

**Tenure Security, Infrastructure and Livelihoods  
Nexus in Slum Upgrading in Eldoret Municipality,  
Kenya**

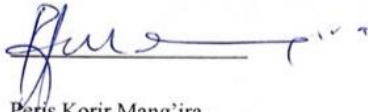
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A thesis submitted in fulfilment for the award of the Degree of Doctor of Philosophy in Urban and Regional Planning at the School of the Built Environment, University of Nairobi.

2021

## Declaration

**I declare that this thesis is my original research work and has not been presented for a degree in any other university for examination.**



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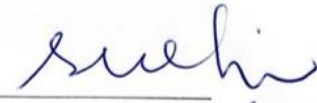
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## **Dedication**

I dedicate this thesis to my husband Murei Mang'ira and children Chepkemboi, Kipngetich, Cherono and Chepchumba and my late parents Mr and Mrs Kimibei Korir.

# Acknowledgement

This thesis journey has been challenging but fruitful, fulfilling experience and opportunity for which I thank God for. However, this outcome is as a result of many helpful hands and minds, to whom I owe a debt of sincere gratitude.

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## List of abbreviations

AFDB	African Development Bank
AURI	African Urban Research Initiative
AVSI	Association of Volunteers in International Service
CARE	Cooperative for Assistance and Relief Everywhere
CBOs	Community Based Organizations
CIDP	County Integrated Development Plan
CoG	Council of Governors
COHRE	Centre on Housing Rights and Evictions
CSOs	Civil Society Organizations
CURI	Centre for Urban Research and Innovations
DFID	Department for International Development
EIA	Environmental Impact Assessment
ELDOWAS	Eldoret Water and Sanitation Company
ESCAP	Economic and Social Commission for Asia and the Pacific
FBOs	Faith-Based Organizations
FGDs	Focus Group Discussions
GIS	Geographic Information Systems
GIZ	German Agency for International Cooperation
GLTN	Global Land Tool Network
GoK	Government of Kenya
KNBS	Kenya National Bureau of Statistics
ICLEI	Local Governments for Sustainability
IFAD	International Fund for Agricultural Development
HH	Household
KENSUP	Kenya National Slum Upgrading Programme
KIPPRA	Kenya Institute for Policy, Public Policy Research and Analysis
KISIP	Kenya Informal Settlement Improvement Project
MDGs	Millennium Development Goals
MLPP	Ministry of Lands and Physical Planning

MoTIHUD	Ministry of Transport, Infrastructure, Housing and Urban Development
NCPD	National Council for Population Development
NGOs	Non-Governmental Organizations
NUA	New Urban Agenda
MCA	Member of County Assembly
OXFAM	Oxford Famine Relief
PRIMED	Integrated Programme for Improvement of Slum Settlements
SDGs	Sustainable Development Goals
SEC	Settlement Executive Committee
SIDA	Swedish International Development Agency
T-I-L	Tenure-Infrastructure- Livelihoods
UN	United Nations
UNDP	United Nations Development Programme
WHO	World Health Organization
UNCCD	United Nations Convention to Combat Desertification
UNECE	United Nations Economic Commission for Europe
UN-Habitat	United Nations Human Settlements Programme
WB	World Bank
WEF	Water-Energy-Food
WSUP	Water and Sanitation for the Urban Poor

## Abstract

One billion people (32 percent) of the world's urban population live in deplorable living conditions in informal settlements, according to estimates by the United Nations. In Kenya, they estimate to be at 56 percent (and the figure is projected to grow). There is, therefore a pressing need for action. Slum upgrading is seen as the current best practice in addressing this challenge. However, upgrading has its challenges. This study sought to investigate this strategy in Kenya to make recommendations on how its policies and programs can be better designed and implemented for maximum impact and sustainability. Studies have shown that upgrading has improved living conditions and quality of life in informal settlements. However, it has sometimes failed to achieve the intended purpose. Part of the challenge lies in the compartmentalization of upgrading interventions along sectoral lines which make it less impactful. There is a need for linked up approaches where synergies can be leveraged and trade-offs minimized to enhance the impact and sustainability of upgrading efforts. However cross-sectoral linkages in the interventions have received limited attention. This study contributes to this knowledge gap by investigating the nexus of slum upgrading interventions, specifically, interventions of tenure security, infrastructure, and livelihoods as well as their institutional dynamics. The inadequacy of these elements underpins poverty and deprivation, thus the proliferation of informal settlements in the urban space. Although there is growing literature on various aspects of these; there is limited research on their interconnections. Understanding these links and their institutional dynamics are critical for policy and implementation of upgrading programs. This study's conceptual framework builds on existing theories on tenure, infrastructure and livelihoods to conceptualize a multi-sectoral linked up approach to upgrading comprising these three essential elements. The study was undertaken in Eldoret town located in western Kenya within East Africa. A multi-case study design comprising Huruma, Munyaka, and Kamkunji settlements and a mixed-method approach of both qualitative (interpretivist) and quantitative (positivist) techniques were used for data collection, analysis and hypothesis testing. Findings showed a limiting sectoral approach, neglect of livelihoods but a linkage in tenure security, infrastructure, and livelihoods improvements in informal settlements upgrading. The study thus recommends a multisector integrated approach that incorporates both physical and human aspects in upgrading through a collaborative institutional framework. For upgrading practice, it recommends a Tenure-Infrastructure-Livelihoods (T-I-L) nexus model to upgrading. An approach that is multisectoral, integrated, synergistic, and addresses both physical and human deprivations of the urban poor, and is deemed to bring greater impact and sustainability of upgrading efforts. The policy implications being the need to significantly transform existing policy and legal frameworks and upgrading strategies to embrace the T-I-L nexus approach for synergy, wholeness, and optimum use of scarce resources. Globally, this contributes to the SDGs especially the global goal of making cities and human settlements inclusive, safe, resilient, and sustainable by 2030 and nationally, it contributes to the aspirations of Kenya's Vision 2030 and current development agenda four, especially on affordable housing.

**Keywords:** *Tenure Security, Infrastructure, Livelihoods, Slum Upgrading, Linkages.*



# Chapter one: Introduction: The setting and The Dynamics

## 1.1. Background

### 1.1.1. The issue, the person and context

*The researcher has a confession to make. Researcher's academic pursuits and professional work engagement have a thin dividing line. The idea of undertaking this PhD study was borne out of the professional undertaking and experiences as an urban planner dealing with slum upgrading initiatives in Kenya. With a background in planning, the investigator was intrigued by how the ideals of planning of order, economy, efficiency, aesthetics accompanied by standards and regulations could be realised in informal settlements and much more how these settlements could be upgraded in a manner that is impactful not just to the neighbourhood but also to the inhabitants of the settlements. Researcher's work experiences in several urban areas in Kenya exposed her to the different approaches and interventions in informal settlements by different agencies including State and Non- State players which for a long time seemed not to converge to comprehensively address the challenge. Could there be another way?*

*Upgrading approaches across Kenya have seen communities benefit from improved infrastructure, sometimes tenure security or shelter and even livelihoods but not all at the same time. This was the genesis of this study. Was it not possible to achieve more with the same resources or better still improve on upgrading approaches?*

### 1.1.2. The setting

This study asks this question; why is it that at the backdrop of a rapidly urbanizing country with a growth rate of 4.3 percent (World Bank, 2016, UN-Habitat, 2014, AfDB, 2013) the country is struggling to address the challenges of slum growth in its urban spaces? Although urbanization and slums are not all doom and gloom, since studies show that the former brings about economic and social transformation (United Nations, 2019, Saghir and Santoro, 2018, World Bank, 2016) while the latter provide cheap housing and informal employment, the benefits do not reach all

urban citizens (Collier, 2017, Jaitman and Brakarz, 2013, Basset, 2002). Those left out are forced to survive in settlements with subhuman conditions devoid of the comforts enjoyed by the well to do urbanites on the other side of the divide. Although these habitations vary in location, legitimacy, structure, zoning and informal construction (Jones, 2017, UN, 2003) and even its forms and severity (Soyinka and Siu, 2016) they are a representation of deficiency, disparity and poverty in urban areas (UN Habitat 2016). This challenge is compounded by a growing number, approximated at “1 billion people or 32 per cent of the world’s urban population” (UN-Habitat, 2019) across the world that lives in these areas. In Sub-Saharan Africa, the proportion was projected at 61.7 per cent and in Kenya, 54.7 per cent in 2009 (AfDB, 2013, UN, 2010/2011, GoK, 2009) and was estimated at 56% in 2014 (UN-Habitat, 2016)

The increasing realization that urgent solutions were needed led Nations to set global goals, initially, the Millennium Development Goals (MDGs) that were aimed at improving the lives of at least 100 million slum dwellers by 2020 (UN, 2015) and the successor, the Sustainable Development Goals (SDGs), targeted at, among others, upgrading slums in order “to make cities and human settlements inclusive, safe, resilient and sustainable” through integrated approaches (UN, 2018). The New Urban Agenda (NUA) goes further to emphasise upgrading of slums and informal settlements through infrastructure, spatial planning, the security of tenure and by embracing and applying integrated, policies and strategies that incorporate the social, economic, cultural and political dimensions (UN, 2017). Achievements have been registered by some countries that have reduced informal settlement growth rates, magnitudes and populations. Asia improved the lives of those in slums by 74 per cent. However, Sub-Saharan Africa registered only 5 per cent improvement (UN, 2010/2011). Why is this so?

In Kenya, for instance; slum upgrading has been embraced as evidenced by policy and legal frameworks and upgrading programs and projects that have made an impact. These frameworks make provisions for the upgrading and prevention of informal settlements through various strategies key among them, the provision of security of tenure, infrastructure and shelter improvements in informal settlements. These have been implemented through both government and non-governmental programs across the country which have positively improved living conditions in the settlements such as reduced flooding, increased accessibility, improved sanitation, transport and safety as well as securing tenure of the dwellers (Mitra, et al., 2017,

Syagga, 2011, Muraguri, 2011). However, challenges abound that constrain the impact and sustainability of upgrading in Kenya. This study sought, therefore, to explore this. Specifically, the study sought to investigate upgrading as a strategy of addressing the growing challenge of informal settlements in the urban space, especially in the global south. The area of focus was on the interlinkages of interventions, specifically of tenure security, infrastructure and livelihoods improvements, which have received limited attention in research yet they are critical for impactful and sustainable upgrading. The study investigated this, hypothesizing that these are interlinked, conceptually arguing that since these are intricately linked, there is need to shift from the current dominant solitary sector approach to multisector integrated approaches for the realization of the global goal of “cities and human settlements which are inclusive, safe, resilient and sustainable by 2030” and nationally the Kenya Vision 2030 and the current development agenda four specifically universal health and affordable housing.

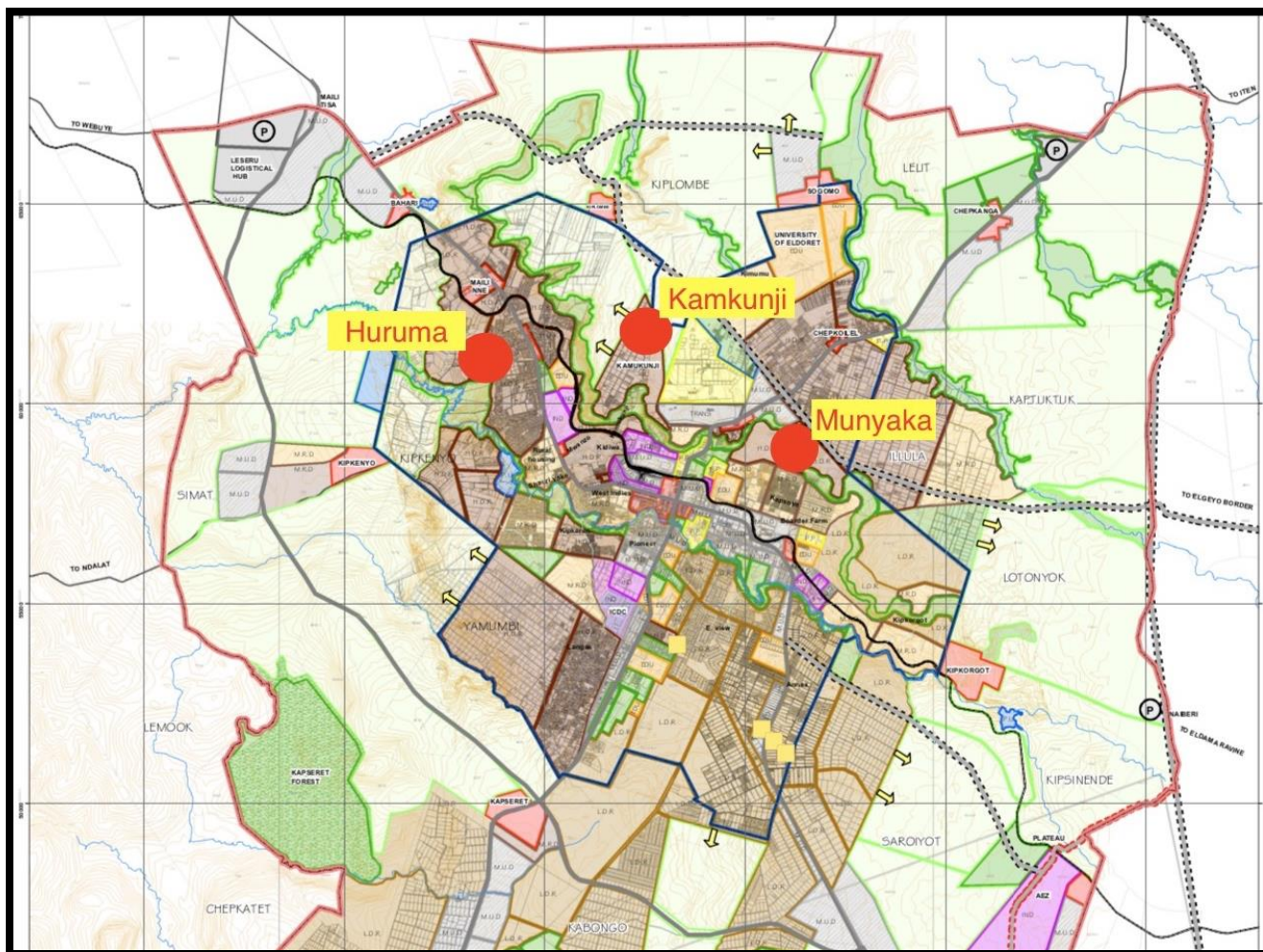
The study was undertaken in Eldoret, Kenya’s fifth largest town characterised by high urban growth rate and increasing informality in its urban areas. Kenya is located in East Africa and straddles the equator bordering South Sudan to the northwest, Ethiopia in the northern part, Somalia in the northeast, Uganda to the west, Tanzania to the south and the Indian Ocean on the eastern side as shown in map 1.1. The map also shows Eldoret town is located in the western part of the country.

Historically, Eldoret traces back to the colonial settlers who settled on this site with services such as security, transport, administrative offices and communication being established in 1908. It became a township in 1912, assumed full municipality in 1958 and its boundary underwent extensions to 59 km<sup>2</sup> from 25km<sup>2</sup> in 1974 and to 147.9 km<sup>2</sup> in 1988 bringing agricultural land and ‘rural’ populations under the jurisdiction of the municipality (Simiyu, 2012). Since then Eldoret has become a fast-growing cosmopolitan secondary city (Badoux, 2018) experiencing a high urban population with an annual growth rate estimated at 3.9 percent (World Bank, 2014) higher than the country’s average. This has contributed to sprawling and growth of informal settlements among them Langas, Munyaka, Kamukunji, Huruma Maili Nne, Hill School, Hill School, Race Course, Kimumu / Hawaii and Kimumu / Kambi Nairobi. (County Integrated Development Plan (CIDP) 2018-2022). In-situ upgrading had been undertaken in some of the areas in an attempt to address this challenge.



*Map: 1.1: Map of Kenya showing location of Eldoret Town*      *Source: Google maps*

The study purposely selected three of these informal settlements as case studies, namely Huruma, Munyaka and Kamkunji because they had benefitted from upgrading and thus presented an opportunity to meet research objectives. The location of these settlements in Eldoret is shown in map 1.2. As shown in the map, these areas are densely populated and residential.



Map: 2.2: Map of Eldoret showing the location of Huruma, Munyaka and Kamkunji case study settlements

Source: Ministry of Lands and Physical Planning

Data collection in these case study areas was undertaken in 2016, using a household survey on randomly sampled households, focus group discussions, key informant interviews and observation. The data collected was analysed using both qualitative and quantitative techniques which were used to validate the hypothesis and to conclude that: there is a nexus in tenure security, infrastructure and livelihoods improvement, the emphasis has been on the hard infrastructure and tenure security with a general neglect of the livelihoods when provided, they are deployed independently buoyed by sectoral institutions and yet, in fact, they are interdependent. The study thus calls for a paradigm shift – from single to multi-sector and integrated approaches for more impact and sustainability. Equally, institutions own agendas and siloed approaches limit the outcomes of upgrading. This study argues for linked up and

collaborative institutional frameworks and incorporation of human in the physical upgrades for poverty alleviation and sustainability of slum upgrading. The next section describes the existing approaches and dynamics in upgrading which the study recommends a deviation.

### **1.1.3. The Upgrading dynamics**

The slum upgrading approaches have metamorphosed over time. From previous strategies of eviction, clearance, bulldozing, demolition and resettlements that failed to upgrade that is currently seen as the best practice (Kamiya and Zhang, 2017, Marais 2017, UN, 2016, World Bank, 2016, Macharia 1992). Upgrading involves interventions aimed at improving slums or informal settlements socially, economically and environmentally. The interventions include tenure security, infrastructure provision, housing, livelihoods that are often implemented through single-sector approaches with limited reference to linkages amongst them. Interventions are also varied and sector-specific (Gulyani and Talukdar 2008, Bassett 2007, Arimah 2004) but their availability to the urban poor depends largely on how governance and institutions function (Devas, 2004). Various institutions that include Government, National and Local, Non-Governmental Organizations, Civil Society, Communities and International agencies play a role in upgrading (Mbathi, 2011, Payne et al., 2007, UN, 2003) albeit working independently, pursuing own goals and interests in limited partnerships thus limiting levels of success and impact to the beneficiaries.

This chapter gives the contextual background to this study which includes the research problem, purpose, research questions, research objectives, hypothesis and justifications including the significance of the study, assumptions, scope of the research, key terms and their definitions, the outcome and the outline of the study.

## **1.2. Problem Statement**

One billion people or 32 per cent of the world's urban population", according to the UN-Habitat (2019), live in deplorable living conditions in informal settlements and this is projected to rise to about 2 billion in the next 30 years. In Sub-Saharan Africa and Kenya, the proportion of the urban population living in informal settlements is projected at 61.7 per cent and 54.7 per cent

respectively (AfDB, 2013, UN, 2010/2011, GoK, 2009). The continued proliferation of informal settlements exacerbates poverty, environmental degradation, social and economic deprivation that exposes dwellers to poor lives and living conditions that include intolerable housing conditions, tenure insecurity, overcrowding, lack of basic services, hazards, unemployment, disease and high incidence of violence and crime (Rikko et al., 2019, UN Habitat, 2010/2011). Slums thus present a massive challenge to countries and their governments, especially in Sub-Saharan Africa where the problem is acute (Sticzay and Koch, 2015, AfDB, 2013). There is, therefore, a pressing need for action.

UN Habitat, (2017) pointed out that among the strategies for addressing this challenge, and one that has been touted as “the current best practice is participatory slum upgrading”. The significance of slum upgrading is exemplified in the current international development agenda, the Sustainable Development Goals (SDGs) that have put it as part of the strategies of meeting Goal 11, on “making cities and human settlements inclusive, safe, resilient, and sustainable”.

However, slum upgrading, although it has made a positive impact in some countries (Payne and Durand, 2013, Cronin, 2011, Gulyani, 2008), it has made little impact in Sub-Saharan Africa, Kenya included (Ngau, 2013, Syagga, 2011, UN 2010, Gulyani, 2008). This begs the question, how can slum upgrading work better for the poor? Baker, (2008) pointed out that slum upgrading is one of the major areas requiring substantial analysis to help determine how its policies and programs can be better devised to increase impact and cost-effectiveness. This study seeks to contribute to this knowledge gap, by examining slum upgrading approaches and interventions to make proposals for the betterment of designs and implementation.

Studies have shown that past efforts have pursued slum upgrading interventions too narrowly along conventional sectoral lines to an extent that most projects are compartmentalized with weak coordination and convergence (Lall and Lall, 2007). In Kenya for example assessments and empirical research have shown that slum upgrading interventions are stand-alone, pilot, sectoral, single and small-scale projects which are not always “scalable or sustainable” and therefore limited in impact (CURI, 2012, Syagga, 2011, Syagga, Mitullah and Gitau, 2002). Due to this, the impact and sustainability of informal settlement upgrading projects are commonly jeopardized (Cities Alliance, 2008) and yet Imperato and Ruster, (2003) argue that slum

upgrading is “not a collection of sectoral actions to be performed independently of each other”. However, to date, the interrelations and effects of sectors upon each other have not been meaningfully integrated (Thieme, 2015) neither have the inter-linkages been fully examined.

Most studies have looked at them individually and sectorally to comprehend and measure the impact rather than study the inter-linkages in detail (Imparato and Ruster, 2003). In upgrading, however, understanding inter-linkages is critical and is useful for identifying processes and activities that can build on or work against each other in slum upgrading. Unpacking the interplays and dynamics is critical in achieving coordinated approaches, building synergies across sectors, facilitating more cost-effective planning, decision-making, integration, implementation, monitoring and evaluation (FAO, 2014) for greater impact. Though there is an emerging focus on integrated, cross-sectoral approaches to slum upgrading (Cities Alliance, 2008, UN-Habitat, 2003, World Bank, 2006), crucial cross-sectoral linkages and synergies in the interventions have received limited investigation. This study sought to contribute to this by investigating the nexus of interventions with particular reference to tenure security, infrastructure and livelihoods.

The absence of tenure security, infrastructure, and fragile livelihoods underpins deprivation and are major sources of conflict, poverty, and proliferation of informal settlements in the urban space (Satterthwaite 2012, Schutte, 2004). According to UN Habitat (2007), “most of the 1 billion people currently living in slums have no security of tenure, while at least 2 million are forcibly evicted every year”. On the other hand, 663 million people and 2.4 billion people across the world still lack clean drinking water and access to proper sanitation, respectively (AURI, 2015, Resnick 2014, UN-Habitat 2010) leading to the spread of communicable diseases, respiratory infections, and waterborne and diseases (UN Habitat, 2016, Adebayo 2014, Akhmat and Khan, 2011). Similarly, livelihoods in slum areas remain precarious. Beyond the deprivation of infrastructure facilities that support acceptable living conditions, the ramifications of poverty have negatively impacted other spheres of life. The high cost of food, housing, health, education, and water in slum areas, in addition to low incomes and unemployment, negatively affect the ability of the urban poor to move out of poverty. On education, for example, according to the UN, (2010/2011) “studies indicate that a majority of parents settling in slums postpone sending



their children, especially girls, to school, until they can manage other expenses, such as food, rent, and transport.”

To alleviate these, countries have upgraded tenure security, infrastructure and livelihoods. A rising body of investigative research done in recent years by academia and other international institutions have surveyed and recognized the significance of each of these interventions in mitigating against these challenges (Payne and Durand-Lasserve, 2013, Luis, 2010, Kyessi, 2010, Nyametso, 2010, Moser 2008, Basset and Gulyani, 2007, De Soto, 1989, Turner, 1968). However, studies have also shown that though essential, these interventions cannot address the plight of the poor, individually on their own (CURI, 2012, Syagga 2011, Payne and Durand-Lasserve, 2007, Huchzermeyer and Karam, 2006). Could there be a linkage?

This research sought to respond to this question by investigating the inter-linkages of tenure security, infrastructure, and livelihoods improvement and provide a conceptual framework that captures these three elements, concurrently, in slum upgrading. The basis for this argument is the need to challenge the current dominant single intervention approach to underscore the need to embrace a nexus approach to slum upgrading. A nexus approach is most useful to reposition and contextualize the tight linkages between these three critical spheres of provisioning in informal settlements. It has been argued that the world is interlinked thus rendering isolated solutions aimed at just one sector, to nought. To formulate appropriate poverty reduction policies for informal settlements, therefore, we must comprehend the links between tenure security, infrastructure and livelihoods. There is, however, limited knowledge on the interplay of these interventions. This research sought to contribute to this knowledge gap by investigating this interplay including the institutional dynamics thereof and advocating tenure–infrastructure–livelihood strategy in dealing with the multi-faceted challenges of informal settlements while advocating this nexus approach as a holistic framework for upgrading.

In Kenya, past and current upgrading approaches are mainly single sector-oriented (CURI, 2012, Syagga, 2011, Syagga, Mitullah and Gitau, 2002). Though the country is currently implementing integrated approaches under the Kenya Slum Upgrading Programme (KENSUP), and the Kenya Informal Settlement Improvement Project (KISIP), sufficient impact has not been realised. Further, the interlinkages of tenure, infrastructure and livelihoods have not been adequately

studied. Consequently, they are not able to fully utilise the interaction and synergies between tenure security, infrastructure, and livelihoods and the potential co-benefits arising from an integrated approach.

### **1.3. Purpose**

The purpose of this research was to determine the interplay of tenure security, infrastructure and livelihoods interventions in slum upgrading in Kenya as well as the institutional dynamics that shape, influence, control and determine their nexus.

### **1.4. Questions**

The study sought to answer the following research questions:

- 1) What is the type, nature and approaches of existing tenure systems, infrastructure provision and livelihoods in informal settlements in Eldoret?
- 2) How do tenure security, infrastructure and livelihoods interact in the process of slum upgrading in Eldoret?
- 3) What are the institutional dynamics of tenure, infrastructure provision and livelihoods in informal settlements in Eldoret Town?
- 4) What measures are required for effective integration of tenure security, infrastructure and livelihoods in slum upgrading?

### **1.5. Objectives**

The study objectives were as follows;

- 1) To determine the type, nature and approaches of existing tenure systems, infrastructure provision and livelihoods in informal settlements in Eldoret.
- 2) To determine the interplay of tenure security, infrastructure and livelihoods in the process of slum upgrading in Eldoret.
- 3) To determine institutional dynamics of tenure, infrastructure and livelihoods in informal settlements in Eldoret Town.
- 4) To recommend measures required for the effective integration of tenure security, infrastructure and livelihoods in slum upgrading.

## **1.6. Hypothesis**

This study hypothesis was:

- Null hypothesis: There are no inter-linkages in tenure security, infrastructure, and livelihoods in slum upgrading processes.
- Alternative hypothesis: There are inter-linkages in tenure security, infrastructure, and livelihoods in slum upgrading processes.

## **1.7. Justification**

This study was justified on several grounds. First, countries and Governments, particularly, low-income countries have put in strategies to better the lives and conditions of those who inhabit slum areas (Turley et al., 2013, UN-Habitat 2003), but while the 2010 Millennium Development Goals (MDGs) progress report showed that these efforts were significant, they did not match up the pace of the growing numbers of the urban poor (UN, 2015). The Sustainable Development Goals (SDGs), the forerunner of MDGs have focused on addressing this slum challenge further. Under goal 11, on “making cities and human settlements inclusive, safe, resilient and sustainable”, the SDGs included a target “to upgrade slums” through ensuring “access for all to adequate, safe and affordable housing and basic services by 2030” (UN, 2019, 2015). Similarly under goal 1 on “ending poverty in all its forms everywhere”, one of the targets is “to ensure that all the vulnerable, have equal rights to economic resources, basic services, and ownership of land and property (UN, 2015). This demonstrates that addressing the challenge of slums is a high priority in global development agenda and more importantly upgrading as a means of addressing this challenge.

Given this international prominence to upgrading as a strategy, it is critical to undertake substantial investigation and analysis to determine how its policies, programs, and interventions can be better devised and implemented to maximise impact and cost-efficiency. This study sought to contribute to this by investigating the type, nature, approaches and interplay of slum

upgrading interventions, specifically tenure security, infrastructure provision and livelihoods improvement.

Secondly, there is an emphasis currently on linked up approaches to policy and practice, those that transcend individual sectors. This study has thus embraced nexus thinking. The SDGs have emphasised the need, not only to “integrate economic, social, and environmental aspects” but also recognise their inter-linkages “in achieving sustainable development in all its dimensions”. Scollon and Scollon, (2004) argue that nothing happens in a vacuum and thus need for nexus analyses for exploration of linkages to anticipate outcomes. Weitz, (2014) on the other hand argues that the nexus approach has been used throughout the world to understand cross-sectoral interactions for planning, decision-making and resource allocation. Empirically, Turok, (2016), using urban land- infrastructure-finance nexus analysis argued for “the linking of processes and policies to create conducive environments for growth and development”.

This study sought to add to this knowledge by investigating the interrelationships and nexus of tenure security, infrastructure, and livelihoods in upgrading. Evidence on the inter-linkages of these interventions and therefore effectiveness in reducing or eliminating the detrimental effects of informal settlements has, to date, not been fully investigated. While several studies have been undertaken, most of them have been geared towards evaluating the impacts of single interventions (Lall and Lall, 2007, Imperato and Ruster, 2003). This study will deviate from this to explore the interlinkages of critical elements of tenure security, infrastructure, and livelihoods in slum upgrading to determine their nexus and how they bolster or challenge upgrading processes, outcomes, and impact on the urban poor.

Thirdly, tenure, infrastructure, and livelihoods are key elements in slum upgrading. There is abundant knowledge regarding their significance but there is limited knowledge on their inter-linkages and how these inter-linkages affect the process of upgrading informal settlements and in particular the residents. This study contributes to this knowledge gap by investigating the tenure-infrastructure-livelihoods nexus to determine how they impact lives and livelihoods in slum upgrading. The argument advanced in this study is that efficacious execution of slum upgrading, in reality, is a function of the interplay of these three core elements. Unpacking their correlation is, therefore, critical in determining the factors that constrain and or enhance slum upgrading as a

strategy of alleviating poverty, curbing the proliferation of informal settlements, gaining economic growth, and sustainable urbanisation (Arima, 2010, UN, 2018). The recommendations of this study will thus inform the policy and practice of slum upgrading.

Fourthly, enormous resources are expended in upgrading projects. The interventions being implemented must be grounded on sound knowledge from empirical studies and data. Noting that upgrading strategies should be based on accessible evidence to ensure that limited resources are effectively and efficiently invested, this study will serve to provide documented evidence of the type, nature, approaches, nexus and institutional dynamics of tenure, infrastructure, and livelihoods in slum upgrading with recommendations for improvement. The study, therefore, will serve as an important contribution to knowledge that can guide policy and practice of upgrading and sectoral reforms.

Fifthly, this study will contribute to the policy and practice of slum upgrading. In Kenya for example, tenure, infrastructure, and livelihoods improvements are delivered sectorally through isolated programs by independent agencies to address specific problems with limited integration limiting upgrading impact and sustainability. In keeping with a growing need for integration, this study draws up a tenure-infrastructure–livelihoods framework as a move towards generating more integration, coherence and complementarity in policy and programs that can yield greater impact and sustainability of slum upgrading efforts while contributing to making cities slum-free.

## **1.8. Significance of the Study**

The findings of this study contribute to knowledge on tenure-infrastructure-livelihoods nexus in slum upgrading, an area that currently is not fully appreciated. It also advances the debate about the role of tenure, infrastructure and livelihoods in slum upgrading as possible answers to the dual challenge of improving living conditions in informal settlements and improving livelihoods of inhabitants. The findings on the role of institutions in this tenure-infrastructure-livelihood nexus inform policy and institutional frameworks for slum upgrading.

## 1.9. Assumptions

The study assumed that tenure-infrastructure-livelihoods elements can be integrated and implemented simultaneously or in sequence to achieve greater impact for the beneficiary communities and in slum upgrading efforts.

## 1.10. Scope

Geographically, the study was conducted in Eldoret town, the fifth largest town located in the western part of Kenya as described in 1.1.2 and figure 1.1. The study was limited to three case study settlements namely Huruma Munyaka and Kamkunji and the sample populations were therefore drawn from these three informal settlements. Regarding interventions in the upgrading of informal settlements, the study was restricted to the interventions of tenure security, infrastructure and livelihoods as defined in section 1.11. Institutional dynamics were also limited to relevant institutions dealing with these interventions including Government, NGOs, CBOs and community organizations.

## 1.11. Definition of Terms

For purposes of this study, the following terms have been used to mean:

**Tenure Security**- “An agreement between individuals or groups, with respect to land and residential property, that is governed and regulated by a legal and administrative framework” (UN-Habitat, 2004)

**Infrastructure** – Physical services for the proper functioning of the economy. These will be limited to roads, walkways, stormwater drains, lighting, water and sanitation.

**Livelihoods** –“A livelihood comprises the capabilities, assets (including both material and social resources), and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks.” (Chambers and Conway, 1991). For purposes of this study, livelihoods will be limited to capabilities (skills, education, health), assets, (housing unit, land, property) and livelihood activities (employment and incomes).

***Institutions-*** Broadly defined, they include governments and non-governmental organisations, policies and laws.

***Nexus*** - The “term ‘nexus’ refers to inter-linkages and connections which highlights relationships, interdependencies, and the need for integrated management across sectors” (Stringer, 2014).

***Slum /Informal Settlement-*** Slum area is a human settlement characterised by “inadequate access to safe water; inadequate access to sanitation and other infrastructure; poor structural quality of housing; overcrowding and insecure residential status” (UN-Habitat, 2003). For purposes of this study, informal settlements and slums are synonymous and are used interchangeably.

***Slum Upgrading-*** At its most basic level, “urban slum upgrading” involves improving the physical environment of slums. This includes improving and/or installing basic infrastructure like water, sanitation, waste collection, access roads and footpaths, storm drainage, lighting, public telephones, etc. Upgrading also deals with regularizing security of land tenure and housing improvements, as well as improving access to social support programs (e.g., health, education) and municipal services (e.g., water, sanitation, waste collection, storm drainage, street lighting, paved footpaths, roads for emergency access)” (World Bank, 2015)

***Silo approach-*** Silo is a metaphor used to illustrate pockets of interaction and knowledge in organizations and it means the presence of barriers to communication and exchange (Bento, et al 2020). In this study, the silo approach is used to mean single and sectoral approaches that lack integration in planning and implementation

***Pigeon hole approach.*** It is used in this study to refer to segregated or compartmentalized approaches

***Sectoral approach:*** It is used in this study to mean; individual based interventions that are undertaken by specific institutions or agencies to address single issues to improve informal settlements. According to (Syagga, 2001) they are initiated, planned and implemented by particular portfolio institutions or agencies.

