Requirement for the Degree of Master's
in Urban Planning and Design

School of Civil Engineering and Architecture

Office of Graduate Studies

Adama Science and Technology University.

June, 2024

Adama, Ethiopia

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Advisor: Prof. Ambuj Kumar

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I/we, the advisor(s) of this thesis, hereby certify that I/we have read the revised version of the thesis “**CHALLENGES AND MITIGATION METHODS OF INFORMAL URBAN SETTLEMENTS IN ETHIOPIA: THE CASE OF ADAMA CITY**” prepared under my/our guidance by Milki Abuna Tafa submitted in partial fulfillment of the requirements for the degree of Masters of Science in Urban Planning and Design. Therefore, I/we recommend the submission of revised version of the thesis to the department following the applicable procedures.

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LIST OF ACRONYMS AND ABBREVIATIONS

UN United Nation

GIS Geographical Information System

GPS Global Positioning System

SPSS Statistical Package for the Social Sciences

LDP Local Development Plan

ETB Ethiopian Birr

UNSD United Nations Statistics Division

ABSTRACT

Informal settlement has been one of the most significant urban concerns in many cities. As one of Ethiopia's most notable cities, Adama has also experienced urban population growth, which has resulted in informal urban settlement in several parts of the city. This research was aimed to investigate the informal urban settlements within Adama City, Ethiopia. It explored the multidimensional challenges caused by these settlements, ranging from inadequate access to essential services to the absence of formalized land tenure. The study was conducted in Adama city specifically two woredas named Hangatu and Melka Adama. It used mixed research methods employing both qualitative (interview, literature review) and quantitative (observation, questionnaire) research methods. For this study 193 residents of an informal settlement were selected through probability (Simple random) sampling. In addition 13 Government officials and 5 farmers from both woredas, totally 211 respondents were selected through nonprobability (purposive) sampling techniques. The data collected from respondents through Questionnaire was analysed using SPSS (ver 20). And the data from key informant interview was summarized in an essay form. The study identified the major cause of informal settlement is poverty and lack of affordable Houses for the low income group. The lack of formal housing provision, financial problems and migration are reasons for living in of informal settlements and it highly contributed to an increase of informal settlement. Respondents witnessed that informal urban settlements in Adama City face different challenges, including inadequate access to basic services such as water, sanitation, and electricity, as well as limited tenure security and vulnerability to crimes. The government authorities are currently implementing measures to demolish informal settlements. Integrated approach for planning combining both city level and local level, prioritizing formal housing provision and introducing more flexibility in planning is recommended as curative and preventive mitigation methods.

Keywords: Informal settlements, urban challenges, Mitigation methods, Adama

CHAPTER ONE

INTRODUCTION

A dwelling unit constructed without proper planning or authorization and without following building codes is referred to as an informal settlement. On the periphery of cities, the majority can be located. World-wide, the growth of urban populations is correlated with the spread of slums, poor residential districts, and informal settlements (Avis, 2016). Inadequate land management and administration systems, a lack of affordable housing, and poor spatial planning are all associated with informal settlements (Un Habitat, 2015). Neighborhoods known as informal settlements are regions in which residents frequently lack security of ownership over the land or houses they live in (Brown, 2015). Neighborhoods with an informal settlement may be deprived of infrastructure and basic amenities. These housing units also do not adhere to the standards of city planning and building laws. These villages are distinguished by their placement in remote, environmentally and physically vulnerable parts of cities (Un Habitat, 2015).

One of the biggest issues facing cities nowadays is informal settlement. The globe is growing increasingly urbanized, as seen by the fact that over half of all people live in cities today. 6 billion people will live in cities worldwide by 2045, a 1.5 fold increase (Ivers, 2023). Since 2008, almost half of the world's population has lived in cities. It is anticipated that more people will live in cities, especially in developing nations. In addition to land, the expanding urban population will require a variety of services, infrastructure, housing, and employment (Un Habitat, 2015). Because of urbanization, over 1 billion people currently reside in informal settlements. Eighth of the world's population endures terrible living circumstances (Welisiejko, et al., 2022). Informal settlements have different local names in different cities such as favelas (Brazil), shantytowns (India), villas (Argentina), aashwa'i (Egypt) or campamentos (Chile) are typically defined by the qualities they lack (Welisiejko, et al., 2022).

One of the most famous cities in Ethiopia, Adama has seen an increase in its urban population, leading to the emergence of informal urban settlement in a number of areas of the city. This city serves as an excellent illustration of the complexity and difficulties associated with the formation and expansion of these informal settlements. Number of

factors, including a lack of government-provided developed land, an imbalance between supply and demand, impractical city planning, a lack of social participation, and others, are extensively examined in this paper as reasons of informal settlement. This study aims to investigate the many aspects of these informal settlements from the viewpoints of the government and the residents, assessing existing mitigation methods, identifying problems, and offering practical solutions within the context of Adama City.

1.1 Background of the study

Since 2007, almost half of all people on Earth have lived in cities, and by 2030, that number is expected to increase to 60%. An increasing number of informal settlements, as well as overworked and inadequate infrastructure and services, are the results of rapid urbanization (UNSD, 2019). Over half of the people in most African cities reside in informal settlements, which are characterized by unsafe housing and insecure ownership and frequently lack basic infrastructure and utilities (Chitekwe-Biti, et al., 2022). This type of urban problem is widespread and complicated, resulting from an array of context-specific factors and has been observed in numerous locations across the globe. African cities have seen an extraordinary increase in the number of informal settlements, which has been accompanied by many problems (Nuhu, et al., 2023). Rural-urban migrations, natural growth, the sale of unserviced customary land, and unmodernized quick urbanization have all contributed to the rapid rise of these settlements and the uncontrolled change of cities. Due to this trend, between 50 and 70 percent of people reside in informal settlements in these cities (Nuhu, et al., 2023). As a result, health hazards linked to environmental and sanitation issues are noted in the majority of African towns (Ehebrecht, 2014).

Over the past few decades, Ethiopia has also seen a rapid surge in urbanization as a result of the conversion of agricultural land to urban areas and the emergence of informal settlements inside cities. These communities are known as "Chereka Bet" in Ethiopia, suggesting that unauthorized home construction occurs at night (Jemal, 2019). Daniel (2011) referred to them as illegal settlements, or more commonly, "moon shine houses," because the construction occurs on the property at night. As the name suggests, these informal housing units are built without a building permit or Government official's consent.

Informal settlements in Adama, Ethiopia, have their roots in the city's early history of rapid urbanization. The city's population has been growing rapidly, driven by economic and social

factors. This growth has put pressure on the city's infrastructure, leading to the construction of new structures to accommodate the growing population (Gondo , 2014). Adama has witnessed a significant number of structures being demolished over a five-year period. The informal settlement in Adama has continued to grow and expand over the years. A study conducted in 2007 found that the number of informal settlers in Adama was increasing rapidly, with many people moving to the city in search of better economic opportunities (Erko, 2022). By 2011, the informal housing sector had become a significant issue in Adama, with many residents living in unauthorized and unserviced settlements (Gondo , 2014). According to reports, over 3,751 structures constructed without official municipal permits were demolished during this time. While the demolished structures were eventually replaced by new ones, this phenomenon raises important questions about the underlying factors driving this trend and its implications for the city's urban development. The demolition of structures without permits is a complex issue that can be attributed to various factors (Jemal, 2019)

1.2 Statement of the problem

Informal settlements have been created as a result of urbanization worldwide, posing problems for both residents and urban planners. The cities where these settlements grew are notable for their poor housing quality, poor infrastructure, and restricted access to basic amenities. The literature that is now available states that because there is a shortage of urban housing in Ethiopia, 70–100% of the country's population lives in informal settlements. (Fentaw, et al., 2023). Cities in Ethiopia has also experienced significant population increase due to several reasons, including migration. Oromia National Regional State is among the areas where informal settlements highly expanded and disturbing the socio-economic development of the region (Bore, 2022).

One of these cities is Adama whose some part is covered with informal settlements. In Adama, informal settlements are currently a widespread form of housing. Poor housing with substandard construction, bad spatial planning, inadequate services, inadequate safety, and inadequate security can be found throughout this area of the city. The problems with informal settlements are made worse by the lack of official urban planning and the absence of real, meaningful government engagement. The residents of Adama's informal settlements deal with a number of socioeconomic, infrastructure, and governance issues. As was previously said, building a structure without the government's authority or consent is illegal. However,

unlawful housing is being constructed in the city as a result of inadequate planning and supervision, and citizens are dealing with substandard and uncomfortable living conditions (Arash, 2015).

In Adama, demolishing these illegal structures as a common mitigation tactic results in the improper use of building materials and other associated problems. Many studies explored the causes of informal settlements in different parts of Ethiopia (Adane, et al., 2023; Alene, 2022; Jemal, 2019). While some studies focus on the challenges, there is a lack of research conducted on exploring effective and contextualized mitigation strategies designed for informal settlements. Existing interventions and policy frameworks lack comprehensive analysis and evaluation of their applicability and effectiveness within this specific context. There are only few related research which can be a foundation for this study. Furthermore, research on mitigating the effects of informal settlements including their status, uniformity, and effectiveness is lacking. In order to fill the knowledge gap on mitigation strategies, this study aims to evaluate the difficulties associated with Adama's informal settlements and to provide information on the efficacy and uniformity of current mitigation approaches.

1.3 Objective of the study

1.3.1 General objective

The general objective of the study is to assess challenges and mitigation methods of informal urban settlements in Adama city.

1.3.2 Specific objectives

The specific objectives of the study includes:

1. To identify causes of informal settlement in Adama city.
2. To assess challenges posed by informal settlement in Adama city.
3. To assess the practicality of the mitigation methods in Adama city.

1.4 Research questions

1. What are the causes of informal settlement in Adama city?
2. What are the challenges posed by informal settlement on Adama city?
3. How practical are the mitigation methods of informal settlement in Adama city?

1.5 Significance of the study

This study looks into Adama City's informal settlements and the difficulties that their residents encounter as a result of the absence of essential services. Additionally, it evaluates the mitigation strategy in order to support or generate more effective and workable mitigation strategies. The research assists in understanding the complexities of the issue and provides hints on how to counteract in workable way. It is essential for Adama City's residents and other stakeholders, such as officials and urban planners, to comprehend the complex network of issues that arise in informal settlements and to identify practical solutions. This might help them take the issue seriously and deal with it appropriately. Furthermore, the paper's final findings and output can be utilized as a starting point for further research on informal settlement, particularly on mitigation strategies.

1.6 Scope of the study

Thematically, the study examined the problems that informal settlements in Adama chosen areas created and assessed mitigating strategies in order to suggest more effective preventive or curating techniques. Since the study is about informal settlements, the population that is being focused on are the people of these communities. It examines conceptual frameworks, stakeholder participation, and socioeconomic implications with regard to informal urban settlements. The study's spatial focus is limited to Adama city, particularly to the areas of Melka Adama woreda and Hangatu woreda, which are home to informal residential structures and settlements. The study focuses on the many informal urban communities located in these two city regions. The people who live in these informal settlements and government representatives who are concerned with this topic comprise the population where the research is conducted.

1.7 Limitation of the study

The study's limitations are associated with the gathering and processing of data. The study was dependent on a small number of data sources or encounters difficulties obtaining precise information about Adama City's informal settlements. This might have an effect on how accurate and trustworthy the study's conclusions are. The study also ran into issues with community involvement and stakeholder engagement. It was essential to include people living in informal settlements in the research process in order to comprehend their needs and

viewpoints. But because of the circumstances at the time, there was a lack of trust between the researchers and the community people.

1.8 Organization of the paper

The facts and major aspects of this research are discussed in five chapters. The following provides detailed explanations for each chapter and its contents:

Chapter One: In the first chapter contains Introduction to the topic of the study, background of the study, problem statement, General and specific Objectives, Research Question, significance of the study, limitation of the study, scope of the study and organization of the research are stated.

Chapter Two: The second chapter includes basic concepts and definitions, theoretical and empirical reviews on papers of related works. In addition conceptual framework is also built under this chapter.

Chapter Three: This chapter consists of Methodology and materials used for this research which are research approach, research design, research methods, data collection, types and sources of data, data analysis and presentation methods are presented.

Chapter Four: In the fourth chapter there is result and discussion of the qualitative and quantitative data findings. In this chapter result from Interviews, Questionnaires and GIS is interpreted, presented visually and discussed.

Chapter Five: In fifth chapter there is conclusion and recommendation where the results are discussed in a more meaningful way. It also contains recommendation by the researcher for better results and further studies.

CHAPTER TWO

LITERATURE REVIEW

This section examines the theoretical and empirical reviews that strengthen the study's importance for conceptualizing and understanding. The main concepts of the study, including the causes of informal settlements, their traits, the challenges they encounter, and the mitigating measures taken to reduce them, are attempted to be laid out in this chapter. It develops a conceptual framework and offers a theoretical framework for examining the study's subject matter from many angles by drawing on a range of works of literature.

2.1 Theoretical Review

2.1.1 The Definition of informal settlements

A clear definition of informal settlement is hardly available. Various words have been used in literature to refer to squatter settlements. These include spontaneous, irregular, unplanned, marginal and informal settlements. There are many definitions of informal settlements. The terms have been used to refer to unregulated, illegal and unauthorized construction, arising from the conditions and regulations in different countries, including spontaneous, unplanned, unauthorized, illegal or squatter settlements (Welisiejko, et al., 2022).

The United Nations has used the term —informal settlementsl to refer to:

- i) residential areas where a group of housing units has been built on land to which the occupants have no legal claim, or which they occupy illegally;
- ii) unplanned settlements where housing is not in compliance with current planning and building regulations (unauthorized housing) (Un Habitat, 2015)

Slums are urban areas characterized by poverty and substandard living conditions, and **informal settlements** are areas developed outside of planning regulations and legally sanctioned housing and land markets (Will, 2018; Welisiejko, et al., 2022). There is significant overlap between the two, but some slums are part of the formal housing sector, and some informal settlements may have very good living conditions and are actually quite affluent (Will, 2018). In this study the term Informal settlement is used to describe

Residential areas where housing is compliance with current planning and building regulations and these houses might be in good condition or not but they are not slums.

Ali, (2006) explained that informal settlements are defined as residential buildings built on "planned" and "unplanned" areas without official planning authorization. Their lack of infrastructure and social services, as well as their poor living conditions are their main features. While few nations have created national policies and plans for informal settlements, site-and-services and upgrading initiatives for informal settlements are widespread worldwide (Loncehr, et al., 2013). Numerous land-related and environmental issues have been linked to the expansion of these unplanned communities. (Ali, et al., 2006). The total population residing in informal settlements exceeds one billion, with three regions accounting for 80 percent of this figure: Eastern and South-Eastern Asia (370 million), sub-Saharan Africa (238 million), and Central and Southern Asia (227 million).By 2030, it is projected that 3 billion people would need decent, affordable housing (UNSD, 2019).