***Integrated approach:*** It is used in this study to mean; simultaneous deployment and implementation of different upgrading interventions to address several challenges to

comprehensively improve the living conditions and lives in informal settlements. According to Syagga, (2001), solutions to issues are to be implemented simultaneously as an integrated set of activities.

## **1.12. The outcome of the study**

The result of the study includes information on the type, nature and approaches of tenure security, infrastructure, and livelihoods improvements in informal settlements in Eldoret and more critically how these interventions interlink in slum upgrading and the role of institutions in these processes. It provides recommendations to facilitate effective upgrading and thereby improvement of lives and conditions in informal settlements.

## **1.13. Outline of the study**

The thesis is composed of eight chapters. Chapter one contains a background which comprises the introduction to the person, the setting, the dynamics, the research problem, purpose, questions, objectives, justification, significance, assumptions, scope, the outcome of the study and its definition of terms. Chapter two contains the reviewed literature relevant to the topic, both theoretical and empirical as well as the philosophical position and conceptual framework of the study. Chapter three gives the research methodology which includes the study design, study area, data sampling, collection, analysis and interpretation as well as study limitations. Chapter four addresses the first objective and therefore discusses the state of existing tenure security, infrastructure and livelihoods which includes the type, nature, and approaches including the benefits, challenges and the defining elements. Chapter five addresses the second research objective on the interplay of tenure, infrastructure and livelihoods and therefore the tenure-infrastructure-livelihoods nexus, validation of the hypothesis and the defining elements of the nexus. Chapter six, on the other hand, is on the third objective which covers the institutional dynamics and addresses the actors, policies and legal frameworks as well as institutional factors that influence tenure, infrastructure and livelihoods. Chapter seven gives the synthesis while chapter eight provides the summary, recommendations and conclusions.



## **1.14. Summary**

This chapter has provided the context of the study including the background of the researcher and slum upgrading the latter being seen as the current best practice in addressing the global slum challenge. Slum upgrading, however, is not without challenges and captured in the chapter as the research problem whose focus is on compartmentalization of upgrading interventions along sectoral lines and a bias towards physical more than the human factors in upgrading which make it less impactful. The chapter gives the objectives and research questions that centre on investigating the interplay or linkages in tenure, infrastructure and livelihoods improvements together with related institutional dynamics with an alternative hypothesis that these are interlinked while the null is that they are not. The chapter further provides the justification for the study, assumptions and the scope which is limited to three case study informal settlements in Eldoret, the fifth largest town in Kenya located in East Africa.

The next chapter delves into the existing literature which includes both theoretical conceptions and empirical studies on slum upgrading, tenure, infrastructure and livelihoods including linkages that may have been identified to identify the gaps in the literature which the study will contribute to. The chapter also gives the conceptual framework and the philosophical foundation of the study.

# **Chapter Two: Literature review and conceptual framework**

## **2.1 Introduction**

This chapter reviews both empirical and theoretical literature on the challenge of informal settlements and the strategy of slum upgrading in addressing this challenge, especially through tenure security, infrastructure and livelihoods improvement, an overview that was provided in chapter one. Theoretical literature examines conceptions, approaches, debates and linkages of these three slums upgrading interventions including their institutional aspects. Empirical literature examines studies that have been carried on these three elements and their linkages. These are preceded by a synopsis of urbanization and the growth of slums globally and in Kenya and the chapter concludes with the study's conceptual framework and the gap in knowledge that this study sought to contribute to.

## **2.2 Urbanisation and Growth of Slums**

The world is fast urbanizing. Today the urban population is estimated at 56.2 percent (UN-Habitat, 2020). Between 1950 and 2018, it grew from an estimated 0.8 billion to an estimated 4.2 billion rising from 30 per cent in 1950 to 55 per cent in 2018 and is projected to be 68.4 percent rising to 6.7 billion by 2050 (United Nations 2019). Most of this urbanisation is however envisaged to occur in the developing world, the largest growth being in Asia and Africa (World Bank, 2016, CURI, 2012, UN, 2010/2011, Cohen, 2006). Though in Africa the percentage is lower, at 42.5 percent in 2018 and projected to be 58.9 percent in 2050, its share increased from 4 per cent in 1950 to 13 per cent in 2018 (UN, 2019, WHO, 2005). Kenya for instance though the percentage population in urban areas is around 27 per cent, it is urbanising rapidly at about 4.3 per cent a year (World Bank, 2016).

Urbanization has been recognized as a positive force of economic and social transformation. However, it has brought unprecedented challenges which include the growth of slums that have exacerbated poverty, increased environmental degradation, inequalities, marginalisation and various forms of exclusion. This has contributed to slum growth in African cities (Arimah, 2004). The UN, (2003) estimated that 924 million people, or 31.6 per cent of the world's urban

population, lived in slums, the majority of them were in the developing regions, accounting for 43 per cent of the urban population, in contrast to 6 per cent in more developed regions” (UN, 2003) with a projection that the global number of slum dwellers will increase to about 2 billion in the next 30 years. With the slum and urbanization growth rates being almost identical, according to UN-Habitat (2006/2007), it has been argued that they are synonymous particularly in sub-Saharan Africa, Western Asia and Southern Asia. This has been supported by statistics that have shown that an increase of one percent in urban population growth leads to an increase of 1.84 percent in the slums prevalence. ( Arimah, 2004).

However, it has been pointed out that slums growth are not unavoidable outcomes of rapid urbanization (UN-Habitat, 2008). Beyond urbanization, slum development has also been attributed to the natural increase of the population in urban areas together with populations in rural areas migrating to cities (Jaitman and Brakarz, 2013, Baker, 2008, WHO, 2005) and expansion of urban centres (GLTN, 2008). However, it is argued that “slums and urban poverty are not just a result of population explosion but also an outcome of failed policies, corruption, bad governance, inappropriate regulation, dysfunctional land markets, unresponsive financial systems, poor planning and a fundamental lack of political will” (Tombari, 2019, Greene, 2010, UN-Habitat 2009).

However, strategies exist that have brought meaningful improvement in living conditions in slum areas and even in the prevention of new ones (UN-Habitat 2009). So far, improvements have facilitated an approximate number of 200 million additional urban inhabitants have accessed clean water, acceptable sanitation, and better housing (Jaitman and Brakarz, 2013, UN, 2011). As a result, there was a decrease of the urban population in slums in the developing countries from 46.2 percent in 1990, 39.4 per cent in 2000, to 32.6 per cent in 2010 and to 29.7 per cent in 2014 (UN Habitat, 2010). However, estimates show that there was an increase in the number of slum dwellers in the developing world from 689 million in 1990, to 791 million in 2000, to over 880 million in 2014 (UN Habitat, 2016, 2010, Revi and Rosenzweig, 2013). This calls for strategies to address this challenge. Currently, it is commonly recognized that slum upgrading is the best strategy (UN, 2003, World Bank, 2005) and is the focus of this study with a focus on tenure, infrastructure and livelihoods improvements.

## 2.3 Slum upgrading approaches

Slum upgrading approaches have developed over time. Studies have shown that they are varied in scope and focus. Previous strategies included ignoring informal areas by not granting them services, eviction of slum dwellers from informal settlements to pave way for projects, clearance or, bulldozing or demolition of these settlements since they were seen as threats and a ‘blot’ on the urban landscape, often harbouring dissidents or to pave way for other desired urban developments as well as resettlement of dwellers to other areas but these failed to effectively tackle the slum problem (Muchadenyika, 2015, Ngau, 2013, Patel, 2013, Marx, 2013, Usavagovitwong, 2012, Syagga, 2011, Mbathi, 2011, Ananya, 2005, Macharia 1992). This phase was followed by government state-built often high-rise housing, planned, designed, and financed by national housing corporations (Syagga, 2011, Basset 2002) as an attempt to meet the housing demand. These housing initiatives soon proved inadequate, costly and due to political interference in allocation, resulted in housing units developed for lower-income individuals ending up in the hands of upper-income elites (Basset, 2002, Cohen, 2001, Okpala, 1986). Sites and service schemes and in-situ upgrading were therefore introduced (Marais 2017, Patel, 2013, Ngau, 2012, Syagga, 2011, Greene, 2010). Households themselves were to be responsible for constructing their houses and loans were provided by the state or the World Bank only for infrastructure (Marais, 2017). Governments withdrew from directly producing housing units and instead focused on enabling settlement improvement by ensuring the availability of the basic inputs (UN Habitat, 2006/2007).

In the 1980s and going until today, the strategy is slum upgrading (Mangira, et al., 2020, 2019, Saad, et al, 2019, El-hadj et al. 2018, UN-Habitat, 2010, Green 2010). Upgrading was seen as a welcome change from previous eradication policies (Marx, 2013, Patel, 2013, Ananya 2005) since it was much cheaper than relocating persons, provided services on site (Muchadenyika, 2015, Ananya, 2005) and inhabitants do not have to move out from the place where they have lived for a long time (Purwanto, 2017). For residents, this avoids the disruptions to livelihoods and social networks that relocation usually entails – and avoids relocations that are often to sites that are far from income-earning opportunities (Boonyabanha, 2005). For the government, upgrading avoids the need to find a new land site (Patel, 2013).

Since the early 80s the concepts, working methodologies, and implementation mechanisms of upgrading programmes have evolved (Rojas, 2010). Its main goal is to improve existing informal settlements through a variety of interventions or approaches that include provision or improvement of tenure security through planning, surveying and issuance of titles, infrastructure provision such as water, sanitation, garbage collection, storm drainage, street lighting, paved footpaths and streets, removal or mitigation of environmental hazards, housing or home improvement, social support programs to address issues of security, violence, substance abuse, enhancement of livelihoods through income-earning opportunities such as training and micro-credit, building social capital/savings and strengthening the institutions and changes in regulatory framework and densification measures (CURI, 2012, Mbathi, 2011, Otieno, 2011, Syagga, 2011, Brakarz et al, 2002, UN, 2003, Majale, 2008, Huchzermeyer, 2008). Although upgrading efforts have improved informal areas, there is continued growth and proliferation of these settlements (UN, 2016, 2014,2010/2011). Why is this so? Slum upgrading has not been without challenges. It has sometimes failed to achieve the intended purpose. Rojas, (2010) observed that only a small part of the population has benefited from the investments in infrastructure, urban services, and tenure regularization.

### **Sector-specific upgrading approaches**

Part of the challenge lies in the compartmentalization of upgrading interventions along sectoral lines that make it less impactful. According to Syagga (2001), sectoral approaches are those strategies initiated, planned, and implemented by specific thematic institutions in exclusion of other service providers. In slum upgrading, the emphasis is on the need for investment in citywide infrastructure and security of tenure (UN-Habitat, 2010, Gulyani, 2008, Bassett 2007, Arimah 2004) provided through a sectoral approach. On tenure security, empirical studies show that it was used to improve conditions of the urban poor in Peru, Zambia, Botswana, Ghana, Kenya (Sjöstedt, 2011, Fernandes, 2011, Nyametso 2010, Almansi 2009, Durand-Lasserre and Selod, 2007, Bassett, 2001, De Soto, 2000). De Soto (1986) for example, advocated for the formalization of informal settlements arguing that legal tenure status would lead to investment in housing and business improvements; access to credit, and eradication of poverty by turning ‘dead capital’ into ‘liquid capital’. Influenced by DeSoto’s arguments, countries formulated regularization programs aimed at both upgrading informal areas and recognizing the land and

housing rights of the dwellers, thus legalizing their status (Fernandes, 2002). Other examples include Thailand's Baan Mankong aimed at securing tenure through the Community Organization Development Institute (CODI) where the program targeted to reach 300,000 households but had benefitted less than one-third of its original target (Lucci et al., 2015, Boonyabancha, 2005).

On infrastructure, countries adopted an infrastructure provision approach to upgrading. Literature shows that it was considered as an essential element in improving informal settlements and reducing their incidence (Kovacic, 2018, AfDB, 2013, UN Habitat, 2011), improving slum "image" and environmental conditions (Degert et al., 2016), improving quality of life for settlement residents (Kessides, 1997). Thus according to Gulyani and Connors (2002), it was the primary goal and central component of upgrading projects. Van Horen (2004) pointed out that upgrading projects showed a very strong emphasis on the provision of infrastructure citing cases such as Baldia and Orangi, Karachi, Pakistan, and in Phnom Penh, Cambodia where the upgrading involved the delivery of physical services (water, drainage, sanitation).

It is deduced, therefore, that these efforts pursued slum upgrading interventions too narrowly along conventional sectoral lines to an extent that most projects are compartmentalized with weak coordination and convergence (Lall and Lall, 2007). Further, studies have looked at the interventions individually and sectorally to comprehend and measure the impact (Imparato and Ruster, 2003). The challenge of this approach is the inadequacy of single interventions to address the myriad challenges of informal settlements and the unsustainability of stand-alone strategies.

### **Integrated upgrading approaches**

Lately, integrated approaches that combine several interventions in upgrading settlements, have emerged. These are multi-sector approaches whose emphasis is on the interconnectedness of sectors and the need for integration to achieve sustainable development (UN, 2015) because it is increasingly apparent that "there is no place in an interlinked world for isolated solutions aimed at just one sector" (Dodds and Bartram, 2016). Examples of integrated approaches include Rio de Janeiro's Favela Bairro that aimed at simultaneously providing infrastructure, social services, community organization, and development as well as land titling (Lucci et al., 2015, Jaitman and Brakarz, 2013). Green (2010) also found that in Chile, the Latin American Neighbourhood

Upgrading Programmes (NUP) included infrastructure and land tenure in the 80s (Green, 2010, Brakaz et al., 2002). The benefits of integrated approaches include the potentiality of scaling-up, partnerships, simultaneous tackling of various slum challenges, synergies, and leveraging and increased beneficiaries and impact (Amiri and Lukumwena, 2018, Lucci et al., 2015, Weitz 2014). These were lacking from earlier approaches. These new approaches offer more inclusiveness and sustainability of upgrading efforts and urbanization.

Although rated as successful, pigeonholed practice and lack of full integration have reduced the impact of these integrated approaches (Lucci et al., 2015). More critically, the crucial cross-sectoral linkages and synergies in the upgrading interventions have received limited investigation. This study sought to contribute to this by investigating the nexus of interventions with particular reference to tenure security, infrastructure, and livelihoods.

### **2.3.1 Slum upgrading approaches in Kenya**

Kenya's approach to informal settlements corresponds loosely to the global approaches to informal settlements that have changed from the previous adverse strategies such as forced resettlement, forced eviction, to more progressive policies of recognition and upgrading. The first phase of ignoring was characteristic of the colonial period where, Africans having been barred from areas reserved for Europeans and Asians, created informal residential settlements which were largely ignored by colonial governments as evidenced by the lack of provision of services (Amnesty International, 2009). As the settlements grew the colonial government saw them as threats, or as a 'blot' on the urban landscape, often harbouring dissidents (Weru, 2004). These were demolished and this marked the phase of demolition and eviction of slum residents (Syagga, 2011). Weru, (2004), points out that this approach of demolishing continued after Kenya's independence in 1963 up to the late 1970s, although aspects of this continued to the 1990s as exemplified by the demolishing of Muoroto and Kibagare settlements with Otiso, (2003) affirming that demolitions increased tremendously in the 1990s. This, however, did not stop the spread of slums. On the contrary, affected dwellers moved to other areas and formed new slums (Amnesty International, 2009).

In the second phase 1970s and 80s, the approach shifted from demolitions to recognition with efforts being made towards improving living conditions in the settlements (Syagga 2011, Amnesty International 2009). This phase was largely adopted a redevelopment approach encompassing housing and site and services schemes funded by multi-lateral agencies but these upgrading efforts were largely sectoral (Syagga, 2011).

The third phase marked the period of incorporation of informal settlements in development in the 1990s. This included the development of supportive policy and legal frameworks as well as the implementation of upgrading programs targeting tenure, infrastructure and livelihoods improvements through state budgetary allocations. This was strengthened by the implementation of the Millennium Development Goals (MDGs), in the year 2000, that gave a global target of achieving “a significant improvement in the lives of at least 100 million slum dwellers by 2020”. During this period, both the government and Non- Governmental Organizations implemented upgrading projects. Notable NGOs included Water and Sanitation for the Urban Poor (WSUP) an international NGO that focused its efforts on the provision of water and sanitation services for low-income urban communities (WSUP, 2019). On the other hand, Muungano wa Wanavijiji, a federation of savings groups within informal settlements, mainly upgraded through mobilizing savings for the purchase of land and house construction or improvements (Rema, 2011). Similarly, Akiba Mashinani Trust supports informal settlement dwellers through the mobilization of savings (Weru, et al, 2018). Examples are Ghetto informal settlement in Huruma in Nairobi County where upgrading focused on savings for purposes of upgrading housing. Another NGO, Pamoja Trust, is engaged in upgrading through strengthening tenure security and mobilizing savings, for example, the Kambi Moto and Huruma projects in Nairobi where Pamoja Trust facilitated the mobilization of community-saving groups for housing construction (Weru, 2018). However, Umade Trust, an NGO, focuses on water and sanitation especially through bio-centre approach also referred to as the provision of ecological sanitation or ablution blocks in slum upgrading (Binale, 2011). Though these upgrading approaches contributed to the improvement of conditions in informal settlements, they were a mainly single sector, stand-alone, unsustainable pilot projects (CURI, 2012, Syagga, 2011, Gulyani and Basset, 2007, Syagga, Mitullah and Gitau, 2002) micro-level and fail to scale up ( Mwau et al, 2020).



Although there are policy advances, there are ongoing problems such as uncoordinated and at times drawn-out policymaking, conflicting stakeholder agendas and duplicating policy initiatives (Omenya and Huchzermeyer, 2006).

In the recent years, however, there has been an attempt at more collaborative approaches such as the Kenya Slum Upgrading Programme (KENSUP) which was a first attempt to provide a nationwide framework on slum upgrading in Kenya (Syagga, 2012, GoK, 2005). It was aimed at improving informal settlements in all urban areas of Kenya through the improvement of living conditions (tenure security and infrastructure) and livelihoods. Besides, the government in 2011 initiated another project, Kenya Informal Settlement Improvement Project (KISIP) to compliment KENSUP in addressing the slum challenge as discussed in the next section. However, although they have had an impact, these projects have failed to stem the proliferation of informal settlements especially in Nairobi (Mwau et al, 2020)

### **Kenya Slum Upgrading Programme (KENSUP)**

This is a multi-strategy upgrading programme which, according to the government of Kenya (GoK, 2005) was “aimed at improving the livelihoods of people living and working in slums and informal settlements in the urban areas of Kenya using a mixed development approach ranging from complete redevelopment to partial redevelopment and allows for incremental development” (GoK, 2005). Its strategies and components include “community organization and mobilization, shelter improvement, preparation of city/town development strategic and land use master plans, provision of physical infrastructure/amenities, provision of social infrastructure, provision of secure tenure and residential security, environmental and solid waste management, employment and income generation, addressing issues of HIV/AIDS, conflict prevention and management and prevention of slum proliferation”. This, however, remains a sectoral approach and it has been described, with its multiple strategies, as overly ambitious (CURI, 2012). To date, the programme has focused mainly on infrastructure provision with the limited implementation of the other components. However, in 2009, the government sought to supplement this programme by initiating a Kenya Informal Settlement Improvement Project (KISIP).

## **Kenya Informal Settlement Improvement Project (KISIP)**

This is a multi-sector, integrated and city-wide slum upgrading project whose objective is to improve living conditions in informal settlements in 15 selected urban areas in Kenya, namely Nairobi, Mombasa, Kisumu, Nakuru, Nyeri, Embu, Garissa, Kakamega, Eldoret, Kericho, Kitui, Machakos, Malindi, Naivasha, and Thika. It is mainly supported with funds from World Bank, the Swedish International Development Cooperation Agency (Sida) and the Agence Française de Développement (AFD).

Its strategies are institutional strengthening, tenure security, infrastructure and service provision and planning for urban growth (World Bank, 2015, 2011). It was initiated as part of the Government strategy to address the challenges of rapid urbanization, particularly the challenges of slums/informal settlements. It is one among two other projects aimed at comprehensively addressing core issues that are constraining the development potential, efficiency, equity, and competitiveness of Kenya's urban areas (World Bank, 2011). Globally it was to contribute to the Millennium Development Goals of improving lives of 100 million people and nationally to the implementation of the Constitution, particularly on rights of all Kenyans to property, water, sanitation and clean environment; the Country's Kenya Vision 2030, particularly on provisions of a just and cohesive society with social equity in a clean and secure environment and; the National Land Policy, on the need to regularize informal settlements (GoK, 2010, 2009).

However, KISIP's strategy in upgrading is largely physical, its focus being on tenure security and infrastructure. The project does not incorporate direct support to livelihoods. Rather it relies on the anticipated benefits of tenure enhancement and infrastructure provision to improve living conditions and subsequently enhance welfare and livelihoods.

### **2.3.2 Legal and Policy framework for upgrading in Kenya**

Kenya has a robust policy and legal framework to address the slum challenge, including the Constitution which has a robust bill of rights on ,among others, right to adequate housing and sanitation; the Kenya Vision 2030 which has provisions for upgrading of informal settlements; ,the National Land Policy which provides a framework for security of tenure and land management structures, both in urban and rural areas"; National Slum Upgrading and Prevention

Policy provides a framework for upgrading informal settlements and preventing the emergence of new ones; National Housing Policy provides for sustainable informal settlement upgrading and eradication, the National Urban Development Policy which recommends formalization of land ownership and provision of infrastructure in informal settlements ; National Land Use Policy calls for adequate provision of infrastructure and services in human settlements through among others use of appropriate standards for infrastructure and planning and National Spatial Plan 2015-2045 recommends inventorying “all the existing informal settlements in urban areas to establish the insufficient services and infrastructure for purposes of upgrading them to more habitable dwelling areas”.

These enabling policy and legal frameworks that support the upgrading of informal settlements have led to increased participation of NGOs, academia and international institutions in various upgrading projects and programs. Examples include the German-funded Mathare 4A project, the World Bank Water and Sanitation Programme in Kibera, (GoK, 2004) and the Kenya Informal Settlement Improvement Project (World Bank, 2011). However, this policy and legal framework have a sector-specific approach (UNDP and CoG, 2015) further compartmentalizing upgrading approaches.

## **2.4 Understanding tenure, infrastructure and livelihoods nexus methodological approach**

### **2.4.1 Nexus Analysis**

This study used the Nexus approach to examine the interactions in tenure, infrastructure, and livelihoods and determine whether there were linkages or not. According to Scollon and Scollon, (2004), the word ‘nexus’ is a link between two different ideas or objects which links them in a series or network”. Scollon and Scollon continue to explain that nexus analysis “in the simplest meaning is the study of how ideas or objects are linked together”. According to Östman and Verschueren, (2014) nexus analysis is a multidisciplinary enterprise used to clarify the many complex relations. Scollon and Scollon, (2004) situate nexus analysis within social sciences and humanities. It has its roots in linguistics. It is, however, interdisciplinary. Nexus analysis identifies a social issue, the primary actors, and observes the interactions, and determines the most significant cycles of discourse or discourse itineraries (Östman and Verschueren, 2014,

Scollon, 2008). Methodologically, Scollon and Scollon, (2004), explain that a nexus analysis is based on three main tasks or activities. First, “engaging the nexus of practice”. This is the point of identification of the problems, locations, tasks, and practices on the issues the researcher wants to address. This can be obtained from history, interactions, and discourses in place using surveys, observations, and open-ended focus group discussions. Secondly, “navigating the nexus of practice”. This is where the analyst identifies the semiotic cycles, interactions, and linkages of people, places, and processes, to see how they are connected. This is where the main work of a nexus analysis is contained. It involves mapping the semiotic cycles including the role of institutions, the interactions, and processes that have not been investigated with equivalent intensity as other areas. Thirdly, “changing the nexus of practice”. This focuses on the relevance of nexus analysis in bringing about change in the systems by the multiple participants in the nexus.

To achieve this, the researcher must become part of the nexus to identify "the social actions, discourses and (mediational means) that are relevant to the participants” Östman and Verschueren, (2014). In this study, the researcher was part of the dynamics in nexus analysis as pointed out in the reflexivity section.

Closely related to the nexus analysis is the nexus thinking that is associated with linkages in energy, water, and food referred to as the water-energy-food nexus ('the nexus'). Middleton et al., (2015) point out that its origins "were in response to the 2008 global food and economic crisis, and has since been promoted as an emerging global development paradigm and research agenda” (Middleton et al., 2015). In simple terms, a nexus, in this context is defined by Leck et al., (2015) "as one or more connections linking two or more things, and this term is widely used, for example, the environment-development nexus, the population—migration nexus”. According to them, the Nexus thinking is used in both the social and natural sciences as a framework for ‘joined-up thinking’, in policy and decision-making.

In research, the nexus analysis has been used in various case studies in different disciplines. It is widely used in the water-energy-food nexus. Its concept has been defined as interdependencies and interconnections among water, energy, and food, (Torres et al., 2019). They argue that this was aimed at addressing the problems of the single-sector approach by recognizing the

interrelationships among multiple sectors. In research, it uses both qualitative and quantitative techniques to understand the interrelations and interdependencies. Similarly, Albrecht et al., (2018) reviewed case studies that used the nexus methods in the Water-Energy-Food (WEF) nexus. He found researchers used the nexus approach to identify linkages, tradeoffs, and synergies of water, energy, and food sectors. The aim was to guide cross-sectoral policies, integration, and improvements to enhance water, energy, and food security. Among the methodologies used were mixed-method approaches that combined qualitative and quantitative methods to attain a more holistic understanding of WEF systems. This included, according to Endo et al., (2018) qualitative methods, such as questionnaire surveys used to describe the WEF nexus in different study contexts and relevant analytical models that are used in research.

Nexus analysis is also used in studies focusing on the upgrading of informal settlements. Thieme and Kovacs, (2015) used the nexus approach to contextualize the linkages in WEF and Waste in slum areas. Using ethnographic research methodology, they found that the four are 'nexus' services in informal which are inextricably interconnected in governance and experience and thus recommending nexus approaches in the provision of services to slum areas.

Kuure, et al., (2018), researched how nexus analysis has been used, in the field of education especially on language learning, language pedagogy, and language teacher education. They found that Nexus analysis provides a research strategy that is suited to the examination of phenomena in situ. It draws on multiple types of methodologies. In the studies they reviewed, it was used as a concept on interactions or as an overall research strategy using different types of data and methodologies of the intersection. Its nexus-analytic research strategy can be followed from the outset of the research or on studies that started with other methodologies but later transformed or was re-interpreted in the framework of nexus analysis. They argued, therefore, that the nexus analysis approach is new and, researchers, therefore, apply the approach in different ways.

This nexus approach gained prominence in the SDGs framing. Weitz, (2014) argued that the nexus approach is a framework for assessing cross-sectoral interactions in the SDGs. This is aimed at promoting sustainable and effective use of resources.

The study used this nexus approach to examine the interactions of tenure, infrastructure, and livelihoods in upgrading and to contribute to the debate on the potential of linked up approaches in development, in this case, in the upgrading of informal settlements.

### **2.4.2 Network Mapping (Net-Map) analysis**

The study also used Net-Map analysis to depict the links and interactions between the elements of tenure security, infrastructure and livelihoods improvement in slum upgrading. According to Stein et al., (2014), the nexus approach requires analytical frameworks that capture the multidimensional linkages between actors. Network Mapping (Net-Map) is a tool, recently developed by Eva Schiffer and the International Food Policy Research Institute (IFPRI) (Schröter, et al 2018, IFPRI 2007). Schröter, et al., (2018) add that Net-Map is a tool for Social Network Analysis (SNA), used in both qualitative and quantitative research. Net-Map is a method whose strength lies in visualizing the interplay of networks, power relations, conflicts and potentials in networks and development of policy and strategies for achieving a common goal (Schiffer and Hauck, (2010). They point out that this tool is based on the need to understand processes, structures, links and dynamics (such as power and control) that determine the success or failures of policies and projects. Graphically the Net-Map analysis uses links to draw a network, which is done by drawing different coloured arrows between linked processes with each colour representing different linkages.

## **2.5 Upgrading elements of tenure, infrastructure, livelihoods and institutions conceptions explored**

### **2.5.1 Conceptions of Tenure security**

#### *Definitions of Tenure Security*

Tenure security has been defined variously. Arnot et al., (2011) argue that these varied definitions, present challenges in definition and measurement of tenure security but many studies use two common measures namely legal title and duration, to define it (Arnot, Luckert and Boxall, 2011). The legal title may be positively correlated with the security of tenure while

others argue that “legality of tenure is not necessarily a precondition for the security of tenure” (Arnot et al., 2011, Feder and Onchan, 1987). Duration of tenure (which also includes perception) on the other hand is a measure of security (Zhang and Pearse, 1996) but others argued that holding a right for long period does not necessarily make the landholder better or worse off (Arnot et al., 2011).

This has led other scholars to categorise tenure security to de-jure (title), de-facto (administrative actions that do not require titling) and perceived tenure security that is not recognized by the government but recognized by the dwellers and as a continuum of rights (Uwayezu and de Vries, 2018). Closely related to de-facto tenure security, the Committee on Economic, Social and Cultural Rights, of the United Nations (2003) defines secure tenure “as the right of all individuals and groups to effective protection by the state against forced evictions from the home and/or the land they occupy, without the provision of, and access to, the appropriate form of legal or other protection” (Payne and Durand-Lasserve, 2007). Further, United Nations defines tenure security “as an agreement between individuals or groups, concerning land and residential property, which is governed and regulated by a legal and administrative framework” and right to effective protection by the state against forced evictions (UN, 2004).

The current thinking is that tenure systems are a combination of formal and informal rules (Kasimbazi, 2017). For others, tenure security is not a mixture “but a continuum of formal and informal legal arrangements that highly context-specific and range from full land titling to local customary rights of tenure” (Laksa and El-Mikawy, 2009, GLTN, 2008). For others, “tenure security is partly a matter of perception, and can be safeguarded under various forms, provided the rights of land users and owners are clear” (UN-Habitat, 2008)

For purposes of this study, tenure security is both legal and perceived and the following definition is therefore adopted “an agreement between individuals or groups, with respect to land and residential property that is governed and regulated by a legal and administrative framework.” (UN, 2004).

### *The tenure security challenge*

Though it is a critical element in the alleviation of poverty in slums, tenure security is increasingly precarious as evidenced by continued evictions in several urban areas (Barry, 2015, UN Habitat and GLTN, 2011, 2006/2007). According to UN-Habitat, (2007) “large numbers of people in cities all over the world, including most of the 1 billion currently living in slums, have no security of tenure, while at least 2 million are forcibly evicted every year”. In Kenya, Syagga (2011) argues that “from 1895 to the 1970s, the approach to slums development consisted of demolition and eviction of slum residents. Elements of this approach are still recognisable in many urban settlements of Kenya today.” Tenure insecurity in informal settlements has been seen as a contributory factor to evictions of the poor in urban areas (Payne and Durand-Lasserve, 2013).

Insecure tenure has other detrimental effects that include lack or inadequate amenities, social marginalisation and destitution; violations (especially to women, elderly, disabled and children); limited or no revenues for state agencies; limited housing investments thus reduced security and distortions in the cost of land and services all of which undermine governance, long-term planning and development (UN-Habitat, 2003, Payne and Durand-Lasserve, 2013, 2006).

### *Debates on Tenure Security*

Studies have shown that there are various approaches towards achieving tenure security (Syagga, 2011, Gelder, 2010, Durand-Lasserve, 2007, De Soto, 2000, Turner, 1968). There is also widespread understanding among various practitioners, academics and researchers that security of tenure is a critical component in the upgrading of slums and informal settlements (CURI, 2012, Gelder, 2010, UN, 2011).

However, there are various debates on what it comprises of (Gelder, 2010). Some have argued that legal tenure (titling or de-jure) is crucial for guaranteeing tenure security, investment, unlocking the value of assets, ensuring access to formal credit markets and can be used to provide or improve services in the settlement, (Gelder, 2010, Field, 2005, De Soto, 2000, Deininger, 2003, Turner 1968). Titling or legal tenure security has however been criticized as



being complicated, expensive, time-consuming and leads to gentrification due to the formal market pressure that tends to push out or exclude the urban poor thus proliferating slums rather than eliminating them or improving environments for them (Annez, 2014, Durand, 2007). Further titles only will neither unlock capital nor increase assets but on the contrary, it reduces the security of tenure through market-driven displacements (Payne, 2009, Galiani and Shargrodsky, 2005).

The second approach emphasises tenure security (de-facto) (World Bank, 2008, UN, 2003). This approach, according to Durand-Lasserve, (2007) “does not require giving of titles, but it does not exclude it either, rather, it uses administrative or legal actions against forced evictions including titles and the provision of services. It has been argued therefore this form of tenure security is more imperative for the poor in urban areas (UN, 2003, Gelder, 2010).

The third approach is that of perceived tenure. This tenure arrangement, according to Payne and Durand (2013) is not formal recognition by the state but by the community which, they argue, is more important. Further, Payne et al, (2009), similarly argue for the perceived form of tenure security with minimum property rights noting that it has a greater influence on investment than the provision of titles per se” (Payne, et al, 2009). Moreover, Kessides, (1997), has argued that infrastructure investment can create such a sense of security. Payne, (2002) and Gilbert, (2002), have argued that perceived rather than legal tenure security is a more important mechanism driving housing investment. However, both de-facto and perceived tenure has been criticised that they do not guarantee security (Fernandes 2011). According to him perceived security of tenure is precarious since it can be change putting residents’ interests in jeopardy.

From these debates, it is concluded that various alternative tenure opportunities ought to be considered and used to answer to the multiplicity of the needs of the poor in slum areas (Smit and Abrahams, 2010, UN-Habitat and GLTN, 2008). Suffice it to say that tenure security is critical for development and stability. The intention should be to realize security, whether through title or other legal forms of tenure” (Royston, 2014).

Despite this general understanding that tenure security is critical for development, it is precarious for hundreds of millions of the poor (UN-Habitat, 2007). This study sought to contribute to this

debate by providing a further understanding of the typologies, approaches of existing tenure systems together with its interlinkages and institutional dynamics with infrastructure and livelihoods.