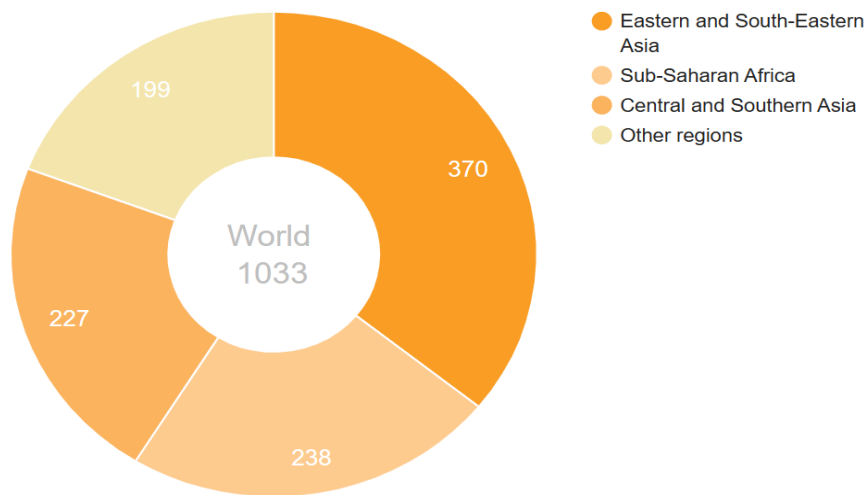


Figure 2.1 Urban population living in informal settlements, 2018 (millions of people)

Source: SDG Indicators (un.org)

Based on the above chart the following table shows the percentage of urban population living in informal settlement of different parts of the world.

Table 2.1 Percentage of Urban population living in informal settlements, 2018 Source: SDG Indicators (un.org)

Urban population living in informal settlements	Million	Percentage (%)
Eastern and South-Eastern Asia	370	35.8
Sub-Saharan Africa	238	23
Central and Southern Asia	227	22
Other regions	199	19.2

Source: SDG Indicators (un.org)

2.1.2 Key term definition

Informal Settlement: Residential structures or areas that have developed without official planning permission or legal recognition from the government. They exist outside of formal land use regulations and zoning laws.

Informal Housing: Any form of housing, shelter, or settlement that is illegal, falls outside of government control or regulation, or is not afforded protection by the state.

Land Tenure Security: The degree of confidence that individuals or communities have that they will not be arbitrarily deprived of the land or property they occupy, regardless of their legal status.

Informal Land Acquiring: The process of obtaining land for settlement through unauthorized or extralegal means, such as squatting or unauthorized purchases.

Informal Land Markets: The exchange of land and property rights outside of formal, legal channels, often facilitated by brokers or intermediaries.

2.1.3 Characteristics of informal settlement

2.1.3.1 Physical aspects

Infrastructure and services in informal communities are substandard. They might not be related to deaths from roads, drainage, sewage lines, electricity, or water supplies. Lack of security services, such as fire and police protection, makes an area insecure. Additionally, these towns are constructed on marginal property along rivers, dump sites, and the edges. The main feature that distinguishes an informal settlement is that the people living there do not own the land parcel on which their home is situated. These could be marginal land parcels like railroad setbacks or "undesirable" swampy areas, or they could be empty government or public land (Jemal, 2019).

2.1.3.2 Social aspects

Individuals with low incomes reside in informal settlements. The majority of the population works part-time or works daily labor, and their average salary is quite low. The majority of residents are mostly migrants, either from rural to urban areas or from urban areas to rural ones. Some may even be second or third generation informal settlers (Adane, et al., 2023).

2.1.3.3 Legal aspects

Informal settlements are practically unlawful because they are built on public land without permission. The absence of ownership certificates and authorized permissions means that they are not supported by any legal provisions (Alene, 2022).

2.1.4 Informal settlement in Ethiopia

Many solutions have been proposed over time to alleviate the physical, social, and economic conditions of those living in informal settlements in developing nations. Research has also been done on the definition, makeup, and traits of informal settlements in emerging nations' metropolitan areas (Jemal, 2019). In Ethiopia, informal settlement remains a hurdle to modern urbanization. There are differences in Ethiopian literature regarding the population of unofficial communities. The literature that is now available states that because there is a shortage of urban housing in Ethiopia, 70–100% of the country's population lives in informal settlements. According to UN figures derived from the Habitat Global Observatory Database, 99.4% of Ethiopia's urban population resides in informal settlements (Fentaw, et

al., 2023). These kinds of towns are referred to as "Chereka Bet" in Ethiopian. The towns are constructed without the approval of the local governments or a building permit issued by them. Due to the city's high population density, it faces a number of difficulties, one of which is the slow rate at which homes are being provided for its citizens, creating a large gap between the supply and demand of housing and fostering the growth of informal settlements (Jemal, 2019).

2.1.5 Informal settlement types in Ethiopian context

The following working definition of informal settlement is used in the Ethiopian setting. Any construction (housing, fences, notice boards, sewerage lines, containers, temporary/movable kiosks, etc.) that has been erected or developed on public lands without a legal foundation is considered informal or illegal. Additionally, it encompasses any unapproved growth or intrusion on public rental properties (Fentaw, et al., 2023).

According to Adane, Nega, & Tilahun, (2023) there are differences in the extent of informality vs illegality, with some being completely informal and others only partially so. Thus, this working definition divides all forms of informality into two main categories.

- a) **Group 1:** consists of those informal settlements that have been established and inhabited without any legitimate foundation or legally recognized proof (such as a building permit, title deed, or book). These communities, which are mostly located in a city's growth regions, are known as "squatter settlements" (Adane, et al., 2023).
- b) **Group 2:** comprises informal and partially illegal communities. Illegality originates from a multitude of sources. For instance, they may possess legal rights (title deed or book) but not a building permission, or they may possess both and build, enlarge, upgrade, alter the shape or size, etc. without following the required legal processes or obtaining a permit (Adane, et al., 2023).

2.1.6 Situation of administrative structures and distribution of informal settlement

The duties of a town administration include maintaining law and order, supervising the delivery of (serviced) urban land within its jurisdiction, handling any tasks assigned by an upper local government council, and settling local issues. As a result, local government representatives are closer to different organizational levels in terms of responsibilities, tasks,

and organizational structures. The primary focus of these administrative structures is to ensure that everyone has access to (served) urban land and that no one is left without what they need inside the urban administrations. In this context, the town administrations should set up institutional frameworks in order to plan and implement managing the rise of informal settlements (Fentaw, et al., 2023).

2.1.7 Legal framework

After overthrowing Haile Selassie's imperial regime on March 4, 1975, the "Provisional Military Administrative Council," or derg (the council), enacted two significant land laws for Ethiopia. The first was proclamation 31/1975 that transferred all rural land to the hand of the state or an agrarian reform program known as Proclamation No. 31/1975. "Proclamation to Provide for the Public Ownership of Rural Lands." This proclamation declared all rural land to be the property of the state (Article 3), without paying any compensation to former right holders (Article 45) (Wibke, et al., 2008; Daniel, 2011). Many rural families who had been employed under abusive leasing agreements for a select number of landlords were given the legal foundation to distribute their privacy rights thanks to the Proclamation (Wibke, et al., 2008). The second was proclamation 47/1975 that puts all urban land and extra houses in the hands of the state (Daniel, 2011). All urban land and additional rental homes are nationalized under the urban land proclamation without receiving any compensation. Each household received 500 square meters of land under the law on which to build a residence (Proc. 47/1975: Art. 5). A piece of land for a business house was also promised. Urban land cannot be sold, mortgaged, leased, or inherited by any person. It also forbade the building of more homes on the same property. Without a question, this has contributed to the nation's urban housing shortage (Daniel, 2011).

Daniel,(2011) stated that Informal settlement has never been defined in Ethiopian laws. However, one can gather its nature from the reading of the current Urban Planning legislation. Proclamation 574/2007 that concerns with urban planning, under article 25(1), provides "No development activity may be carried out in an urban center without a prior development authorization." And according to Article 24 of same proclamation "development" means:

“the carrying out of building, engineering works, mining or other operations on or below ground, or the making of any substantial change in the life of any structures or neighborhoods”.

2.1.8 Land holding system

According to the lease law, all urban property holders would receive land from the state through a lease arrangement, and urban land would be converted into a leasing system. The two main ways to obtain lease land in metropolitan areas are through bidding and negotiation (Proc. 272/2002: Art.4). However, regional cities have the authority to think of other approaches as well. Thus, in addition to the first two, award and grant by lot are also in use. As a result, anyone desiring a piece of land for their home or place of business may submit a bid. The land will be awarded to the highest-bidding party. In addition, the government can wish to promote investment and negotiate the provision of land to investors. Usually, there is a cheap cost and limited availability of the opportunity. Ethiopians who make outstanding contributions to the nation are awarded land. Land grant is the most common method of distributing land to the nation's average and low-income citizens. Lease land is given away for free to individuals or groups of people for residential use through lots. The issue with the final and most significant kind of land distribution is that it occurs less frequently than the population's need (Daniel, 2011).

2.1.9 Major causes of informal settlement

There are various driving causes of informal settlements as scarcity of planned land resource, and level of education. The other causes of driving factors are ineffective housing policy, freedom of change of land use, existing trusted local institutions and urbanization. The freedom of land use changes in informal settlements and trusted local institutions have attracted many users despite the lack of resources (Msuya, et al., 2017).

2.1.9.1 Urbanization

Some researchers called it a “driving force. As the urban population and urbanization grows the housing needs will continue to increase, forcing more agricultural land to be converted into human settlements and the prolific growth of huge informal settlement. The critical issue that needs to be addressed is the extent to which government can formulate development policies that can have a definite impact on trends of urban growth. (Ali, et al., 2006)

2.1.9.2 Poverty

At the centre of the informal settlement phenomenon lies the question of poverty (Ali, et al., 2006). Thus, a vicious circle is created whereby poverty leads to informal settlements and informal settlements breed poverty.

2.1.9.3 Administrative deficiencies causing informal settlements

Informal settlement continues as a challenge in contemporary urbanization in Ethiopia. Studying the triggering factors for the growth of informal settlements in Ethiopian cities and towns is timely and could support decision-makers to make informed decisions. Use of administrative arbitrariness and the blind eye administration, lack of political commitment and failure to enforce construction laws, the widespread alleged corruption and backdoor deals, authority vacuum under rural and urban land administration institutions, lack of well-defined law for illegal builders and actors involved, and poor urban land registry systems (Fentaw, et al., 2023).

2.1.10 Challenges in Informal Settlements

2.1.10.1 Housing Conditions

Housing quality, infrastructure deficiencies, overcrowding, and lack of basic services like water, sanitation, and electricity (Gomez, et al., 2023).

2.1.10.2 Social Issues

Dynamics, community cohesion, and access to education, healthcare, and security concerns within these settlements. (Gomez, et al., 2023)

2.1.10.3 Economic Challenge

Livelihood patterns, employment opportunities, and economic vulnerabilities faced by residents, Loss of construction materials (Gomez, et al., 2023). in addition other challenges i.e. housing deficiencies inadequate basic service social vulnerabilities economic limitations are also resulted in informal settlements. (Haile, 2020)

2.1.11 Mitigation and Intervention Strategies

2.1.11.1 Regularization

Most African countries, including Tanzania, have considered regularization an important governance initiative for formalizing informal settlements in major cities. This is because land regularization has been increasingly recognized as an emerging and relevant urban planning instrument for tackling informal settlements in African cities (Kyessi, 2014; Nuhu, et al., 2023)

2.1.11.2 Local Initiatives

Explore any ongoing efforts by local authorities, NGOs, or community-based organizations addressing challenges in informal settlements.

2.1.11.3 Upgrading

Upgrading in place consists of retaining many or most of the existing structures (streets, houses, natural landscape etc.) but organizing resources or incentives for improvement of those structures; this upgrading of places also includes upgrading of infrastructure to improve health and quality of life in the neighborhood. In modernizing infrastructure, there may be buildings to be demolished to create necessary right-of way, for example, but this is minimized so that most residents can remain in place. This is the lowest cost strategy and is most likely to enable poor families to afford to remain in situ. However, it has also limitations such as the quality of housing improves only incrementally, to keep within the limited resources of its occupants or retaining the structures of the neighborhood to be upgraded, and it is unlikely to increase the density of an area unless there is substantial vacant land. (Haile, 2020)

2.1.12 Housing in Ethiopia

Post 1991 land ownership and the majority of the nationalized buildings remained in the hands of the government. There is a free market economy. Urban land lease legislation was issued, 1993. As a New housing development, Government or government-sponsored Integrated Housing Development Program (IHDP) has emerged. In private sector lottery system or public auction for land is there. There are also housing options like Real estates, Cooperative, ARHA and other government organizations (rental houses) and Informal (chereka bait) (Berhe, et al., 2017).

2.2 Empirical Literature Review

2.2.1 Urbanization as negative impact urban areas

In Ethiopia, different cities have responded differently to these settlements. In Addis Ababa (Bole, Yeka and Kolfe sub-cities) there were demolitions in 1994, which destroyed 13,440 informally constructed houses (Jemal, 2019). In Adama, over 3,751 structures constructed without official municipal permits were demolished over a five-year period, although the demolished structures were soon replaced by fresh ones. In Bahir Dar, eviction through demolition took place in 1995 in Kebeles 11 and 13. In Ambo, the municipality applied litigation, whereby 412 land related cases were filed in courts during the periods August 1/ 1997 to May 10/2000EC. As being the capital city of Ethiopia, Addis Ababa accounts for about one fourth of the country's urban population (Jemal, 2019).

The primary negative impact of urbanization is the fast spread of urban areas into agricultural and woodland areas, often informally. Developing countries have faced enormous population movements from rural to major urban centers and this led to swelling informal settlements posing city's socio-economic challenges (Elfarnouk, 2015). Therefore, one of the perplexing problems confronting many of the developing nations today is the illegal occupation of urban land. (Jemal, 2019)

Jemal, (2019) stated the reason why informal settlement continued to happen even after demolition take place. There are a number of reasons for the proliferation of informal settlements, poverty, high population pressure, aggravated by rural urban migration and weak municipal capacity. Furthermore the proliferation and development of informal settlements is a consequence of multiple factors including the demand supply imbalance in the provision of housing, historical influences and the failure to anticipate this demand, rapid urbanization accompanied by a stagnating rural sector and the absence of adequate levels of economic growth.

Table 2.2 Major determinants / cause of informality in two sub-cities of Addis Ababa (Source : Jemal, 2019)

Sub- City	Leading cause(s)	Secondary causes

Bole	The lack of ability to pay for the land There was no conscious effort by city officials to target critical land problems increased rural urban migration resulting in increased demand for land versus limited supply increasing levels of poverty	Increase in speculative behavior leading to higher prices of land Over emphasis on land for investment rather than for housing the poor. Artificial land price
Yeka	Bad governance and corruption Shortage of land high land values Increasing levels of poverty, unemployment and under employment Inefficient land administration procedures Increased rent seeking behavior Weak law enforcement mechanisms Delays in the land delivery process High temptation for land occupation	Most land allocation procedure based on the bidding system which favors the most affluent, weak law enforcement mechanisms

The findings indicate that though the city administration made attempts to prevent the construction of illegal settlements by issuing various regulations, the proliferation of illegal settlements has continued unabated. Thus, demolitions had taken place in parts of the city where preventive measures failed. Both in the implementations of the regulations and demolitions, the city administration faced many problems such as high temptation for illegal construction, population pressure, weak law enforcement and inefficient institutions. The increase in informal settlements in Addis Ababa can also be associated with lack of enlightenment of the public on planning regulations, unwillingness to accept laid down regulations, and high cost (of money) involved in getting the right land papers (Jemal, 2019).

2.2.2 Determinants for the escalation of informal settlements in Butajira town

A study from Butajira Town which focuses on informal settlements and factors for their escalation used a suitable approach for this specific subject matter. The study employed a mixed research approach with a sequential explanatory research design to answer the research objectives because the problem under investigation has both quantitative and

qualitative aspects of issues. A mixed research approach enables the investigators to use both quantitative and qualitative data because they are important to provide the best understanding of a research problem and answer research questions. (Adane, et al., 2023)

This researchers Adane, Nega, & Tilahun, (2023) used Binary logistic multiple linear regression models to present the results of the data and to show the relationships between and among different dependent and independent variables. This model was selected because the dependent variable (informal settlement) is a discontinuous dichotomous variable and there are both continuous and discontinuous independent variables that are supposed to influence the dependent variable. By using these methodologies the results were presented in different ways including LULC analysis. (Adane, et al., 2023) Understanding the reasons why residents do or do not attempt to transition can inform policy interventions to support formalization and improve access to affordable formal housing (Adane, et al., 2023).

According to the results informal settlement is mainly caused by the inflated land lease system, rural-to-urban migration, and unaffordable land prices, and high house rent prices. The binary logistic regression analysis has also resulted in four significant independent variables, which determine the prevalence of informal settlements. These are monthly income, the previous residence of the respondents, mode of accession of the respondent's current holding, and brokers' agitation.

2.3 Conceptual frame work

The main idea of this research is Identifying Challenges posed by informal settlement and evaluating the currently used Mitigation method. In addition there needs to be identification of cause of this problem to suggest what type of mitigation approach work for Adama city. In this approach there are dependent and independent variables. Dependent variable is Informal settlement which depends on a number of independent variables to occur. There are independent variables which are Low housing supply, Unaffordability, Unemployment, Low income /poverty, Rural-urban Migration, Insufficient planning, and Weak Governance. There are also other factors that are not influenced by independent variables but contribute to occurrence of dependent variables which is informal settlement these are Age, Marital status, Education level, Land acquiring method, and Family size. Housing demand which is caused by the independent variable also contributes to informal settlement as a mediating variable.

The following chart illustrates the connection of dependent and independent variables for this study.

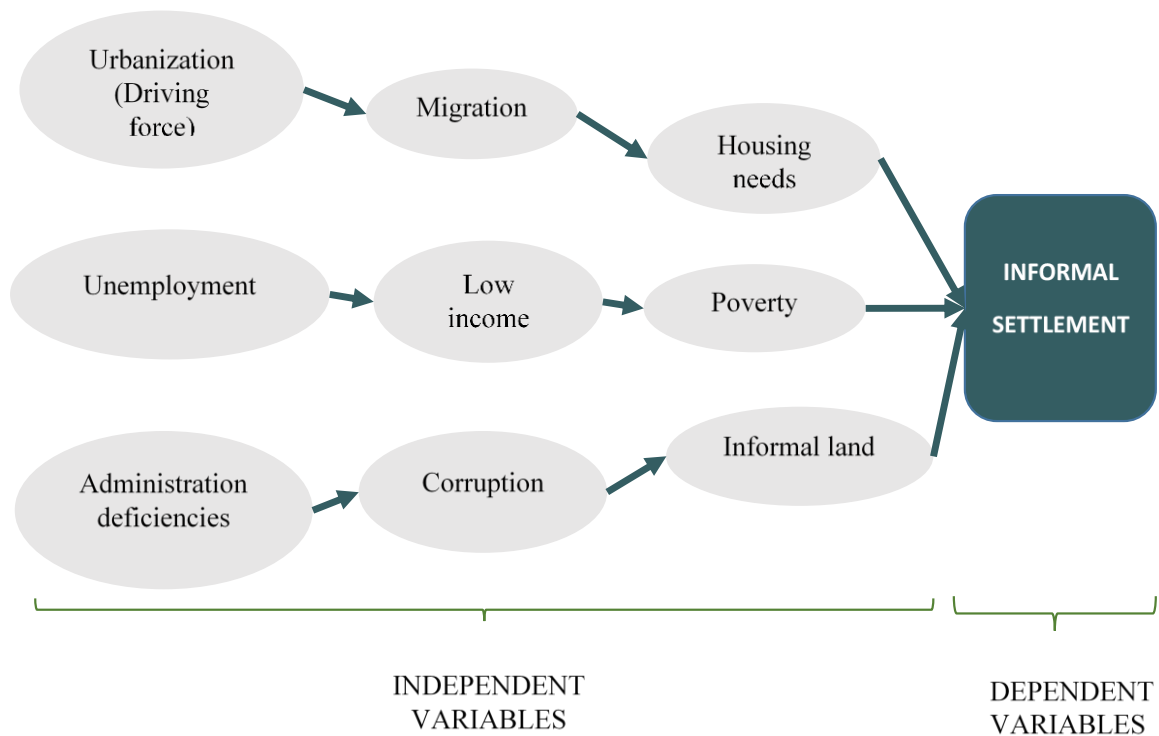


Figure 2.2 Conceptual framework (Source: Own presentation)

2.4 Research gap

Many studies explored the causes of informal settlements in different parts of Ethiopia (Adane, et al., 2023; Alene, 2022; Jemal, 2019). While some studies focus on the challenges, there is a lack of research conducted on exploring effective and contextualized mitigation strategies designed for informal settlements. Existing interventions and policy frameworks lack comprehensive analysis and evaluation of their applicability and effectiveness within this specific context. There are only few related research which can be a foundation for this study. They are also used for understanding informal urban settlement in Ethiopian contexts and learn from the experience of other cities.

CHAPTER THREE

MATERIALS AND METHODS

3.1 Introduction

This research identifies the causes and the different types of challenges of informal settlement in Adama City. It then assesses the currently used ways to solve the problem and identify better ways to mitigate this urban problem. This chapter describes the methodological framework that are used to attain the stated objectives of the study.

3.2 Description of the study area

The study was conducted in Adama city, the central Oromia Regional state, located in the East Shewa Zone 99 km southeast of the Addis Ababa, the city sits between the base of an escarpment to the west, and the Great Rift Valley to the east. Latitude and longitude coordinates of the city are- 8.514477, 39.269257. Based on the 2007 Census conducted by the Central Statistical Agency of Ethiopia (CSA), this city has a total population of 220,212, an increase of 72.25% over the population recorded in the 1994 census, of whom 108,872 are men and 111,340 women. With an area of 29.86 square kilometers, Adama has a population density of 7,374.82; all are urban inhabitants. A total of 60,174 households were counted in this city, which results in an average of 3.66 persons to a household, and 59,431 housing units. Adama is one of the largest and most vibrant cities in the state of Oromia and is home to almost half a million people currently. The area comprising informal residential buildings and settlements.

3.2.1 Study site selection

Because of its strategic position at the center of the nation's transportation system, Adama City has seen a sharp increase in the number of migrants looking for employment. This has led to the emergence of informal settlements that often fall outside the authority of official urban planning. Two woredas in Adama (**Hangatu and Melka Adama**) out of total of 19 woredas (see figure 3.1) are purposively selected because of the following reasons:

1. These areas are undergoing land transformations and are with saturated with informal settlements.

2. Informal settlements represents all the current status of informal urban settlements which are being demolished regularized and unseen.

One of the two woredas (Melka Adama) is located at periphery of Adama city while the other (Hangatu) is at central area.

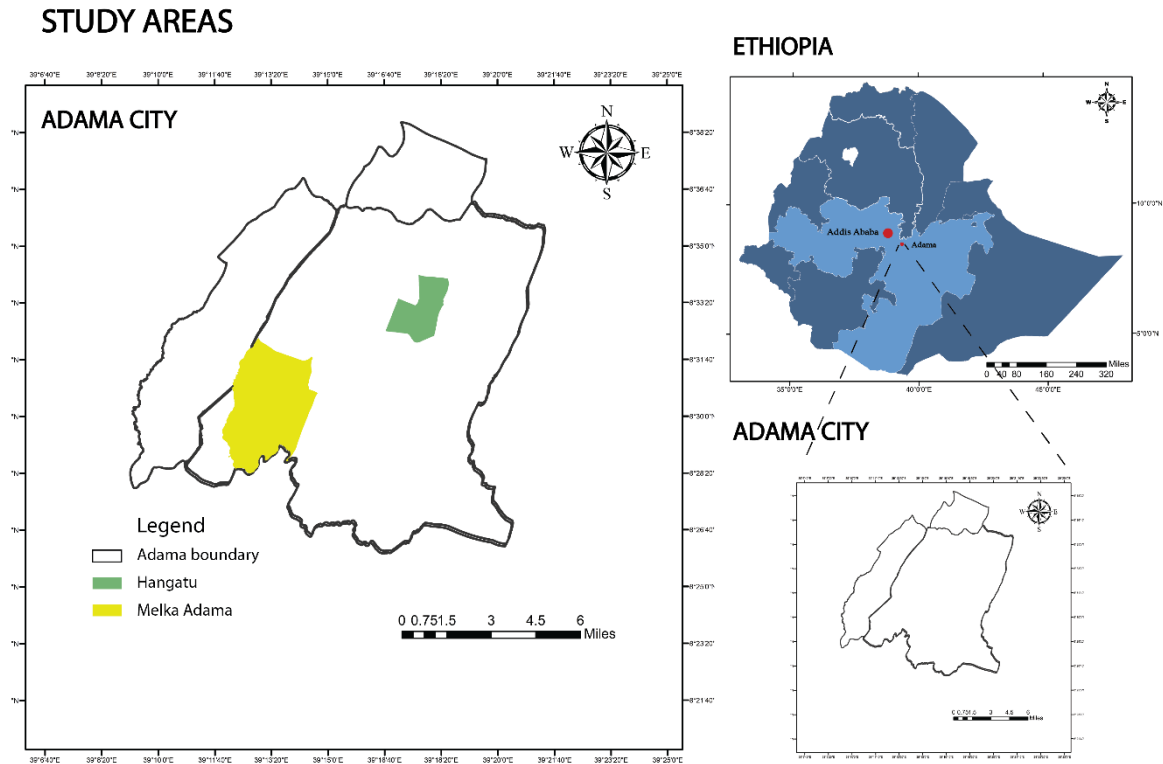


Figure 3.1 Location map of the study area

3.3 Research type and approach

The study employed both qualitative and quantitative research methods. Thus, the study used mixed research methods, which considers the diversity within informal settlement and relate the findings of the quantitative with that of the qualitative analysis. The qualitative case study design was employed to allow a logical understanding of why people settle in an informal way, the challenges they face and mitigation measures used to reduce the informal settlements. Adama is used as a case study to explore the challenges and strategies used to mitigate informal settlement.

3.4 Methodology flowchart

This section addresses the plan, structure, and strategy of investigation of issues related to the study of informal settlement and their mitigation methods in Adama. It shows the flow of research methodologies. These methods are designed to ensure that the key research questions are adequately answered. Firstly, the questionnaire addresses a variety of topics, such as demographic information (e.g., sex, age, education level, and occupation), land holding size, previous residence, duration of residence(in an informal settlement),causes of living in informal settlement, challenges and mitigation strategies currently in use are included. Data from woredas are also utilized. Interview is also conducted with Government officials and urban planners from both woredas identifying the causes challenges and mitigation strategies related to informal settlements in Adama. Observation is necessary to closely look at these problems inside the community.

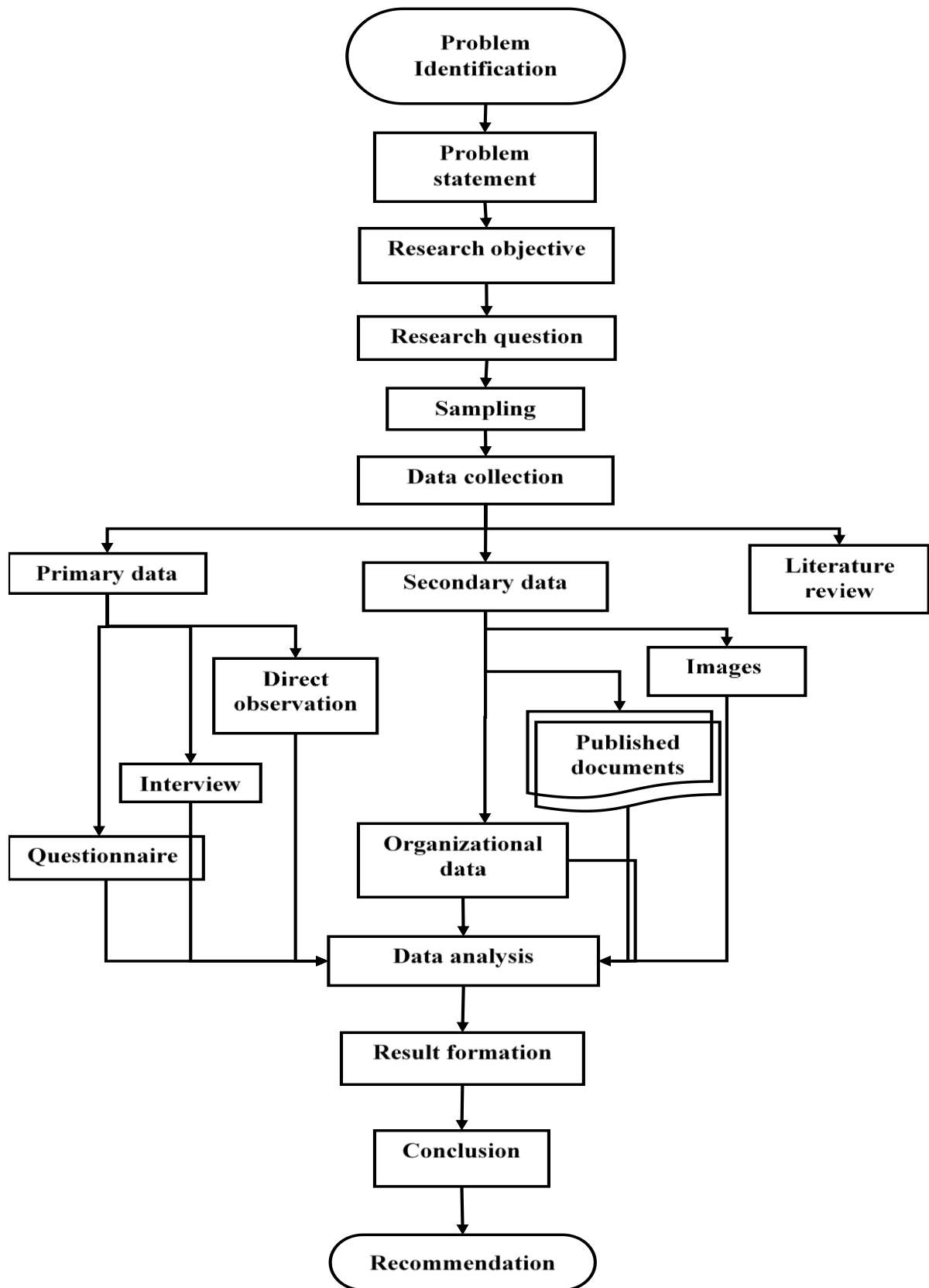


Figure 3.2 Methodology flowchart / procedure (Source: Author)

3.5 Sampling Techniques

The sample areas are randomly selected by purposive sampling which have based on the intensity and amount of informal settlement in the area and 2 neighborhoods assuming that the selected neighborhood represent the whole study area and the city. In these woredas (Melka Adama and Hangatu) there are around 2,941 and 714 (respectively) informally settled houses, which in total equals **3,655** informal houses. The study population included the inhabitants of informal settlements in Adama city selected woredas i.e. Melka Adama and Hangatu. The study population which are informal settlements in Adama are consists of 3 types. These are:

- Prior farmers/ native landholders ...The farmers which are given 1000 sqm during Derg regime.
- Informal settlement which are called “Before regulation” which are constructed before a regulation / proclamation 155/2005.
- Informal settlement which are called “After regulation” which are constructed after a regulation / proclamation 155/2005.