### ***Tenure security and infrastructure***

Although secure tenure has been seen as essential, it has been argued that it cannot tackle the needs of the low income, on its own but rather that it forms part of an integrated approach that includes delivery of essential infrastructure services (Lucci et al, 2015, Basset and Gulyani, 2008, Durand-Lasserve, 2007). Similarly, it has been argued that insecure tenure can be a grim obstacle to the development of housing, roads, and other urban facilities, and thus detrimental to the urban poor (Durand- Lasserve, 2007, Cromwell, 2002). As a result, Durand- Lasserve (2007) argues that provision of services in informal settlements may be misconstrued as legal recognition and tenure regularization and for this reason, governments are reluctant to provide services in informal settlements. However, Fernandes, (2001) argued that infrastructure and service provision did not directly rely on completion of tenure legalisation processes. For example, the *Favela Barrio* and PRIMED upgrading programmes facilities were improved by the government despite the dwellers having *de facto* use of the land and according to Lucci, et al, (2015) “this was enough to guarantee tenure security, enabling access to utilities and incentivising investments in home improvements.”

This research sought to add to this debate on whether tenure and infrastructure interlink and which of the two should precede the other. Equally the study seeks to establish how these two interventions interact in upgrading. Do they build on each other or not? What are the dynamics? What strategies can enhance linkages that maximise the impact of slum upgrading? This research answers these questions and contributes to knowledge.

### ***Tenure security and livelihoods***

The state of tenure has been seen to be one of the key fundamentals in tackling poverty (Durand 2007). According to Turner, (1968), “insecure tenure discourages household investments thus contributing to the deterioration of the economic situation of the urban poor”. Tenure security,

therefore, does indeed provide a critical incentive for improved investment and credit access (Deininger and Feder, 1998). De Soto, (1989) emphasizes the formalisation of rights in tenure security that will increase housing and other assets and lead to alleviation of poverty in developing countries. “The property has to be transformed into collateral, collateral into credit and credit into income” (Durand-Lasserve and Payne, 2006). Further, in most tenure upgrading and regularisation projects, there has been a positive impact on household resources, savings and development of land, dwellings and environment thus improving livelihoods and living standards (Royston, 2014, GLTN 2012).

However, it has been argued that security tenure that involves titling can lead to gentrification and further that poor people still do not get bank loans because of their lack of income and information (Olajide, 2015, Kagawa, 2000). Fernandes (2001) suggests that if tenure is to have a significant effect, it has to be part of a wider strategy on urban reform supported by policies purposely aimed at socio-economic development that include generation of job opportunities and earnings. This begs the question; what are these other policies that can work together with tenure to improve lives and living conditions in informal settlements? This research is putting forward an argument that there is potential in a tenure-infrastructure-livelihoods slum upgrading basket in addressing both the living conditions and lives of slum dwellers.

### ***Tenure security and institutions***

It has been argued that poverty alleviation efforts should not be limited to just economic and social wellbeing but should also include the institutions and their capacities (Simatele and Munacinga, 2009). In further emphasizing the critical role of institutions, Cotula, Toulmin, and Hesse, (2003) argued that security of tenure is less about the title but about empowering local institutions to manage rights and related land disputes. This includes putting in legal systems that are fair and serve the bigger public interest (Ellsworth, 2002). Therefore, there should be strong institutions as well as reforms in administrative and political arenas to implement tenure policies (Durand Lasserve, 2006). He, however, pointed out that these remain a government monopoly especially in sub-Saharan Africa, and whose land management is challenged by parallel property markets and corruption. This raises the question, how invulnerable is a property entitlement in

the face of more powerful persons or the State whose officials can overturn claims that were once acknowledged as secure? (Ellsworth 2002).

It has been argued therefore that there is a need for participation and integration of various institutional stakeholders for synergy and sustainability. These are varied. Institutions responsible for the administration of land are found at various levels including “the international, regional and national levels” (Kasimbazi, 2017). The global level institutions financially and technically support and promote tenure security, property rights, land reforms, and other tenure matters in host countries. These include the World Bank, the United Nations bodies such as UN-Habitat and the Global Land Tool Network, UN Convention to Combat Desertification, United Nations Development Programme, Food and Agriculture Organization (FAO) and the International Fund for Agricultural Development. Regionally, institutions include African Development Bank, Asia Development Bank and United Nations Commissions for Africa, Latin America and the Caribbean, Asia and the Pacific, and Europe. Nationally, there are government ministries and agencies such as National Land Commissions in Kenya and Uganda. Community institutions also play a role. For example, in Mozambique, communities administer community land. There are also customary land institutions and civil society or non-governmental organizations that play a role in land administration.

These institutions are key in the upgrading of tenure security in informal settlements. The question, however, is, beyond their roles in tenure security, what are the institutional dynamics that shape, influence, control and determine tenure security in informal settlements? This research sought to address this question concerning institutions responsible for, infrastructure and livelihoods improvements in informal areas.

## **2.5.2 Conceptions of infrastructure**

### ***Definition of infrastructure***

There is no collectively recognized definition of what comprises infrastructure. According to the African Development Bank, (2018), “infrastructure is a heterogeneous concept that typically includes both various types of physical assets that are used in an economy as inputs to the production of goods and services”. This description encompasses “social infrastructure” (e.g.

hospitals and schools) and “economic infrastructure” (e.g. water, energy, transport and telecommunications).

Similarly, UN-Habitat, (2011) defines infrastructure “as basic inputs into and requirements for the proper functioning of the economy, mainly categorised into economic and social infrastructure where the former is used to facilitate economic production (e.g. electricity, roads, and ports) while the latter encompasses services such as health, education and recreation and both have a direct and indirect impact on the quality of life” (UN Habitat, 2011).

On the other hand, Weisdorf, (2007) defines infrastructure “as the essential facilities and services that the economic productivity of a community or organization depends on. It includes transportation assets (roads, bridges, railroads, airports); communications assets (radio, television, wireless communications, satellite); regulated assets (electricity, gas and oil pipelines, water distribution systems, wastewater collection and processing); social infrastructure assets (schools, hospital prisons and courthouses)” (Weisdorf, 2007). Fulmer, (2009), after synthesising various definitions concisely, defines infrastructure as “the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions”.

This study uses infrastructure to mean physical services for the proper functioning of the economy. These will be limited to roads, walkways, stormwater drains, lighting, water, and sanitation. These are seen as the most critical in improving living conditions and were the only ones available in the case study settlements.

### ***The extent of the infrastructure challenge***

Infrastructure has been identified as necessary for economic growth. However, there is an infrastructure deficit worldwide. For example, UN-Habitat, (2016) estimated that “663 million people worldwide still lack improved drinking water while 2.4 billion people worldwide still lack access to improved sanitation”. Africa is the hardest hit in regards to the provision of sufficient basic infrastructure facilities such as reliable clean water, adequate sanitation (54 percent in 2010), electricity (32 percent in 2011), transportation and affordable housing (AfDB 2018, Resnick 2014, UN-Habitat 2010).

Infrastructure challenge is acute in slum areas. Piped water in dwellings is lacking, refuse collection is virtually absent, latrines are uncommon, learning facilities are insufficient and the health, transport and open spaces are limited. In Kenya, only 10 percent dwellers in informal settlements have access to piped water, 10 percent have a home toilet, 8 percent have a sewer connection, and 5% have garbage collection (World Bank/NORC, 2013). This has led to the spread of disease, respiratory infections and waterborne and transmissible diseases (UN Habitat 2016, Adebayo 2014, Akhmat and Khan, 2011).

It has been argued therefore that “investing in infrastructure is, an absolute necessity for the new urban agenda” (UN Habitat, 2016).

### *Debates on infrastructure*

Infrastructure services have for a long time been seen as crucially critical for the reduction of poverty economic development and sustainable urbanization (AfDB, 2018, Priti, et al, 2015, UN-Habitat, 2012, Foster and Briceño-Garmendia 2010, Ogun, 2010, Calderon, 2008, Estache and Fay, 2009, Ariyo and Jerome, 2004). It is the mainstay of any urban economy and thus the SGDs gave infrastructure prominence in both cities and rural areas (UN, 2016). In Africa, according to the Economic Commission for Africa (2015) “infrastructure development is a critical key driver for progress as it allows for productivity and sustainable economic growth and contributes significantly to human development, poverty reduction, and is crucial to the attainment of sustainable development goals”. However, according to Economic Commission for Africa, (2015), “Africa has the lowest productivity of any region in the world, and this is largely attributable to serious infrastructural shortcomings across all the subsectors: energy, water, sanitation, transportation, and communications technology”. This shortfall is severe in informal settlements where almost two-thirds of African urban inhabitants live (UN, 2011) and promoting universal access should be one of the critical issues of the new urban agenda (UN Habitat, 2016).

### *Infrastructure and livelihoods*

Infrastructure is also seen as a critical element for livelihoods. Calderón and Servén, (2004) argued that “under appropriate conditions, it has a positive impact on the income and welfare of

the poor over and above its impact on average income”. For example, access to clean water and sanitation reduces mortality and morbidity, saves time through freeing up time and resources thereby resulting in improved productivity while electricity powers education and health amenities and improves small businesses while roads provide links to markets (Pritti, 2015, Komives, 2005, World Bank, 1999). Infrastructure, therefore, should not only be the principal goal and fundamental component of upgrading (Gulyani and Connors, 2002) but that it should be the topmost in the agenda of poverty reduction. According to World Bank, (2007), “the approach to infrastructure must focus not only on economic growth or human growth but also on smart growth to make a difference in people’s lives.”

However, there are debates centred on the complexity of processes and high costs. Akhmat and Khan, (2011) argue that “access to infrastructure can have little effect if services are not affordable”. Often poor tenants and owners involuntarily move out as a result of un-affordability resulting from costly user charges, increased housing and land values (Arimah, 2004). In most cases, the main concern is not the cost but how to create incomes or resources to meet these demands. According to UN-Habitat, (2012) however, “a more serious problem to tackle may be the semi-legal or illegal condition of many dwellings in urban and peri-urban areas, which often precludes dwellers from getting connected to utility networks but unfortunately, very few concrete assessments of current experiences exist” (UN-Habitat, 2012). Further, how infrastructure contributes to improving livelihoods, especially in the developing world remains empirically limited (Mensah, 2011). According to World Bank, (2007) “there is still much that is not known about the infrastructure-poverty nexus because good baselines are lacking on how much the poor spend and consume on infrastructure services”. This study sought to contribute to these knowledge gaps by examining the type, nature, and approaches to infrastructure provision to dwellers in informal settlements and how they interact with livelihoods.

### ***Infrastructure and tenure security***

The lack of formal infrastructure facilities has been described as a condition arising from the absence of tenure. According to Cromwell (2002), lack of tenure impedes investment in roads, housing and other services, but equally the provision of infrastructure can result in dispossession

of those with the weak rights requiring and to forestall this, existing informal settlements should be regularised

(Cromwell, 2002). However, these schemes are time-consuming and bureaucratic (Payne, 2005). Though tenure security and infrastructure are related issues and solving one cannot be done without engaging with the other, De (2017) argues that “tenure improves housing and basic services but it does not purge the threat of eviction while infrastructural investment by the government may increase private investment, it may intensify the threat of eviction especially for slums that are well connected to the rest of the urban areas”.

### ***Infrastructure and Institutions***

Investing in physical infrastructure relies on institutions. According to AfDB, (2013) “there are two other aspects to be considered, namely (i) strengthening the governance scheme for infrastructure service provision and (ii) streamlining the institutional system to maintain an effective level of service provision”. According to them, the “core issues are institutional in nature arguing that pouring additional funding into sectors characterised by high levels of inefficiency and low institutional capacity makes little sense and the need, therefore, to first improve the capacity and efficiency of those institutions responsible for developing and managing infrastructure”.

Institutions involved in infrastructure are varied. According to Estache and Fay, (2009), infrastructure, in the 1980s was understood as a public sector or government’s obligation but during the 1990s, responsibility was shifted to the private sector with a lesser role for governments. This did not yield expected results and according to the UN, (2016) and Estache and Fay, (2009) “public sector is once again seen as the major player in financing infrastructure”. In agreeing with this, Adebayo and Iweka, (2014) assert that it is the primary responsibility of the state. The current thinking, however, is that the “choice is no longer simply a dichotomy between public and private provision, but how to forge cooperation between these two sectors, defined by areas of competence” with the public sector playing a significant role in financing while the private sector does the construction, operation, and/or to some extent financing in some sectors (UN, 2011). However, due to the enormity of costs involved, the international community has become a central player in the scaling-up efforts, particularly in developing



countries (Gulyani and Basset, 2007). The community efforts have also become significant for example in waste management (Mukama et al, 2016)

The challenge is that these efforts from different institutions rarely converge (Thieme and Kovacs, 2015). One of the basic infrastructure debates, according to Estache and Fay, (2009) is “who should be in charge of the sector; the government or the private sector, the central government or the subnational governments, independent regulators or politicians?”

There is a need to understand the institutions that control and determine the provision of infrastructure. What are their roles? What is their approach to the provision of infrastructure? How do they relate with each other and to other institutions such as those that provide security of tenure? What are the tenure related challenges facing infrastructure provision? What is the role of planning in the development and management of infrastructure? What are the dynamics within and between these institutions? Gaps that this study sought to contribute to.

### ***Integrated versus sectorial infrastructure provision***

The integrated provision of infrastructure is gaining traction. However, sectoral provisioning is still widespread. According to Gulyani and Connors, (2002) the debate among practitioners and policymakers “is over the relative merits of integrated infrastructure provision versus sectoral interventions”. Arguing against sectoral approaches, Angel, (1983) points out that the limited success with infrastructure improvement in slums and squatter areas reflects the pursuit of limited objectives by limited coalitions. The effect, according to Thieme and Kovacs, (2015) is that the interrelations and effects of one service sector upon another have not been meaningfully integrated since the services are still individualized, technocratic resulting in overlaps and incoherencies between sectors whether across governmental ministries, departments or donors”. The current thinking is the need for integrated and inter-sectoral approaches to infrastructure in slum upgrading.

There are however limited studies on the type, nature and approaches of infrastructure provision in informal settlements, and more importantly, on the linkages of these to tenure security and livelihoods improvement, a gap that this study sought to contribute to.

### **2.5.3 Conceptions of livelihoods**

#### ***Definition of livelihoods***

According to Chambers and Conway, (1992), “a livelihood in its simplest sense is a means of gaining a living and it comprises people, their capabilities and their means of living, including food, income and assets. Tangible assets are resources and stores and intangible assets are claims and access. A livelihood Chambers and Conway continue to say, it is environmentally sustainable when it maintains or enhances the local and global assets on which livelihood depend, and has net beneficial effects on other livelihoods. A livelihood is socially sustainable which can cope with and recover from stress and shocks, and provide for future generations”

Other livelihoods definitions make people more central and are less concerned with precise terminology for different kinds of assets. They highlight issues of ownership, access and decision-making. One of these definitions of livelihoods states: “People’s capacity to generate and maintain their means of living, enhance their well-being and that of future generations. These capacities are contingent upon the availability and accessibility of options which are ecological, economic and political and which are predicated on equity, ownership of resources and participatory decision making” (Carney, 1999).

For purposes of this study, “a livelihood comprises the capabilities, assets (including both material and social resources), and activities required for a means of living”.

#### ***The extent of livelihoods challenge***

In several towns and cities of the world, economic development has not led to the prosperity of all. Large sections of the population in urban areas, especially in informal settlements, suffer anguish from severe levels of poverty (UN Habitat, 2010/2011). Slum-dwellers are more often than not omitted from economic opportunities, as demonstrated by high rates of joblessness in those areas (Shah, 2014, Gulyani and Talukdar, 2008) with those who can find work are employed in the informal sector, do temporary or casual labour and receive inadequate or inconsistent incomes” (Shah, 2014, Mitlin, 2011). In addition to these, costly food, housing, transport, health, education, and water in slum areas negatively affect the capability of the urban

poor to move out of poverty. On education, for example, studies “indicate that a majority of parents settling in slums postpone sending their children, especially girls, to school, until they can manage other expenses, such as food, rent, and transport” (UN 2010/2011, 2006/2007). In Kenya, although there is free primary education, the sector still faces numerous challenges with access, equity, inclusion and learning outcomes (Rawal, et al. 2018). According to 2019 Kenya Population and Housing Census, only 42.7% of the population age 3 years and above, in urban areas, were in school or in a learning institution indicating the extent of education challenge in the country and which is expected to be greater in informal settlements.

### ***Debates on Livelihood Approach***

Livelihoods approach place persons and their needs at the core of development. According to Haidar, (2009) the emphasis should be on reducing poverty by empowering the poor. Slums have been seen as physical aspects pieces of evidence of urban poverty (UN-Habitat, 2003). However, there have been debates on the physical improvements versus people-centred approaches in the upgrading of informal settlements. The contemporary “global thinking is that policy framework for poverty alleviation can no longer ignore inclusive strategy, which simultaneously takes into consideration poverty in all its dimensions as well as aspirations and needs of the poor” (Olajide, 2013).

### ***Livelihoods, income, assets and capabilities***

Livelihoods have been seen in terms of incomes, assets and capabilities to make a living and withstand shocks. According to Sanderson, (1999), the incomes and assets can empower the poor to cope with shocks and stresses. However, it has been argued that poverty is not just income but is multidimensional (Mitlin 2008, Huchmzermeyer and Karam, 2006, Moser, 2005, Lloyd-Jones and Rakodi, 2002, Krantz, 2001). It, therefore, necessitates an all-inclusive scope of livelihood strategies that people can draw upon, including capabilities, assets, activities to overcome susceptibility (Moser, 2005, Lloyd-Jones and Rakodi 2002, Krantz, 2001).

This argument is in tandem with sustainable livelihoods framework which was developed as a “comprehensive approach which takes into consideration livelihoods assets, vulnerability

context, livelihoods strategies, livelihoods outcomes, and policies, institutions and processes which influence livelihoods of the poor” (Carney, 1999, Chambers and Conway, 1992). This approach has been supported by several development organisations and agencies. This approach “provides a comprehensive platform for understanding the links between all factors that affect households’ livelihoods ranging from how assets are secured, what they do with assets, what obstacles they come across while obtaining assets and who controls the assets on which livelihoods are based” (Bebbington, 1999).

### *Livelihoods, tenure, and infrastructure*

Livelihoods are not-stand-alone. According to Meikle et al, (2001) they “are defined in large part by the opportunities and constraints under which they are operating”. For example, tenure security is a key constraint and so is the absence of infrastructure (Mitlin, 1999). Further, Satterthwaite, (1997) argues, “the provision of effective public or non-profit private provision for schools, health care and childcare also lower the income needed by households to avoid poverty and generally mean increased employment”.

Although the provision of tenure and infrastructure can remove the constraints, there is a need to go beyond these and include interventions that strengthen the capabilities and assets of the poor as well as institutions that allow people to achieve sustainable livelihoods. Moser, (2008) argues that it is the ability to transform these assets into income that forms a ‘resilience’ strategy. This transformation can be achieved by enhancing existing livelihood strategies or creating new diversified strategies” (Moser, 2008, Grant, 2004).

The use of a livelihoods approach, however, is not without downsides (Hagans, 2011). Critics have pointed out that the approach overlooks “issues of politics, power and voice, and rights and empowerment” (Moser, 2008). Moser and Norton, (2001) suggest the inclusion of how power and authority influence livelihoods capabilities. This study sought to analyse how institutional dynamics influence the livelihoods of dwellers in informal settlements as it relates to tenure security and infrastructure improvement.

The latest thinking highlights the need for integrated approaches, which simultaneously generate livelihoods alongside physical improvements (Cronin, 2010). This research sought to explore this current thinking and contribute to our understanding of integrated slum upgrading approaches as well as the dynamics within and between the interventions that aim to generate livelihoods as well as improve living conditions. In particular, the study sought to examine the type, nature and approaches of livelihoods in informal settlements, the institutional dynamics and livelihoods interplay with tenure security and infrastructure to recommend measures to strengthen and integrate livelihoods in slum upgrading?

## **2.5.4 Conceptions of Institutions**

### ***Definitions of institutions***

An institution, according to the “Global Sustainable Development Report (GSDR), (2016) is a broad and multi-faceted term, which encompasses a range of structures, entities, frameworks and norms that organize human life and society”. For Elobeid, (2012) it “includes governments, private organisations, laws, and social norms that contribute to the establishment of recognised standards and the enforcement”. The definition that is widely used however is that of North, (1999) who defined institutions to mean “the rules of the game in a society or, more formally, the humanly devised constraints that shape human interaction.” Constraints, according to Sjoquist, (2001), ought to be interpreted in the spirit of *guidelines*. However, though North’s definition is commonly cited, Jutting, (2003) argues that it is not universally agreed on. Williamson (2000), includes “organisational entities, procedural devices, and regulatory frameworks”.

Menard and Shirley, (2008) expound further and state that “institutions are the written and unwritten rules, norms, and constraints that humans devise to reduce uncertainty and control their environment. These include (i) written rules and agreements that govern contractual relations and corporate governance, (ii) constitutions, laws, and rules that govern politics, government, finance, and society more broadly, and (iii) unwritten codes of conduct, norms of behaviour, and beliefs”

Other definitions have categorised institutions to formal and informal. World Bank defines institutions “broadly as the set of formal and informal rules, norms, and values that operate

within societies” (World Bank, 2005). Similarly, other scholars have divided institutions into formal and informal (Rakodi, 2007, Pamuk, 2000, van Horen, 1999) while Schuitte (2004) on the other hand argues that institutions include the domains of power and politics and that institutions do, in effect, determine the structure of formal and informal power arrangements and property rights (Sjoquist, 2001). UN Habitat, (2016), defines institutions as “patterns and structures of organised behaviour, which persist through time, and are indispensable to the management and governance of any city”. For purposes of this study, institutions “include governments and non-governmental organisations, policies and laws.

### *Debates on institutions*

In the contemporary world, the institutions' role cannot be gainsaid. It has received considerable attention (Jutting, 2003) since they are now seen as being at “the centre of efforts to promote sustainable development and reduce poverty and inequality” (UN, 2007). According to scholars, institutions spur development, increase the availability of information, and decrease the transaction costs, reduce risk while increasing certainty, protecting property rights and the rule of law as well as increasing incomes and service delivery (Leftwich and Sen, 2010, Acemoglu and Robinson, 2008, North, 1990, World Bank, 2005). Institutions also determine the scope for subjugation and appropriation of resources, level of inclusivity, cooperation, participation and increased collective capital (Ferine, 2012, Shirley, 2003)

Institutions, however, have been the mislaid link in poverty alleviation efforts. According to Devas, (2004), the well-being of the urban poor is not just about access to economic, social, and infrastructural opportunities but on how institutions function. Faulty institutions can invalidate the impact and institutions must be reformed before poverty alleviation strategies can commence (Magalhaes and Villarosa, 2012, UN, 2003,). The obstacles to wider national replication of programs have not been mainly financial but rather political and institutional (Kessides, 1997) while for the poor, though it is their efforts that define their survival, resilience and livelihoods, these can be constrained or propelled by institutions (Devas, 2001). Studies have shown that the key institutions that play a critical role in upgrading include the international community, government, non-governmental organisations including civil society and communities (Lucci et al 2015, Stren, 2014). The primary concern, according to Gulyani et al (2010) is “what are the

appropriate institutions for implementing upgrading?” What are the current institutions engaged in slum upgrading? What are their roles? What are the dynamics between them? How do they contribute to success or failure of upgrading efforts and what measures can be put in place to increase their effectiveness?

The earlier upgrading strategies, as advocated by Turner, (1968) argued for a minimal state (UN-Habitat, 2007, Werlin, 1999). For slum upgrading, Turner (1968) limited the role of the state to public services while the role of dwellers is to progressively improve their living conditions. More recent research has questioned this and asserted that ‘minimal state’ is incapable of dealing with the challenges of slum upgrading (Werlin, 1999) and arguing instead “for an effective and strong state to ensure clear property rights, land acquisition and secure tenure” (Werlin, 1999, De Soto, 1989) and harness its strengths in “garnering financial, administrative, and technical resources to undertake large-scale projects and influence other housing and service providers to meet poor people’s urban needs” (Otiso, 2003). McLeod, (2004) established that Government provision of free or “cheap” land provided significant opportunities to communities to undertake informal settlement upgrading in Kenya, India, Cambodia, South Africa, and Zimbabwe.

The current debate, however, is on which level of government should implement upgrading, central (national) or local? (Gulyani and Connors, 2002). They argued that the central government, in the 1970s and 1980s, played a major role in upgrading more than the local government until recently when the latter was involved. This arrangement is seen to work better with Dillinger, (1994) pointing out the comparative advantage of their grounded situation that makes them “potentially more demand-responsive, know the local situation better, and can be held more accountable for their actions by an electorate than distant central government actors”. Government institutions though they play a critical role in upgrading are confronted with challenges. Their programs and policies tend to be fragmented, isolated, sectoral, marginal, extremely underfunded, and uncoordinated with agencies pursuing disconnected and sometimes inconsistent approaches (Resnick, 2014, Payne et al, 2009, McLeod, 2004). Further, weak institutional capacity, lack of integration and coordination, piecemeal interventions (UN, 2014, Otiso, 2003) top-down strategies and bureaucratic administrative practices and procedures, stringent standards and regulations constitute major obstacles (AfDB 2013, Durand-Lasserve

2007, Otiso, 2003, Syagga and Kiamba, 1992). Poor governance has also been cited as a challenge with government institutions, for example in the case of titling which can generate enormous profits, “it is not uncommon for governments to manipulate it for individual and group benefit” (AfDB, 2013) and politically connected and dominant elite groups using their supremacy and power to enhance their welfare at the cost of the poor (Otiso, 2003, Syagga and Kiamba, 1992).

International Institutions have a critical role to play in providing financial and technical support to slum upgrading efforts. The debate has however been on “donor consistency and collaboration where donors tend to work in isolation using contradictory paths and interventions that are frequently designed on a one-off basis rather than being linked to longer-term strategic planning” (McLeod, 2004).

The private sector also plays a role in slum upgrading (Baker, 2009). This is through its engagement with government, community, the wealthy and the poor in delivering services to in urban areas but they have a poor record in urban services to the poor due to limited profit-taking opportunities” (Baker, 2009, Otiso, 2003).

Non-Governmental Organisations (NGOs) in slum upgrading have been common throughout Africa (Gulyani and Habib, 2009, Connors, 2002). Though “urban development experts believe that NGOs can help squatter settlements” (Satterthwaite, 2012) mainly through the provision of health, education, water and sanitation, community organisations and mobilisation, “some experts are sceptical of NGO activities in slum development” (Habib, 2009, Ananya 2005). Their piecemeal approach to developing slums “does not support the wide-ranging, far-reaching, and forward-thinking strategy which is needed for cities to develop sustainably and cater to growing populations” (Practical Action, 2012). It is argued that most “local NGOs are strapped for resources, their agendas are driven by foundations, donors, their activities are seldom well coordinated, and in many cases, they overlap” (Habib, 2009). Furthermore, NGOs are also semi-public organisations with limited accountability and transparency (Ananya, 2005). Rakodi (2004) adds that “many NGOs (especially indigenous ones) are small, relatively few, poorly resourced, are often distrusted both by poor residents and by governments, as being self-interested, unrepresentative and unaccountable but where NGOs have played a role in gaining benefits for



poor residents, as in Cebu, they have worked alongside local government on particular issues or projects” (Rakodi, 2004)

From the late 1990s, community-driven interventions have arisen. As a result, “recent successful examples give organised communities of the urban poor a lead role in the design, financing, and implementation of upgrading programs” (UN-Habitat, 2007). Questioning the effectiveness of community participation, Gulyani and Connors, (2002) pointed out that it is a source of serious concern since it is synonymous with communities selecting from a menu of technical options otherwise referred to as consultation and not participation”. None the less, according to Ngau (2013), partnerships with CBOs in informal settlements are critical in articulating needs of the urban poor including solutions for sanitation, finance, housing and unemployment and they should therefore be embraced.

Other debates have centred on the categorization of the above approaches with those that are government-led being categorised as top-down while the community-led are seen as bottom-up. According to Cronin, (2011), “good practice approaches to urban slums can be *generalised* as being ‘top-down or centralised’ and some as ‘bottom-up or decentralised’. Each approach has had successes, each has an alternative delivery method and each can result in sustainable development”.

In upgrading, all these institutions are critical and there is a need for a more collaborative model that should consider the urban poor, “non-governmental organisations and community-based organisations as resourceful and contributors to improved urban environments” (Albrechts, 2012, Siame, 2003). Ideally, Practical Action, (2012) point out that “NGOs, governments, the private sector and donors would work together in a partnership approach”.

Though institutions play a critical role in slum upgrading, limited studies have analysed their roles critically, more importantly on the role they play in the tenure-infrastructure –livelihoods nexus. The essential claim is that if these three interventions are to be put at the centre of upgrading, a better understanding of the setting, conditions and power plays in which they are delivered, is necessary. The institutional analysis contributes to such an understanding by lifting

into the foreground constraints and opportunities presented by various institutions and which can aid in formulating strategies to make use of their comparative advantage.

This research contributes towards filling this gap by undertaking an analysis of institutional dynamics and specifically explores why, how, when and where and what role institutions play in tenure security, infrastructure provision and livelihoods in slum upgrading.

## **2.6 Empirical inquiries of tenure, infrastructure, livelihoods and institutions**

This section discusses the empirical studies that have been undertaken in specific areas of tenure security, infrastructure, livelihoods and institutions in slum upgrading.

### **2.6.1 Security of Tenure**

Empirical studies have shown tenure security is one of the strategies that contribute to the improvement in the conditions of the urban poor particularly because of its catalytic effect on shelter delivery (UN-Habitat and GLTN, 2011, Cities Alliance, 2004) private investment in housing and general neighbourhood improvement and increased infrastructure investment, (Reerink, 2011, Nyametso 2010, Almansi 2009, Durand-Lasserve and Selod, 2007, McGranahan and Mitlin, 2005, Payne, 2002, De Soto, 2000, Kessides, 1997); access to water as in the comparative case study of Zambia and Botswana that showed higher water coverage level due to tenure (Sjöstedt, 2011); significant effect on housing investment in urban squatter neighbourhoods in Peru (Fernandes, 2011, Field, 2005); increase in property values by approximately 25 percent in Peru (Fernandes, 2011) and Mtaani-Kisumu Ndogo settlement in Kilifi, Kenya, (Bassett, 2001).

Ducrot, (2010) also pointed to connections between the provision infrastructure and tenure security. According to him “ the title first approaches pre-supposes that formal land titles encourage not only private investment and housing improvement, but also public infrastructure since the government is more willing to invest in settlements viewed as permanent”. In relation

to livelihoods, it was found out, in a study in Cebu, that in “both social and economic terms, the security of tenure was perceived to be important for livelihood strategies in the present and greater livelihood security in the long run” (Grant, 2004)

Empirical studies have however shown that tenure alone is not adequate in solving challenges in informal settlements. In a study conducted in Peru and Brazil, Fernandes, (2011) found that Peru, implemented the narrow legalisation of tenure through titling and though 1.5 million titles were issued, evaluations indicated that security of tenure had minimal effect on getting credit. Similarly, findings of a study on tenure, capital accumulation and quality of life for poverty alleviation in the Philippines by Velasco, et al, (2014), showed that titles had no impact on credit and to the labour market. In a separate case study carried out in informal settlements of Lima (Peru), the study showed that after 10 years after obtaining title, legal ownership had not resolved difficulties since housing conditions were still precarious and infrastructure was still inadequate (Almansi, 2009). Equally, Huchzermeyer and Karam, 2008, using South African study on informal settlements argued that security of tenure is not the “silver bullet” solution to informal settlements due to the precariousness of existing livelihoods and the unhealthy living conditions. Galiani and Shargrotsky (2005) equally found no evidence in their Buenos Aires study “that titling had generated an increase in ...household head income, total household income, total household income per capita, total household income per adult and employment status of the household head. These families are still very poor... their household income amounts to only 38 percent of the official poverty line, and 94 percent of households are below this line... 20 years after titles were allocated” (Payne et al, 2009, Galiani and Shargrotsky, 2005). Finally, in the case of Brazil, Fernandes, (2011) notes that “despite the advantages of titling in many respects,...the fact is, even when they have titles following the completion of regularization programmes, the residents of informal settlements are still perceived – and see themselves – as favela dwellers and, as such, they are discriminated against by the labour market” (Fernandes, 2011).

This has led to the conclusions in various studies that tenure security is not on its own adequate to overcome the cycle of poverty. Instead, “it forms only part of a more comprehensive and integrated approach to informal settlement upgrading” (Durand Lasserre, 2002). In a case study by Khemro and Payne, (2004) on improving tenure security for the urban poor in Phnom Penh

Cambodia, they concluded that provision of titles is not a ‘silver bullet’ but it should include other elements such as employment and basic services. Similarly, Almansi, (2009) concludes in her study in Argentina that other components required are healthcare, improvement of local environmental conditions, services, employment and social networks. Ananya, (2005) also, using the case of Peru, indicated that the poor, despite titles, lacked employment. In Brazil, according to Fernandes, (2011), the successful upgrading of informal settlements included “public services, job creation, and community support structures”. In Cambodia, Payne, (2005) argued that intermediate tenure can provide security but only if adequate planning regulations and administrative procedures are put in place. Similarly, Porio and Crisol, (2004) in their study on property rights, the security of tenure and the urban poor in Metro Manila agreed that intermediate tenure can offer security but must be supported by improvements in services and livelihoods. For Accra, Ghana, housing finance, provision of infrastructure and planning, are among factors necessary in informal settlements since tenure alone is not adequate (Nyametso, 2010).

In concluding this part, the foregoing discussion of empirical studies shows that tenure security is a key element in upgrading but not an adequate factor, on its own, to improve informal settlements. Other interventions that have been singled out as a necessary part of integrated approaches are infrastructure and service provision and livelihoods (employment, incomes, health, housing, credit). These studies, though hinting at some form of relationship of tenure with these elements have not analysed the details of their inter-linkages. It is noteworthy that none of these studies has specifically analysed the nexus between tenure, infrastructure and livelihoods, a gap that this study sought to investigate and contribute to.

### **2.6.2 Infrastructure Provision**

Empirical studies have shown that infrastructure is a critical element in improving informal settlements (AfDB, 2013, Akhmat and Khan, (2011), UN-Habitat, 2011, Almansi, 2009, Majale, 2008) arguing that it plays a critical role in economic development thus uplifting the quality of life. In regards to slum upgrading, Amis, (2001), in his study on 12 slums in India, pointed to the “relative success of upgrading projects in providing basic infrastructure and its direct and indirect impacts” that include; improved water provision, access, slum “image” and

environmental conditions. In the same vein, Arimah, (2004) argued that “improving infrastructure reduces the incidence of slums among African countries especially paved roads where statistics showed a 1% increase in paved roads reduced the incidence of slums by between 0.32% and 0.38%”. These road improvements, according to Amis, (2001) led to investment in housing and an increase in rents and improvement of the quality of life for settlement dwellers(Kessides, 1997). Conceptually, according to various studies cited by Calderón, and Servén, (2004), “infrastructure helps poorer individuals to get connected to core economic activities, thus allowing them to access additional productive opportunities, reduces production and transaction costs, regarding education, a better transportation system and a safer road network help raise school attendance; Electricity also allows more time for study and the use of computers; Regarding health, access to water and sanitation plays a key role in reducing child mortality” (Calderón, and Servén, 2004). In the same way, Komives et al, (2005), citing various case studies, argued that “water, sanitation, and electricity lead to improved health reduction of health related costs, safe storage of vaccines and foods. For Gulyani and Connors (2002), therefore, “the provision of basic service infrastructure should be the primary goal and central component of upgrading projects”.

However, empirical studies have shown that infrastructure did not, according to Amis, (2001), address all the challenges confronted by the urban poor. Using a case study in India, he argued that infrastructure did not address livelihoods. According to Boonyabancha, (2005), pointed out that although physical improvements are critical, upgrading should go beyond these physical aspects. So, the question, therefore, is how to translate the physical upgrading into bigger meaningful transformation.

Several studies have also pointed out that the provision of infrastructure did not provide tenure security (Nyametso, 2010, Handpick, 2010, Durand-Lasserve, 2006). In a study undertaken by WaterAid on an infrastructure project they were implementing together with United Nations, Human Settlements Programme found out that the project, though very beneficial to residents of the area, brought to the fore, serious land tenure challenges. Construction of civil works on the project in some parts of Sabon Zongo in Ghana had to be put on hold for a while owing to disputes over the ownership of the land earmarked for construction (WaterAid, 2009). Similarly, Durand-Lasserve (2006) established that slum upgrading undertaken in the 1970s with the

support from international agencies showed provision of secure tenure was a requirement for the provision of services. However, he argues that it is now recognized that the perception of land tenure security is more important than the land title but there is need for both land tenure and infrastructure in upgrading (Durand-Lasserve, 2007). In concurrence, Collin, (2012), from his research in Tanzania, argued that infrastructure upgrading positively impacts tenure and that the two are complementary.

However, Handpick, (2010), in his study on Favela Bairro slum upgrading Program in Rio de Janeiro argued for infrastructural upgrading rather than the legalisation of land tenure as a way of increasing the security of tenure of favela residents.

The results of research in Accra, Ghana, however, indicated “that access to infrastructure, social amenities, and basic services supplies were not necessarily related to the land tenure status of the research participants” (Nyametso, 2010). Conversely, Makachia, (2011) in his research on the influence of the tenure system on the physical environment in Nairobi’s human settlements, argues that tenure is not a solution to slum eradication and it contributes minimally to the physical environments arguing instead for enhanced tenancy rights which may offer more respect for tenants and structure owners as well as improved quality of the environment. Musyoka, (2002) on the other hand argues for acceptance of informal urban land delivery systems as part of securing tenure and, incremental improvements to utilities and services (Musyoka, 2002).

For Durand –Lasserve and Payne (2006) the experiences are varied: - In Colombia, infrastructure is availed to all who can afford irrespective of tenure status, in Peru, access to services is not improved due to titling, in Egypt, tenure and provision of services are not connected and in India, those with leaseholds had better access to water, sanitation and electricity. (Durand –Lasserve and Payne, 2007). What is the experience in Kenya?

Some scholars have argued for a dual entry approach to slum upgrading- tenure and infrastructure provision (Gulyani and Talukdar, 2008). Using their study undertaken in Nairobi, specifically in Nairobi’s slums, and the living conditions model they developed, they argued that tenure and infrastructure investment addresses the living conditions of informal settlements. This

study, however, seeks to further this argument of dual entry of infrastructure and tenure security by introducing a third dimension on livelihoods which is equally critical in upgrading.

In conclusion, authors have pointed to a relationship between infrastructure provision and tenure security though authors differ on the nature of tenure security- de jure and de facto. The studies have also not provided the specific inter-linkages between these elements and much less on their relation to livelihoods, an area that this study seeks to investigate. Further research has brought the realisation that while tenure security and infrastructure are essential in slum upgrading, it all depends on the abilities of the poor to benefit from these opportunities.

### **2.6.3 Livelihoods**

Studies have shown that policies and programs aimed at slums should seek to enhance the livelihoods of the urban poor (UN, 2003). Baker, (2008) pointed out that recent upgrading programs combine infrastructure with social programs such as microfinance, tenure regularisation, crime and violence prevention with upgrading water, sewage, solid waste, electricity, roads, drainage. What is the experience in Kenya?

When asked what they need most, according to Grant et al, (2004), “most poor people in cities, they say jobs or money ...the most fundamental preoccupations of the urban poor.” Similarly, Arimah, (2004) established that in African Countries, higher levels of income decrease prevalence of slums. The policy implication, therefore, according to Pritti, (2015) is that there is the need to improve the economic well-being of the poor through income-generating programs. Both Pritti, (2015) and Grant, et al., (2004), however, agree that income-earning is not the only source of livelihoods but it includes broader strategies that include health, safety, education, infrastructure tenure security and access to decent housing and supportive policies (Arimah, 2004). In this vein, African Population and Health Research Centre, (2002) in a study carried out in Nairobi City’s informal settlements, they concluded that strategies such as sanitation, health and livelihood opportunities have a higher effect.

What is the experience in Kenya? What are the types, nature, and approaches to livelihoods improvement in slum upgrading in Kenya? There are limited studies on this aspect of

livelihoods, a gap that this research sought to explore in relation to tenure and infrastructure improvement.

#### **2.6.4 Tenure, Infrastructure and livelihoods Linkages**

An analysis of empirical studies alludes to linkages in tenure, infrastructure and livelihoods in informal settlement upgrading. For example, despite titling efforts and de facto tenure in Peru and Cambodia respectively, the poor still have difficulties accessing means for livelihoods (jobs, capabilities and assets), still dwell in poverty-stricken areas, still lack basic services and therefore poverty is reinforced rather than annihilated (Bernadette, 2004, Khemro et al., 2003). To provide infrastructure, however, requires some form of tenure security, (Payne and Durand Lasserre, 2013, CURI, 2012, Ducrot, 2010, Gulyani and Talukdar, 2008). Provision of infrastructure, though it has a significant effect improving the “quality of life”, it does not have much impact on survival and security, which have been identified as important dimensions (Amis and Kumar, 2000). There is, therefore, a need for peoples’ wellbeing and rights in upgrading and not just a few roads and drains (Boonyabancha, 2005). However, upgrading livelihoods without improved living conditions is not holistic and will not generate a tangible change (Schütte, 2006). Noting the inadequacies of individual interventions, this study deviates from these debates to argue for a new and more comprehensive approach that integrates these three critical interventions in upgrading, namely tenure, infrastructure and livelihoods improvements.

#### **2.6.5 Institutions**

Empirical studies have shown that institutions can ease or restrain efforts to move persons and communities out of poverty (World Bank, 2005). They particularly play a critical role in slum upgrading (Bassett and Gulyani, 2007). According to Satterthwaite, (2002) institutions in slum upgrading include community organizations, NGOs, foundations, international agencies or national government agencies.



Despite the many players, Cities Alliance (2008) points out that government plays a critical role in the achievement of upgrading interventions and Imparato and Ruster, (2003) emphasises the same noting that the state is key in all urban upgrading and shelter initiatives.

However, not all upgrading interventions are done by government, others are through NGOs or CSO, though these rarely upscale but most often remain as pilot projects, unless they obtain government support (Imparato and Ruster, 2003). Similarly, Kyessi (2010) argues that since the 1990s, the central governments, in collaboration with local authorities and other grassroots actors, have initiated and implemented upgrading and formalisation projects which have followed the participatory approach with an ultimate goal of enhanced security of land tenure to informal settlement dwellers. In a case study in Tanzania, Kyessi, (2010) established that an NGO, Wat-Human Settlements Trust, operating in Hanna Nassif, the settlement went ahead to facilitate plot surveying in the area with an ultimate aim of enhancing the security of tenure to the property owners. He noted that though the tenure security was seen as a public top-down task, NGOs and CBOs played a critical role in improving land tenure security through regularisation and formalisation of informal settlements. In Kenya, NGOs like “Pamoja Trust”, “Kituo cha Sheria” and “Shelter Forum” are involved with activities which promote land rights. These NGOs and others focus most of “their work at the community level to build capacity for policy influence, promote credit and savings groups, to bring communities in informal settlements together and to build community structures capable of addressing land and housing tenure issues” (Kyessi, 2010).

Noting these actors, it is necessary to create mechanisms of collaboration and partnerships with clear roles and responsibilities, consistent support, flexibility, political maturity, synergies with a common objective that will drive successful implementation (Baker, 2006). According to United Nations (2012), about a case study of an integrated urban upgrading project in Salvador Bahia, Brazil, “the project developed a partnership with various institutions where each actor contributed to the program objectives in different roles and with different specific traits. International institutions (World Bank, Italian Ministry of Foreign Affairs) whose role was to have technical-managerial know-how and financial resources converge; Public local institutions (State, Municipality) whose role was to govern the resources converging on the territory and to invest in the action themselves; Private businesses, providing technical know-how and work;

NGO and third sector, whose role was a link between the community and the other subjects, by activating financiers, competencies and human resources; CBOs, orienting the program actions” (United Nations (2012)).

The challenge, however, is that though recent initiatives comprise all these actors including government, development partners, Civil Society, Non- Governmental and Faith-Based Organizations, they rarely work synergistically, operate independently or in narrow partnerships thus limiting the impact of upgrading. Why is this so? This study seeks to analyse institutional dynamics in slum upgrading particularly regarding tenure security, infrastructure provision, and livelihoods improvement to underscore the way they shape, influence, control, and determine the nexus of these three elements.

## **2.7 Conceptual Framework**

This study’s conceptual framework is an integrated and multisector approach to informal settlement upgrading as opposed to the dominant but narrow single sector approach that has in the past limited impact of upgrading programmes. It is based on the insight that first, upgrading of informal settlements cannot be considered in isolation from their socio-economic, environmental, physical, and institutional context and secondly, that these factors are interlinked. This requires that interventions aimed at improving the settlements are looked at from a nexus perspective.

The concept is on the view that slum upgrading, if it is to be effective and to generate greater impact in alleviating poverty and facilitating sustainable development must, first; be integrated, second; focus on key consequential interventions that integrate both the physical as well as the people, thirdly; deploy interventions simultaneously or incrementally due to their intrinsic interlinkages and fourthly; recognize and maximize potentials of institutions in slum upgrading.

The study focus is on key upgrading interventions that address both the socio-economic and physical aspects as well as their institutional dynamics namely, the security of tenure, and infrastructure and livelihoods improvement. The absence of security of tenure, infrastructure, and fragile livelihoods underpins deprivation and are major sources of conflict, poverty, and

proliferation of informal settlements in the urban space (Satterthwaite 2012, UN-Habitat, 2012, 2007, World Bank, 2006, Schutte, 2004). Countries have implemented these interventions and an increasing body of investigative literature by academia and development institutions has documented the significance of each of these interventions and have argued that these elements are critical in upgrading. (Payne and Durand-Lasserve, 2012, Luis, 2010, Kyessi, 2010, Nyametso, 2010, Moser 2008, Basset and Gulyani, 2007, De Soto, 1989, Turner, 1968). However, studies have also shown that though essential, these interventions cannot address the needs of the urban poor, each on its own (UN, 2012 CURI, 2012, Syagga 2011, Payne and Durand-Lasserve, 2007, Huchzermeyer and Karam, 2006, World Bank 2006).

This study, therefore, proposes a multi-sector, tenure-infrastructure-livelihoods nexus approach to informal settlement upgrading, for improving both the living conditions and livelihoods in informal settlements- a framework that considers the complex but synergistic interplay between these elements.

This conceptual framework builds on theoretical frameworks of various scholars. On tenure security, scholars and practitioners have pointed out that it is a critical element in slum upgrading (Gelder, 2009, Basset, 2007, Durand, 2006, Payne 2005, UN Habitat, 2003, Gulyani, 2002). However, there is no consensus on what it entails and how it ought to be realized (Gelder, 2009). Some authors have stressed the importance of titling or *legal* tenure security (Cokburn, 2013, De Soto 2000, Turner, 1978, 1968). This is seen as *top-down* while others have focused on bottom-up approaches such as de facto tenure security, that emphasizes protective administrative measures against forced evictions than legal status (Fernandes, 2011, UN Habitat, GLTN, 2008, Durand, 2007, Payne, 2005, ) and others have taken tenure security as that which is *perceived* by slum dwellers (UN, 2012). It has been argued alternative tenure options ought to respond to the needs of poor households and dwellers in informal settlements to facilitate investment in housing, stimulate economic initiatives, improve health conditions, make credit accessible, alleviate poverty, and facilitate infrastructure provision (UN, 2003, Durand, 2007 Basset, 2002, Kessides, 1997).

This approach to upgrading has been critiqued. Several studies have underscored the limitations of legalization (Durand-Lasserve, 2006, Ananya, 2005, UN-Habitat 2003). Gilbert (2002), as

quoted by Ananya, (2005), argues that “De Soto perpetuates a myth of popular capitalism in which policymakers can believe that all they have to do is to offer title deeds and that they can leave the market to do everything else”. Ananya, (2005) in his research, showed that legalization did not facilitate access to formal credit or employment thus “casting doubt on the notion that ending informality can end poverty”. Bernadette, (2004) concurred with this argument and noted that despite titling efforts, the poor could not access employment opportunities, lacked infrastructure and lived in poverty “therefore cycles of poverty are reinforced rather than destroyed”

Another challenge of legalization that has been identified is gentrification. That vulnerable dwellers of informal settlements can be gentrified as a result of tenure formalization (Ananya, 2005, Arimah, 2004, Payne, 2002) thus jeopardizing livelihoods of the poor. On the other hand, research in Phnom Penh in Cambodia showed that those households with de facto tenure did not feel “secure given previous attempts to remove them” (Khemro and Payne, 2003) and according to Khemro and Payne, this proved to be a constraint to the improvement of housing and the living conditions. How then can formalization or tenure security proceed while facilitating affordability and preventing gentrification and displacement?

Due to these challenges, it has been argued that “secure tenure alone cannot address the needs of the urban poor and that it should form part of an integrated development approach” (Durand, 2007, Payne 2006, Bernadette, 2004, Khemro and Payne, 2003, Cohen 1983). Durand (2007) and Payne (2006) argued for provision of basic infrastructure to accompany tenure while Gulyani and Connors, ( 2002) argued that basic infrastructure should be the main goal and key component in upgrading programs arguing that it will provide both tenure security as well as improve settlement conditions (Gulyani and Basset 2010).

Taking this debate further, Gulyani and Talukdar, (2008, 2010) argued that instead of selecting either tenure or infrastructure as a single-entry, there is a need to act on both simultaneously. Using a study in Nairobi’s slums, they argued that neither De Soto’s title-based approach nor the World Bank’s infrastructure approach is likely to work independently. They argued that these are inter-dependent and they should be acted upon simultaneously. They, therefore, proposed “that living conditions—in any settlement, including slums—can be understood as a combination of

four types of factors: (i) tenure, (ii) infrastructure, (iii) unit quality, and (iv) neighbourhood's condition and location. These four factors interact with and influence each other, and they collectively determine the overall quality of living conditions in a given settlement". This is illustrated in figure 2.1

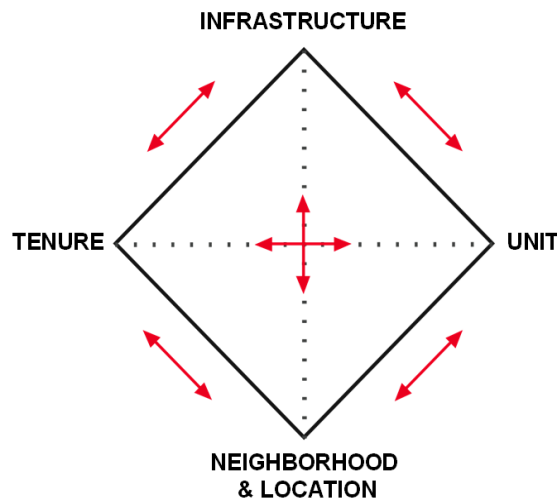


Figure 2.1: Living Conditions Diamond Source: Gulyani and Talukdar, (2008)

This study seeks to build on this current existing approach to upgrading that focuses mainly on the physical aspects and expand it to include livelihoods. It has been argued that tenure security and infrastructure are related issues and solving one cannot be done without engaging with the other.

However, the scale of infrastructure provision and gains in tenure security should be complemented by an equal emphasis on the improvement of livelihoods. Further, it is important to establish whether tenure security and infrastructure provision either enhance opportunities for the poor to conduct their livelihood pursuits, or whether they make it more difficult. Specific strategies may lead to cycles of livelihood improvement or livelihood sustainability. Such an understanding has important implications for policy development, programme design, and implementation of interventions.

The study, therefore, advocates for a more explicit integration of livelihoods - a dimension which is people-centred and is geared towards improving the lives of poor people since they are at the

core of sustainable development. It proposes to go beyond improving physical living conditions in informal settlements to directly addressing livelihoods such as capabilities of the poor, healthcare, food, education, training, shelter, incomes, and employment generation. Though the provision of tenure and infrastructure can remove constraints to livelihoods, there is a need to focus on people’s capability to transform tenure and infrastructure into income and other livelihoods. This can be realised by equally focusing on livelihoods both the strategies and activities.

This study’s conceptual framework, therefore, is a multi-sector, integrated tenure –infrastructure –livelihoods nexus approach to improving livelihoods and living conditions of dwellers in informal settlements. This framework places the greatest emphasis on the inter-linkages of these interventions. Rather than being taken singly, as has happened in the past, this study argues that strength lies in the nexus of these interventions. Far more importance is placed not just on the interventions in slums but on the opportunities in symbioses, complementarities and partnerships that can be harnessed through a multi-sectoral approach as shown in the illustration in figure 2.2.

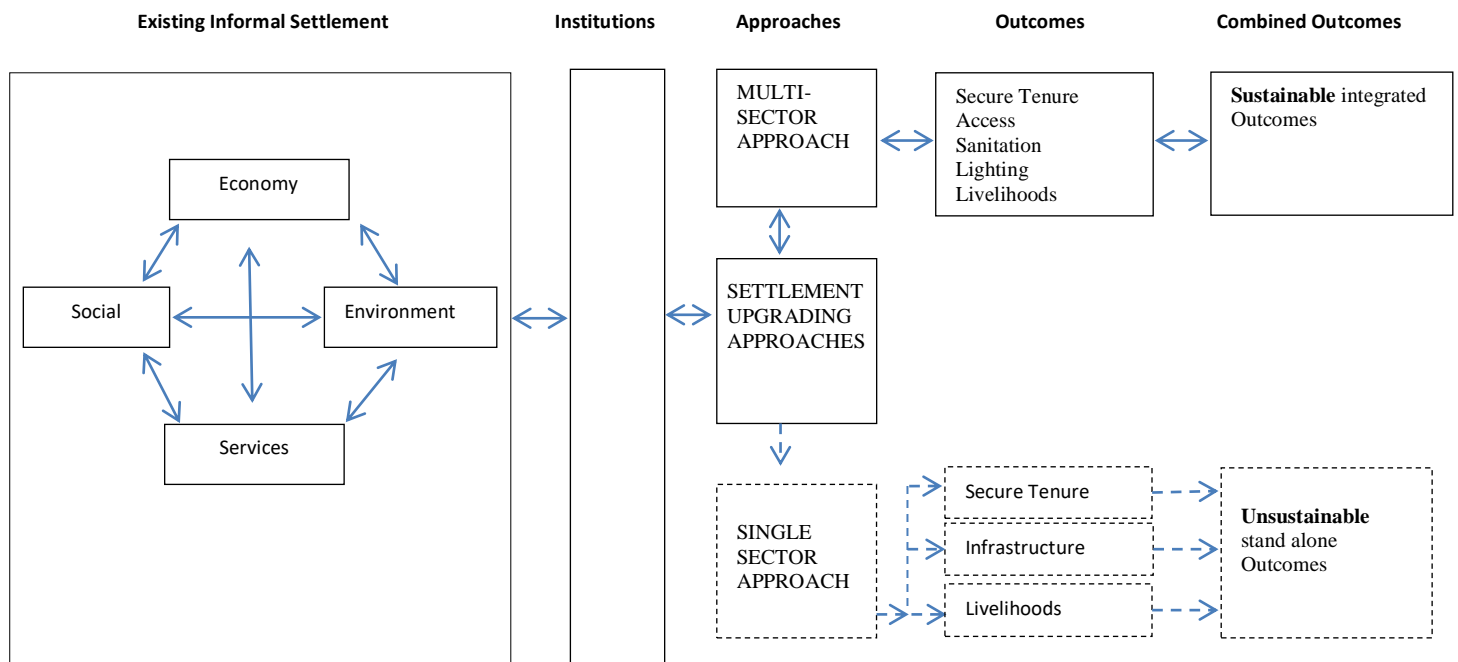


Figure 2.2: Conceptual framework for this study Source: Author

From the illustration, an existing informal settlement exists within its economic, social, physical services and environmental context. These factors are interrelated and together they influence the informal settlement. Studies have shown that environmentally, informal settlements are located in precarious neighbourhoods that are characterised by degradation, pollution, unsanitary conditions, health and safety hazards. The incidence of disease and mortality is higher than in other urban areas. They occupy areas prone to landslides, flooding, and pollution from industries. Severe environmental impacts are associated with lack of services such as infrastructure that includes sanitation. These, in turn, influence the economic well-being of dwellers. Economically, informal settlements are areas characterized by irregular or casual employment, low, insecure and unstable income, lack of access to credit, funding sources, poor housing, and low ownership of assets in addition to low levels of literacy, education, health, mortality. This is exacerbated by a lack of full security of tenure, which exposes the dwellers to the risks of evictions. These conditions make livelihoods precarious. This is exacerbated by adverse health effects of overcrowding and unsanitary conditions arising from poor access to water and sanitation facilities. Though dwellers have strong social networks and are more cohesive, high crime rates and violence inhibits wellbeing.

In addition to these conditions, informal settlements are generally places of extreme policy neglect. While there are policy advances, dynamics of political, policy and institutional changes have undermined slum upgrading efforts and have ensured that the undesirable status quo is maintained. This includes challenges such as a multiplicity of institutions with diverse agendas, uncoordinated and at times drawn –out policy-making, conflicting interests of stakeholders and duplication.

Upgrading has been singled out as a current best practice in addressing these challenges. A common approach in countries, including Kenya, is a single sector approach, where interventions are compartmentalized into sectors and implemented singularly with little regard to their interconnectedness. As shown in the illustration, the outcomes are equally limited. For example, tenure security becomes a single outcome where tenure only has been provided however this is not adequate to address the needs of the poor nor is infrastructure or livelihoods alone. Multi-sector approach, on the other hand, multiple related interventions are used. In this study, and as

shown in the illustration, these interventions are tenure security, infrastructure and livelihoods. The multi-sector approach maximizes the linkages of interventions to realize multiple outcomes—livelihoods, secure tenure and improved services that address the physical conditions and is people-focused. This study thus seeks to challenge the dominant single intervention approach to slum upgrading, to emphasize opportunities for nexus approaches to interventions, in particular, those that take into consideration both physical and people-focused interventions.

The study focus and questions, therefore, were to determine which approach is viable, under what conditions? What institutional arrangements? What challenges exist? And what are the lessons for slum upgrading in Kenya? The linkages within and between the tenure, infrastructure and livelihoods provide factors which should inform policy and slum upgrading strategies. In Kenya for example, tenure, infrastructure, and livelihoods improvements are delivered through a series of ad hoc programs by various agencies to address specific problems. In keeping with a growing move towards program integration by governments, this study draws up a tenure–infrastructure–livelihoods framework as a move towards generating more coherence, integration, and complementarities in programs that can yield greater impact and contribute to efforts on making our cities slum-free.

## **2.8 Challenges with this concept**

This proposed tenure–infrastructure–livelihoods multisector integrated framework to slum upgrading, however, has associated challenges. These include insufficient financial and human resources, existing silo policies, rules, regulations and existing sectoral institutional and societal setting. Moreover, multisector and integrated approaches are much more complex than conventional sectoral (silo) approaches. They would require robust coordination and organization between key stakeholders.

## **2.9 A critique of the literature**

The literature has provided a knowledge base on the study’s area of focus on the conceptions, debates, theoretical and empirical research surrounding slum upgrading, specifically the elements of tenure security, infrastructure, livelihoods, and institutions. Although the literature obtained is wide-ranging, valuable, and makes a critical contribution to knowledge, much remains to be



done in the areas of (i) contextualizing in the African context (ii) examining the nexus between tenure, infrastructure and livelihoods, (iii) the special place of livelihoods in upgrading.

First, most of the studies have focused on the international scene but are limited on African and local situations. The conceptions and debates on tenure security by Payne and Durand-Lasserve, (2013, 2007) are based on land tenure rights and tenure systems world-wide with examples being drawn from the international level to capture their argument that tenure security is a precondition for reducing poverty. Similarly, De Soto's, (2000) argument for legal tenure by his declaration that properties without legal rights in informal areas are 'dead capital', is an international perspective that is used as a reason why the west has prospered more than the developing countries and urging the later to give legal ownership rights to alleviate poverty especially of the urban poor. On infrastructure, Estache and Fay, (2007) use a global perspective on developing countries to flesh out the debates on infrastructure arguing that it is an important ingredient in development, low growth rates are attributed to insufficient investment in infrastructure, the poor are the hardest hit due to limited access and affordability. On livelihoods, Chambers and Conway, (1992) conceptualized the sustainable livelihoods framework from a world view regarding low- and middle-income countries to argue for prioritization of livelihoods in research, development, and policy. These discourses provide a global view of these concepts but the perspective from Kenyan local communities is limited. A gap that this study contributes to by examining the efficacy of tenure, infrastructure, and livelihoods in informal settlement upgrading through case studies domiciled within local communities.

Secondly, the literature is mainly focused on individual sectors, on their significance in development and impact. De Soto, (2000) argued for the recognition of legal ownership of land to alleviate poverty while Gelder (2010) dwelt on the typologies of tenure and their impact with Payne, (2002) and Gilbert, (2002) arguing that perceived rather than legal tenure security is a more important mechanism driving housing investment. These, however, failed to examine the effect of tenure security on other sectors or interventions such as infrastructure and livelihoods that would otherwise give a wider understanding of tenure. Although Fernandes, (2011) study conducted in Peru and Brazil showed that tenure alone is not adequate in solving challenges in informal settlements, alluding to some connectivity with other sectors, the study does not critically determine which other interventions are necessary. Priti, et al., (2015) and Estache and

Fay, (2009) on the other hand researched infrastructure services and argued that they are critical for the reduction of poverty and economic development, and sustainable urbanization but did not show their impact on tenure security and livelihoods. Moser, (2005), Lloyd-Jones and Rakodi, (2002), Krantz, (2001) focused on livelihood approaches that necessitate an all-inclusive scope of livelihood strategies that people draw upon, including their capabilities and asset base and ways of overcoming susceptibility and social exclusion but limited on nexus with other interventions.

Thirdly, few studies looked at linkages in sectors, but are limited on the tenure security, infrastructure, and livelihoods links in upgrading. Gulyani and Talukdar (2008) researched and emphasized simultaneous deployment of both tenure and infrastructure in slum upgrading to improve slum conditions arguing that the two are connected. However, their focus is on physical aspects which failed to give equal emphasis to people's livelihoods or wellbeing, and yet they are critical for the sustenance of tenure and infrastructure. Royston, (2014) on the other hand looked at tenure and the impact on household resources, savings, and development of land, dwellings, and environment but silent on infrastructure while Calderón, and Servén, (2004) focused on the effects of infrastructure on economic activities and health and not on tenure. From the foregoing, it is notable that none specifically focused on all the three interventions of tenure security, infrastructure, and livelihoods and much less on their inter-linkages in slum upgrading. A knowledge gap that this study sought to contribute to.

Further, the existing literature used varied methodologies to analyze and demonstrate linkages in interventions. Gulyani and Talukdar, (2008) and Gulyani and Basset, (2010) used the living conditions diamond model to show linkages in four components which they argued were fundamental to improving living conditions in informal settlements, namely tenure, infrastructure, housing unit quality, and neighbourhood. However, this was limited to physical aspects and much less on the livelihoods component. On the other hand, the livelihoods approach as advocated by Lloyd-Jones and Rakodi, (2002), Carney, (1999), Chambers and Conway (1992) used a Sustainable Livelihoods (SL) analytical framework comprising of capabilities, assets, and activities necessary to make a living to argue for livelihoods approach to policy. Hagans, (2013) used this SL framework to analyze linkages in livelihoods, land-use, and public transport. The livelihoods approach, however, overlooks the impact of institutions as well as clear connections

to tenure security and infrastructure. This study used a nexus analytical framework to determine linkages in the interventions of tenure, infrastructure, and livelihoods. Nexus analysis is a mixed-method, multisectoral and integrated approach used to assess and address the interactions among different sectors and although it is relatively new, it has been used over time to demonstrate the interlinkages and interconnectedness of sectors which is critical for policy (Torres, et al., 2019, Kuure, et al., 2018).

## **2.10 Gaps in the literature**

Literature has shown that upgrading is an important strategy in addressing the challenge of informal settlements proliferation in urban space. Further, studies have shown that various interventions can be used in slum upgrading including through tenure security improvement (Gelder 2010, Kessides, 1997, De Soto, 2000), infrastructure provision (Priti, et al., 2015, Handpick 2010, Gulyani and Connors, 2002) and livelihoods improvement (Moser, 2008, Chambers and Conway, 1992). However, literature has revealed that a knowledge gap remains concerning tenure, infrastructure, and livelihoods nexus in slum upgrading.

First, the studies examined these interventions from a sectoral perspective, looking at them independently on their own but linkages amongst them were less explored. Although there is a growing literature on various aspects of tenure, infrastructure, and livelihoods of the poor, little work has been done linking these three sectors. A gap which this study contributes to by using a multisectoral conceptual framework that integrates sectors for a more comprehensive slum upgrading.

Secondly, most studies focused on the physical aspects of upgrading. Payne and Durand-Lasserve, (2013) and Gulyani and Basset, (2010) emphasized improving living conditions of settlements but limited on people aspects. This study builds on this approach to upgrading but expands it to include livelihoods, an area that was found to require more emphasis. As argued by proponents of dual entry of both tenure and infrastructure, both are related issues, and solving one cannot be done without engaging with the other. However, the scale of infrastructure provision and gains in tenure security should be complemented by an equally definitive boost in the households' livelihood opportunities. Notwithstanding the growing research on links between sectors, much remains to be understood about the interplay of these three elements in upgrading

process and the implications thereof for policy and practice of upgrading, a knowledge gap that this study contributes to. It does so by determining the interplay of tenure, infrastructure, and livelihoods in upgrading and recommending a Tenure-Infrastructure-Livelihoods (T-I-L) nexus approach to upgrading for impact and sustainability.

Thirdly, institutional aspects of tenure security, infrastructure, and livelihoods improvements are not well understood and documented. Turner, (1968), argued for a “minimal state” in public services instead of dwellers' efforts in improving their conditions but Werlin, (1999) and De Soto (2000) criticized this notion arguing instead “for an effective and strong state. Baker, (2009) looked at the role of the private sector, while Satterthwaite (2012), Habib, (2009), Ananya (2005) the Non- Governmental Organizations and Albrechts, (2012) and Siame, (2003) on the community’s role. These studies focused on types of institutions undertaking slum upgrading. However, there is limited knowledge of how such institutions affect upgrading. The interplays of actors are critical for impactful and sustainable upgrading. This study contributes to this knowledge gap by determining the institutional dynamics of tenure, infrastructure, and livelihoods that shape, influence, and determine the nexus of these interventions in upgrading.

Lastly, research on the tenure, infrastructure, and livelihoods interventions in upgrading in Eldoret, Kenya is limited. The bulk of the literature is based on other countries and those undertaken in Kenya are concentrated in the major cities especially the capital city of Nairobi. More work is therefore required to be done in secondary cities such as Eldoret, especially on the nexus of these elements in the process of upgrading, a gap which this study contributes to by focusing on tenure, infrastructure and livelihoods nexus in Eldoret municipality.

## **2.11 Summary**

This chapter has discussed both the empirical and theoretical literature on the study’s area of focus namely slum upgrading specifically tenure security, infrastructure and livelihoods improvement and noted that various aspects of these interventions have been studied but there is limited research on their linkages, a gap that this study sought to contribute to. Building on existing theories, this study conceptualises that tenure security, infrastructure and livelihoods improvements are interlinked and should be deployed simultaneously through multisector

strategies that take cognizance of linkages thereby leveraging on synergies and minimizing trade-offs to achieve greater impact and sustainability of upgrading efforts

The next chapter provides the research methodology on where and how the investigation was undertaken to achieve the objectives of this research and further build on literature explored in this chapter.

# Chapter Three: Research Methodology: The Setting, Steps, Approaches and Process

## 3.1 Introduction

This research sought to fill the gap identified in the preceding literature review chapter by investigating the linkages in upgrading interventions, specifically the interplay of tenure security, infrastructure and livelihood improvements in the process of upgrading and the institutional dynamics thereof. This chapter presents the research methodology including the study philosophy, design, area, case study settlements, sampling, data collection, analysis and interpretation as well as research challenges. The methodology was largely determined by the research questions and the contemporary nature of upgrading that needs to be investigated within its context. According to DePoy and Gitlin, (2011) and Yin, (2004, 1994), the methodology is guided by the type of research question, the control a researcher has over events, and the contemporary nature of the phenomena. Based on this understanding, the study adopted a case study methodology composed of three case study informal settlements of Huruma, Munyaka and Kamkunji in Eldoret town. These settlements were purposely chosen after an earlier reconnaissance survey which established that these settlements presented an opportunity of meeting the objectives and answering the research questions. They had some form of tenure security, livelihoods and they were benefitting or had benefitted from infrastructure upgrading. The study used multiple data collection techniques involving household survey, focus group discussions, key informant interviews and observations which allowed triangulation of data thus increased validity. Similarly, it used mixed-method data analysis using both qualitative and quantitative approaches and interpretation.