In this study simple random sampling and purposive sampling is used. Simple random sampling technique is applied on informal settlement residents since there is homogeneity in the population and to make unbiased sample for analysis. The purposive or judgmental sampling technique is for, key stakeholders involved in urban planning of selected areas, housing, and Government officials within Adama city and selected neighborhood.

To determine the sample size of population Slovin's formula (1960) or taro yamane's formula (1967) is used to calculate the minimum sample size needed to estimate a statistic based on an acceptable margin of error.

$$n = \frac{N}{1 + N(e)^2}$$

N= Total study population

n= Sample size

e= Error tolerance (level) 0.07 for 93% level of confidence

Sample size (n)= **193**

Decision-makers at municipality are also the samples for getting data about the informal settlement in the city, their impact and the reason behind them to be informally occupied and the mitigation methods they used is studied through key informant interview. Therefore **13** officials from both woredas were included. In addition to identify the causes **5** Farmers in the area were involved in an interview.

Table 3.1 Total population of informal settlement in two woredas of Adama (Source: Author)

Type	Number of informal Household		Total Number
	Before regulation	After regulation	
Hangatu woreda	707	7	714
Melka Adama woreda	1618	1323	2,941
Total			3,655

3.6 Methods of Data collection

This research used Primary data from Questionnaire and key informant interview and secondary data from municipality is used In order to achieve the objectives both Qualitative and quantitative data were collected through various techniques. Data collection materials such as GPS (Phone application), notebook, phone camera, pen, checklists, and questionnaires were used to collect qualitative and quantitative data for the study.

3.6.1 Household Questionnaire

Among the most important data collection tools, which are used in the undertaking of this research household questionnaire survey is one of them. A self-administered questionnaire was conducted with the help of one assistant data collector. The reasons for employing a self-administered questionnaire were due to most of the residents in the suburbs not being able to read and write, and for better quality data. Hence, a total of 193 individuals were able to participate in self-administered questionnaire which is semi structured and part of it is open for the respondent to give explanation freely.

3.6.2 Key Informant Interview

The key informant interview (KII) is used to assess issues that were not thought to be answered through the questionnaire and exploring further information about the issue.

Officials from the municipality of the town, Farmers, and planners from both woredas who know about the expansion of informal settlements in the area were involved in the research. In this regard, it was possible to contact a total of 18 key informant interviewees.

3.6.3 Observation

Observation is used to collect data by observing the behavior, actions, and interactions of individuals or groups in this context. This helps to gather detailed and rich information about the challenges residents are facing and to understand their way of living. Observation provides a deeper understanding of the context in which the mitigation strategies are done.

3.7 For the first objective

3.7.1 Methods and materials used

In order to achieve the objective both Qualitative and quantitative data were collected through various techniques. For the first objective this research used Primary data from (Ehebrecht, 2014) to identify the causes of informal settlements in different areas of the city. To identify the causes a semi structured and Questionnaire was given to the residents of the selected areas and self-administered questionnaire for 5 Farmers in the area. In addition these data were collected by Key informant interview questions with 11 officials from both woredas. The study also used in depth interview with 3 officials i.e. 1 from Melka Adama, 1 from Hangatu and 1 from Adama city land administration office. This approach helps understanding the cause of informal settlements on both residents and Government official's point of view.

3.8 For the second objective

3.8.1 Methods and materials used

This research also identifies the challenges of informal settlement in Adama as a second objective. For the second Objective which is assessing challenges of informal settlement in adama city the study used a self-administered questionnaire which is semi structured and part of it is open for the respondent to give explanation freely. On the other hand to identify the challenges the officials face questions are included in the key informant interviews.

3.9 For third objective

3.9.1 Methods and materials used

To evaluate the mitigation interview were used to identify what methods has been used before and are currently in use. In addition their advantages and disadvantages were explored. To understand the perspective and experiences of resident's questionnaires and observation were used.

3.10 Analysis and presentation Techniques

After collecting both the qualitative and quantitative data, the study compiled and interpreted it to get numerical and meaningful information needed for the study. Demographic profiles of the sample size is analyzed with descriptive statistics or percentage. The study used different software packages like SPSS (ver. 20), Excel and GIS to generate and support the findings with maps, Texts, Graphs, Charts, Figures, Percentages, and Tables as a presentation methods. In addition, the study has put some experiences from respondents in an essay form.

Table 3.2 Summary of methods and materials used (source: own presentation)

Research Objectives	Data type	Method of Data Collection	Data Analysis Tool	Presentation techniques
1. To identify causes of informal settlement in Adama city.	Qualitative Quantitative	Questionnaire Key- informant interview	Excel, SPSS	Tables Charts Essay
2. To assess challenges posed by informal settlement in Adama city.	Qualitative	Questionnaire Key- informant interview	Excel, SPSS	Tables Charts Essay
3. To assess the practicality of the	Qualitative	Questionnaire	SPSS	Tables

existing mitigation methods.		Key- informant interview Observation	Images	Charts Essay
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3.11 Ethical considerations

Since the study involves human subjects and the sensitive issue which is illegal settlement every step of data collection and interpretation adheres to ethical guidelines, respects the ultimate confidentiality and informed consent.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter is comprised of Analysis of collected data, results and discussion. It presents the findings of the research and provides an in depth analyses and interpretation of the results of collected data. The chapter is sub divided to topics based on the objectives of the study. Qualitative data from Key informant interview and questionnaire which includes, the cause of informal settlement, Challenges that both residents of informal settlement and the officials face, Mitigation methods that are in use and has been used before and their results are included. Quantitative data such as Demographic data, Number of informal household per each woredas are also included. Microsoft Excel and SPSS is utilized to analyze data, to prepare visual and graphical presentation of the results.

4.2 Demographic and socioeconomic description

4.2.1 Characteristics of study population

The study population which are referred to as informal settlements in Adama are consists of 3 types. These are:

- **Prior farmers/ native landholders-** The farmers which are given 1000 sqm each during Derg regime. These settlers are not necessarily referred to as informal instead they are just called native land holders and they pay taxes.
- Informal settlement which are called “Before regulation” which are constructed before a regulation / proclamation 155/2005. These are assumed to be known and recognized by the Government.
- Informal settlement which are called “After regulation” which are constructed after a regulation / proclamation 155/2005. These are assumed to be unknown and unrecognized by the Government.

In selected areas or woredas there are both types of informal settlements which are before and after regulations/ proclamation. The regulation that is proclaimed in 2005 (E.C.) that is differentiate these two types of informal settlements is presented as follows.

Oromia Regional National State Urban Land lease Administration Regulation (No.155/2005).

Article 2 “When the city administration decides to remove the property on illegal possession for various reasons, neither compensation nor replacement land shall be given.”

Article 3 “If the illegally occupied properties are approved by the plan, they will be legally entered into the lease system for a period of time based on the criteria issued by the city standards.”

Article 8 “The advance payment shall be made to him and he shall pay all the rent on the land at once from the time he occupies the land.”

Article 9 “Subject to the provisions of sub-paragraphs 3 to 8, even if the illegal property is constructed from the date of entry of this regulation and meets the requirements of this regulation, it shall not be legalized in any way.”

Table 4.1 Total population of informal settlement (Source: Author)

Type	Number of informal Household		Total Number	Farmers
	Before regulation	After regulation		
Hangatu	707	7	714	-
Melka Adama	1618	1323	2,941	1758

The above result shows that in Hangatu woreda there are few houses that are constructed after the proclamation which shows that the community is aware of the regulations. In

addition the woreda being situated around the center of the city and bounded by other woredas there are no land of expansion which restricted further construction and it is also full of buildings already. Those 7 houses show that there are lands still being informally sold.

In contrast, the number of informal settlement in the Melka Adama woreda are nearly identical to those that existed before to regulation. This is because unplanned, informal lands are readily available on the outskirts of the city. There are barren or unplanned expansion lands in this region, which are close to Adama City's planning boundaries and have encouraged the development of informal settlements. The woreda's land administration claimed that people continue to build their informal houses at night so as to avoid being noticed by the authorities.

4.2.2 Gender profile of respondents

193 respondents from both study areas are included in this study with the goal of including both genders. 37.3% of the respondents, who live in informal settlements, were female and 62.7% of the respondents were male. These respondents are the head of each household, and it was assumed that the experiences of men and women in informal settlements differ. Most of people that are involved in informal settlement are male being the primary decision makers in most families which helps explain why there are more men than women living in these areas.

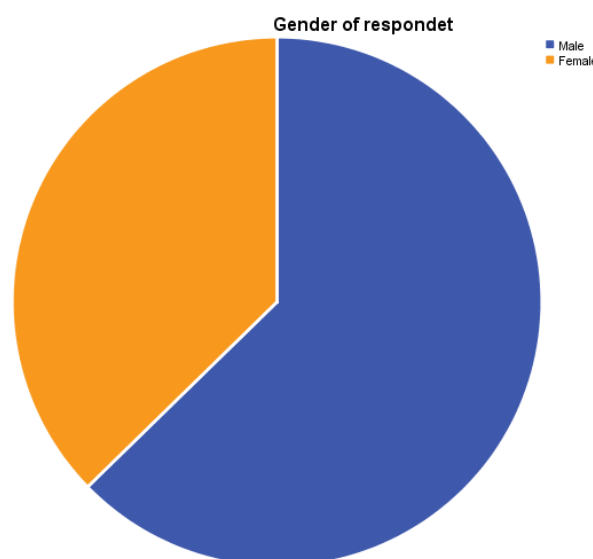


Figure 4.1 Gender profile (Source: Author)

4.2.3 Age profile of respondents

The age profile has four components assuming that those in this age bracket are potential residents of informal settlements. The study included four age intervals for the respondents: under 30, between 30 and 40 years old, between 41 and 50 years old, and beyond 50 years old. The data obtained showed that 5.7% of the sample was under 30, 44% was between 30 and 40 years old, 25.4% was between 41 and 50 years old, and 24.9% was over 50 years old. Age-wise, the majority of the respondents (44%) are in the 30- to 40-year-old age range, which is ready for a family but cannot afford a formal home of their own and wishes to establish a household. This demonstrates that the working class occupies a larger portion of Adama City's informal settlements.

Table 4.2 Age profile of respondents (Source: Author)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<30	11	5.7	5.7	5.7
	30-40	85	44.0	44.0	49.7
	41-50	49	25.4	25.4	75.1
	>50	48	24.9	24.9	100.0
	Total	193	100.0	100.0	

4.2.4 Marital status of respondents

Four divisions were also created for marital status. Assuming that residents of informal settlements fall into one of these status categories. These include Single / unmarried, Married Divorced, and Widowed. Based on the gathered information, 15.5% of the sample was unmarried or single, 74.6% was married, 6.7% had divorced, and 3.1% had become widowed. Considering the result presentation, the majority of persons living in informal settlements are married. The majority of individuals living in informal settlements are married, accounting for $\frac{3}{4}$ (74.6%) of the sample population that represents Adama. This is a result of their desire to establish a family in their own homes.

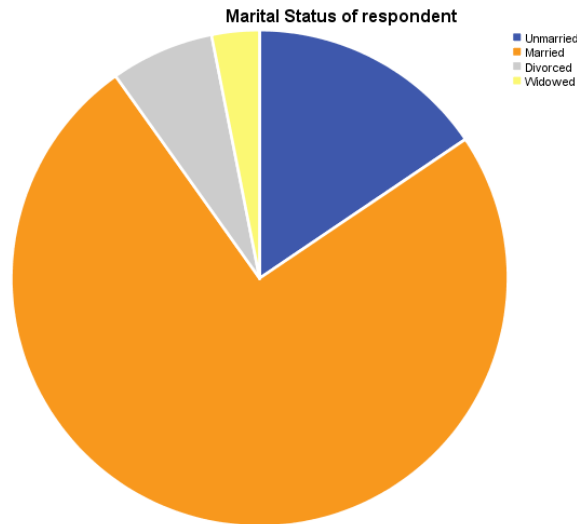


Figure 4.2 Marital status (Source: Author)

4.2.5 Educational Background

Respondents with varying educational backgrounds and levels participated in the survey. The educational backgrounds of the 193 respondents who were selected as a sample from the two woredas are shown in the following chart. It demonstrates that the majority of sample participants have completed high school. The responders were distributed as follows: 18.1% of people have completed elementary school, 44% have completed high school, 11.4% have earned a college diploma, and 26.4% have earned a degree from a higher institution. The majority of people living in informal settlements (44%) only completed high school. Their domination is a result of their restricted economic options, as they frequently struggle to find well-paying employment, forcing them to live in these settlements. This contributes to their monthly income range and is a factor in the movement from urban to rural areas.