## 3.2 Study philosophical position

The study's methodology was guided by the philosophical positioning of the research. There are various paradigms or philosophical positions that underpin research. Two main paradigms in the social sciences are the *positivist approach (quantitative approach)* and *interpretivist (qualitative approach)* (DePoy and Gitlin, 2011, Kumar, 2005,). The positivist approach has its roots in physical science (Mukherji and Albon, 2010), it is objective and focuses just on facts, obtained

through direct observation and empirically measured using quantifiable methods and analysed statistically (Hibberd, 2010, Blaikie, 1993, Ritchie and Lewis, 2003, Roth and Mehta, 2002). In the interpretivist approach, on the other hand, “knowledge is socially constructed rather than objectively determined” (Carson et al., 2001). It is not about objective truth but more about subjective understanding (Scotland, 2012) since the study focus is on finding out how people interpret their experiences. It uses qualitative data in the form of “thick narratives” or “thick description” with extracts from documents or interviews (Della Porta and Keating, 2008, Lin, 1998, Geertz, 1973). Some authors have included a third paradigm, that of *realism* (Krauss 2005). Realist paradigm has been described as a “middle ground” between the poles of positivism and interpretivism/constructivism (Flowers, 2009, Krauss, 2005). For DePoy and Gitlin, 2011, this third view is referred to as pragmatism “which transcends the seeming incompatibility of the two philosophical positions and provides a sound rationale for using mixed methods to address the limitations of each approach” (DePoy and Gitlin, 2011).

There however has been an age-old debate about which philosophical paradigm is most applicable from which research methods ought to be derived (Smith et al., 1991). Many social scientists combine these approaches (Della Porta and Keating, 2008, Hibberd, 2010, Parker, 2003, Hartwig, 2007, Bisman, 2002, Perry, Alizadeh and Riege, 1997). According to DePoy and Gitlin, (2011) they can be integrated into a study for complementarity and the understanding (DePoy and Gitlin, 2011).

This research adopted a mixed-method approach of both the quantitative (positivist) and qualitative (interpretivist) approaches. For this reason, therefore this study was based on realism paradigm. The reason for this is that the mixture of both methods gives a better understanding and analysis than each approach might alone. Further, Creswell and Plano Clark, (2011) argue that this combination of approaches, rather than the mono-method, reinforces the research design as each weakness is counteracted and strengthened by the other.

On interpretivist or qualitative approach, this study, which is on tenure security-infrastructure-livelihoods nexus in slum upgrading, focused on exploring the experiences of people and their views and how they interpret tenure security, infrastructure and livelihoods interventions in their informal settlements’ context. The study used the interpretivist approach in establishing

relationships in the three interventions. According to Lin, (1998) interpretivist work, can be used for detailed examinations of causalities and explaining how variables interact. The focus is not on determining laws about underlying relations between variables (as is the case in positivist approach), but on understanding humanoid including the multiplicity of societies (Della-Porta and Keating, 2008). The study used the strength of the interpretivist model to provide the enlightenments necessary to determine that a set of relationships in tenure security, infrastructure, and livelihoods exists. In the interpretivist approach, context is most important (Della Porta and Keating, 2008). The aspects of tenure, infrastructure, and livelihoods in this research were studied within the context of informal settlements and for this reason, three informal settlements have been purposively identified as case study areas.

The study, however, used the positivist quantitative approach to measure, validate or quantify the extent of tenure, infrastructure and livelihoods while the qualitative methodology was used to describe experiences, emphasizing meaning and exploring the nature of these issues. The qualitative data was used to inform, describe, and offer further insight into findings produced from the quantitative data. These, qualitative and quantitative data sets were integrated within an analysis.

On the presentation of the data, the study used both interpretivist or qualitative form of narratives or description with extracts from interviews and documents as well as all the positivist quantitative techniques. The tenure security, infrastructure, livelihoods, and institutions were not reduced to simple interpretations but rather new layers of insight were exposed as phenomena were thickly explained.

On the relationship between the investigator and the investigated, this study adopted the strength of the interpretivist approach which allowed the researcher to be engrossed in the situation to be studied, to understand the households, and to see things from their viewpoint. This research adopted this approach by examining various tenure-infrastructure-livelihoods types, approaches, and interplays from the perspective of the researched. Individual constructs were elicited from surveys with participants being relied on as much as possible to provide information.



The study sought to overcome the weaknesses of the interpretivist and positivist approach, regarding subjectivity (the researcher's individual opinions and views). Although, according to Scotland, (2012) it is acknowledged, by interpretivists, that it is not possible to have value-free knowledge since researchers influence when, how and interpretation of their data. However, this research adhered to values and upheld objectivity in terms of both the research process itself and the deductions made. In ensuring reliability, this research ensured consistency in interpretation or categorization of issues and validity through providing dependable accounts of the opinions of the research participant as well as a reflexive account of the investigator's role in the generation of the research data

### **3.3 Study Design: Case study approach**

Research may be undertaken in various ways. The identified methodologies include “case studies, experiments, surveys, histories, and the analysis of archival information” and each is chosen based “on three conditions: One, the type of research question, two, the control an investigator has over actual behavioural events, and three, the focus on contemporary as opposed to historical phenomena” (DePoy and Gitlin, 2011, Rowley, 2002, Yin 2004, 1994).

Based on this understanding and to achieve its objectives, this study used a “case study approach”. According to Yin, (1994), a case study is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not evident”. Feagin, et al., (1991) point out that this approach is the best method for “a holistic, in-depth investigation”, since, like Yin, (1994) puts it, “it allows expanding and generalizing theories by combining the existing theoretical knowledge with new empirical insights”, assists in finding underlying associations (Hillebrand, Kok, and Biemans, 2001; Jensen and Rodgers, 2001), and can be used to produce “thick descriptions and rich understandings” (Dyer and Wilkins, 1991, Eisenhardt and Graebner, 2007) of phenomena in their contextual settings (Yin, 1994, Bensabat et al., 1987). Further, the case study uses multiple sources of evidence and multiple data collection techniques (Yin, 1994) that include archival records, documents, interviews, observation and artefacts which facilitates triangulation of data (more recently referred to as crystallization) and other different strategies to examine a phenomenon (DePoy, 2011).

The case study approach for this study is justified on several grounds. The research questions for this study are both explanatory ‘how’ and descriptive ‘what’ has been happening?). According to Yin, (2004), this is the first and most important criteria for choosing a case study method and the nature of research questions either a descriptive question (*what* happened?) or an explanatory question (*how* or *why* did something happen?). The study seeks to investigate how tenure, infrastructure, and livelihoods interact and what has been happening as regards the type, nature, and approaches of these slum upgrading interventions as well as the institutional dynamics. Secondly, the study had no control over the events of tenure, infrastructure, and livelihoods in the informal settlements. “The researcher has no control over actual behavioural events” (Yin, 2004, 1994). Thirdly, the issues to be investigated are contemporary events and cannot be manipulated. The focus was on understanding the tenure, infrastructure and livelihood variables within their natural setting and which could not be manipulated. Contextual conditions were highly relevant. Contextual conditions are regarded as highly relevant. To examine and explain the interplay of or dynamic interaction between the interventions, it was crucial to understanding them within their context. For this type of research, the *case study* design is most appropriate (Yin, 1994, Stake 2006). Further, the case study approach facilitated a holistic, in-depth investigation, the use of a diversity of evidence obtained from diverse sources including interviews, documents and observation, and it facilitated the use of a mix of quantitative and qualitative approaches.

This study adopted a multiple-case study that involves three informal settlements, namely Huruma, Munyaka and Kamkunji. The three informal settlements are chosen first and foremost because they are characterized as informal settlements/slums and secondly, the tenure and infrastructure upgrading had been done in the settlement. According to DePoy, (2011) multiple-case studies are useful for examining the same phenomenon in various cases for purposes of strengthening theory or testing the findings. It is used in two ways, for comparing (Yin, 1994) or “for a better understanding of a phenomenon, without comparing the cases but by extracting diverse or similar evidence from them” (Stake, 2006). In this study, the multiple case studies were used for the latter. As Yin, (2004, 1994) puts it, ‘replication logic’ reinforces the investigation. All this was aimed at developing an insight into the nexus of tenure, infrastructure and livelihoods and related institutional dynamics in upgrading in three informal settlements.

### 3.4 Study Area

The study area is Eldoret town in Kenya. Kenya as a country is located in East Africa with a total of 591,971 square kilometres (Statistical Abstract 2018). Administratively it is divided into 47 counties. According to the 2019 Kenya population and housing census, its population was estimated at 47.6 million in 2019, with an inter-censal population growth rate of 2.2 per cent and an urban population of 14.7 million. Though mainly rural, it is rapidly urbanizing with a growth rate of 4.3 per cent (World Bank, 2016, GoK, 2013,2009) attributed to natural increase, rural-to-urban migration, an increasing number of urban centres and expansion of urban boundaries. However, this rapid growth has not been matched with adequate services thus constraining and negatively impacting the quality of life of populace (World Bank 2017). This has pushed the urban poor into informal settlements that are deprived of services, tenure security, safety and proper shelter (Flinck, 2016). In Kenya, more than half of the urban population lived in slums in 2014 as shown in table 3.1

*Table 3.1: Proportion of urban population in the slum areas in Kenya, 1990-2014*

	1990	1995	2000	2005	2010	2014
<b>Proportion of urban population in slum area</b>	54.9	54.8	54.8	54.8	54.7	56
<b>Urban slum population at mid-year('000)</b>	2,343	2,859	3,400	4,069	4,762	6,427

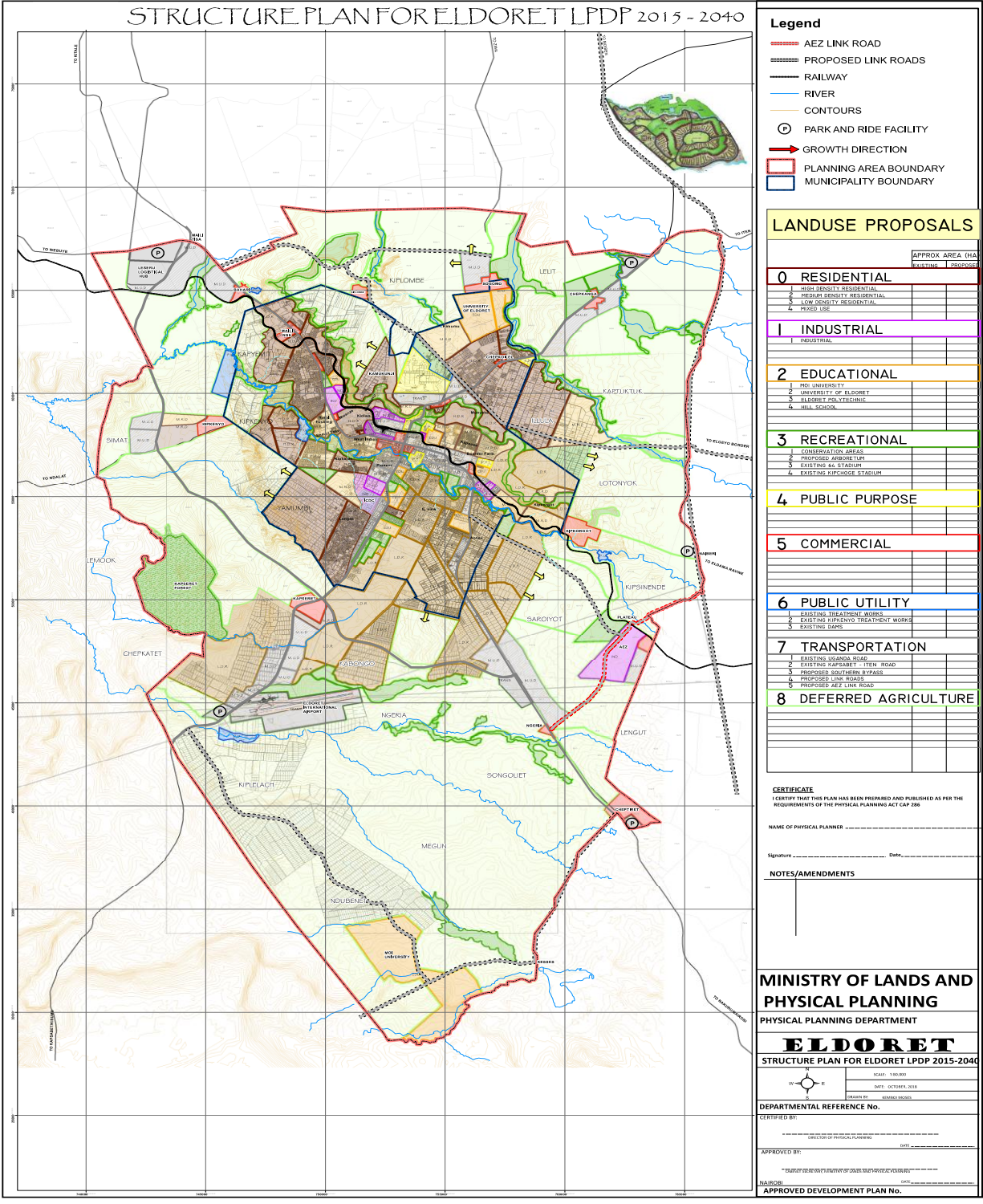
*Source: National Council for Population Development (NCPD) 2017*

#### 3.4.1 Eldoret Town

Eldoret town is the fifth largest town in Kenya. Geographically, it is located 330 km to the northwest of Kenya's capital Nairobi, in the Great Rift Valley as shown in map 1.1. Historically, Eldoret traces back to the colonial settlers who settled in Uasin Gishu and "more so Afrikaner settlers who moved in from South Africa" (Simiyu, 2012, Ndege, 2005, Agevi, 1991) and settled on farmland survey numbered sixty-four, and locally referred by the locals as "Sisibo". Services such as security, transport, administrative offices and communication in this area were established in 1908. The area was elevated to a township in 1912 and subsequently renamed Eldoret with an administrative area of approximately 11.2 km (Ombura 1997).

According to Simiyu, (2012) this new status spurred growth and led to the expansion of facilities such as postal, banking, recreational and commercial services to meet the emerging demands of the expanding population, but also to link Eldoret to the rest of the country. Eldoret assumed full municipality status in 1958, its boundary extended in 1974 to 59 km<sup>2</sup> from 25km<sup>2</sup> and extended again in 1988 to cover 147.9 km<sup>2</sup> bringing agricultural land and ‘rural’ populations under the jurisdiction of the municipality.

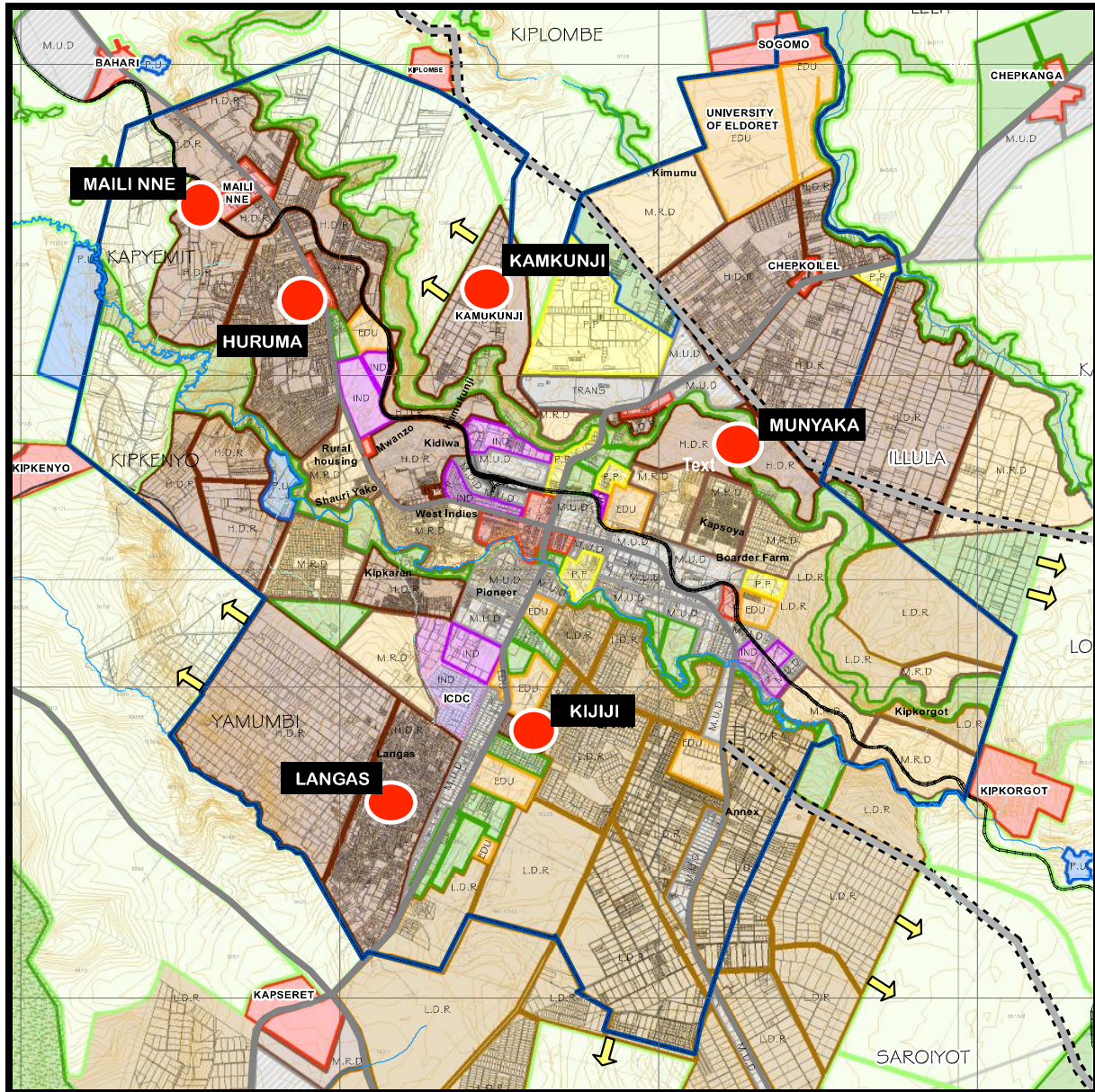
Since then Eldoret has become a fast-growing cosmopolitan secondary city (Badoux, 2018) characterized by commercial, industrial, manufacturing, educational, hospitality, tourism, residential and transportation developments as shown in the towns structure plan depicted in map 3.1.



Map 3.1: Eldoret town structure plan, 2015-2040. Source: Ministry of Lands and Physical Planning

The town is experiencing a high urban population with an annual growth rate estimated at 3.9 percent (World Bank, 2014) higher than the country's average. The total urban population, according to 2019 Kenya population and housing census was estimated to be 475,716 in 2019 from 289,380 in the 2009 Census (KNBS, 2019). The high urban population growth rate has been attributed to natural increase (birth and deaths), industrial and institutional growth of the town, Municipal boundary expansion in 1988 (Cheserek, 2012, Musyoka, 2002, Agevi, 1991) and rural-urban migration (Badoux, 2018).

The high rate of urban growth coupled with the inability to meet the demand for services has contributed to sprawling and growth of informal settlements. According to the World Bank (2014), an estimated 29% of the urban population is in informal settlements. Some of the densely populated areas are home to the informal settlements which include Langas, Munyaka, Kamukunji, Huruma Maili Nne, Kijiji/Hill School (County Integrated Development Plan (CIDP) 2018-2022). The location of these major informal settlements within Eldoret town boundaries is shown in map 3.2.



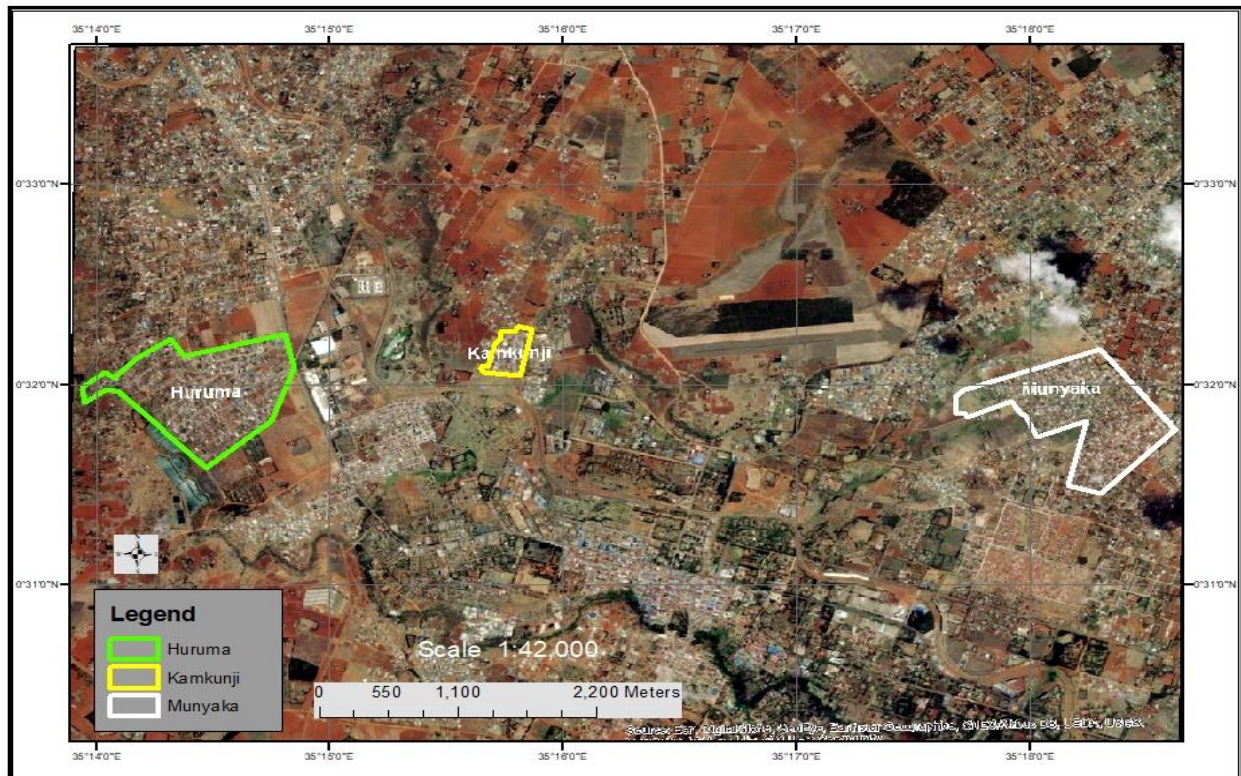
Map 3.2: Map showing layout of Eldoret town, its boundaries and location of major informal settlements within the town boundaries :

Source: Ministry of Lands and Physical planning

### 3.5 Case study settlements

The study purposely chose Huruma, Munyaka and Kamkunji informal settlements as case study areas since they presented an opportunity to answer the research questions and realize the study objectives as given in section 1.5. The key opportunities were that they are among the main

informal settlements in Eldoret town and they had benefitted from upgrading. Map 3.3 shows an aerial view of Eldoret town showing the location of these case study settlements of Huruma, Munyaka and Kamkunji.



Map 3.3: Map showing an aerial view of Eldoret town and location of case study settlements. Source: Google Maps

### 3.5.1 Huruma Informal Settlement

Huruma and Mwenderi, are two contiguous settlements located in Eldoret North Constituency, Huruma Ward, Turbo location and Kapyemit sub-location and is approximately 3 km northeast of Eldoret Town. For purposes of this study, the two are treated as one settlement and referred to as Huruma. The settlement is accessed through Uganda road, (Eldoret main highway). It measures approximately 70.9 hectares with a population of approximately, 20,000 people (5000 households) (KISIP socio-economic report). It is described as a high density, low-income residential area (Cheserek, 2012) located on a gradient. It borders the Sosiani River on the lower side and ELDOWAS' wastewater treatment lagoons as shown in aerial map 3.4.





Map 3.4: Map showing an aerial view of Huruma informal settlement

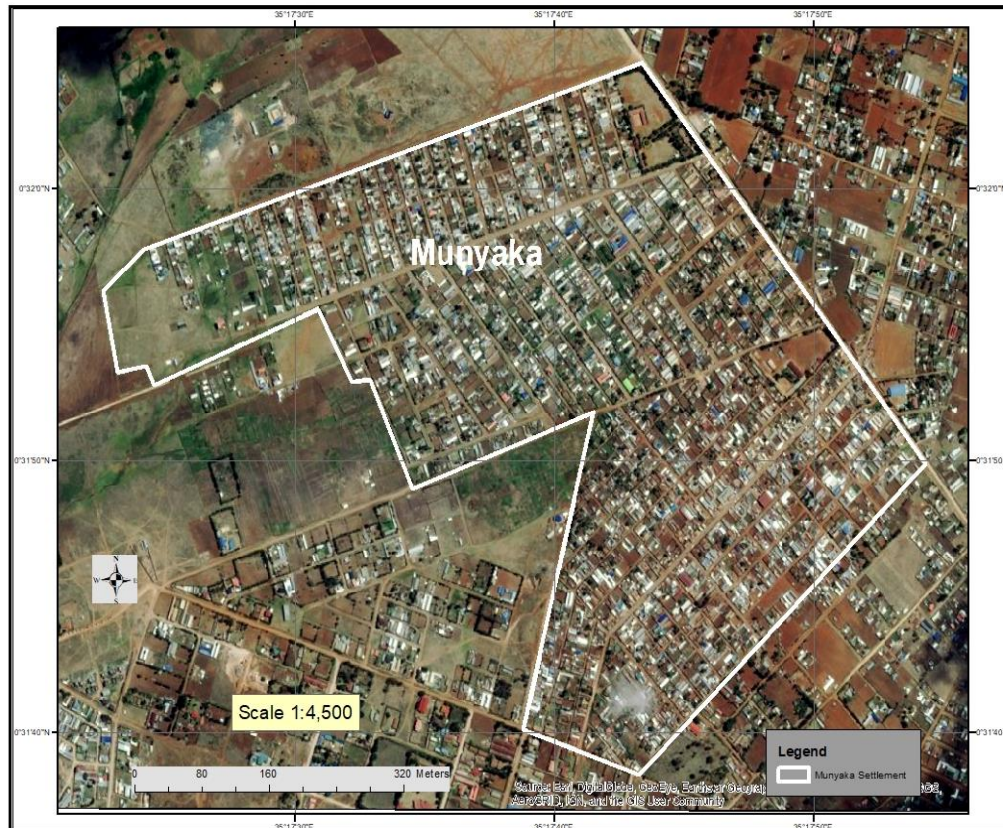
Source: Google earth 2016

Historically, Huruma settlement arose from the sale of formerly colonial farms that were subsequently subdivided. Many of the residents came from other slums within Eldoret town - and many were previously squatting in government forests in the region (KISIP socio-economic report -2012). The settlement has tenure security and it has benefitted from the upgrading of infrastructure as shown in the aerial photo above. The questions are what type, nature and approaches of tenure, infrastructure and livelihoods improvements in Huruma? This study will contribute to this knowledge gap by examining these in addition to investigating their nexus and institutional dynamics.

### 3.5.2 Munyaka Informal Settlement

Munyaka is located in Ainabkoi constituency, Kapsoya ward, Chepkoilel location, and Sigot sub-location approximately 4.3 km northeast of the central business district. Munyaka has a land area of more than 88 hectares (88.2 ha) with an estimated population of 12,000 people and it is

situated on the outskirts of the town. The settlement is planned but the plots are not titled because regularization is still ongoing, (GoK, 2012). However most of the plots are developed (Musyoka, 2002). The aerial photo of Munyaka is shown in map 3.5.



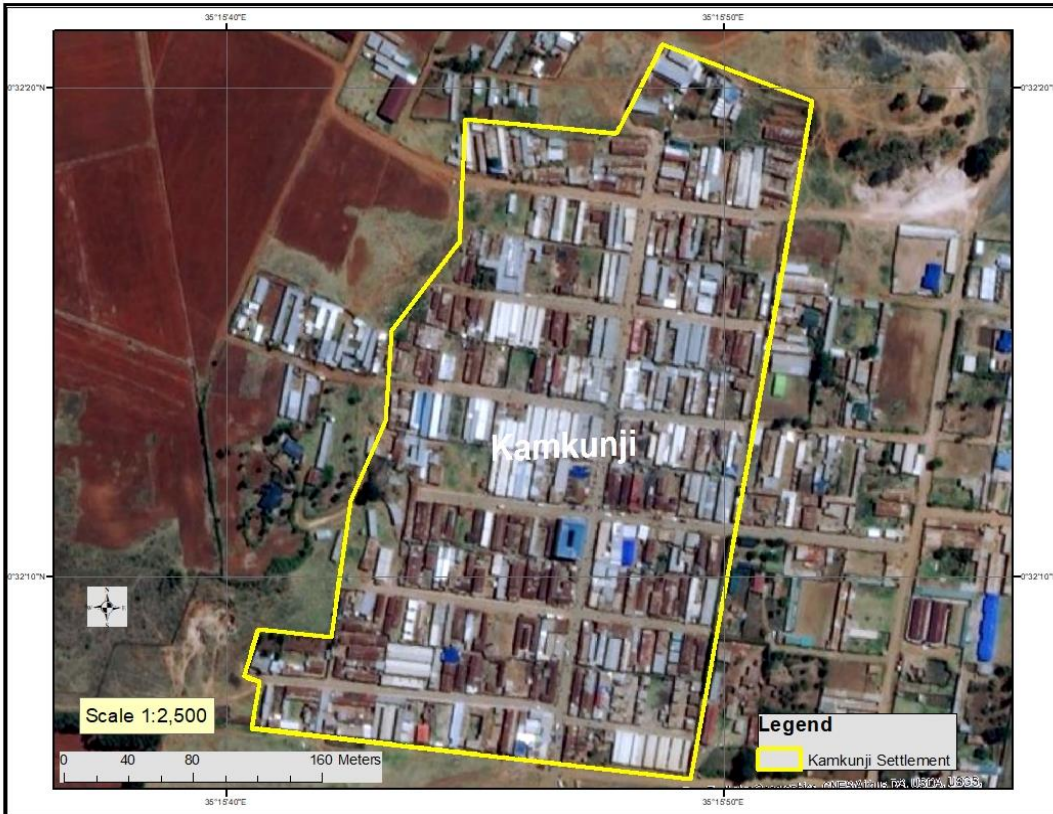
Map 3.5: Map showing an aerial view of Munyaka settlement

Source: Google maps 2016

Historically Munyaka arose from the subdivision of the original farm of 121.4 and people began settling in 1984. The settlement was initially characterized by limited infrastructure in 2012 but this has been improved through KISIP project.

### 3.5.3 Kamukunji Informal Settlement

Kamukunji is located in Soi Constituency, Kamukunji sub-location. It has an estimated area of 11.1 hectares, is approximately 6km north of the central business district. The name denotes a meeting place. The southern part of the settlement is flat but its northern part borders a steep hill towards the Bondeni area. Though flat on the southern part, its northern boundary is hilly. The aerial view of the settlement is shown in map 3.6.



Map 3.6: Map showing an aerial view of Kamkunji informal settlement

Source: Google maps

Historically, Kamkunji was farmland. Musyoka, (2002) notes that “at the time the farm was acquired it was outside the municipality and it remained so until the 1988 municipal boundary extension”. It has an estimated population of 8000 people. According to KISIP socio-economic survey report, 2012, a group of shareholders purchased the land that is known as Kamukunji Estate from a white settler called ‘Woodler’. The land was subsequently subdivided and shareholders granted share certificates but did not acquire land titles “until 30 years later in 1995 when the settlement was regularized” (Musyoka, 2002). By 2012, a majority of owners had a certificate or freehold title for the land while 6 percent have some sort of another document (letter of offer, a letter from the Chief or temporary occupation license). On the availability of infrastructure, Kamkunji also registers some form of infrastructure (roads, electricity, shared water and sanitation) although less than that of Huruma (GoK, 2012). Kamkunji, according to Musyoka, (2002) benefitted from the World Bank-funded Third Urban Project in the 1980s, unlike Munyaka and Huruma.

Questions arise as to why despite the World Bank upgrading that facilitated the provision of infrastructure services in the '80s and early '90s, and tenure secured much earlier, has the settlement remained poor/informal/low income for long.

## **3.6 The Actors**

The actors in this research were the actual participants that included the households, key informants and focus groups that provided the information. Households were randomly selected, interviewed and information recorded using structured digital questionnaires. Key informants, on the other hand, were purposely selected and included persons that were drawn from the three settlements and institutions knowledgeable or working in the areas of tenure security, infrastructure, and livelihoods in the settlements as detailed. The third group comprised of persons purposely selected from the respective settlements and participated in Focused Group Discussions as shown in section. Each of these is described in details in the subsequent sections.

## **3.7 The Data and sampling approach**

### **3.7.1 Data Collected**

Data for each question and objective was collected. Data collected for the first objective was on the type, nature and approaches of existing tenure systems, infrastructure and livelihoods. For the second objective data collected was data on interlinkages of tenure, infrastructure and livelihoods and their evolving dynamics, the effects of each of these elements on the other. The third objective data was on institutions dealing with tenure, infrastructure and livelihoods and their roles and power relations were collected.

### **3.7.2 Sampling Frame**

The sampling frame for this study was the accessible population in three case study informal settlements of Huruma, Munyaka and, Kamkunji. This description of the sampling frame is similar to that of DePoy and Gitlin, (2011) and Mugenda and Mugenda, (2003) who argued that a sampling frame is comprised of the target population from which a sample can be picked. The population of the settlements were derived from socio-economic surveys undertaken in 2012 which estimated the populations of the settlements to be 20,000 in Huruma 12,000 in Munyaka

and 8,000 in Kamkunji (GoK, 2012). A sample population was drawn from each of these settlements upon which household questionnaires were administered.

For institutions, all institutions that dealt with issues of tenure security, infrastructure and livelihoods were studied and these included National and County Government, Parastatals, Non-Governmental Organizations, Civil society, community organizations, and International Agencies. Similarly, all tenure systems in informal settlements in Eldoret were studied but Infrastructure was limited to roads, stormwater drains, footpaths/walkways, sanitation (sewer /ablution blocks), and lighting. For livelihoods, elements that were studied were limited to assets, (housing unit, land, property) capabilities (skills, education, health) and livelihood activities (businesses, employment and incomes).

### **3.7.3 Sample Method and Sample Size**

Various sampling designs have been developed that are categorized into probabilistic and non-probabilistic (Ngau and Kosmas, 2004, Mugenda and Mugenda, 2003). This study used both techniques to select a sample. For the household survey, a probabilistic random sampling procedure was used to obtain a sample size using ArcGIS to generate maps of the three informal settlements and respective random points corresponding to the sample size. The Sample size, according to Mugenda and Mugenda, (1999), depends on several variables, design, method of analysis as well as the size of the reachable population. They recommend a sample size of 30 cases. To ensure representativeness of the sample, however, the sample size for this study was 200 households distributed proportionately across the three settlements as follows; 40 cases in Kamkunji that had a household population of 1,600, 60 cases in Munyaka whose household population was 2,400 and 100 cases in Huruma which had a household population of 4000. However, the actual sample size interviewed was 197 and not 200 due to unavailability of randomly selected households.

For institutions, key informants and Focus Group Discussion member's non-probabilistic purposive sampling was used. This entailed purposive identification of institutions that dealt with tenure, infrastructure and livelihoods and persons with historical experience (mainly

opinion leaders) in the respective settlements. With this, the investigator was able to obtain relevant information to meet the objectives of the study.

### **3.8 Data Collection Method**

This study used multiple methods of data collection that were guided by the study's use of realism paradigm, which combines both positivist and interpretivist philosophical approaches. This compares well with the argument of DePoy and Gitlin, (2011) who argued that the choice of a data collection method is based on the philosophical underpinning, the research problem, research design and available resources. Methods used in this research included a household survey, focus group discussions, interviews, and observations. The use of multiple methods was envisaged to increase the reliability of data. This also facilitated the triangulation of data from various sources to validate the results. To meet the objectives of the study, both secondary and primary data on upgrading interventions of tenure security, infrastructure, livelihoods, and institutions were collected. A research programme was prepared to guide fieldwork. The programme covered the dates, time, venue/settlement, activities, roles, and actors.

Secondary data was acquired from existing literature from relevant agencies including Government and international agencies. Primary data was collected using household surveys, Focus Group Discussions, key informant interviews, and observation schedules.

#### **3.8.1 Household survey**

This study used the household survey to gather primary data from the sampled households that were randomly selected and their structure located using Geo-Information System (GIS). An example of Kamkunji settlement is shown in map 3.7.



*Map 3.7: Map showing GIS generated points/structures for household interviews in Kamkunji settlement.  
source: Google maps*

The survey was undertaken using mobile devices for more accuracy and to save time and costs. Studies have shown that conducting household surveys with mobile devices save time and

money compared to traditional pen-and-paper surveys since, according to Fitzgerald and FitzGibbon, (2014) it leads to increased accuracy and efficacy. These included digital data collection using a tablet or a smartphone and uploading the digital questionnaire to a server which subsequently aggregated all the data from questionnaires. To do this the study used the “Open Data Kit (ODK)” which is a “free and open-source set of tools used to collect and manage digital data using Android-enabled phones or tablets”. ODK enables multimedia data collection and secures web-based data storage.

To collect data using this digital method, it was necessary to convert the questionnaire in Microsoft Word into a form, referred to as XLSForm that can be used with ODK tools, using Microsoft Excel 2007. The programmed survey instrument was uploaded to the SurveyCTO server as shown in the illustration below. For this study, HUAWEI Media Pad 7 inches tablets were selected. The tablets were configured for access to the mobile internet through a local telephone service provider and ODK Collect was installed. After installing ODK Collect, the tablets were then configured to communicate with SurveyCTO server. This made it possible to fill the digital questionnaire, upload to the server for storage, and download in useful formats as shown in figure 3.1.

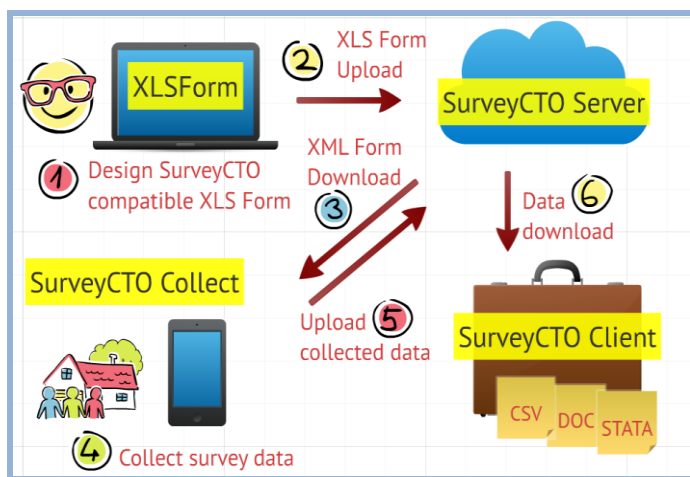


Figure 3.1: Illustration of digital data collection tool. Source: Open Data Kit (ODK)

Research assistants were identified and trained on the data collection especially on the use of digital gadgets in the administration of the questionnaire. They were trained on how to use ODK system and how to download new surveys from SurveyCTO server while in the field. The trained research assistants and supervisors each had a tablet containing the digital questionnaire and a



copy of the respective settlement maps indicating the computer-generated random points in the settlement.

After the training and familiarisation with the settlements, the questionnaires were piloted to ensure smooth flow and facilitate the trained research assistants to fully understand the questions and the gadgets before actual data collection commenced. During the piloting, the errors that were noted were corrected in the gadgets and some questions were clarified. To prepare for the actual field survey, meetings and introductions to respective community representatives and opinion leaders were held to facilitate ease of entry to the community and awareness of the research undertaking. The household survey was subsequently undertaken in the three informal settlements of Huruma, Kamkunji and Munyaka between November 2016 and February 2017. Out of the planned sample size of 200, 197 questionnaires were completed with 98 in Huruma; 59 in Munyaka; 40 in Kamkunji. It involved researcher questions, listening to interviewees and recording answers of randomly selected households using a structured questionnaire. The questionnaire was categorized into six parts namely: Part 1: General Information, Part 2: Tenure Security, Part 3: Infrastructure Services, Part 4: Livelihoods, Part 5: Interplay between Tenure Security, Infrastructure, and Livelihoods: Part 6: Institutions.

Each morning before the start of the data collection, each research assistant was given a set of random points to cover. Each would then identify the point on the ground and proceed to interview the household. In the instances where the household was not available for an interview, the instructions were that the research assistant would keep checking with the last resort being the immediate household. Each day the survey responses were downloaded from the SurveyCTO server to the tablets for documentation and compilation.

### **3.8.2 Focus Group Discussions**

This study used Focus Group Discussions (FGDs) as another method of collecting primary data. This is similar to what other researchers have done. According to Freitas et al, (1998) FGDs are widely used singly or in combination with other methods in data collections. According to Krueger, (1994), it is relatively easier to conduct since the identified participants and the

investigator meet in one location at the same time. This method, according to Kitzinger, (1995) is used to explore and clarify views and experiences in ways that would be less easily accessible in a one to one interview and further, according to Ochieng et al., (2018) it is used to explore people's understanding, interpretation and legitimization and providing insights into their perceptions. This study used this method to gain in-depth knowledge and people's perspectives on the issues of tenure, infrastructure and livelihoods.

Focus Group Discussions (FGDs) were undertaken between November 2016 and February 2017 in the case study settlements. This entailed meetings in the respective settlements between the researcher and groups that included opinion leaders and community representatives. These groups comprised of Men, Women and Youth. Discussions were guided by a checklist of questions posed by researcher and responses and explanations received from the members of the groups that ranged from 6-10 members in a group. According to Kitzinger, (1995), the ideal group size is between four and eight people though some studies have reported as few as four and as many as fifteen participants. The study undertook four FGDs one in each settlement and the fourth in a central place. This was aimed at getting several perspectives and information from the groups. This was similar to Burrows and Kendall, (1997), who recommended a minimum of three to four group meetings to facilitate a variety of views but at the same time ensure that the groups are manageable.

In this study, the discussions were centred on background information about the settlements, upgrading development projects in the settlement and specifically the existing type, nature and approaches and interlinkages of tenure security, infrastructure and livelihoods as well as institutions and their dynamics as well as their recommendations on upgrading efforts. The aim of this was to gain understanding and knowledge from the ideas, insights skills and experiences of the research participants to build the case for tenure-infrastructure-livelihoods nexus rather than using researchers' ideas. These were interactive sessions that provided a diversity of opinions on tenure security, infrastructure and livelihoods and their inter-linkages to obtain insight and to generate ideas and recommendations. These discussions were recorded and transcribed at the end of each day to ensure that information was not lost.

### **3.8.3 Key Informants**

Key informant interviews were also another data collection tool used in this study. This study purposefully identified key informants with experience and knowledge of the phenomena being researched. They included policymakers, project staff and community members. The key informants were drawn from the respective settlement communities (excluding those who participated in Focus Group Discussions), National government and County Government sector Ministries and Agencies, NGOs, Private sector and Multinational Institutions. Specifically, discussions were held with Chief Executive Committee Members for Lands, Housing and Physical Planning, Roads and Infrastructure and Health; County Directors of Education, Lands and Environment; County Secretary; Kenya Power and Eldoret Water and Sewerage Company (ELDOWAS). Discussions with these key informants were guided by a checklist of questions on the type, nature, and approaches to tenure security, infrastructure, and livelihoods, respective institutions and institutional dynamics of tenure, infrastructure and livelihoods, the interplay of tenure security, infrastructure, and livelihoods in slum upgrading in Eldoret and measures required to strengthen the integration of tenure security, infrastructure and livelihoods in slum upgrading. These discussions were recorded and transcribed at the end of the day. They provided more knowledge, insight and details on these phenomena and these contributed immensely to meeting the study objectives. The researcher held discussions with key informants from September 2016 – February 2017. Later on, the researcher made repeat visits to the field to fill emerging gaps.

This method of key informant interview compares with that of other researchers such as Tremblay, (1957) who argued that key informants are used primarily as a source of information on a variety of topics and according to Boyce and Neale, (2006) they include policymakers, program participants, project staff and community members.

### **3.8.4 Observation**

This observation method was also used to collect primary information in this study. The researcher made observations on the ground which included the type of existing tenure systems demonstrated by visible features such as the property boundaries, beacons, the layout of the settlements and organisation of space. On infrastructure, the type, nature, condition and use of

infrastructure was observed. Similarly, types of livelihood activities and general physical conditions of the settlement including housing and existing institutions were observed and recorded. To guide the observation, an observational checklist was used which had the list of the variables under study, that included, infrastructure, tenure, livelihoods, institutions and the settlement, dwellers and research participants in general. These were recorded on camera, notebooks and the maps. These provided a better understanding of the phenomena being studied and contributed to the realization of study objectives. This resonates with Denzin and Lincoln, (2017) and Kawulich, (2005) who argued observation allows the researcher to describe existing situations and to further validate the findings from other sources.

### **3.9 Data Analysis**

Various statistical techniques were used to analyze the survey data. Data obtained in the field in the raw form is difficult to interpret (Mugenda and Mugenda, 2003). It is argued therefore that “one of the first meaningful ways in which the investigator begins to organize information is to develop categories” (DePoy and Gitlin, 2011, Flick, 2002, Strauss and Corbin, 1990) with similar characteristics or experiences and search for associations among categories and seek the primary theme or meaning in them. Therefore, once data was obtained, it was cleaned and grouped into themes or categories of tenure security, infrastructure, livelihoods and their, nexus as well as institutions and recommendations for integration of these interventions in upgrading.

The data were reduced and reviewed several times. This included reading and re-reading data in its entirety until the researcher was familiar and obtained an overall understanding of the material. During data review notes, thoughts and summaries were made. These were used to guide data interpretation. The data was also organised to make it manageable. The data were grouped by data collection type i.e. household survey, key informants, Focus Group Discussions, and observations. Since household data survey was collected using digital data tool, ODK, the data was already coded. These were categorised according to descriptive topics or thesis chapter headings which are linked to research questions and objectives, first the description of the status of the existing tenure security systems, infrastructure, livelihoods in the three settlements, secondly tenure-infrastructure-livelihoods nexus, thirdly, the institutional dynamics and finally

the recommendations. The study to answer the research questions used both quantitative and qualitative techniques to analyse the data.

### **3.9.1 Qualitative data analysis**

Qualitative data analysis, according to Marshall and Rossman, (1999), is “a search for general statements about relationships among categories of data”. It is an in-depth investigation involving the collection and analysis of textual or verbal data and includes what people said or how the researcher described what s/he saw or experienced (Babbie and Mouton 2001, Bryman, 2004). Qualitative data is collected by observation, participant observation or through interviews using an interview schedule (Engel and Schutt, 2005, Mugenda and Mugenda, 2003). Analysis of qualitative data is inductively done to generate themes that seek to give meaning to the data describing the problem under study.

Coding of transcribed data was undertaken in two phases – the first involving an overview of the data that was followed by a more detailed examination of data. The overview stage helped in the identification of themes and grouping them accordingly. The detailed examination revealed concepts that would help present the information.

#### ***Qualitative content analysis***

Qualitative content analysis is one of the numerous research methods used to analyze text data with a focus on the content and contextual meaning of the text (Hsieh and Shannon 2005). Erlingsson and Brysiewicz, (2017) add that it includes analysis of the raw data from verbatim transcribed interviews to form categories or themes the initial step is to read and re-read the interviews to get a general understanding of what participants say followed by formulating codes and then grouping these codes into categories. Hancock et al., (2009) point out the responses to open-ended questions can be analysed through content analysis.

The data collected from Focus Group Discussions and key informant interviews were raw data. The researcher’s task was to prepare a statement regarding the collected data. The first step was to transcribe all FGDs and Key Informants' notes. This provided a complete record of the discussion to facilitate analysis of the data. The next step was to analyze the content of the

transcribed notes. This analysis aimed to look for trends and patterns that emerge within either a single focus group or among various focus groups. As (Krueger, 1988) suggests that content analysis begins with a comparison of the words used in the answer and the emphasis or intensity of the respondents' comments. Other considerations relate to the consistency of comments and the specificity of responses in follow up probes. Data analysis found out emerging themes and patterns in the data through this qualitative data analysis technique.

### ***Network Mapping and Nexus Analysis***

Network Mapping (Net-Map) is a tool, recently developed by Eva Schiffer and the International Food Policy Research Institute (Schröter, et al., 2018, IFPRI 2007). Net-Map is a method whose strength lies in visualizing the interplay of networks, power relations, conflicts and potentials in networks and develop policy and strategies for achieving a common goal (Schiffer and Hauck, 2010). Schröter, et al., (2018) add that Net-Map is a tool for Social Network Analysis (SNA), used in both qualitative and quantitative research. They point out that this tool is based on the need to understand processes, structures, links and dynamics (such as power and control) that determine the success or failures of policies and projects. Graphically the Net-Map analysis uses links to draw a network, which is done by drawing different coloured arrows between linked processes with each colour representing different linkages with two arrowheads indicating a mutual exchange.

This study used this analysis method to analyse the qualitative data on the linkages. The study identified actors and processes in tenure security, infrastructure and livelihoods improvements in the upgrading of the case study settlements of Huruma, Munyaka and Kamkunji and their linkages through Household survey, FGDs and key informant interviews as well as through secondary data. The researcher used these findings to develop the Net-Maps visually depicting the actors or processes and their linkages. These were depicted in figures and tables.

The study also used the nexus analysis to further explain the interactions and linkages amongst the elements of tenure security, infrastructure and livelihood improvement in upgrading as elaborated in section 2.4.1. According to Stein, et al., (2014) nexus domains and are interconnected with the network mapping approach since the latter can contribute to assessing the complex actor linkages that characterize the nexus. According to Scollon and Scollon,

(2004), the word ‘nexus’ is a link between two different ideas or objects which links them in a series or network”. Scollon and Scollon continue to explain that nexus analysis “in the simplest meaning is the study of how ideas or objects are linked together”. According to Östman and Verschueren, (2014) nexus analysis is a multidisciplinary enterprise used to clarify the many complex relations, identifies the primary actors and their interactions. Similarly, Leck, et al, (2015) defines it “as one or more connections linking two or more things and this term is widely used, for example, the environment-development nexus, the population—migration nexus”. Nexus thinking, they argue, embraces both the social and natural sciences and the arts and humanities stand to make an important contribution around traditional knowledge, environmental valuation and other key nexus aspects”. They further laud the nexus approach for “its potential for ‘joined-up thinking’, recognizing connections and coordinating policy and decision-making to minimize negative externalities and unforeseen consequences in tackling interconnected local to global challenges.”

This nexus approach gained prominence in the SDGs framing. Weitz, (2014) argued that the nexus approach provides a framework for systematically analysing cross-sectoral interactions in the SDGs. This approach integrates the goals across sectors with an aim of cost-effectiveness, efficiency and sustainability in the resource use. This study used this nexus approach to interrogate the interplay of tenure, infrastructure and livelihoods in upgrading to provide more understanding of the interlinkages and implications for policy and upgrading practice.

### **3.9.2 Quantitative data analysis**

Quantitative methodology refers to the research approach that collects and produces discreet numerical data (Sapsford and Jupp, 2006, Mugenda and Mugenda, 2003). In this study, quantitative data from questionnaires and interviews were analysed using the Statistical Package for Social Sciences (SPSS). The study used both descriptive statistics and inferential statistics. In descriptive statistics, the results were presented using various statistical tools such as tables, percentages, and graphs. The measures used for the descriptive statistics were the frequencies, mean, mode, median and standard deviation.

Data analysis using statistical inference specifically used the Chi-Square Test of Independence (association) to determine whether there was a relationship between categorical variables of tenure security, infrastructure, and livelihoods. Due to the nature of the data which is categorical, the Chi-Square Test of Independence (association), at (a-0.05 significance level) was used to analyse the inter-linkages in the tenure security, infrastructure and livelihoods. A Chi-Square Test of Independence (association), at a -0.05-significance level was therefore used to analyse the inter-linkages in the tenure security, infrastructure, and livelihoods.

The chi-square statistic formula used is:

$$\chi_c^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

The subscript “c” is the degrees of freedom, “O” is the observed value and E is the expected value. This, in turn, provides the p-value (SPSS provides the corresponding p-value). The Chi-Square Test of Independence was found appropriate since the following conditions were met:

- a) The sampling method was simple random sampling.
- b) The variables under study were each categorical.
- c) If sample data were displayed in a contingency table, the expected frequency count less than 5 would not be more than 20% of the cells.

Due to the basic assumption (c) above, Chi-Square Test analysis using SPSS yielded 3 statistic and p -values for hypothesis testing namely; Pearson Chi-Square, Fisher’s Exact test and Likelihood ratio. In the hypothesis testing, the P-value was smaller than the significance level (a), the study, therefore, rejected the null hypothesis (H0) in favour of the alternative (H1) and concluded that at the (a-0.05) level there are interlinkages/associations between tenure security, infrastructure and livelihoods. Since the test of association only shows whether there is an association between variables without suggesting the strength of their association, the study used the Phi coefficient to measure the strength of the association and concluded that tenure security, infrastructure, and livelihoods have a very strong inter-linkage/association with a Phi coefficient of 0.491.



### **3.9.3 Operationalization of variables and analytic method**

This section summarises how the study variables of tenure security, infrastructure and livelihoods, their typologies, approaches, linkages as well as institutional dynamics were observed, measured and interpreted. Operationalization is a process linking concepts to variables and to concrete observations that are believed to empirically capture a concept existing in the real world (Allen, 2017). Table 3.2 summarises these using the categories of the research objective, the variable being measured which in this study are tenure security, infrastructure and livelihoods, the indicators for each objective and variable, the research tool used to obtain data (household questionnaire (HH), Focus Group Discussion (FGD) and Key Informant (KI) interviews including the relevant questions and the checklists) and the corresponding measurement used which include scales, the Phi coefficient, Cramer's V, the Contingency coefficient C, and Net-maps. These are summarized in table 3.2.

Table3.2: Summary of operationalization of the variables

CONSTRUCT Variable/Objective	OBJECTIVE INDICATORS	RELEVANT QUESTIONS ( Household Survey, (HH) Focus Group Discussions (FGDs) Key Informants (KI)	MEASUREMENT
<b>Existing types and approaches to tenure security, infrastructure and livelihoods</b>			
• Tenure Security	Existing types of tenure (tenants and owners)	HH (8-15), FGDs, KI	Ordinal scale
	Freehold title	HH (8-11), FGDs, KI	Ordinal scale
	Leasehold title;	HH (9,10) , FGDs, KI	Ordinal scale
	Share certificate	HH (9-11,) FGDs KI	Ordinal scale
	Other forms of tenure	8,9, FGDs KI	Nominal Scale, Ordinal scale
	Period of stay	HH 12, FGDs KI	Nominal Scale, Ordinal scale
	Amount of rent paid (tenants)	HH 16, FGDs KI	Nominal scale
	Approach tenure,	HH (13-15,23), FGDs KI	Nominal Scale, Ordinal scale
• Infrastructure	Level of security, benefits and challenges	HH (17, 31-34), FGDs KI	Nominal Scale, Ordinal scale
	Type of infrastructure; Water, sanitation, roads, electricity, storm drain, lighting, garbage disposal	HH (36-39), FGDs KI	Nominal Scale, Ordinal scale
	infrastructure improvements, nature or characteristics of the infrastructure	HH (37-43), FGDs KI	the Phi coefficient, Cramer's V the Contingency coefficient C,
	Approaches to infrastructure	HH (39,40,41) FGDs KI	Ordinal scale
• Livelihoods	Benefits and challenges of infrastructure	HH (38,43), FGDs KI	Ordinal scale, Nominal Scale
	Type of livelihood activities (, employment, business, industry, farming,)	HH (44,45,47,47,) FGDs KI	the Phi coefficient, Contingency coefficient C, Cramer's V,
	Total household cash income	HH (45, 46,) FGDs KI	the Phi coefficient, Contingency coefficient C, Cramer's V, Ratio scale
	Challenges and benefits	HH (47,50,52,55,58,60,) FGDs KI	the Phi coefficient, Contingency coefficient C, Cramer's V,
	Types of Capabilities(skills, education, health)	HH(48,49,51,52,53,54,55,56,57), FGDs KI	the Phi coefficient, Contingency coefficient C, Cramer's V,
	Type of assets (housing unit, land, property)	HH (54,56,57,59,60) FGDs KI	the Phi coefficient, Contingency coefficient C, Cramer's V,
<b>The interplay between tenure security, infrastructure and livelihoods</b>	Approaches to Livelihoods	FGDs KI	Nominal scale, Ordinal scale
	Upgrading projects done in the settlement	HH 61, FGDs KI	Nominal scale, Ordinal scale
	Infrastructure improvements	HH (37-,43, 63-66), FGDs KI	the Phi coefficient, Contingency coefficient C, Cramer's V,
	Tenure security improvements and approaches	HH (8-24, 64,65,) FGDs ,KI	the Phi coefficient, Contingency coefficient C, Cramer's V,
	Livelihood improvements	HH (68,69) FGDs, KI	the Phi coefficient, Contingency coefficient C, Cramer's V,
	Interactions/Inter-linkages	HH (70-73,) FGDs ,KI	Net map, nominal scale
	Effects of Interactions/Inter-linkages	HH (70,-81), FGDs, KI	Net map, nominal scale, Phi-coefficient, the Contingency coefficient C, Cramer's V
	Challenges of Interactions/Inter-linkages	HH (82-87), FGDs, KI	Net map, nominal scale, Phi coefficient, Cramer's V, the Contingency coefficient C,
	Coordination of Interactions/Inter-linkages	HH (88-91), FGDs, KI	Net map nominal scale
	Priorities of Interactions/Inter-linkages	HH (92-93,) FGDs ,KI	Net map, nominal scale
<b>Institutional dynamics of tenure, infrastructure and livelihoods</b>	Measures to effectively integrate Interactions/Inter-linkages	HH (94-95,) FGDs, KI	Net map, nominal scale
	Institutions, policies, laws, functions, linkages, conflicts, duplications or collaborations, coordination, power and control.	HH (96,-102), FGDs, KI	Net maps, nominal scale ordinal scale Likert scale

Source: Author

This section summarises the analytics used to test the hypothesis and the interpretation of these tests. Robson, (2011) argued that the process and outcomes of analysis form the basis upon which interpretation is made. The study used both qualitative and quantitative analysis to analyse the data. These included; content, network maps, nexus, Pearson Chi-square, Likelihood Ratio, Fisher’s Exact Test and Cramers V analytic tests to analyse the data. Based on these analyses the study’s interpretation rejected the null hypothesis in favour of the alternative that there are linkages in tenure, infrastructure and livelihoods improvements in slum upgrading.

Table 3.3: Summary of analytic methods employed

OBJECTIVES	HYPOTHESES	ANALYTIC TESTS	INTERPRETATION
To determine the type, nature and approaches of existing tenure systems, infrastructure provision and livelihoods in informal settlements in Eldoret	Null hypothesis: There are no inter-linkages in tenure security, infrastructure, and livelihoods in slum upgrading processes.  Alternative hypothesis: There are inter-linkages in tenure security, infrastructure, and livelihoods in slum upgrading processes	<ul style="list-style-type: none"> <li>• Content analysis</li> <li>• Descriptive statistics</li> <li>• Net- maps analysis</li> </ul>	These were used to analyze the type and approaches of the existing tenure system, infrastructure, and livelihoods in Eldoret town. Based on these analyses, the null hypothesis was rejected in favour of the alternative
To determine the interplay of tenure security, infrastructure and livelihoods in the process of slum upgrading in Eldoret	Null hypothesis: There are no inter-linkages in tenure security, infrastructure, and livelihoods in slum upgrading processes. Alternative hypothesis: There are inter-linkages in tenure security, infrastructure, and livelihoods in slum upgrading processes	<ul style="list-style-type: none"> <li>• Pearson Chi-Square, Likelihood Ratio, Fisher's Exact Test, Phi and crammers v</li> </ul> $\chi_c^2 = \sum \frac{(O_i - E_i)^2}{E_i}$ <ul style="list-style-type: none"> <li>• Nexus Analysis</li> <li>• Netmap analysis</li> </ul>	The subscript “c” is the degrees of freedom, “O” is the observed value and E is the expected value Cramer’s V and denoted as $\phi_c$ is a measure of association between two nominal variables giving a value between 0 and +1 (inclusive). These statistics were used to determine the interplay of tenure security, infrastructure and livelihoods in the process of slum upgrading in Eldoret. Based on the outcome of the analysis the null hypothesis was rejected in favor of the alternative hypothesis that there are interlinkages in tenure security, infrastructure and livelihoods in slum upgrading
To determine institutional dynamics of tenure, infrastructure and livelihoods in informal settlements in Eldoret Town.	Null hypothesis: There are no inter-linkages in tenure security, infrastructure, and livelihoods in slum upgrading processes. Alternative hypothesis: There are inter-linkages in tenure security, infrastructure, and livelihoods in slum upgrading processes	<ul style="list-style-type: none"> <li>• Content analysis</li> <li>• Nexus Analysis</li> <li>• Netmap analysis</li> </ul>	These statistics were used to determine the institutional dynamics of tenure security, infrastructure and livelihoods in informal settlements in Eldoret. Based on the outcome of the analysis the null hypothesis was rejected in favor of the alternative

Source: Author

### **3.10 Data Interpretation**

This stage involved ascribing meaning and importance to the information and data obtained from the household survey, key informant interviews, FGDs and observations made in the three case study settlements of Huruma, Munyaka and Kamkunji. The key themes of tenure security, infrastructure and livelihoods, their status, linkages and institutional dynamics were identified and these formed the initial interpretations. Each theme was reviewed to identify resemblances and differences in the participant's responses and also the associations between these themes were examined to determine the connection.

Although the researchers' experiences influenced the choice of research subject and selected case study settings, the investigator, wanting to establish the real issues, detached herself from these experiences by allowing all actors in the study to give, freely, their views and experiences in the upgrading of the settlements, specifically on the elements of tenure security, infrastructure and livelihoods, their status, linkages and institutional dynamics. This was done through household questionnaires, focus group discussions and key informant interviews as discussed in section 3.8 of this chapter. This study used their knowledge, skills and experiences to present their ideas and insights to build the case for tenure-infrastructure-livelihoods nexus rather than using the researchers' ideas. The study reported, first-hand, qualitative and quantitative data obtained from these research participants. The study, therefore, strived to adhere to "good Practice" at all times. The researcher however used own experience and background skills to analyse information obtained from the research participants and this according to Östman and Verschueren (2014), is not seen as a problem, but rather as an asset when it comes to identifying relevant social actions, practices, discourses and mediational means.

### **3.11 Managing research pitfalls and limitations**

The fieldwork was undertaken successfully. However, some constraints were experienced and the researcher had to find ways of mitigating against them. Among them, data deficiency arising from the unavailability of some of the sampled household and insecurity in some parts of the settlement. To address this challenge, the researcher continued to re-visit the points/households to carry out the interviews thus narrowing the gap of those who were initially unavailable. On security issues, the researcher requested and was accompanied by the local opinion leaders in the settlements. Out of the targeted 200 households, 197 were achieved. The study also faced initial

challenges of mistrust and withholding of information by respondents especially on the intentions of the data collection. To overcome this, the researcher assured the participants that the data was purely for research as evidenced by a copy of the research permit and that their opinions were of great value in realizing the research objectives. The participants were also assured of anonymity and confidentiality of the collected information. These assurances eased the initial mistrust challenges but it was not eliminated. Resource requirements including funds and time also emerged as constraints due to enormity of data required. To mitigate this, the researcher maximized the available resources by doing more with less time and cost.

### **3.12 Summary**

This chapter has provided an in-depth discussion of the research methodology used in this study. It has given the setting, steps, approaches and the process followed. The case study design was chosen due to the nature of research questions and the setting is Eldoret town located in western Kenya focusing on three case study settlements namely Huruma, Munyaka and Kamkunji altogether providing an opportunity to meet the study objectives. The data collected was mainly on nature and typologies, approaches, interactions and institutional dynamics of tenure security, infrastructure and livelihoods improvement in informal settlements upgrading in line with the research questions and objectives. A simple random sampling method was used to draw a representative sample from the sampling frame of the total population in each settlement. Subsequently, data were collected through a household survey, focus group discussions, key informants and field observations. These were qualitatively and quantitatively analysed using qualitative and quantitative analytic tests and interpreted, a basis upon which the study made conclusions and recommendations. The study reported, first-hand, qualitative and quantitative data obtained from research participants, adhered to codes of ethics including confidentiality, consent, privacy, and accuracy and strived to adhere to “good practice” at all times.

The next chapter, chapter four, presents the study findings and analysis on the first objective on status of the existing tenure, infrastructure and livelihoods in the three case study settlements of Huruma, Munyaka and Kamkunji as obtained in the field and analysed and interpreted by the researcher.

## **Chapter 4: The state: Tenure, Infrastructure and Livelihoods elements explored**

### **4.1. Introduction**

This chapter focuses on the type, nature and approaches of existing tenure systems, infrastructure provision and livelihood improvement in the case study settlements of Huruma, Munyaka and Kamkunji. The data collected is analysed using the techniques described in the preceding chapter and subsequently interpreted by the researcher. These are examined to get an understanding of each of these interventions in the context of upgrading. This lays the foundation for the interlinkages and nexus argument of this research discussed in chapter five. This chapter addresses the first objective of the thesis which is:

*To determine the type, nature and approaches of existing tenure systems, infrastructure provision and livelihoods in informal settlements in Eldoret*

This is presented through the following topics in the chapter:

- i. State of existing tenure systems in informal settlements in Eldoret*
- ii. State of existing infrastructure provision in informal settlements in Eldoret*
- iii. State of existing livelihoods in informal settlements in Eldoret.*
- iv. The defining elements in tenure, infrastructure and livelihoods improvements*
- v. Benefits and challenges of upgrading intervention*

### **4.2. Theoretical underpinnings**

Slum upgrading is seen as the “current best practice” in addressing the slum challenge as opposed to previous retrogressive approaches of evictions and demolitions. Studies have shown that tenure, infrastructure and livelihoods improvements are key elements in the upgrading. The focus, however, has been on the individual outcomes of each of these (Lall and Lall, 2007). On tenure security, statistics show that most of the 1 billion living in slum areas, do not have the security of tenure, while at least 2 million are evicted annually (UN Habitat, 2007). It has been argued therefore that this challenge can be addressed through granting of secure tenure (Coburn, 2017, Gelder, 2010, UN, 2011,). However, there are various theoretical perspectives and debates

as to what tenure entails with arguments for titling (de-jure) De-Soto, (2000), the security of tenure or de-facto (World Bank, 2008, UN, 2003, Payne and Durand, 2007, Durand-Lasserve and Royston, 2002, Payne, 1997) and perceived tenure (UN, 2007, Almansi, 2003).

Almansi, (2009), Majale, 2008 and Gulyani (2002) have argued for the provision of basic service infrastructure pointing that it should be the “primary goal and a central component of upgrading”. Arising from statistics that show that urban dwellers living in slums are characterized by deficient infrastructure (UN, 2011), proponents of infrastructure approach argue that it contributes to improved water sanitation, housing, rents, access, environmental conditions, and access opportunities to income-generating activities, quality of life, and improved slum “image” (Amis, 2001, Kessides, 1997). However, studies have also shown that provision of infrastructure leads to gentrification (Akhmat and Khan, 2011, Durand-Lasserve, 2006).

The challenge with these perspectives on tenure and infrastructure, according to other theories, is that they view poverty reduction in terms of physical dimension that focuses on improvements in housing, infrastructure and physical environmental conditions and not the poor people whom themselves are living in poverty. Some scholars have therefore advanced a livelihoods approach to poverty with a focus on the poor themselves (Chambers and Conway, 1991, Alinovi, et al., 2010, Moser, 2005, Mitlin, 2008, Huchmzermeyer and Karam, 2006).

The question is which sector should be prioritized in slum upgrading- the elusive tenure or hard infrastructure that might spur growth or the softer essentials such as education, healthcare, employment and incomes that empower the people. In Kenya, the literature shows that the country is emphasizing hard infrastructure meaning that there is less investment in other crucial sectors that support livelihoods like health and education (Transparency International-Kenya, 2016). This study argues for a break away from the silo single-sector approaches to a multi-sector nexus approach that integrates these essential but fragmented elements into a whole, based on the intrinsic linkages amongst them and the need for sustainability.

### 4.3. The State: Tenure Security in informal settlements in Eldoret

The study findings showed that the three informal settlements of Huruma, Munyaka and Kamkunji have formal tenure but in differing degrees and status. This section will describe the chronology, typologies and approaches of these existing tenure systems in each of these case study areas.