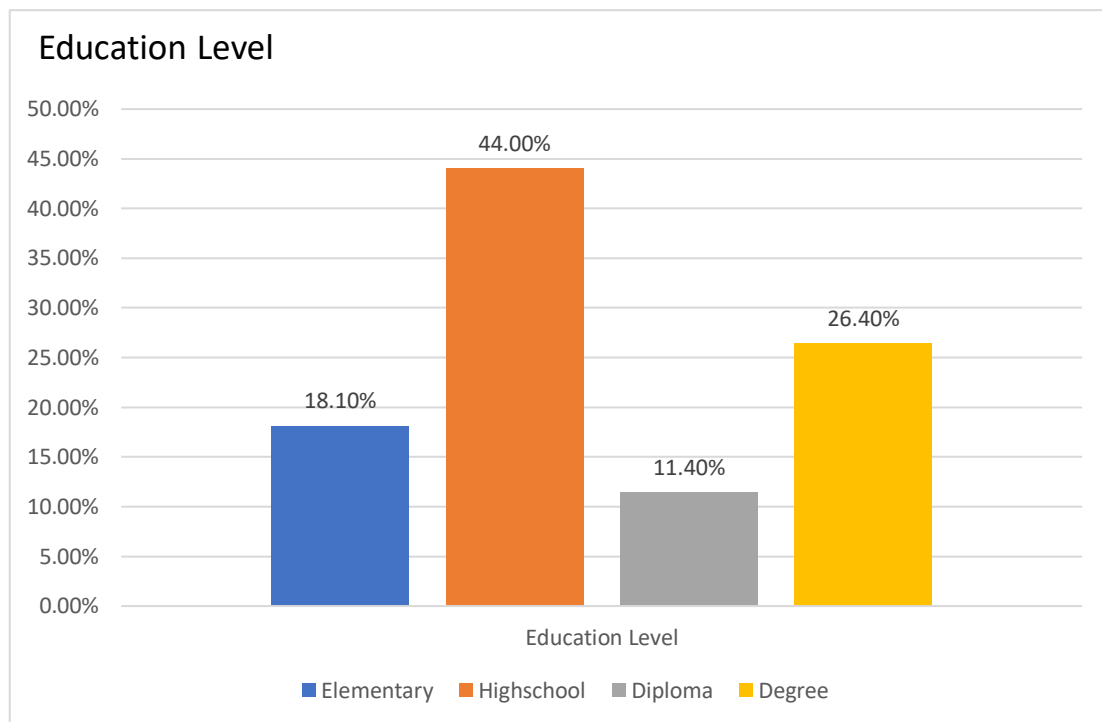


Figure 4.3 Education Level (Source: Author)

4.2.6 Occupation of respondents

The survey included respondents with various employment statuses, including those who were employed in different firms, self-employed which run their own small and informal businesses, and unemployed. 32.1% of the respondents, or 84 people, have a job. 74 respondents, or 28.2%, are Unemployed or do not have a job. 39.7% of the 104 respondents are self-employed. In this status some are overlapped because there are 69 (35.8%) people who are employed and self-employed at the same time to support their lives. Occupation or employment status of respondents is presented as follows:

Table 4.3 Employment Frequencies (Source: Author)

Employment Frequencies				
		Responses		Percent of Cases
		N	Percent	
\$Employmenta	Employed	84	32.1%	43.5%
	Unemployed	74	28.2%	38.3%
	Self-employed	104	39.7%	53.9%
Total		262	100.0%	135.8%

a. Dichotomy group tabulated at value 1.

4.2.7 Monthly income of respondent

One of the primary factors contributing to the growth of informal settlements is the monthly income of the respondents. The distribution of respondents' monthly income from the two woredas is shown below, divided into four income categories, < 1000 ETB, 1000-3000 ETB, 3001-5000 ETB, and > 5000 ETB. As a result 55.4 percent of the respondents make between 3,001 and 5,000 ETB a month on average. A sizeable percentage (23.8%) make between 1,000 and 3,000 ETB a month. Merely 12.4% of participants earn more than 5,000 ETB each month. Only 8.3% of people make less than 1,000 ETB a month. The majority of people living in informal settlements are classified as low-income. As a result, they lack the funds to pay for official housing options. Rather than leasing, they decided to purchase land at a lower cost in an unplanned region. The result is illustrated as follows.

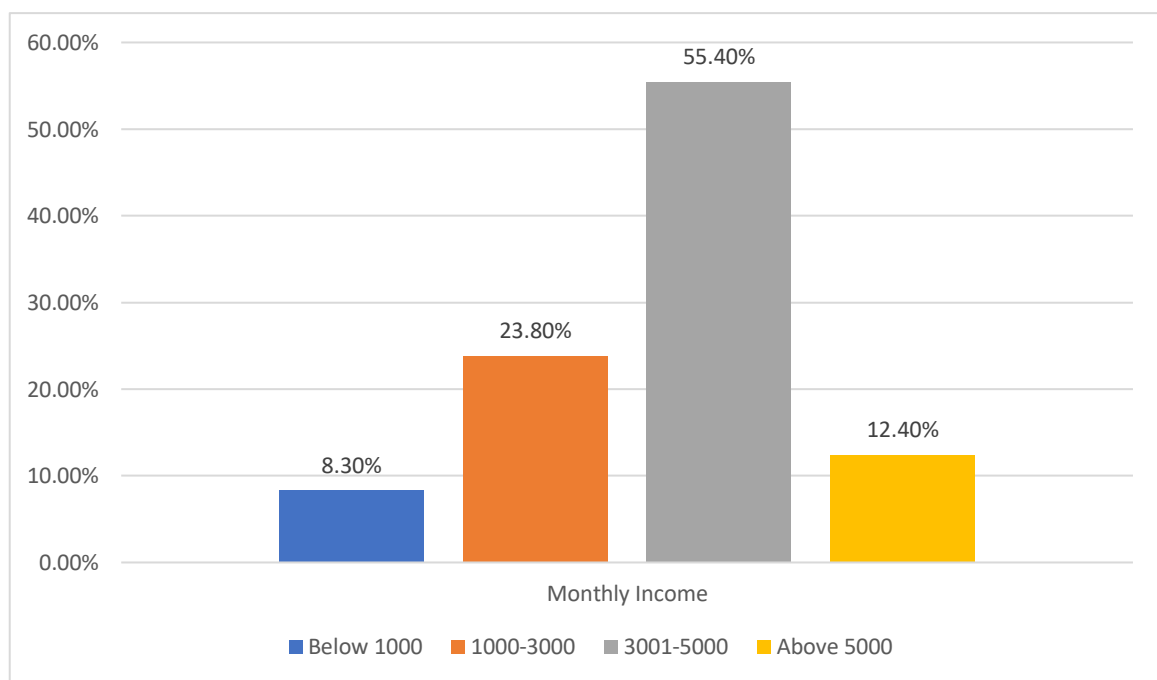


Figure 4.4 Monthly income (Source: Author)

Most of informal residents are employed while some are self-employed with low monthly income. Relatively those are employed in Governmental offices earn better than others. But still their income only covers household expenditure. Income level is a significant factor in determining housing choices. In some cases, the formal housing market may not adequately meet the diverse needs of low-income populations, leading them to seek alternative housing options such as informal settlements.

4.2.8 Household family size

Assuming that having family could contribute to increase of informal settlement respondents were asked number of family. Majority of respondents have children. One of the causes to live in informal settlements are to start family and want to have their own house.

Table 4.4 Household family size (Source: Author)

Descriptive Statistics				
	N	Minimum	Maximum	Mean
Household Family Size of respondent	193	1	8	4.52
Valid N	193			

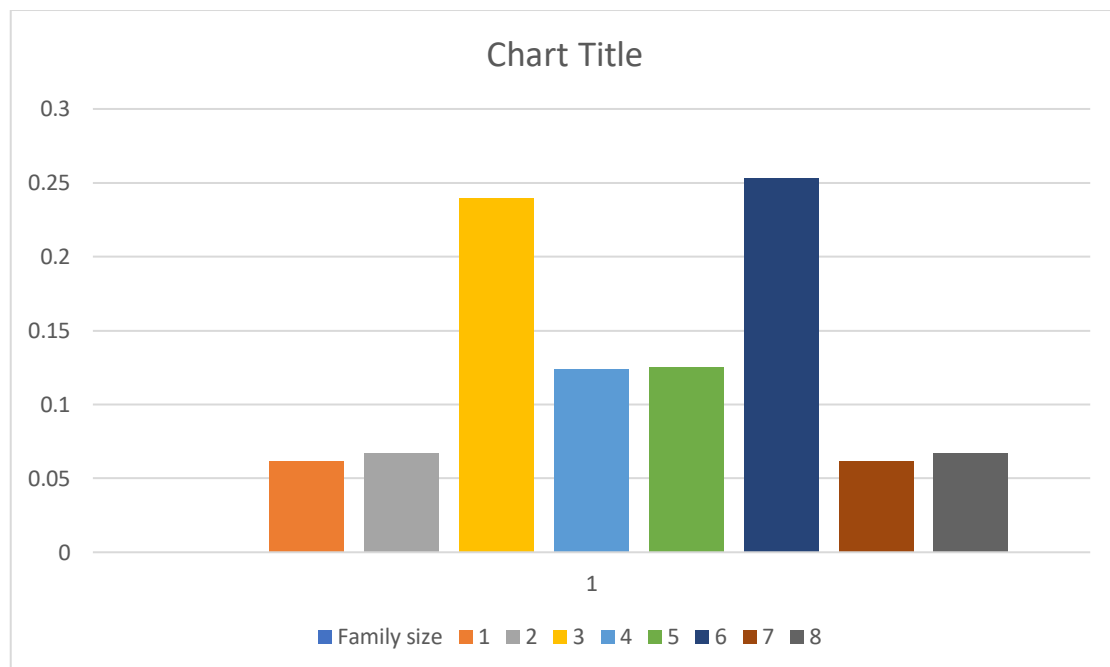


Figure 4.5 Family size (Source: Author)

4.2.9 Previous residence of respondent

Previous residence is important to identify if the settlers are migrants or not. Prior to relocating to their current dwelling in the informal settlements, 133 respondents (68.9%) had lived in various regions of Adama. Before moving to the informal settlements, 60 respondents (31.1%) were from places outside of Adama.

Table 4.5 Previous Residence of respondent (Source: Author)

Previous Residence of respondent					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Adama	133	68.9	68.9	68.9
	Out of Adama	60	31.1	31.1	100.0
	Total	193	100.0	100.0	

Table 4.6 Cause * Previous Residence Cross tabulation (Source: Author)

			Previous Residence of respondent		Total
			Adama	Out of Adama	
Cause	Affordable	Count	121	60	181
	Lack of formal Housing	Count	133	60	193
	For business purpose	Count	12	12	24
Total		Count	133	60	193

The above-mentioned finding suggests that the growth of informal settlement is also fueled by urban migration. This is due to a lack of availability and a high demand for reasonably priced homes for migrants and for internal population growth.

4.2.10 Landholding size

The current residential landholding size has been observed to have a minimum value of 105 m². This implies that 105 square meters is the smallest plot size among the responders. At the moment, 300 m² is the maximum value noted for the size of residential landholdings. This suggests that 300 square meters is the highest plot size among the responders.

Table 4.7 Landholding size (Source: Author)

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Current residential landholding Size in m ²	193	105	300	186.57	47.785

Valid N (listwise)	193				
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According to the result 186.57 m² is the mean or average size of residential landholdings. This indicates that the residential plots of the respondents are, on average, 187 square meters in size. The dispersion or spread of the values around the mean is measured by the standard deviation, which is 47.785 m². This indicates that there is a 48 square meter difference between the mean value of 187 m² and the present residential landholding sizes.

Table 4.8 Current residential landholding Size in m² * Montly income of respondent Crosstabulation (Source: Author)

Current residential landholding Size in m² * Montly income of respondent Crosstabulation						
Count						
		Montly income of respondent				Total
		Below 1000	1000-3000	3001-5000	Above 5000	
Current residential landholding Size in m ²	105	0	12	12	0	24
	125	0	0	12	0	12
	144	0	0	0	12	12
	170	12	0	0	0	12
	190	0	0	12	0	12
	200	12	24	49	0	85
	205	0	12	0	0	12
	240	0	0	12	0	12
	300	0	0	0	12	12
Total		24	48	97	24	193

Plot sizes appear to vary somewhat, according to the standard deviation, which may be connected to other things. This component is their income level, and the cross-tabulation above suggests that people who earn more than 5,000 ETB are likely to purchase a larger land piece. And income level 3000-5000 are likely to buy the average plot size.

4.2.11 Duration of living in an informal settlement

The duration of the respondents' residency is significant since it affects the mitigating actions that are implemented for them. Less than five years have 36 respondents (18.7%) been living in the informal settlement. 18% of the respondents, or 36 more people, had lived in the colony for five to ten years. This implies a steady population segment that has been residing in the town for a quite extended period of time. The settlement has been home to 12

responders (6.2%) for the past 11 to 15 years. A smaller percentage of long-term inhabitants are in this group. 109 people (56.5%), who make up the majority of responders, have lived in the settlement for more than 15 years. This suggests that a significant number of the long-term inhabitants have roots in the informal settlement. The distribution of years lived in the informal settlement provides insight to the dynamics of the settlement and the length of stay of its people. Over half of the respondents had lived in the community for more than 15 years, accounting for the majority of long-term residents. This demonstrates a solid social fabric and a community that is well-established and has strong ties to the settlement.

Table 4.9 Duration of living in the informal settlement (Source: Author)

Duration of living in the informal settlement					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 5 yrs	36	18.7	18.7	18.7
	5-10 yrs	36	18.7	18.7	37.3
	11-15 yrs	12	6.2	6.2	43.5
	Above 15 yrs	109	56.5	56.5	100.0
	Total	193	100.0	100.0	

Table 4.10 landholding Size in m² * Duration Crosstabulation (Source: Author)

Current residential landholding Size in m² * Years spent residing in the informal settlement Crosstabulation						
Count		Years spent residing in the informal settlement				Total
		Below 5 yrs	5-10 yrs	11-15 yrs	Above 15 yrs	
Current residential landholding Size in m ²	105	0	12	12	0	24
	125	0	12	0	0	12
	144	0	0	0	12	12
	170	0	12	0	0	12
	190	0	0	0	12	12
	200	12	0	0	73	85
	205	12	0	0	0	12
	240	0	0	0	12	12
	300	12	0	0	0	12
	Total	36	36	12	109	193

Currently For both types of informal settlements different measures are being taken and are being demolished in the city. For the “Before regulations” which are constructed before 2005 (E.C.) a year which proclamation 155/ 2005 is announced, they are being regularized with uniform Area (140 m²). According to the above table the total number of sample population in bold (12+73+12= 97) which is the land of 97 respondents will be reduced to 140-144 sqm. This means if their current landholding size is more than 140 it will be taken and the houses are being demolished and relocated if they do not align with local development plan. For the “After regulations” that are constructed after 2005(E.C.) a year which proclamation 155/ 2005(E.C.) is announced, houses will be demolished totally and will not be relocated. In this case 72 respondents will be totally evicted of their land and house. And the rest 72 will be safe or will be relocated if they do not align with LDP.

4.2.12 Informal Land Acquiring option

This section encompasses whom the respondents purchase a land from. There are two known ways to get land informally. One is buying unplanned land from farmers. While the other is buying land from other informal land owner who bought the land from farmer and act as mediator. According to the result 133 respondents (68.9%) obtained their land from farmers. This indicates that a significant portion of the respondents acquired their land directly from agricultural landowners. 60 respondents (31.1%) acquired their land from informal landowners. This suggests that a smaller but notable proportion of respondents obtained their land from individuals who were not formal landowners.