#### 4.3.1. Huruma informal settlement: Land ownership dynamics

**Chronology and land ownership dynamics:** Tenure security in Huruma settlement goes back to the colonial period. According to the secretary to the Settlement Executive Committee, a plot owner and opinion leader in Huruma settlement,

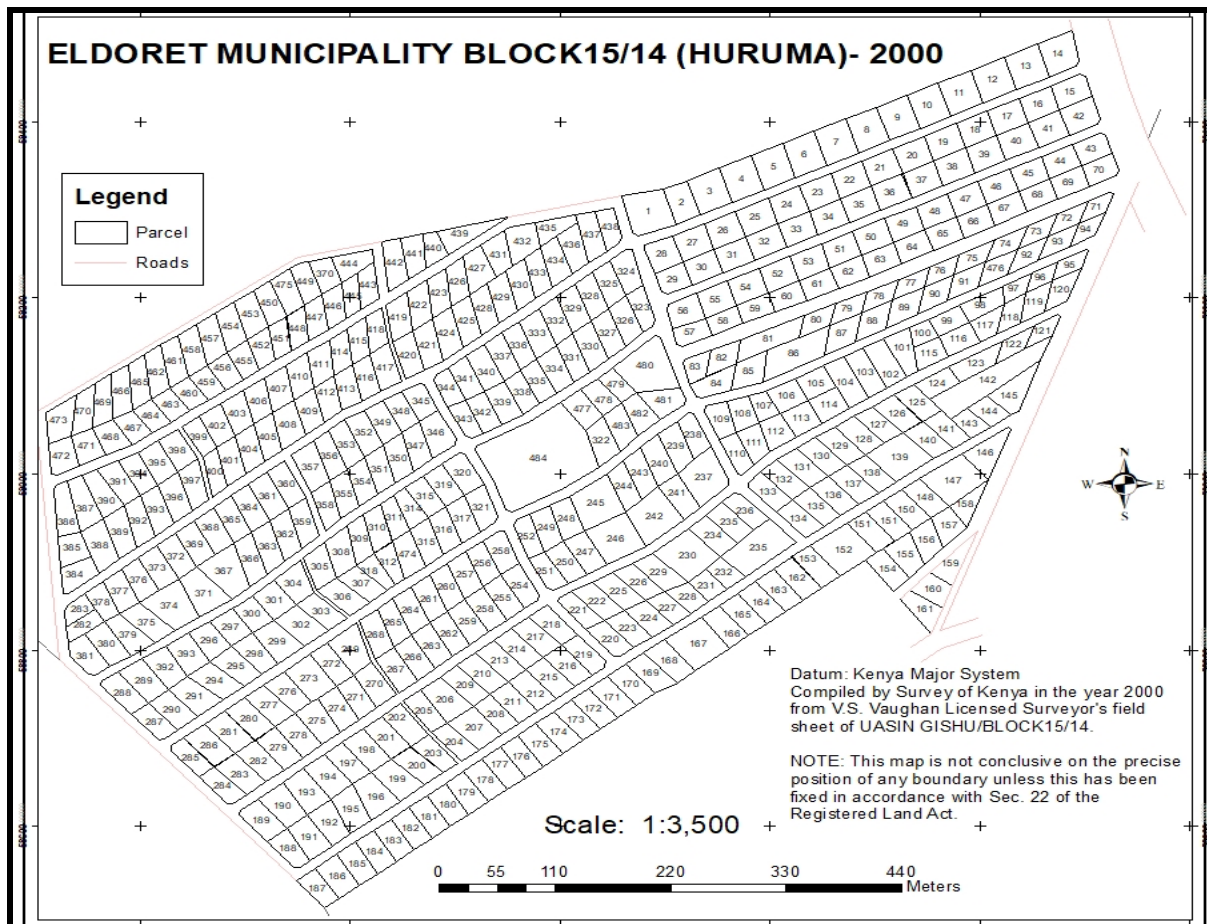
*“The land was originally bought from white settlers by two individuals namely, Kotut and Maru, as one big farm. A land buying company called Huruma Farmers was formed in 1973 composed of original 480 members and directors who subsequently bought the land. The land was subdivided into ¼ and 1-acre plots but other people continued to subdivide into smaller plots. Surveyors did the subdivision but the subdivision was not accepted by Ministry of Lands because it was not properly done and there was no land set aside for public use. The shareholders contributed land and set aside 5 acres for Huruma primary school. However, due to lack of transparency in land allocation, the school got only 2.5 acres and some members lost their shares. Members contributed Kenya Shillings 30,000 each for subdivision”.*

According to a landowner in Huruma;

*“People developed their plots but there was ‘wasi wasi (fear)’ since people were given share certificates only. Those who paid got their titles from the Ministry of Lands after a long time. However, up to now, some people have not completed payment and therefore do not have titles. Some owners initially built temporary houses on their plots and rented out to tenants but those with titles started building stone houses”*

These descriptions point to legal tenure in Huruma settlement with ownership dynamics from single white settler owner, to numerous owners emanating from informal subdivision of the hitherto farmland into urban plots. The government later regularized the tenure and titles were issued. Map 4.1 shows a survey plan showing the subdivisions in Huruma settlement in the year 2000





Map 4.1: Map showing a survey plan with subdivisions of Huruma settlement: Source: Ministry of Lands and Physical Planning

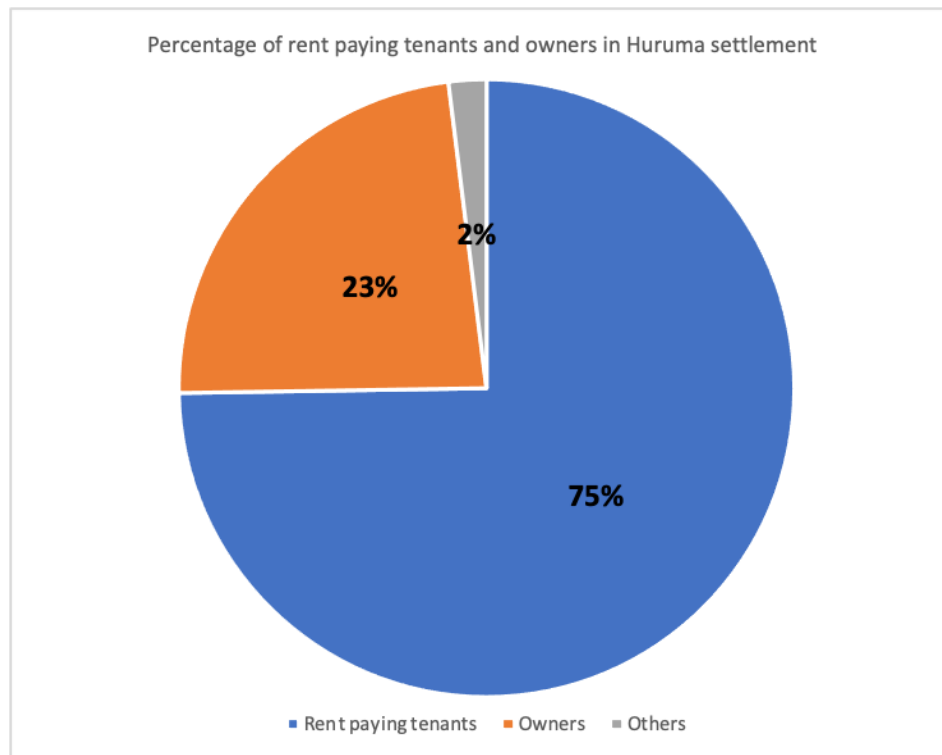
Initially, the buyers were issued with share certificates by farm directors. According to the Land Registrar in Uasin Gishu County, the continued subdivisions and informal developments contributed to informality in Huruma and the government stepped in to regularise the tenure. According to a planner in the Uasin Gishu County Lands office, this was done through planning, surveying and issuance of titles to the beneficiaries but these were undertaken at different periods.

**Typologies: Tenancy, land ownership and rights:** Huruma settlement is characterized by both rental and land tenure. Land tenure was found to be of three categories namely legal also referred to as statutory, a secondly semi-legal tenure which was mainly share certificates issued by farm directors to plot owners which although not legal, were accepted by the Ministry of Lands,

during tenure regularization, as proof of land ownership and, thirdly, an illegal tenure which was mainly squatting on wayleaves. These typologies of tenure are described in this section.

### ***Rental Tenure***

This study found that rental tenure was the most prevalent tenure in Huruma as compared to other forms of tenure systems. From a household survey, 75.5% of the residents are rent-paying tenants while 23.5% own both land and structure as shown in figure 4.1



*Figure 4.1: Percentage of rent-paying tenants and owners in Huruma settlement Source: Field survey 2016*

From the analysis, these tenants had lived in the settlement for quite some time with 63.3% of the tenants have moved into the settlements more than 10 years ago, 11.4% moved between 5 and 10 years ago, 10.1% moved in between 1 and 5 years ago while only 6.3% moved into the settlements less than a year ago. Reasons for moving into the settlement were varied. 24.7%, attributed to business or investing in the settlement, 21.9% to the availability of land, 20.5% to job opportunities nearby, 16.4% to the affordable housing, 12.3% to security while 4.1% to the proximity of the settlement to town. The rent increase was, however, a challenge. 95.9%,

indicated that rent increased in the last 2 years, the main reason being infrastructure improvements such as electricity and water at 27.0%, while for 23.0% it was due to the renovations or improvements in the houses and for 16.2% it was because of the high demand of houses in the settlements pushing the rent charges upwards. The irony, however, is that despite the increase in rents findings, 86.7%, showed that people were moving into the settlement. 29.3% was due to affordable housing and livelihoods, 24.0% improved infrastructure, 13.3% good security, 6.7% job opportunities, 5.3% availability of land and business opportunities. Despite this, the findings showed aspects of gentrification with 13.3% indicating that people were moving out of the settlement reason being expensive housing and livelihood at 5.3%, poor infrastructure at 2.7% and insecurity.

### ***Land tenure***

The type of land tenure in Huruma settlement was two-fold – the legal tenure and the semi-legal comprised of share certificates. There were, however, persons without any documentation as shown in figure 4.2.

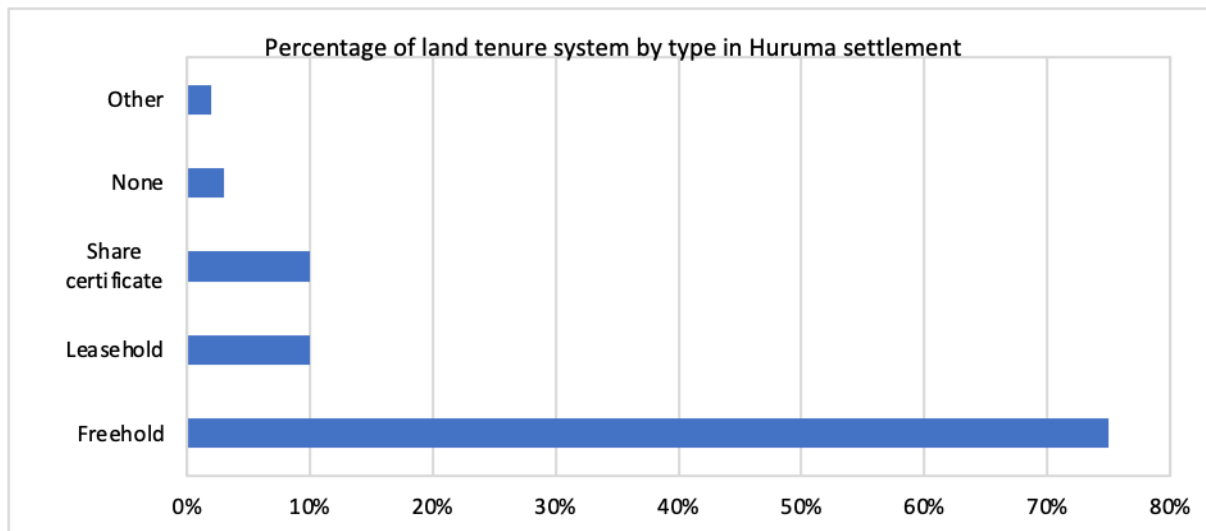


Figure 4.2: Percentage of land tenure system by type in Huruma settlement

Source: Field survey 2016

### ***Freehold Tenure***

This research established that this form of freehold tenure was predominant among plot owners, accounting for 75.0%. This was corroborated by information obtained from the Eldoret County

Land Registrar's office, which indicated that the majority of plot owners in Huruma hold freehold titles. Freehold tenure has been described as the highest form or most secure form of tenure. From findings, 85% of the respondents who had legal tenure felt that they were secure.

### ***Leasehold Tenure***

From figure 4.2 above, leasehold tenure was not as prevalent as freehold, accounting for an average of 10%. According to Douglas Njuguna, a landlord and structure owner and Village Elder for Nyathiru area (Katanda) of Huruma settlement: *“There are those people especially those who have high rise buildings that applied for a change of use from agricultural to commercial and were given leasehold titles”*

Both freehold and leasehold tenure did not only offer security but land rights as well. From the household survey, the majority, 75.0% could lease/rent out the land, 61.5% had a right to sell the land, 12.5% could use the land as collateral for a loan and only 4.2% indicated that they could give out the land as an inheritance. From FGDs in Huruma, tenure security has several benefits;

*“the titles are used to acquire loans although residents fear the high-interest rates; ownership attracts donor funding because development partners require ownership documents before they invest their money; tenure brings security and therefore people are free from fear of eviction, people are also able to build their houses without fear,”*

### ***Share Certificates***

The research established that there were persons who still hold share certificates from land buying companies, 10% as shown in figure 4.2 above. These certificates were issued by directors of land buying companies to their members as evidence of the purchase of land. According to the secretary of Huruma farmers land buying the company, *“people bought shares according to their ability ranging from a quarter acre to one and quarter acres. Those who paid had their titles processed but some did not pay and to this day, they have not received their titles but they have the share certificates.”*

### ***Public Tenure***

From key informants, focus group discussions and observations made in the field, public tenure in Huruma was minimal and were mainly the existing public schools namely Huruma primary school (originally 5 acres but now 2 acres) and the existing public utility areas such as roads and wayleaves. These are government-owned and are meant for public use. As noted from the sizes, the public land has reduced over time. According to FGDs and key informants, these were hived off by farm directors and sold. These impact upgrading negatively since the lack of public land is a constraint to the provision of infrastructure.

### ***Other forms of tenure (temporary occupation/squatting)***

The study also found that there were other forms of tenure outside the leasehold, freehold, share certificate, public and house tenancy. These were mainly those who squatted or temporarily occupied public space especially along bus/matatu stages, walkways, road reserves and on top of stormwater drains. These were composed mainly of mobile traders without any tenure documentation. They have to makeshift temporary structures where they display and sell their wares. For this group, however, the risk of eviction remains. The researcher witnessed an eviction of Huruma dwellers squatting along the Eldoret – Uganda road.

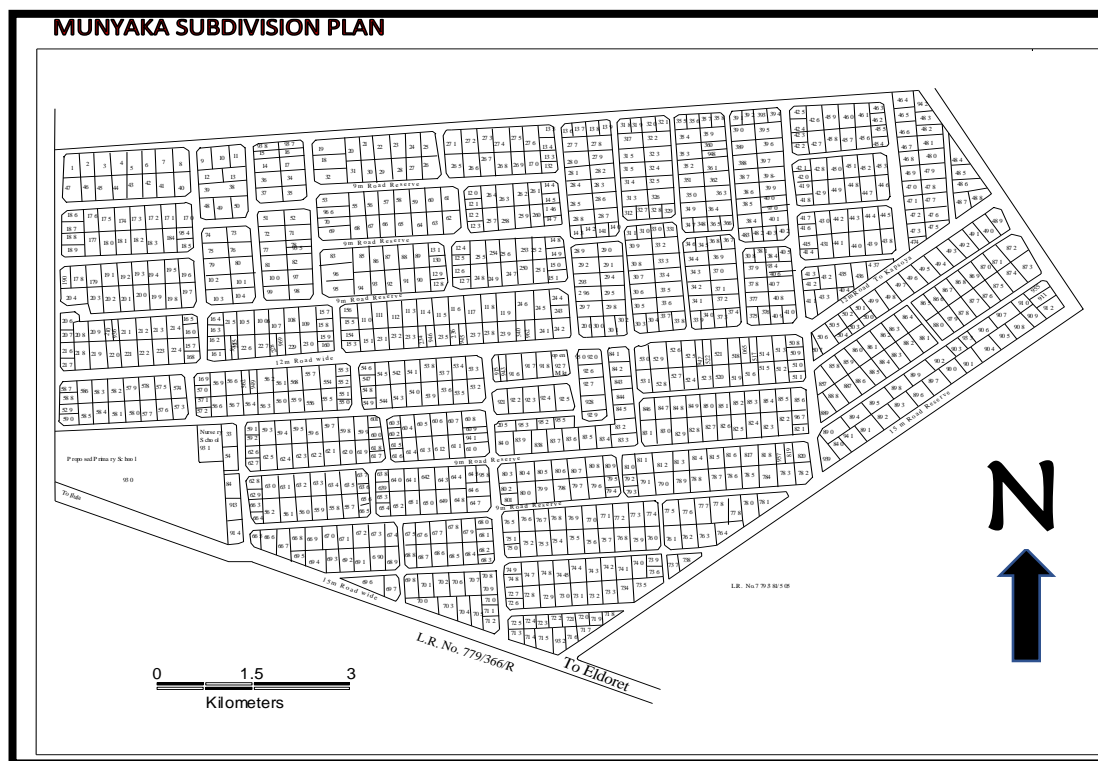
**Approach to tenure security and challenges:** The approach to the provision of tenure, according to findings was single sector approach with 88.9% indicating that tenure processes (planning, surveying, titling) were individually done and the majority of respondents, 63.0% indicated there was no collaboration with other institutions and 77.8% indicating lack of community participation. Tenure security processes were however not without challenges. In Huruma 30.8% cited delays in processing documents (65.4% cited timeline of 10-20 years) with and similar percentage indicated lack of money, while 7.7% indicated ownership disputes as a challenge and 3.8% cited poor coordination in tenure security provision.

### **4.3.2. Munyaka informal settlement: Land ownership dynamics**

**Chronology and land ownership dynamics:** Munyaka settlement had a similar chronology to that of Huruma. As reported by a long-time resident and plot owner of the settlement,

*“Munyaka was originally farmland measuring 100 acres owned by Miyako and he had a title to the land. He and 5 other directors brought people especially those who have chased away from the forests and asked them to register as members of Munyaka land buying company. They were to pay Ksh 5000. The directors subdivided the land into more than 1,500 plots of 50x50 feet and 50x80 feet. An unqualified surveyor who undertook this subdivision. Each person was required to pay Ksh 9,500 for processing of titles. There is only one head title but the members have share certificates, no one has a title. The same unqualified surveyor is following up on their title. On the lower side, however, the part bought by Mr Kuria called Mutiriria, it was subdivided and some people have titles.”*

Map 4.2 shows the survey subdivision that was undertaken in Munyaka settlement.



Map 4.2: Map showing subdivisions in Munyaka settlement. Source: Ministry of Lands and Physical Planning

According to another key informant, a landowner and secretary of Settlement Executive Committee,

*Munyaka was land that belonged to a Mzungu in 1907. Mzungu had a lease title for 100 years from 1907 to 2007. This was sold to three people who subdivided into three portions, Munyaka, Mutiriria and Silas and these had lease titles for the remaining period, which expired in 2007. Silas measured 70 acres and with LR No. 779/520. The*

owner (Silas) subdivided and sold to other people with an expired lease. Only 22 people got titles due to the high cost and the rest had share certificates. Of those with titles, very few renewed the titles and the rest are to date without any title. The acreages initially were between 1 and 1 ½ but people have continued to subdivide and currently into portions of 1/8 and 1/16

**Typologies of tenure: Tenancy, land ownership and rights.** Like Huruma, Munyaka settlement was characterized by both rental and land tenure. However, unlike Huruma and Kamkunji, the land tenure is semi-legal or transitional with most owners holding share certificates and not titles.

### ***Rental Tenure***

Rental tenure was similarly prevalent in Munyaka. From a household survey, 66% of the residents were rent-paying tenants while 32% owned the land and the structure as shown in figure 4.3 below.

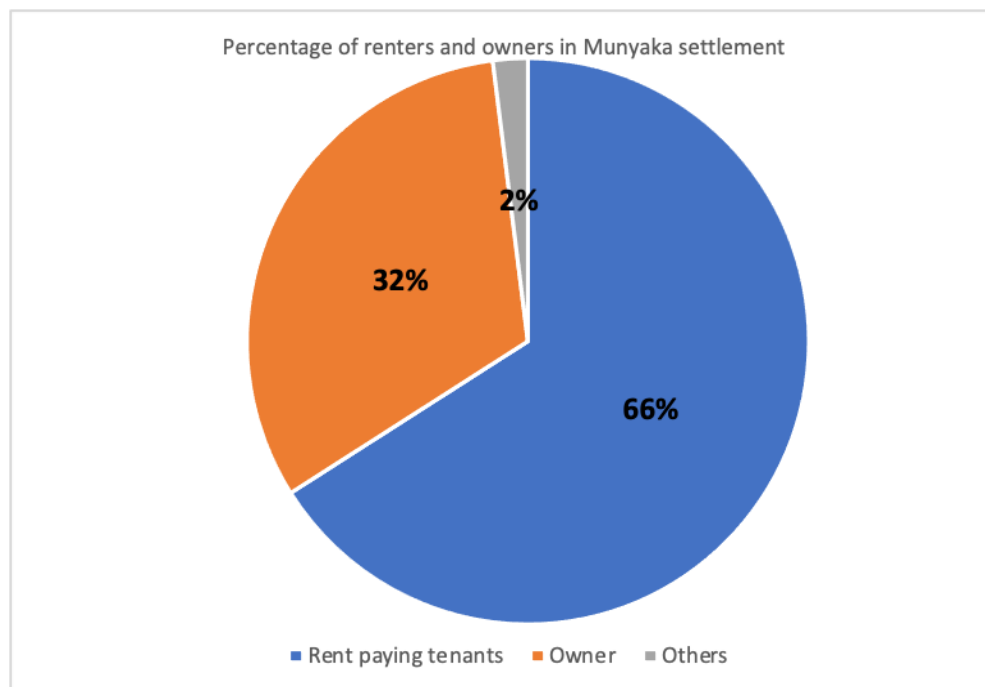


Figure 4.3: Percentage of rent-paying tenants and owners in Munyaka settlement Source: Field survey 2016

Compared to Huruma and Kamkunji, most tenants had not lived in the settlement for very long. Only 19% moved into the settlement more than 10 years ago, the majority, 24.1%, indicating that they moved in between 5 and 10 years ago, 22.4% 1 and 5 years ago, while 10.3% less than a year ago, a figure that is higher than that of Huruma. The reasons advanced for moving to the settlement were similar to those of Huruma and Kamkunji though differing in magnitude. 33.3% cited business or investment, 22.2% job opportunities, 11.1% indicated that it was due to the availability of ample land in the settlement, 6.7% good infrastructure or good security in the settlement while 4.4% indicated that it was because of affordable housing.

The rent increase was, however, was a challenge. 71.4% indicated that rent increased in the last 2 years. Unlike Huruma and Kamkunji, where the main reason for rent increase was infrastructure, for Munyaka it was renovations or improvements in the houses at 28.2%, 15.4% indicated it was due to the infrastructure improvements while 12.8% indicated it was because of the high demand of houses though this is lower compared to Huruma. As in Huruma, people were moving into the settlement indicated by 85.0%. The main reasons being affordable housing and livelihood indicated by 25.0%, 20.0%, good security 10.0%, job opportunities and surprisingly only 5% cited improved infrastructure as a reason for moving into the settlement

On the other hand, there were still people moving out of the settlement, the reasons given were poor infrastructure with 7.5%, and expensive housing and insecurity indicated by 5%.

### ***Land tenure***

Unlike Huruma and Kamkunji where the majority of owners had titles, Munyaka settlement was characterized mainly by semi-legal or transitory tenure comprised of share certificates with limited titling. There were, however, persons without any documentation as shown in figure 4.4.



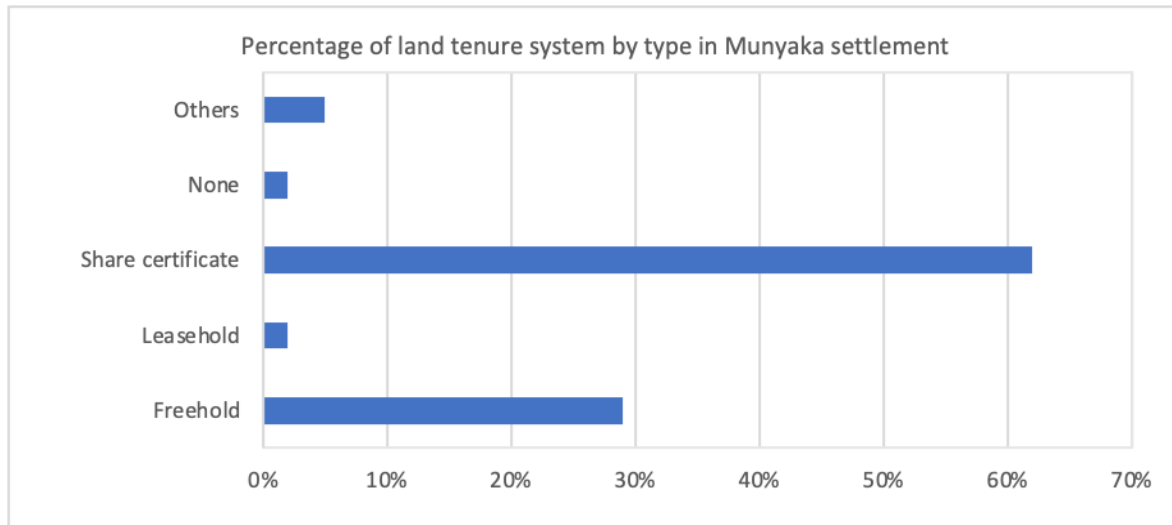


Figure 4.4: Percentage of land tenure system by type in Munyaka settlement

Source: Field Survey 2016

### ***Freehold Tenure***

This research established that this form of freehold tenure was limited among plot owners, accounting for 29%. The findings from key informants and focus group discussions were that there were persons who did a change of use from agricultural to residential and some were issued with freehold titles.

### ***Leasehold Tenure***

From figure 4.4 above, leasehold tenure accounted for less than 10%. A key informant, a landowner and organizing secretary for Settlement Executive Committee for Munyaka, corroborated this information. According to him, there were only 22 people who got titles in Silas part of Munyaka. The Eldoret County Land Registrar’s office pointed out that Munyaka leases were yet to be completed but most people had share certificates as proof of ownership.

### ***Share Certificates***

Munyaka settlement, unlike Huruma and Kamkunji where the majority have titles, ownership documents were share certificates. According to a plot owner, community leader and a resident of Munyaka commenting during a Focus Group Discussion, said that;

*“There is only one head title for original owners of Munyaka farm. Members and those who bought plots later have only share certificates and we have been waiting for titles since 1987 but for the lower side of the settlement, called Mwitiriria, some people already have titles. Many of us feel frustrated because titles have taken too long and we do not know why.”*

This narrative was corroborated with a household survey where it emerged that approximately 60% of owners have share certificates as shown in figure 4.4.

### ***Public tenure***

Public land was originally set aside but over time, this was reduced. According to a landowner and resident of Munyaka settlement,

*“Originally 8 acres had been set aside for a school but the size that is existing now is 2 ½ acres for Munyaka Primary school. 2 acres had also been set aside for a shopping Centre/market but this has since been reduced to a 50x80 feet plot. These portions of lands were sold by the directors of the company.”*

### ***Other forms of tenure (temporary occupation/squatting)***

Other forms of tenure in Munyaka related to perceived tenure since they did not have any ownership documents – these were mainly those who operated from roadsides and bus stages.

**Approach, benefits and challenges to tenure security:** On the approach to the provision of tenure, the majority 68.8%, indicated the processes were done individually. However, the majority, 52.9%, indicated that there was a collaboration between institutions, unlike Huruma where majority indicated there was no collaboration but 70.6% pointed to lack of community participation in tenure processes.

Benefits of the tenure processes were highlighted during the research. From FGDs in Munyaka, members pointed out that tenure security had several benefits;

*People are occupying their plots and they have built houses to live in; people have developed their plots although people are still fearful due to lack of titles however people have a home with no threat of being evicted.*

Other benefits given during household survey include shelter as indicated by 72.9% while 50.0% pointed out benefit from money from rent, 12.5% pointing to land as collateral for a loan but a

majority, 87.5%, could not take a loan using the land. 18.8% indicated that they had benefitted by accessing infrastructure services.

Challenges were however experienced in Munyaka regarding tenure security processes. The main challenge in Munyaka was mainly delayed title processing. According to the household survey, 43.8% indicated that it took more than 21 years to get titles. The second challenge cited was the high cost associated with the process of acquiring the title.

### **4.3.3. Kamkunji informal settlement: Land ownership dynamics**

**Chronology and land ownership dynamics:** Kamkunji emerged as a result of informal subdivisions of hitherto white settler farmland. According to an opinion leader, landowner and resident of the settlement;

*“The settlement was initially a farm owned by white settlers who sold to a land-buying company in 1964. Three farmers brought together 100 members and formed Uasin Gishu Farmers Company who contributed money and bought the farm, which was subsequently subdivided into 5-acre farmland on the upper side and 1/8 of an acre as plots on the lower side. Initially, it was one community (Kikuyu) but now it is a mixed community. Members sold to other communities and the five-acre pieces have since been subdivided into plots. The area is referred to as block 16 and it is of mixed-use both commercial and residential.”*

**Typologies of tenure: Tenancy, land ownership and rights:** Kamkunji was characterized by both rental and land tenure. The land tenure was mainly legal, comprising mainly freehold with minimal leaseholds. There were, however, persons with share certificates, other forms of tenure and those without any ownership documents.

#### ***Rental Tenure***

Study findings showed a prevalence of rental tenure. In Kamkunji, 68% of the residents were rent-paying tenants as shown in figure 4.5

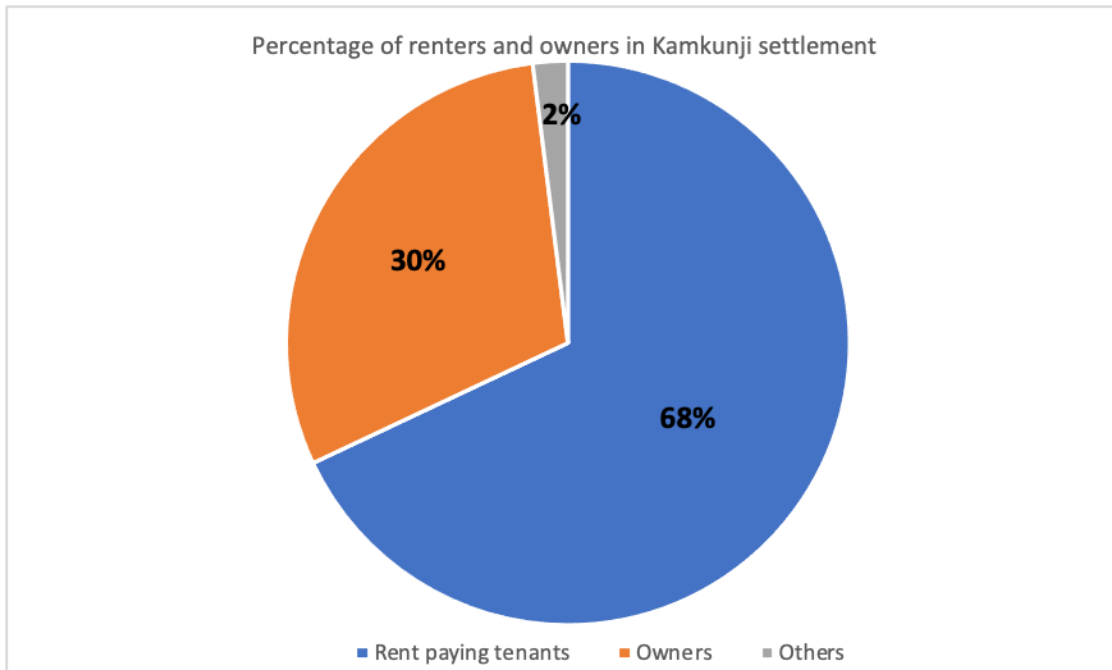


Figure 4.5: Percentage of rent-paying tenants and owners in Kamkunji settlement Source: Field survey 2016

Compared to Huruma and Munyaka most tenants had lived in the settlement for very long. 52.5% moved into the settlement more than 10 years ago, the majority, 27.5%, indicating that they moved in between 5 and 10 years ago, 12.5% 1 and 5 years ago, while 7.5% less than a year ago, a figure that is higher than that of Huruma. The reasons advanced for moving to the settlement were similar to those of Huruma and Munyaka though differing in magnitude. 42.5% cited business or investment, 20% indicated that it was because of affordable housing, 12.5% job opportunities or indicated the availability of ample land in the settlement or good infrastructure or good security in the settlement.

Increased rent was, however, a challenge. 100% indicated that there had been increased rent in the last 2 years. Unlike Munyaka but similar to Huruma, the majority, 28.0% indicated it was due to the infrastructure improvements such as electricity and water, 20.0% renovations or improvements in the houses while 8.0% indicated it was because of the high demand for houses in the settlements that pushed the rent charges upwards.

As in Huruma and Munyaka, people were moving into Kamkunji settlement despite the rent increases. The main reasons being affordable housing and livelihood indicated by 33.3%,

improved infrastructure by 26.7% while good security and job opportunities were indicated by 6.7%.

### ***Land tenure***

In Kamkunji majority of owners had freehold titles compared to those with leaseholds, share certificates and other forms of tenure types as shown in figure 4.6.