Table 4.11 Respondents way of obtaining land (Source: Author)

Respondents way of obtaining land					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Farmers	133	68.9	68.9	68.9
	informal land Owners	60	31.1	31.1	100.0
	Total	193	100.0	100.0	

The above result demonstrates that the majority of respondents obtain informal land purchases through farmers. The land was previously owned by the farmers.

4.2.12.1 Farmland price in Adama

Five farmers were also questioned about the reasons behind their land sales in the absence of legal enforcement to the informal purchaser. Every single one of them had the same response. They said they had a 1000 square meters from Derg, and that the government now offers them 500 square meters for each leader and 200 square meters for each child, with the option to take or purchase the remaining space at a reduced cost. At current prices, farmers can charge individuals 3500-6000 ETB per square meter for their land. However, if the government seizes the land, the price per square meter of compensation is reduced to between 213 and 220 ETB. As a result, they decide to sell their land to unofficial buyers for a higher price rather than allowing it be taken away from them for less money.

4.3 Causes of informal settlement in Adama city

4.3.1 Reasons that Caused individuals to live in informal settlement

Respondents were asked what caused them to live in informal settlements. Almost all respondents responded that because of the cheaper price of the land and housing in informal settlements.

4.3.1.1 Lack of affordable housing provision

The majority of the 193 respondents (100%) chose this, suggesting that the main cause of living in informal settlements is a lack of formal housing options. Furthermore, it made a significant contribution to the rise of informal settlement. The growing rural-to-urban migration is driving up housing demand in the city. Condominium and other similar housing options are quite scarce. Even in the event that they are corrupted and provided to government employees and their families.

4.3.1.2 Affordability/ Being cheap of informal land

One reason given by 181 respondents (93.8%) for living in informal settlements is affordability. This implies that a major obstacle for a lot of residents is the high cost of formal housing. The Formal land price is 3.6 times of the price of informal land.

Formal Land price in Adama= 12,381 ETB - 22,500 ETB

Informal Land price in Adama = 3500 ETB - 6000 ETB

4.3.1.3 Informal Business

Only 24 participants, or 12.4%, said that they occupy informal settlements for business purposes. This suggests that the vast majority of locals do not use their residences for business purposes. However, these are the ones that purchase land from farmers, construct a modest home there, and then resell it for a higher price or a profit. They act in this way as, in theory, they are only allowed to sell properties on land. The following table provides insights into the reasons why respondents chose to live in informal settlements. The table presents the frequency of each reason and the percentage of respondents who selected each option.

Table 4.12 Reason that Caused informal settlement in Adama (Source: Author)

\$Cause Frequencies				
		Responses		Percent of Cases
		N	Percent	
Cause	Affordable	181	45.5%	93.8%
	Lack of formal Housing	193	48.5%	100.0%
	For business purpose	24	6.0%	12.4%
Total		398	100.0%	206.2%
a. Dichotomy group tabulated at value 1.				

The findings demonstrate how important it is for there to be a lack of affordable formal housing to fuel the expansion of informal settlements. Residents are forced to look for other living arrangements, frequently in informal settlements, when they are unable to access or afford formal housing options.

4.3.1.4 Lack of proper planning

According to Government officials the main causes of informal settlement in adama city is because the planning boundary and administrative boundary is not the same or compatible. This mismatch between the planning boundary and administrative boundary in Adama City creates challenges. Only part of adama administrative boundary is properly planned and there are also unplanned areas at the periphery of the city which are mostly farm land. These farm lands are sold in cheaper price (than the planned land) by farmers from fear of losing their lands without making a profit.

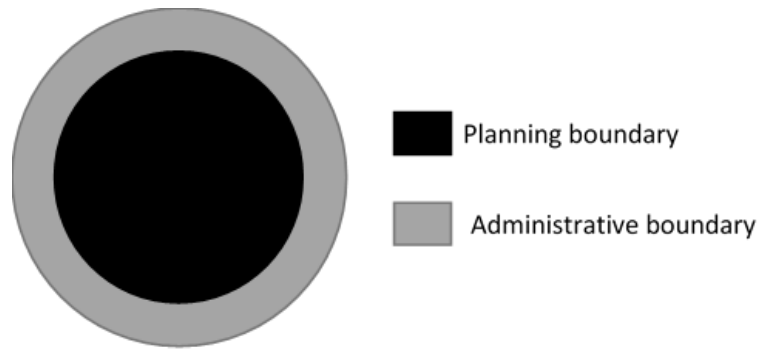


Figure 4.6 Planning and administrative boundary mismatch

(Source: interviewee's demonstration, 2024)

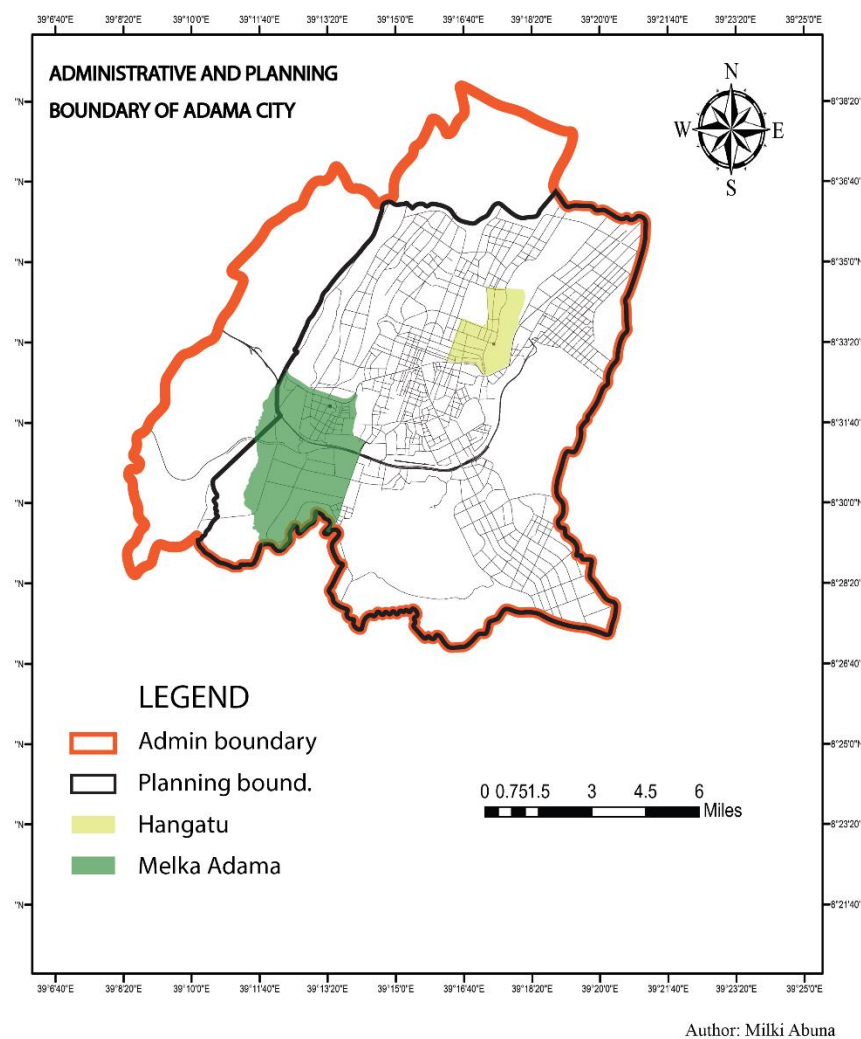


Figure 4.7 Planning and administrative boundaries of Adama (Source: Author)

The data supplied by government officials' explains important elements fostering the expansion of informal settlements in Adama City. Unplanned settlements, informal land transactions, and

uncoordinated growth can result from planning inconsistencies or a misalignment between the administrative and planning boundaries. Inadequate infrastructure, services, and urban sprawl may arise from this mismatch.

4.3.1.5 False information

The responses from the urban planners and government officials reveal two key reasons why residents choose to buy informal houses or land, despite knowing they may be resettled or their houses demolished in the future.

- **False information:** Some residents are misinformed that by paying taxes, their informal settlements will be legalized and they will have the right to remain. This suggests a lack of clear communication from authorities about the legal status of informal settlements and the consequences of residing in them.
- **Lack of alternatives:** Even if their houses are demolished, many residents feel they have no choice but to buy another informal house, as there are no affordable formal housing options available to them. This indicates a severe shortage of adequate and accessible housing for low-income urban residents.

Whether this is respondent's only house or not

Residents were asked if the house they live in is their only house or not. 181 respondents (93.8%) answered "Yes", indicating that this is their only house. 12 respondents (6.2%) answered "No", meaning they have additional houses besides the one they currently reside in. The distribution of replies to the question "Whether this is respondent's only house or not" among 193 respondents is displayed in the descriptive analysis table.

Table 4.13 Whether this is respondent's only house or not (Source: Author)

Whether this is respondent's only house or not					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	181	93.8	93.8	93.8
	No	12	6.2	6.2	100.0
	Total	193	100.0	100.0	

The results indicate that the majority of respondents (93.8%) reside in informal settlements as their primary and only residence. This implies that informal settlements are serving as the

main housing option for a significant portion of the population. The small percentage (6.2%) of respondents who have additional houses may be relatively better-off individuals who have invested in multiple properties. These are those who used informal land and house formal land and house purchase for business purposes. The high percentage of respondents for whom the informal settlement is their only house highlights the critical need for affordable and available formal housing solutions. The lack of alternate housing options forces many individuals to turn to informal settlements.

4.4 Challenges of informal settlements

4.4.1 Challenges Government officials face

4.4.1.1 Difficulties to apply city plans

The informal nature of landholding and development, according to urban planners at the Adama Land Administration Office, hinders the city's ability to implement the city plan. A negative impact on the city's health and image is caused by the construction of informal settlements on its green spaces. In fact, regular settlements constructed on urban green spaces may have detrimental effects on the general public's health and perception of the city. Increased pollution, a loss of green space, and environmental deterioration could result from these communities. In addition to this it is challenging to distribute water lines since the roads in these communities do not line up with those in the city.

4.4.1.2 Lack of Intensive land utilization

Urban planners and woreda administrators also provided information that Land in Adama is underutilized. The predominant construction pattern in Adama City is horizontal, meaning buildings are spread out horizontally rather than vertically. This results in a sprawling urban form. This horizontal construction pattern and inefficient use of land further contributed to a shortage of housing units, as more land is required to accommodate the same number of people compared to vertical development. The limited supply of housing, coupled with high demand, drives up housing prices and rents, making formal housing unaffordable for many residents. On the contrary providing infrastructure and services, such as water, electricity, and transportation, becomes more expensive when development is spread out horizontally. The cost per capita increases due to the longer distances and larger area that needs to be covered.

4.4.1.3 Lack of law enforcement

There are regulations that are difficult to implement and execute. The regulations state that there will be no compensation for demolished houses, but they do not explain the rationale behind this policy. This lack of clarity and justification makes it difficult to enforce the regulations effectively. On the other hand the community is not adhering to the established rules and regulations, posing a significant challenge to their implementation.

4.4.2 Challenges respondents face living in an informal settlement

There are impacts on residents due to informality in these areas.

4.4.2.1 Lack of adequate infrastructure

This is the most commonly mentioned issue according to 56% of research participants, their everyday lives are difficult due to inadequate infrastructure, particularly the absence of officially constructed roads and water supplies.

4.4.2.2 Lack of proximity to services

Lack of proximity is the other, and second, most frequent problem, as reported by only 48.2% of the respondents. It's challenging to find health facilities in particular close to these neighborhoods.

4.4.2.3 Inadequate housing conditions

Inadequate housing conditions are still a major problem, while being less common than the first two difficulties 13.5% of them expressed dissatisfaction with their living situation. This is because they were unable to complete building the houses due to financial difficulties and fear of being evicted.

4.4.2.4 Limited economic opportunity

Limited economic opportunities are also a challenge, 18.1 % of the total sample population encountered economic opportunity challenge due to low income and there are only informal businesses which are difficult for them on a daily basis.

4.4.2.5 Lack of security and safety

Residents in these settlements also face challenges of safety and security. 53.4% of respondents stated that because of their illegality they get fear of eviction and some of the government bodies Abuse them and do corruption.

A small percentage of respondents (12.4%) indicated that they do not face any challenges in their informal settlements. Respondents answered multiple responses of these given challenges they face. The following is descriptive analysis of these responses from 193 respondents.

Table 4.14 Challenges respondents face living in an informal settlement (Source: Author)

\$challenges Frequencies				
		Responses		Percent of Cases
		N	Percent	
\$challenges ^a	Lack of adequate infrastructure	108	27.8%	56.0%
	Lack of proximity to services	93	23.9%	48.2%
	Inadequate housing conditions	26	6.7%	13.5%
	Limited economic opportunity	35	9.0%	18.1%
	Lack of security and safety	103	26.5%	53.4%
	Nothing	24	6.2%	12.4%
Total		389	100.0%	201.6%
a. Dichotomy group tabulated at value 1.				

The main concern is under developed roads with no streetlight which expose the surrounding for extra crime activities. These challenges are likely to have a significant impact on the quality of life for the respondents, making it difficult for them to access basic necessities and feel secure in their environment.



Figure 4.8 Lack of road planning in Melka Adama (Source: Author)

4.4.3 Tax payment

37.3% of those surveyed said they pay taxes. 62.7% of those surveyed said they never pay taxes. Due to their informality, the majority of them do not pay taxes, as the following result demonstrates. However, unexpectedly portion of the responders do pay taxes. Woreda/local officials pushed these responders to participate. Others pay taxes in the name of farmers since they purchased the land from the farmer and must do so in order to obtain legal assistance.

Table 4.15 Whether respondents pay tax or not (Source: Author)

Whether respondents pay tax or not					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	72	37.3	37.3	37.3
	No	121	62.7	62.7	100.0
	Total	193	100.0	100.0	

4.4.4 Security concerns within informal settlements

In informal settlements, crime and violence were cited as a major security issue by 18.1% of respondents. This demonstrates how common violence and criminal activity are for the locals. Concerns over the absence of law enforcement in informal settlements were expressed by 12.4% of respondents. This suggests that there is a gap in the enforcement of

law and order in these areas. Land disputes and evictions were identified by the majority of respondents (69.4%) as a serious security concern.

Table 4.16 Security concerns within informal settlements (Source: Author)

Security concerns within informal settlements					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Crime and violence	35	18.1	18.1	18.1
	Lack of law enforcement	24	12.4	12.4	30.6
	Land Disputes/ Eviction	134	69.4	69.4	100.0
	Total	193	100.0	100.0	

4.4.5 Barriers residents face in accessing formal housing options

The primary barrier identified by respondents is financial constraints, followed by a lack of awareness regarding how to access formal housing. Additionally, participants expressed concerns about a lack of trust in the government due to perceived issues of accountability, transparency, and corruption. The research findings reveal that 93.3% of the total study population is unable to access formal housing due to financial limitations. Furthermore, 32.1% cited a lack of awareness as a difficulty, indicating a lack of knowledge about available options for affordable formal housing. Another significant category comprises 24.4% of individuals who lack trust in the government. Some respondents reported attempting to access formal housing but faced challenges due to perceived corruption within government institutions, while others refrained from trying due to a general lack of trust in the government.

Table 4.17 Barriers residents face in accessing formal housing options (Source: Author)

		Responses		Percent of Cases
		N	Percent	
Barriers	Lack of Awareness	62	21.5%	32.1%
	Financial problems	180	62.3%	93.3%
	Lack of trust in Government	47	16.3%	24.4%
Total		289	100.0%	149.7%

4.5 Mitigation Methods

4.5.1 Formal housing option

The Ethiopian government has launched numerous programs to boost the availability of reasonably priced homes. There are just two types in Adama which are condominium lotteries, where participants register to win condominium homes. The other is a government-built home that is provided to the poor upon their admission that they are unable to pay for a formal residence. In Adama, there are still insufficient options for affordable housing for the poor provided by the government.

4.5.1.1 Formal housing preference

92.2% of respondents prefer single-family houses as their formal housing option, where they can reside independently and privately. This indicates that the majority of respondents desire independent, detached housing units. 18.1% of respondents prefer condominiums indicated that they would consider condominiums as an option once it is their own property. These are multi-unit residential buildings with individually owned dwelling units and shared common areas. 13.0% of respondents favor apartments that offer higher quality compared to condominiums. 11.9% of respondents are open to any type of formal housing option as long as they own the property and can reside in it without the concern of eviction, suggesting a more flexible preference.

Table 4.18 Formal House preference Frequencies (Source: Author)

		Responses		Percent of Cases
		N	Percent	
Formal House preference	Single Family	178	68.2%	92.2%
	Apartments	25	9.6%	13.0%
	Condominiums	35	13.4%	18.1%
	Any type	23	8.8%	11.9%
Total		261	100.0%	135.2%
a. Dichotomy group tabulated at value 1.				

Understanding the formal housing preferences of respondents and relating them to mitigation methods is crucial for addressing several key aspects, including flexibility in planning and

zoning systems. According to this study conducted in Adama there are two main types of planning processes the general structural plan and the local development plan (LDP). The general structural plan is a rigid and inflexible plan that is updated every 5 years. In contrast, the LDP is a local plan created for each individual neighborhood. However, these LDPs must not contradict the main general structural plan. The structural plan, as it currently stands, does not appear to be considerate of the community's needs and preferences. Any road construction project stemming from this plan could potentially lead to the demolition of private properties.

4.5.2 Transitioning from informal settlements to formal housing

The reasons for this lack of exploration are discussed in the following section. The study participants were asked whether they had explored options for transitioning from informal settlements to formal housing.

Table 4.19 Whether respondents explored options for transitioning from informal settlements to formal housing (Source: Author)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	30	15.5	15.5	15.5
	No	163	84.5	84.5	100.0
	Total	193	100.0	100.0	

Based on the responses collected, 30 respondents (15.5%) of the respondents indicated that they had attempted to explore options for transitioning to formal housing, but were unsuccessful due to various factors. The remaining 163 respondents (84.5%) of the participants had never tried to explore these options.

4.5.3 Supports respondents would like to see from the government

Residents in informal settlements suggested the following supports from the Government. 81.9% of them would like to have formal housing provision, 12.4% need financial support to start new businesses, 13.5% wanted to be announced about the measures that are going to be taken and where residents are actively involved in decision-making processes related to

the development and upgrading of informal settlements, 19.2% need legal aid and want to be regularized.

Table 4.20 Supports respondents would like to see from the government (Source: Author)

Support Frequencies				
		Responses		Percent of Cases
		N	Percent	
Support	Formal housing provision	158	64.5%	81.9%
	Financial Support	24	9.8%	12.4%
	Participatory planning	26	10.6%	13.5%
	Legal aid	37	15.1%	19.2%
Total		245	100.0%	126.9%
a. Dichotomy group tabulated at value 1.				

4.5.4 Mitigation measures currently in use

The government authorities are currently implementing measures to demolish informal settlements. This course of action is primarily driven by the significant challenges that informal settlements pose to the effective implementation of development plans. Due to the lack of proper planning in these informal settlements, the housing structures are often haphazardly constructed, with narrow and crooked roads. As a result, when the government attempts to execute its planned development initiatives, it encounters obstacles such as the presence of houses in areas designated for roads, and vice versa. Since these houses lack legal standing, the government is obliged to demolish them and provide the affected residents with alternative land, without of any existing structures. This process inevitably leads to the complete demolition and eviction of some households, while others may be required to sacrifice a portion of their property to accommodate the planned development. As previously mentioned, according to the Adama Land Administration Office, there are two distinct categories of informal settlers in Adama, known as the pre-regulation and post-regulation groups established before and after the 2005 (E.C.). Consequently, among the informal settlements subject to demolition due to the process of regularization and Local Development Plan (LDP) implementation, those categorized as pre-regulation will receive alternative legal land without a house and compensation. Conversely, the post-regulation

informal settlements will not receive any land or compensation, as they failed to adhere to the regulatory requirements.

The following image shows a road plan that is taken from LDP of Melka Adama woreda. It shows the contrast between the LDP road planning and the existing road. The LDP road plan do not align the Existing Road and it also cause many houses to be demolished.

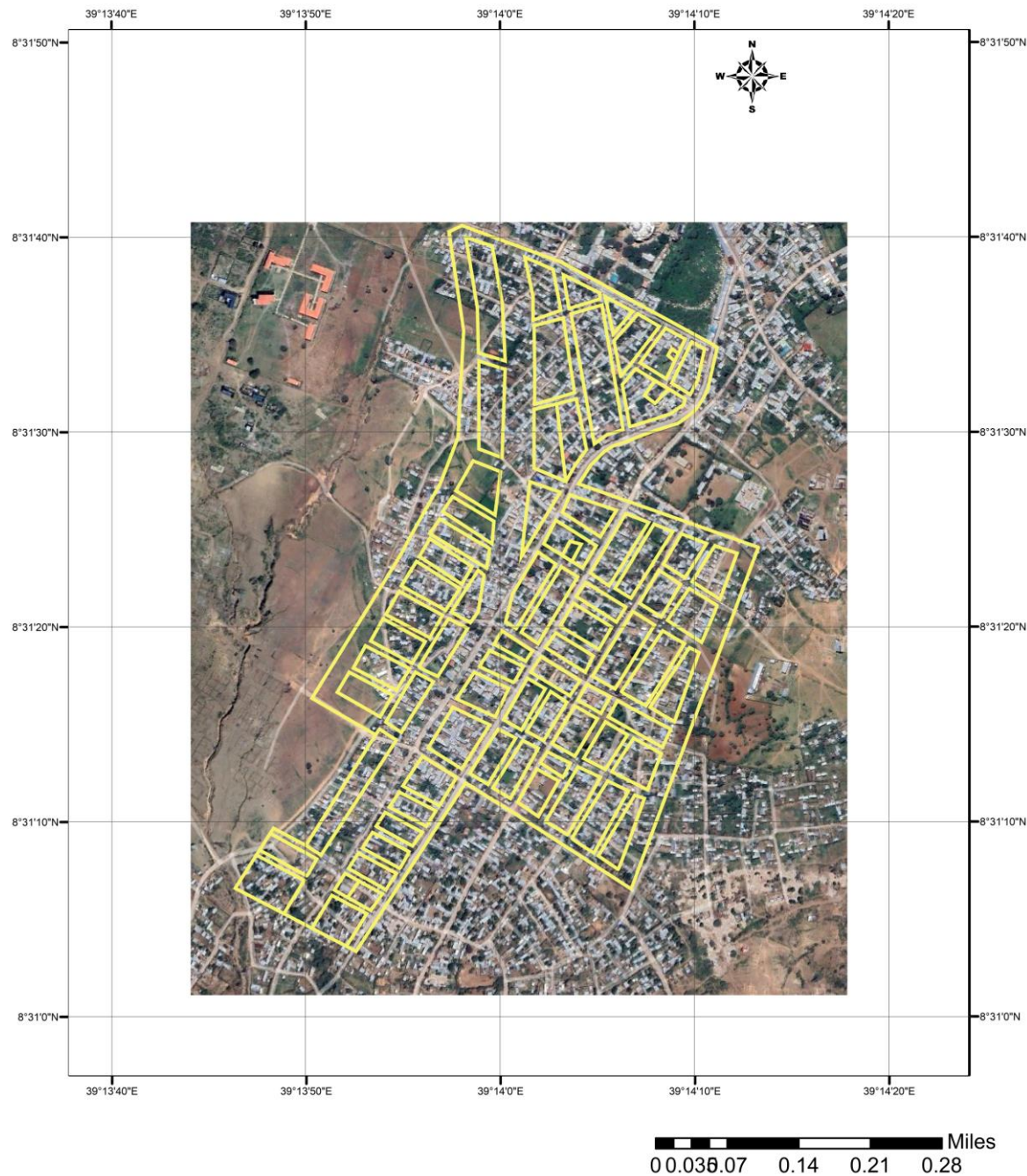


Figure 4.9 LDP of Melka Adama woreda (Source: melka Adama land administration)

4.5.5 Advantages and disadvantages of Demolition

4.5.5.1 Advantages

- ✓ This method is prohibiting people from constructing new informal houses and decreases informal settlement.
- ✓ Informally grabbed lands are being restored to land bank
- ✓ Demolishing makes easy to apply city plan
- ✓ It is important to protect and restore green areas

4.5.5.2 Disadvantages

- Demolition is highly contributing to loss of construction material in the city.
- Informal settlers after their house being demolished they will be burden to government.
- The population that are evicted from their houses with their children go through a harsh psychological, economical, and social problems that leads to mental health, homelessness and risk the future of many children.





Figure 4.10 Demolition of informal houses without compensation (Source: Author)

4.5.6 Governments intervention

Respondents were asked if they get any notice from Government officials assuming that there might be announcement of regularization or demolition. Accordingly There were notices from Government officials and are listed as follows

4.5.6.1 Notice of Consultation or Dialogue

The most frequent kind of official notification, according to 63.2% of respondents who said they have received notices of consultation. The neighborhood was informed that regularization would occur soon and that certain homes may be demolished since they did not fit correctly with the Local Development Plan (LDP). Yet the rest stayed unannounced about what was going to happen.



Figure 4.11 Announcing that houses are going to be demolished by painting red (Source: Author)

4.5.6.2 Notice of relocation

As stated earlier there are two types of informal settlements in Adama City.

- Informal settlement which are called “Before regulation” which are constructed before a regulation / proclamation 155/2005. These are assumed to be known and recognized by the Government.
- Informal settlement which are called “After regulation” which are constructed after a regulation / proclamation 155/2005. These are assumed to be unknown and unrecognized by the Government.

The first categories have got notice of relocation because they are evicted because of LDP application.

4.5.6.3 Notice of regularization

About 28.0% of those questioned said they have received relocation-related notices. This suggests that relocating from their current informal settlements may be an option for some

residents. These are which constructed before 2005 (E.C.), to get notification of regularization for houses that are not in line with the LDP.

4.5.6.4 Notice of Violations or Non-Compliance/ punishment

12.4% of respondents, a lower percentage, reported receiving warnings about punishment. Recent development was penalized and instantly demolished on the site in order to prevent this settlement and to educate others.

4.5.6.5 Notice of Demolition

44.0% of respondents reported receiving notices of demolition, showing that a significant amount of the population in informal settlements faced the possibility of having their dwellings demolished. Due to their eviction as a result of their LDP application, the second category has received notice of demolition. Furthermore, because they were built after 2005 (E.C.) legislation that prohibited the development of informal settlements, they are not recognized by the government.

The following presents the analysis and number of respondents that have got Notices from Government

Table 4.21 Notice from Government officials (Source: Author)

		Responses		Percent of Cases
		N	Percent	
Government notice	Consultation	122	36.5%	63.2%
	Relocation	54	16.2%	28.0%
	Regularization	49	14.7%	25.4%
	Punishment	24	7.2%	12.4%
	Demolition	85	25.4%	44.0%
Total		334	100.0%	173.1%
a. Dichotomy group tabulated at value 1.				

4.6 Discussion

This study and other comparable studies conducted in Ethiopia show that informal settlements are growing quickly at the detriment of the surrounding forests and agricultural areas (Adane, et al., 2023). There are issues with informality in many of the Ethiopias's cities and villages like Addis Ababa (Jemal, 2019), Gondar city (Alene, 2022), Butajira town

(Adane, et al., 2023), Bishoftu (Bore, 2022), Woldiya (Fentaw, et al., 2023) and Mekelle (Haile, 2020). The cause challenges and mitigation methods of this study area (Adama town, Hangatu and Melka Adama Woredas) are discussed as follows.

4.6.1 Causes of informal settlements

The dwellers' ultimate goal is to have their own house to live in without insecurity. The lack of formal housing provision is the primary reason for living in informal settlements and it highly contributed to an increase of informal settlement. There is high demand of housing in the city. The results indicate that the majority of respondents (93.8%) reside in informal settlements as their primary and only residence. This implies that informal settlements are serving as the main housing option for a significant portion of the population. The large number of respondents who gave affordability or being cheap of informal houses as their reason implies that many low-income people and families cannot afford the expense of formal housing. This emphasizes the requirement for more accessible housing options as well as focused interventions to meet vulnerable populations' housing requirements. The majority of inhabitants selected a detached home with a private compound where their kids and family are free to live. However, some of them chose any type, an apartment building, or a separate home. All they desire is to purchase their own home and be free from rental properties and fear of eviction.

The other reasons why people choose to live in informal settlements is the size of their families (Alene, 2022) . It is true that the possibility of settling in informal regions increases with marriage and having more children. These settlements are attractive to larger families because they offer a network of social connections and support among members and easy way of life. In the results shows that there is Strong social networks and community relationships are frequently formed in informal settlements, drawing families looking for a place to call home and support. Therefore larger households are more likely to settle in informal areas.

Migration also contributed to these settlements. Large number of informal settlements draw working class individuals who are looking for jobs in cities. The migration that follows opportunities for employment and education has a significant impact on the demand for housing and the growth of informal settlements.

The land was previously owned by the farmers. Therefore Most of respondents obtain informal land purchases through farmers. These farmers sell their property because they are afraid of losing it to regularization. Thus, this also had a significant role in the rise of informal settlement. Despite receiving land allocations, the farmers still feel insecure about their rights and vulnerable to having their land taken away by the government for less price. The other is that the selling of farmlands for less money because of the worry of possible land loss without making a profit points to a complicated situation in the land market. This approach may draw purchasers seeking out affordable land, resulting in the increase of informal settlements in certain locations. The false belief that paying taxes can make informal settlements lawful indicates an imbalance in the lines of communication between local government and the general public. False information also has the potential to raise irrational expectations about informal settlements.

4.6.2 Challenges posed by informal settlements

The problems that informal urban settlements present to Adama's urban fabric were the main focus of these concerns expressed by the city's planners. The first is the difficulties in urban planning. The development of informal settlements frequently occurs at random, disregarding infrastructure needs and zoning laws, which makes it difficult to carry out the city plan. The other issue is that by being constructed on green spaces within the city, these settlements are not only making the region less aesthetically pleasing, but they are also causing environmental degradation. In addition to posing difficulties for infrastructure provision and urban planning, the existence of unplanned regions and informal land transactions may hinder equitable urban growth and alter land use patterns.

On the other hand residents face serious difficulties as a result of problems with land ownership, tenure security, and forced evictions. The majority of respondents (69.4%) highlighted land disputes and eviction as a major security concern. This suggests that issues related to land ownership, tenure security, and forced evictions are significant challenges impacting residents. The people of informal settlements are concerned about the following security issues. There is a greater lack of safety and security in informal settlements due to a lack of enforcement. Majority of individuals in informal settlements struggle with financial constraints that hinder their ability to access resources and opportunities. Some individuals may not have sufficient knowledge about available services, rights, or support systems. Lack of confidence in government institutions may impact residents' willingness to engage with

authorities or seek assistance. Notices of demolition have been received by 44.0% of respondents, indicating a significant number of residents facing the potential demolition of their homes in informal settlements. The second categories have got notice of demolition because they are evicted because of LDP application which is very challenging for their family. Having these challenges in their lives they still prefer living in these settlements because of high social relations and lack of affordable housing provision.

4.6.3 Mitigation Methods

In Adama, over 3,751 structures constructed without official municipal permits were demolished over a five-year period, although the demolished structures were soon replaced by fresh ones (Jemal, 2019). The informal land market and subsequent informal settlements mushroom when cities implement land policies that do not take local realities into account (Koroso, 2022). Lack of flexibility and community involvement in the planning process can worsen the growth of informal settlements, as residents may feel that their interests are not being adequately represented or protected. The government authorities are currently implementing measures to demolish informal settlements. This course of action is primarily driven by the significant challenges that informal settlements pose to the effective implementation of development plans. Giving formal lands for the new settlers collecting them together and taking serious measure on new settler's measures i.e demolishing as soon as they construct or avoid before they do is suggested by majority of Government officials in Adama two woredas as the better way to prevent informal settlement.

One of respondents said *"Now my house is being demolished and they told me I cannot get compensation and substitute land for this house. But if I get the opportunity to Acquire another informal land with no formal plan I would occupy it. Because I have no choice and I and my family and my children have nowhere to go. We cannot afford formal housing now and anytime soon."* This is father of 4 children leading 6 family represents the majority of leaders in an informal settlements of Adama. This shows how complex and harsh the situation the residents experiencing is. Learning from past experience of the city and the difficulty of demolition, using it as a mitigation method is not effective.

The high preference for single-family houses suggests that respondents value privacy, independence, and the ability to customize their living spaces. This preference may also be influenced by cultural norms and the desire for a traditional housing arrangement. The

interest in condominiums and apartments, although lower than single-family houses, indicates that some respondents are open to more compact and shared living arrangements. This could be driven by factors such as affordability, proximity to urban amenities, and the desire for a more manageable living space. The small percentage of respondents who are open to any type of formal housing option may be influenced by their immediate need for secure and adequate shelter, regardless of the specific housing type.

Residents of these settlements often face significant challenges in accessing adequate housing and improving their quality of life. However, in this study conducted in the area revealed that informal settlement dwellers have specific needs and preferences regarding the support they would like to receive from the government. Respondents indicating the need for formal housing provision. This suggests that access to adequate and affordable formal housing is a critical priority for residents of informal settlements. Respondents highlighted the need for legal aid, which could include assistance with land tenure issues, property rights, and navigating legal processes related to informal settlements. This information can support the decision making process with regard to mitigation method. Financial support, such as subsidies, loans, or income-generating opportunities, to help address the economic challenges faced by residents of informal settlements. By prioritizing formal housing provision, financial support for new businesses, transparency and community engagement in urban development processes, and legal aid and regularization, the government can help address the diverse needs and preferences of informal settlement dwellers.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This study on the challenges and mitigation methods of informal urban settlements in Ethiopia, Adama with a focus on Melka Adama and Hangatu woredas, has shed light on causes for emergence, critical issues facing these communities within informal settlement. The study employed a mixed-methods approach, combining quantitative and qualitative data collection techniques. A structured questionnaire was administered to 193 respondents living in informal settlements to gather information on various aspects, including land acquisition, housing preferences, challenges, and support needs. Additionally, in-depth interviews were conducted with 5 farmers and 13 key informants, including urban planners and government officials, to gain deeper insights into the causes and dynamics of informal settlements. Through a comprehensive analysis of data collected from total of 211 respondents and living in informal settlements and officials, several key findings have emerged.

Firstly, it is evident that informal urban settlements in Adama City face different challenges, including inadequate access to basic services such as water, sanitation, and electricity, as well as limited tenure security and vulnerability to crimes due to lack of law enforcement. These challenges worsen the socio-economic inequalities and fuels cycles of poverty within these communities. Furthermore, the research has identified that in adama there are two types of informal settlements that are differentiated by a time line 2005(E.C.) on which a regulation is proclaimed about the regularization and demolition of informal settlements and various mitigation methods that are being used at current time. These include Demolition of unaligned houses , relocation of evicted informal settlers, regularization of residents before 2005(E.C.) and eviction of residents after 2005(E.C.). The majority of respondents obtained their land through informal channels, either from farmers or informal landowners, highlighting the lack of access to formal land markets. This informal land acquisition process is further fueled by mismatch between planning and administrative boundaries, leading to the growth of unplanned settlements on the city's periphery. The predominance of horizontal construction patterns and inefficient use of land in informal settlements contribute to low housing supply, high costs, and increased infrastructure distribution expenses. Residents of informal settlements face various challenges, including inadequate infrastructure, lack of

proximity to services, limited economic opportunities, and concerns about security and safety. These challenges are compounded by the lack of affordable formal housing options and the false belief that paying taxes can legalize informal settlements. Despite the risks of eviction and demolition, residents continue to choose informal housing due to the absence of affordable alternatives and the desperation to find shelter. The construction of informal settlements on green areas within the city has negative implications for the urban environment, public health, and infrastructure provision.

An integrated strategy that combines the supply of formal housing, infrastructure improvements, economic development, and community engagement is required to address these issues. Developing more inclusive and efficient solutions requires strengthening legal aid programs, encouraging participatory planning, and building trust between citizens and public institutions. The growth of informal settlements can be slowed down and the living conditions of their inhabitants can be improved by implementing best practices from around the globe, such as regularization, expanding access to affordable housing, improving infrastructure and service delivery, creating economic opportunities, and putting the community before the image of the city.

In order to successfully address the issues surrounding informal settlements, cooperation amongst various interested parties is necessary. These stakeholders include local officials, government agencies, the department of urban planning and development, housing and land management, and, most importantly, the residents themselves. More reasonable urban settings that leave no one behind can be achieved by giving inclusive and responsive development the highest priority.

5.2 Recommendation

5.2.1 Recommendation for Housing and land management

- Affordable housing provision should be prioritized because if there is lack of provision all these dwellers have nowhere to go and end up settling informally.
- There should be provision of sites for formal housing and vertical houses which are affordable and can cater the demand of low income group and reduce urban sprawl.

- Housing management should intervene and support secure access to formal housing by providing condominium lotteries more and controlling the housing market whether it is rental or purchase.
- Providing access to low-interest loans, microfinance, and housing savings schemes can also enable residents to afford formal housing options or upgrade their existing homes.

5.2.2 Recommendation for Urban planning and development department

To mitigate the negative impacts of informal settlements, it is essential to address the rigidity of the current planning system.

- Introducing more flexibility in planning and zoning regulations can enable residents to actively participate in the decision-making process and ensure that their housing preferences are taken into account.
- City planning should be targeted and responsive to the needs of all residents, including those living in informal settlements.
- Instead of applying a rigid city wide plan and incorporate the local plans to align with city plan, using the Integrated approach for planning combining both city level and local level planning and integrating them can help all level of stakeholders to understand the local and small problems and solve it in a city level.

5.2.3 Recommendation for Land administration

- Land administrators office should understand the informal land market and Stop the farmers and sellers.
- Strengthen land use regulations and enforcement mechanisms to prevent unauthorized land transactions and unplanned development, particularly in peri-urban areas.
- Setting boundary on these areas and following up to prevent new settlement can be used as prevention method.

5.2.4 Recommendation for Local Administrators

Considering the length of residency, the mitigation method should consider the strong social fabric of most of the population.

- The mitigation method should not be the same for all, it has to be differentiated for different income groups, it can be differentiated by the plot size they have and residing years of most dwellers.
- It should consider the strong social fabric of most of the population.
- The current mitigation method which is demolition is not the right because of the residents in informal houses own only that house and demolishing their only house for the purpose of city planning and city image is not the wise way. It can also lead to homelessness of many parents and children, exposes them to economic, social and psychological crisis. There for these stake holders should refrain from demolition.
- If demolition is must the housing management officials should first prepare at least a transition house for the people who are evicted. Otherwise they will look for another informal settlement on the outskirts of the city which makes the problem unending.
- Local Government or woreda rulers should work on Poverty reduction and job creation for those who did not finish their high school to address the root cause.
- Implement financial support programs, microfinance initiatives, or income-generating opportunities to address the financial challenges faced by individuals in informal settlements.
- Enhance Security Measures by increasing police presence and security groups in informal settlements to discourage criminal activities and ensure the safety of residents.
- To strengthen enforcement capacity allocate sufficient resources and build the capacity of authorities to effectively monitor and enforce planning regulations.
- Establish clear procedures for addressing non-compliance and ensure consistent application of penalties.
- Furthermore even if the formal land is given due to unending human demand residents will sell it to wealthy businessmen and buy an informal land where it is cheap and get profit from the formal land. This needs a high follow up by the land administration.

This problem within informal settlement has a wide scope and many problems which invites other researchers for further study.

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Adama, Ethiopia

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APPENDIX

Appendix A

Questionnaire for informal settlements residents

ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY

SCHOOL OF CIVIL ENGINEERING AND ARCHITECTURE

DEPARTMENT OF ARCHITECTURE

Questionnaire to be filled by informal settlement dwellers in adama city

Dear respondent,

Thank you so much for agreeing to assist in this research survey. I value your honest input highly. The following set of questions, prepared by Adama Science and Technology University 2nd year Urban planning and design student, will help me get a better understanding of informal settlement, the challenges and Mitigation methods as part of my action research being conducted entitled “***Challenges and mitigation methods of informal urban settlements in Ethiopia: The case of Adama city***”. I assure you that your individual answers will be treated with the utmost confidentiality and the data collected will be used for educational purposes only. Thank you for your time and cooperation.

Section II. (Obj. 1) There are some questions listed below based on General information, informal settlements and its causes. Put tick mark (✓) in the box the most appropriate answer and write your opinion or experience if any on the provided space.

1. Gender: ☐ Male ☐ Female
2. Age: ☐ < 30 ☐ 30- 40
- ☐ 41-50 ☐ >50
3. Marital status: ☐ Unmarried ☐ Married

☐ Divorced ☐ Widowed ☐ Other _____

4. Education Level :

☐ No formal Education ☐ Elementary school ☐ High school

☐ Diploma ☐ Degree Other _____

5. Occupation:

☐ Employed ☐ Unemployed

☐ Self-Employed ☐ Other _____

6. Monthly income

☐ < 1000 ☐ 1000-3000

☐ 3001-5000 ☐ > 5000

7. Household family size:

8. Previous residence:

☐ Adama city ☐ Outside of Adama city

9. Current Residential landholding size in m² _____

10. How long have you been living in the informal settlement?

☐ Below 5 years

☐ 5- 10 years

☐ 11-15 years

☐ Above 15 years

11. From whom did you buy the land?

☐ from farmers

☐ from Informal land owners

Other _____

12. Why did you decide to buy a land here? Or what were the reasons for choosing to live here?

☐ It is cheap

☐ Lack of formal Housing options

☐ It is close to my work place

☐ For business purpose

Other _____

13. Is this your only house?

☐ Yes ☐ No

Section II. (Obj. 2) There are some questions listed below based on informal settlements and its challenges. Put tick mark (✓) in the box the most appropriate answer and write your opinion or experience if any on the provided space.

14. What challenges do you face living in an informal settlement?

☐ Lack of adequate infrastructure (Road, water, electricity)

☐ Lack of proximity to services (Education, healthcare)

☐ Inadequate housing conditions

☐ Limited economic opportunity

☐ Lack of security and safety

☐ Nothing

Other _____

15. What kind of notice you received from government officials recently, if any?

☐ Notice of Consultation or Dialogue

☐ Notice of relocation

☐ Notice of regularization

☐ Notice of Violations or Non-Compliance/ punishment

☐ Notice of Demolition

Other _____

16. What are the security concerns within informal settlements, if any?

☐ Crime and violence _____

☐ Lack of law enforcement

☐ Land Disputes/ Eviction

Other _____

Section III: Mitigation and Improvement

There are some questions listed below based on informal settlements. Put tick mark (✓) in the box the most appropriate answer and write your opinion or experience if any on the provided space.

17. What kind of formal housing options do you prefer if access to them is improved?

☐ Single Family house

☐ Apartments

☐ Condominiums

☐ Co-operative Houses

☐ Transitional Houses

☐ Any type

Other _____

18. Have you explored options for transitioning from informal settlements to formal housing?

☐ Yes ☐ No

19. If yes, please describe.

20. If No, why? please describe what barriers residents face in accessing formal housing options?

☐ Lack of Awareness

☐ Financial problems/ constraints

☐ Legal barriers

☐ Lack of Accountability of Government officials/ Lack of trust in Government

Other_____

21. What support would you like to see from the government or other organizations?

☐ Options for formal housing Acquiring

☐ Financial Support/ livelihood support

☐ Participatory planning

☐ Legal aid

Other_____

Section IV: Additional Comments

22. Is there anything else you would like to share about your experience living in the informal settlement?

Thank you for participating in this survey. Your feedback is valuable for my research.

Appendix B

Interview Questions for Government officials

1. Is there registered number of informal settlements? If yes Number of informal settlements in the kebele?
2. Who owned the lands before the settlements?
3. What do you think are the main factors contributing to the growth of informal settlements in the area?
4. What are challenges related to informal settlements?
5. What is the current approach or policy towards informal settlements in your jurisdiction?
6. What strategies are currently in place to reduce informal settlements? What is the plan for this area? Demolish neglect or regularize?
7. How do you compare the results of this method? (Number of settlements or other) Which method was better and why?
8. Does the higher government body know about this settlement?
9. What do you think are effective strategies to address informal settlements in urban areas?
10. How involved are residents of informal settlements in decision-making processes related to urban development?
11. Is there any trend pattern on settlements of mitigation methods in adama city? If yes what are those?
12. Advantage and disadvantages Demolishing? And which is better?
13. Does not it expose for other urban problem? For eg. Economic and environmental (loss of construction materials)
14. If yes what supports are being provided to these settlers who are included in a

Thank you for your Time !!