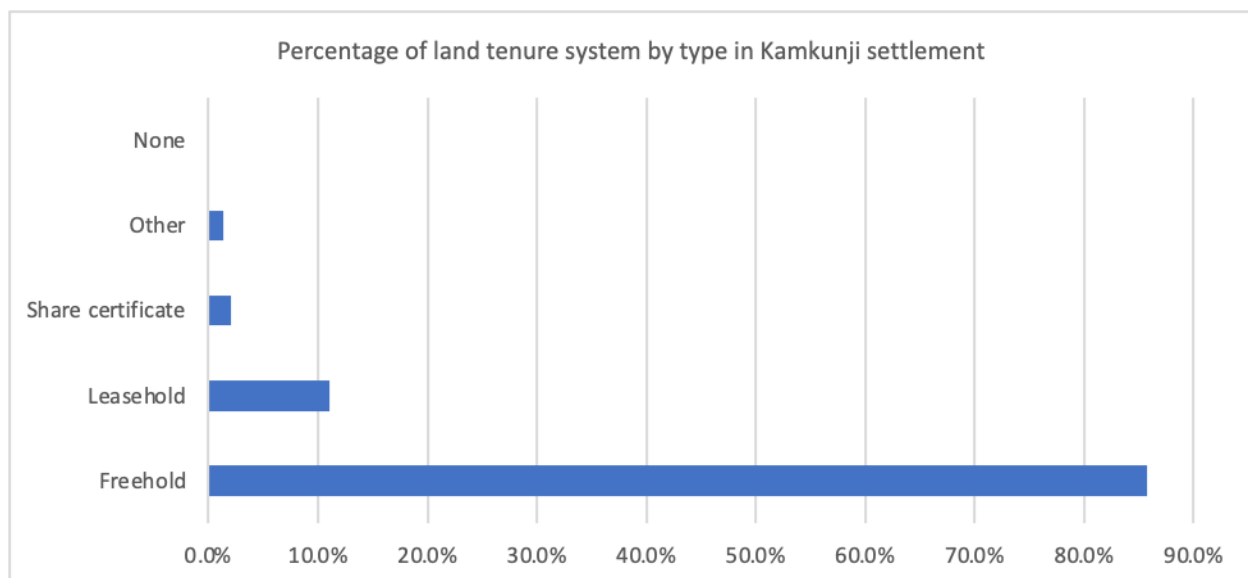


Figure 4.6: Percentage of land tenure system by type in Kamkunji settlement

Source: Field survey 2016

### ***Freehold Tenure***

This research established that freehold tenure was prevalent in Kamkunji, unlike Munyaka where share certificates were the main form of ownership. 85.7% of the owners indicated that they had freehold titles as shown in figure 4.6. According to a key informant, former chairman of Uasin Gishu Farmers Land Buying Company,

*Kamkunji was a 605-acre agricultural land bought in 1964 and subdivided to 100 shareholders with each getting a 5-acre piece for agriculture and 50x100 plot. These got freehold titles in 1986. The 5-acre pieces have since been subdivided into smaller portions*

### ***Leasehold Tenure***

From figure 4.6 above, leasehold tenure accounted for less than 11%. According to Uasin Gishu land registrar, the leaseholds were mainly those who changed the use of their plots to commercial and these were limited since the majority of the land and plot owners in Kamkunji had freehold titles.

### ***Share Certificates***

In Kamkunji share certificates as proof of ownership was minimal at 2% compared to Munyaka and Huruma settlements that had higher numbers of those with share certificates. According to a landowner and chairman of Settlement Executive Committee in Kamkunji settlement,

*“Originally people had share certificates but those with money followed for themselves in land offices and got their titles. They were required to pay Ksh.12,000 shillings to the directors for processing of titles. Those who did not pay did not get titles and are still following them”.*

According to another key informant, former chairman of Uasin Gishu farmers Land Buying Company (Kamkunji), the reasons for delayed titles and others not getting titles was due to the high cost of surveying and other land processes and change of leadership at the land buying company.

### ***Public tenure***

Public land was originally set aside but over time, this was reduced. According to a member during focus group discussions;

*“Originally 1 acre of land had been set aside for a market but the size that is existing now is 1/8 of an acre. Other portions were sold by the directors of the company.”*

### ***Other forms of tenure (temporary occupation/squatting)***

Other forms of tenure in Kamkunji related to perceived tenure since they did not have any ownership documents – these were mainly those who operated from roadsides and bus stages. According to a landowner and chairman of Settlement Executive Committee in Kamkunji settlement,

*Original 100 farmers who bought land from the white settlers had titles but most of the original farmers have passed on. Some of those people who bought from them have written agreements but the process of succession after the death of the original owners has taken a long time. Though they feel secure, and may not be evicted, they still want to get their titles.*

**Approach, benefits and challenges to tenure security:** The approach to the provision of tenure was sectoral, similar to that of Huruma and Munyaka, with 85.7% indicating that the tenure processes were done individually. However, the majority, 56.3% indicated that there was a collaboration between institutions, unlike Huruma where majority indicated there was no collaboration. The significant number, 43.8%, who indicated that there was no collaboration shows that the collaboration was not adequate. This was further affirmed by 68.8% that pointed to a lack of community participation in tenure processes.

The benefits of tenure in order of priority, according to the data obtained from the household survey, were a shelter, security from eviction due to the legality of ownership, income from rent, accessibility to services and borrowing loans. Other benefits according to members of FGD in Kamkunji the benefits of tenure are;

*“People have confidence due to possession of the title. They can develop their property because they are sure of land ownership. You are no longer treated as a squatter and title is a means for compensation if your plot is affected by utilities or is required for utilities, you cannot be compensated if you do not have a title. The title is used as surety in court and for borrowing loan for education and business.”*

This was corroborated with information from a household survey where findings showed that landowners had rights with the majority, 88.2%, citing the right to lease/rent the land, 64.7% inheritance, 52.9% collateral for a loan, 50.0% indicating rights to sell the land.

Dwellers in the settlement, however, pointed out various challenges they encountered in the tenure security processes. The key challenge, like in Huruma and Munyaka, was a delay in the processing of titles. According to the household survey, a majority, 66.7% showed that it took between 10-20 years to get the titles. According to a key informant, Chairman of Uasin Gishu Farmers land buying company (Kamkunji), they bought the land in 1964 and got titles in 13 to 21 years. Another impediment mentioned by 17.6% was ownership disputes.

## 4.4. The State: Infrastructure in informal settlements in Eldoret

### 4.4.1. Huruma informal settlement: Infrastructure provision dynamics

**Chronology:** Infrastructure was introduced to Huruma settlement long after the dwellers had settled on the land. When they were introduced, in the early 80s, it was single piecemeal forms of infrastructure. In a Focus Group Discussion held with community representatives and opinion leaders, the secretary to Settlement Executive Committee and Opinion Leader gave the following narration:

*‘Upgrading in the settlement has been haphazard’. One road was upgraded using LATIF fund through the municipal council in the early 1980s. The settlement lacked the infrastructure for a long time because of being ‘politically incorrect.’ The settlement is largely composed of Kikuyu ethnic community but over time, it is becoming cosmopolitan. Piped water was provided in the late 80s to a section of the settlement. Similarly, sewer lines in the early 90s but these have not functioned properly since. The community had a minimal role. In 2014 the government and the World Bank tarmacked the roads, built walkways, drainages and high mast floodlights. They also built ablution blocks but they are white elephants since they were not completed. Not all areas in the settlement were covered*

**Typologies:** The study findings show that Huruma settlement has been upgraded through infrastructure provision. According to the household survey, the type of infrastructure in the settlement that is readily available are roads, water, sewerage and electricity with 62.2%, 82.8%, 72.0% and 89.2% respectively. However, stormwater drainages, walkways, lighting and garbage disposal were partly available in the settlement with 30.6%, 39.8%, 23.7% and 45.2% respectively. Ablution Blocks were hardly available in the settlement with only 8.4% of the respondents indicating their availability. These findings are shown in figure 4.7.



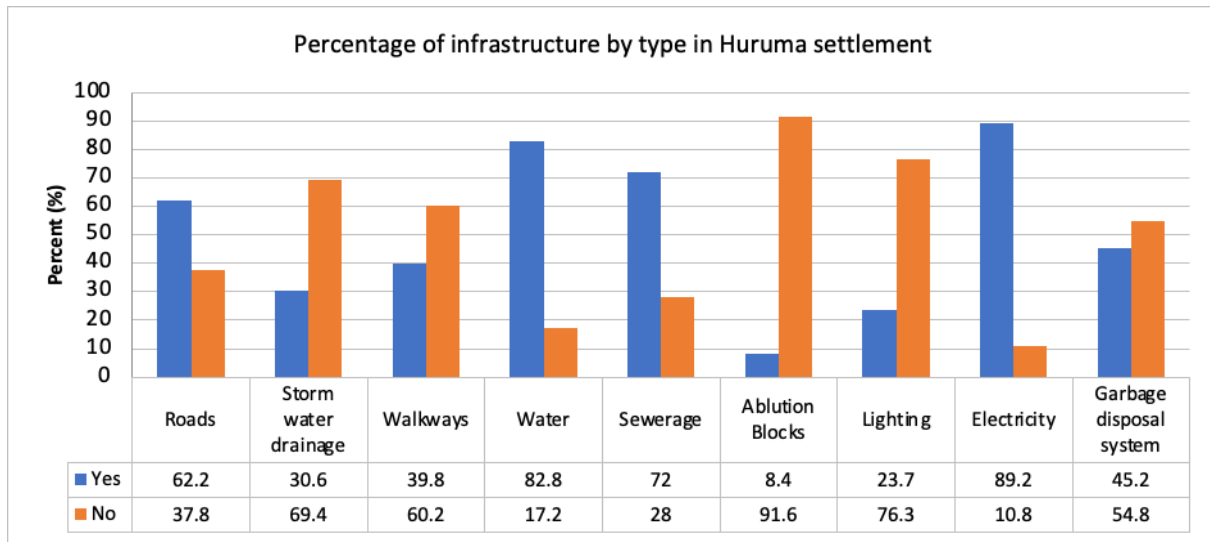


Figure 4.7: Percentage of infrastructure by type in Huruma settlement

Source: Field Work, 2016

On roads, the household survey showed that of 62.2% with roads, 44.9% indicated that they were tarmacked 41.8% were earth roads while 12.2% indicated that there were gravel /murrum roads. Figure 4.8 shows tarmacked roads and electricity in Huruma settlement. The photo on the left shows improved road but poor housing still prevalent while the photo on the right shows improved roads, electricity and improved housing. These indicate the impact of the interplay of tenure, infrastructure and livelihoods.



Figure 4.8: Tarmacked roads and electricity in Huruma settlement

Source: Field survey, 2016

Stormwater drainages on the other hand showed that 32.7% indicated that the drains were open and paved, 28.6% open earth drains, 5.1% indicated closed paved drains. In respect to the nature of water in Huruma, most of the respondents, 66.3%, indicated that they had access to piped water from a shared compound. However, a significant proportion, 20.4%, of respondents in Huruma had access to piped water from a private connection inside their houses while 10.2%, had access to a shared borehole inside the compound. It emerged, from FGDs and household survey that the water is inadequate. In Huruma, the headmaster of the Huruma Primary School pointed out that;

*“Water is still a challenge– inadequate, almost non-existent - comes once in two weeks. Not adequate for the high population in the settlement. The school is forced to purchase 200 litres of water at 2,500 every day, which is not sustainable. The toilets in the new school building are not being used for lack of water; even teachers are forced to use the pit latrines.”*

For sanitation, the most common form in Huruma indicated by 66.3% of the households is shared latrine and bathroom outside the house but within the same compound while significantly 19.4%, had private toilet and bathroom in the house a percentage that is higher than that of Munyaka and Kamkunji. Only 1.0% used public facilities/ablution blocks. On Electricity, the majority, 79.6%, of the households with electricity in Huruma indicated that they had a formal connection in their housing unit. However, a significant proportion of 16.3% had an informal connection into the housing unit.

**Approach to infrastructure:** The research finding showed that the approach used in the provision of infrastructure in Huruma is a single sector. From the chronology of infrastructure described above, different infrastructure sectors provided infrastructure independently. Institutionally, these infrastructures were sector based with no apparent linkages with key actors being government, NGO and other government agencies. There was limited community participation, save for the infrastructures provided in the 2014-2016 period when there was community involvement though the community felt it was not adequate. According to a landowner and opinion leader, during a focus group discussion:

*“The earlier improvements like sewer and lighting, there was no community participation. On the new improvements, the team from Nairobi engaged the community before the construction of roads, drainage, footpaths and high mast lighting. The MCA*

*and other local leaders were present but after that, the Nairobi team disappeared and did not consult the community regularly. This led to mistrust and sometimes conflict because of lack of information and transparency- for example; the community representatives were not given the bill of quantities to ascertain the scope of work. The County team was not always available and when available, they did not have details so they were not assisting the community to get the facts. We complained to the World Bank when they came to see the progress of work on the ground and they asked the Nairobi team to hold meetings with the County and community. This was done but not adequately. The community had high expectations, which were not fully met.’’*

**Benefits and challenges:** The benefits of infrastructure according to the dwellers were varied. 24.5% indicated improved infrastructure and investment in the settlement, 15.1% improvement of transport or easy accessibility of the settlement, 13.2% increased lighting leading to improved security, or improvement of sanitation or electricity for domestic use, 11.3% indicated the proper demarcation of boundaries for wayleaves while 5.7% indicated the commercial use of the electricity to generate an income.

These were however not without challenges. 20.0% pointed to the non-participation of the community, 18.5% encroachment or scarcity of land meant for infrastructure development or poor state of the infrastructure provided or poor planning in the provision of the infrastructure, 13.8% inadequate funds for development while 10.8% indicated corruption in the provision of infrastructure.

#### **4.4.2. Munyaka informal settlement: Infrastructure provision dynamics**

**Chronology:** Introduction of infrastructure in Munyaka was similar to that of Huruma. It was provided after the area was settled and it was done by different agencies of the government at different times. According to a member during a focus group discussion in Munyaka that was held with community representatives of landlords and tenants, opinion leaders a landowner and a member of Settlement Executive Committee in Munyaka narrated an overview of this.

*“Upgrading of the settlement began through the introduction of lighting in 1992 – people were paying 35,000 to be connected and many people could not afford. Water was connected to the settlement in 1994 and later upgraded in 2005 by water supply Company before ELDOWAS. The water is not regular in the upper part but the lower side of the settlement has no problem with water. Kenya Power upgraded lighting in 2003. The municipal council graded roads in 1987 but Government and World Bank built current tarmac roads in 2014-2016 including paved drainages, footpaths, four high mast lighting and four ablution blocks. All others are in use except four ablution blocks, which have been described as white elephants because they are not in use due to wrong*

*location/siting and most people have their toilets in their houses and compounds. The community had requested for sewer line but instead, they brought ablution blocks, which may never be used. Lake Victoria Water Services have also upgraded water provision with new household connections although the water is inadequate. Need for comprehensive upgrading not piecemeal. It should be provided in the whole settlement.*

Figure 4.9 shows the incomplete ablution block at the time of field research. However key informants, in the course of filling fieldwork gaps in 2017, confirmed that this was completed but the challenge was that it was not being optimally used since most residents had their sanitation facilities and the mechanism of the running of the facility was not in place. Challenging the top-down approach to upgrading and development in general.



*Figure.4.9. Incomplete ablution block in Munyaka settlement. Source: Fieldwork, 2016*

**Typologies:** Research findings showed that Munyaka settlement has, over the years, benefitted from infrastructure upgrading. Findings from the household survey illustrated that the type of infrastructure in the settlement that is readily available is mainly electricity, lighting, followed by water. However, roads, stormwater drainages and walkways were partly available in the

settlement while sewerage was entirely lacking and ablution blocks and garbage disposal were not adequate in the settlement as shown in figure 4.10.

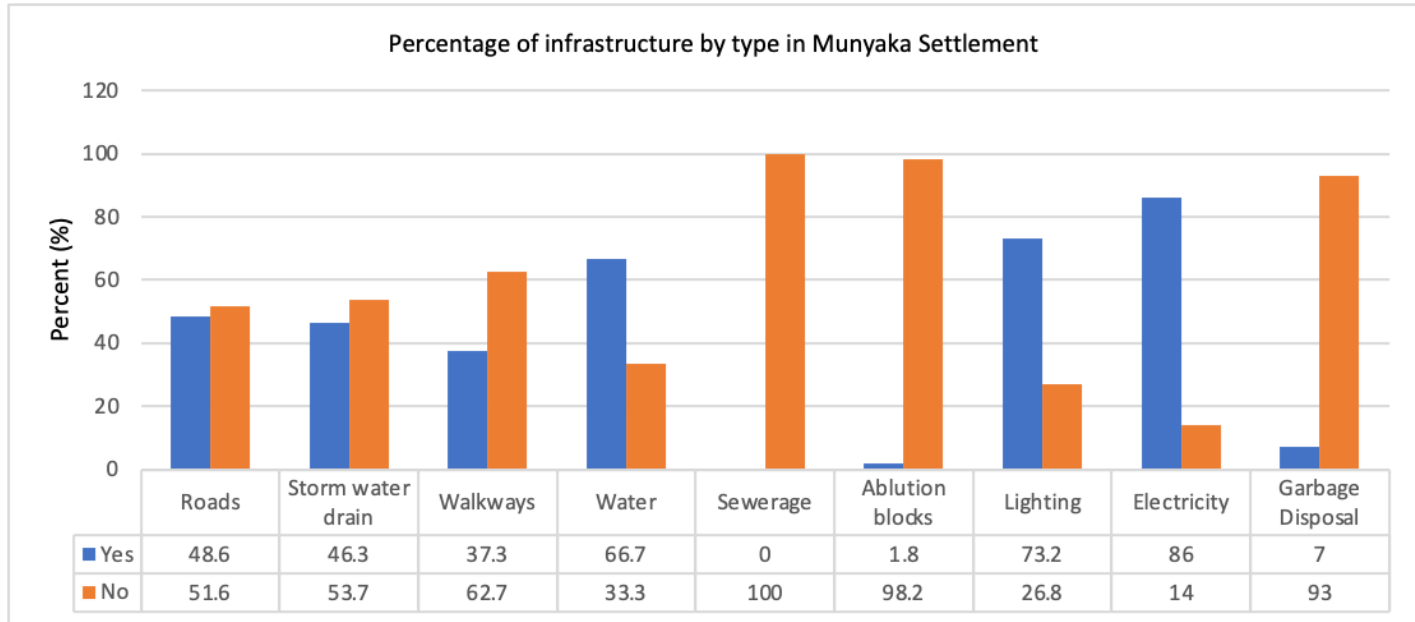


Figure 4.10: Percentage of infrastructure by type in Munyaka settlement

Source: Field Work, 2016

The household survey showed that 51.6% indicated that Munyaka settlement had roads. Of these, 59.4% were tarmacked while 40.6% were earth roads. However, storm drains in Munyaka settlement were limited with 53.7% indicating that there were no drains at all. Where drains existed they were mainly, open paved drains indicated by 18.6%, open earth drains indicated 3.4% and closed paved drains by 1.7%. Figure 4.11 shows the paved stormwater drains, tarmacked road and electricity in Munyaka settlement. It is observable that the road on the right is narrow due to encroachment by dwellers housing. This depicts infrastructure-tenure conflicts and impacts as explained in section 4.8.



*Figure 4.11: Open paved stormwater drains, tarmacked road and electricity in Munyaka settlement.*

*Source: Field survey, 2016*

In respect to the water, majority, 66.7% indicated there was water. Of these most, 52.5% indicated that they had access to piped water from a shared compound and a significant proportion of respondents had access to piped water from a private connection inside the compound 13.6% and 11.9% had access to a shared borehole inside the compound. On sanitation, the predominant form is shared pit latrine and bathroom outside the house but in the same compound as indicated by most of the respondents across the settlements. It is highest in Munyaka with 84.7%. Significant proportions, 15.3%, had private toilet and bathroom in the house while none used public facilities/ablution blocks. Electricity, on the other hand, is available in the settlement with 86% of households having it. Of these, 72.9% indicated that they had a formal connection to the housing unit. However, a significant proportion had an informal connection into the housing unit at 18.6%.

**Approach to infrastructure:** The research finding showed that the approach used in the provision of infrastructure in Munyaka is a single sector. From the chronology of infrastructure described above, different infrastructure sectors provided infrastructure independently.

**Benefits and challenges:** On benefits, dwellers indicated that they had benefitted from the various infrastructure 28.6% indicated improvement of transport or easy accessibility of the settlement, 3.6% indicated improved investment in the settlement, 39.3% increased lighting leading to improved security, 3.6% improvement of sanitation and 13.2% electricity for domestic use. These were however not without challenges. 26.3% pointed to the non-participation of the community, 5.3% encroachment or scarcity of land meant for infrastructure development 15.8% poor state of the infrastructure provided or poor planning in the provision of the infrastructure, 10.5% inadequate funds for development while 26.3% indicated corruption in the provision of infrastructure. Other challenges pointed out are the inadequacy of infrastructure. For example, on the water the FGD in Munyaka, *“The water is not regular in the upper part but the lower side of the settlement has no problem of water”*.

#### **4.4.3. Kamkunji informal settlement: Infrastructure provision dynamics**

**Chronology:** Kamkunji was settled before the infrastructure was provided. According to a plot and structure owner and Chairman of the Settlement Executive Committee, during Focus Group Discussions in Kamkunji had this to say about infrastructure upgrading;

*Upgrading was undertaken in the settlement has mainly been on infrastructure. Pit Latrines were built, with the support of Amref in the early 80s on a cost-share basis but most community members because of the cost did not accept this. Later in 1999, water was brought while the municipal council undertook sewer about 7 years ago and handed over to ELDOWAS. There are both formal and informal connections to the sewer and water. Not all people have connected to the sewer due to high cost. Kenya Power brought electricity in the early 90s. The approach to these upgrading projects was mainly government-driven with no community participation. The roads, water drains, one ablution block and one high mast lighting was done in 2015. Roads, drainage, footpaths, ablution block (costs 10/- to use), rehabilitation of sewer line and high mast lighting were undertaken recently by the government and World Bank, in 2014-2016. These were done at the same time and they have improved Kamkunji a lot.*

**Typologies:** According to research findings, Kamkunji settlement has benefitted the most from infrastructure upgrading. Analysis of household survey data showed that Infrastructure in Kamkunji settlement that was readily available although in varying proportions were roads 82.5%, stormwater drainages 65.8%, walkways 65.8%, water 81.6%, lighting 72.5%, electricity

97.4%. However, sewerage, ablution blocks and garbage disposal were minimal at 27.5%, 27.5% and 31.6% respectively as shown in figure 4.12.

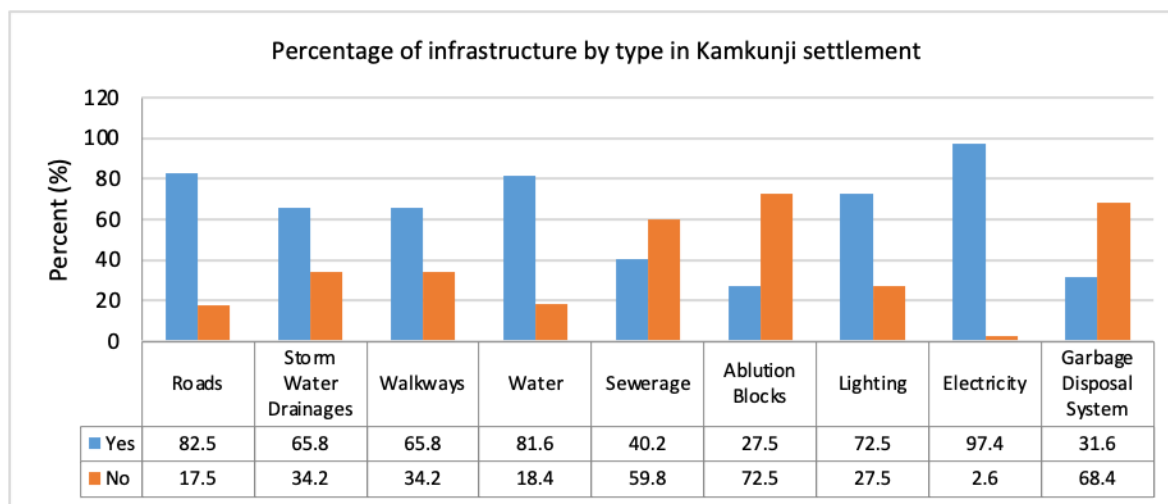


Figure 4.12: Percentage of infrastructure by type in Kamkunji settlement Source: Field Work, 2016

Roads in Kamkunji, according to the household survey, were mainly tarmacked indicated by 85% while 10.0% earth road and 5.0% gravel/murram. The tarmacked roads in Kamkunji settlement are shown in figure 4.13. The roads are also used by pedestrians and some sections used as vending platforms, all of which compete for the same space and are in conflict with the vehicular transport.



Figure.4.13. Tarmacked roads, paved drains and electricity in Kamkunji Source: Field survey, 2016



The nature of stormwater drains, on the other hand, were mainly, 62.5%, open paved drains, 20.0% open earth drains while 12.5% indicated that there were no drains at all. In respect to the nature of water source, majority 72.5% indicated that they had access to piped water from a shared compound – a percentage that is higher than Huruma and Munyaka. However, a significant proportion of respondents had access to piped water from a private connection inside their houses and access to a shared borehole inside the compound with Kamukunji 12.5%. Sanitation in Kamkunji was predominantly shared pit latrine and bathroom outside the house 67.5%. Significant proportions had private toilet and bathroom in the house with 5.0%. While only a few respondents used public facilities/ablution blocks with Kamukunji 2.5%. For Households with the toilet in the house or compound, the majority indicated they had a formal connection to a public sewer line with 42.5%. A significant proportion had an informal connection to a public sewer line with 35.0% while 22.5% used a pit latrine. In terms of the nature of electricity, the majority of the households indicated that they had a formal connection in the housing unit with 72.5%. Further, a significant proportion had an informal connection in the housing unit with 22.5%.

**Approach to infrastructure:** The research finding showed that the approach used in the provision of infrastructure in Kamkunji is a single sector. From the chronology of infrastructure described above, different infrastructure sectors provided infrastructure independently at different times. Infrastructure is mainly provided by the government with limited community participation.

**Benefits and challenges:** On benefits, majority 57.7% indicated the improvement of transport or easy accessibility of the settlement, 19.2% indicated there was increased lighting leading to improved security, 11.5% indicated improved infrastructure development and investment in the settlement while 3.8% indicated the commercial use of the electricity to generate an income. From Focus Group discussions in Kamkunji, benefits of infrastructure include improved security due to high mast lighting (mulika mwizi), trading has extended to late hours, they have been able to save time due to efficient road transport and water within the compound.

Challenges faced in Kamukunji settlement regarding infrastructure, majority 57.6% indicated encroachment or scarcity of land meant for infrastructure development, 16.7% the poor state of the infrastructure provided (mainly due to solid waste), 11.1% indicated inadequate funds for

development while similarly, 5.6% indicated the non-participation of the community or poor planning in the provision of the infrastructure or corruption in the provision of infrastructure. Other challenges mentioned during FGD were;

*“Although there is piped water, it is inadequate. It comes twice a week. People have had to sink their boreholes and others buy from water kiosks (1 public kiosk and 3 private) in the settlement (a 20-litre jerrycan costs Ksh 2 but sometimes goes up to Ksh 100). Illegal connections to the sewer line and dumping of waste, both solid and greywater, in the drains are some of the settlement challenges. Further, there is an encroachment on roads – traders have put their wares on top of drains and others are selling on the road creating serious safety issues. Besides, due to the smooth road, vehicles and motorbikes are driven at high speed and this has caused many accidents”.*

## **4.5. The State: Livelihoods and community wellbeing**

### **4.5.1. Huruma informal settlement: Livelihoods typologies**

**Capabilities (skills, education, health):** Skills development in Huruma was found to be limited. According to data obtained, only 38.8% indicated that they had household members with skills but the majority 61.2% indicated that they did not possess skills. The common basic skills according to FGD were tailoring, mechanics, and drivers. On education, however, a majority, 93.9% indicated that household members had an education while only 6.1% indicated no education. Education, according to Focus Group discussions in Huruma.

*“The majority have gone up to class 8 and there some form four leavers, very few tertiary and university and that is why they are not getting formal employment, most of them are in Jua Kali. Education facilities are not enough -there is only one public school- Huruma Primary school. The rest are private academies, which are not up to standard”.*

On health, household data showed that the major illnesses in the settlement or household were malaria and typhoid with 79.1% and 64.8% respectively. Other minor illnesses in the households were cholera, diarrhoea, tuberculosis, respiratory problems and common cold/flu with 14.3%, 20.9%, and 7.7%, 23.1% and 17.6% respectively. According to key informants and focus groups, there was no public health facility within the settlement and residents relied on private clinics that were ill-equipped but expensive or were forced to walk to the nearest county district hospital about 5km away.

**Assets (Housing unit, land, property):** Housing units were mainly permanent in Huruma, indicated by 59.2%. There are, however, semi-permanent structures indicated by 22.4% and temporary structures indicated by 12.2%. The majority, 62.2%, of the structures were, however, one-roomed with a significant proportion of 22.4% with two rooms. The nature of the material of the external wall was predominantly bricks/blocks with Huruma indicated by 63.3% while 18.4%, were made of mud and wood. The type of roofing material across all the settlements was generally corrugated iron sheets indicated by 87.8% while the common flooring material was cement with 78.6% although earth/clay floors were also present in the settlement with 13.3%. According to a landowner and secretary to Settlement Executive Committee during Focus Group discussions in Huruma settlement;

*“Housing in the settlement is not the same. The houses were initially made of mud and iron sheet roofing. Now those nearer the highway are good but those near the sewerage ponds are ‘pathetic’. This is where the poorer people live and have moved to when rents in the improved areas were increased. People are moving out to Kingongo- a poorer slum area because of poverty”*

Figure 4.14 shows this disparity in housing conditions and materials used. On the left is mud-walled and iron sheet roofed houses and on the right permanent and storied building.



Figure. 4.14: Mud houses and those of permanent housing materials in Huruma. Source: Field survey, 2016

In respect to the assets owned, a television set was owned by most, 42.9%, of the households, followed by household items 16.3%, and land 15.3%.

**Livelihood activities (economic activities, employment and incomes):** In Huruma settlement, the main livelihood activity was employment both formal 32.7% and informal 29.6% and self-employment at 12.2%. The second highest form of livelihood was business/commercial trade at 20.4% while 1.0% were practising some form of agriculture. For those who engaged in business, the main location of the business was along the road within the settlement indicated by 34.7%, the individuals' home/household by 21.4%, while 20.4% indicated that their business was located outside the settlement. Surprisingly only 4.1% had their business in a designated marketplace in the settlement. Figure 4.15 shows businesses located along the upgraded roads in Huruma. However, they have detrimentally encroached on the road of access, footpaths and blocked the storm drainages by placing their wares over them and dumping solid wastes in the drains as depicted in figure 4.15. This demonstrates the links between tenure, infrastructure and livelihoods that must be understood to make upgrading effective.



*Figure. 4.15. Businesses located along the roads in Huruma. Source: Field survey, 2016*

On average household income, 20.4% indicated an income of between Kshs. 18,001-22,500, 15.3% had an income of between Kshs. 9,001-13,000 or Kshs. 13,001-18,000 and 12.2% had an income of between Kshs. 22,501-30,000 while 10.2% had an income of between Kshs. 6,001-9,000.

From Focus Group discussions, a tenant, in describing livelihood activities in Huruma settlement said that;

*'We are mainly hustlers' whose main activities include kiosks, mama mbogas, mkokoteni (hand carts), mechanics, charcoal sellers, watchmen, shoe shiners, drivers, house helps, changaa/local brewing and commercial sex workers.*

**Challenges:** The challenges experienced in pursuit of livelihood activities, 20.7% indicated poor infrastructure as the main challenge, 16.3% indicated that the main challenge was low incomes, 11.5% indicated that a lack of capital or credit was the main challenge, 8.7% indicated it was a delay in rent payments by tenants while 7.6% indicated that poor market for their produce. Challenges relating to the acquisition of skills where majority indicated lack of funds/fees to pay for training with 69.4%, lack of government support in terms of free tuition in the training institutions or bursaries with Huruma 18.1% and lack of training institutions in or near the settlement 12.5%. On education, the main challenge, 67.1%, was lack of fees followed by lack of government support in terms of grants/bursaries 15.8% while inadequate education facilities in the settlement were pointed out by 13.2% as a challenge while 3.9% indicated that overcrowding in institutions was a challenge. On health, the major challenge in the settlement is concerning the provision of health services. 95.9%, indicated that the health facilities were inadequate and a significant proportion of 40.9% pointed to the lack of medicine in the only nearby public health Centre. When looking at the challenges concerning housing in Huruma settlement, 27.5% of the respondents indicated that it was the poor standard/state of the housing structures, 18.8% of the respondents decried the expensive building materials, 11.6% indicated poor sanitation, 14.5% inadequate social amenities in the settlement, 11.6% indicated congestion in the settlement while 10.1% indicated poor waste management or poor state of the infrastructure. When looking at the obstacles in obtaining assets, the majority indicated that the main challenge is lack of money as the major impediment to asset ownership 71.1%,

#### **4.5.2. Munyaka informal settlement: Livelihoods typologies**

**Capabilities (skills, education, health):** Research data showed that 40.6%, in Munyaka settlement have skills, higher than Huruma and Kamkunji. On education, the majority, 54.2%,

had an education. According to a dweller and a women representative in the settlement executive committee of Munyaka, during Focus Group discussions in Munyaka pointed out that on education level,

*“Most are fourth form leavers and there are some university graduates but no employment- even graduates go and look for unskilled work in construction sites or they are idlers”*

The major illnesses in the settlement or household were Malaria and Typhoid as indicated by the respondents with 74.6% and 49.2% respectively. Other minor illnesses in the households were Cholera, Diarrhoea, Tuberculosis, Respiratory problems and Common Cold/Flu with 1.7%, 1.7%, 0%, 3.4% and 22.0% respectively. Munyaka also lacked a public health facility within the settlement and residents relied on private clinics that were not fully manned, did not have adequate medications and equipment but were expensive. Most of them sought treatment from the government referral hospital located in town, more than 10km away from the settlement.

**Assets (Housing unit, land, property):** On assets, Munyaka was less endowed compared to Huruma. From the data only 37.3% indicated that their housing units were permanent structures, 32.2% indicated that they were temporary structures while 30.5% indicated that they were semi-permanent structures. The majority, 54.2%, were one-roomed. A significant proportion of 28.8% indicated that they had two rooms with 22.4% while 15.3% indicated that they had three rooms. The nature of the material of the external wall was predominantly bricks/blocks with Munyaka 52.5%, less than Huruma but higher than Kamkunji. Mud and wood walls were also present in Munyaka at 23.7% while 10.2% indicated that the external walls were made up of corrugated iron sheets. The type of roofing material across the settlement generally corrugated iron sheets at 100.0%. The most widely used material flooring material was cement with indicated by 84.7% although earth/clay floors were also present in the settlement as indicated by 11.9%. Figure 4.16 shows these housing conditions, those that are of permanent materials and the contrasting mud-walled iron-roofed structures. The latter was common in areas where infrastructure had not been improved and those without tenure security indicating a link in the three elements as explained in chapter five.



Figure: 4.16. Housing conditions in Munyaka settlement. Source: Field survey, 2016

Concerning the assets owned by dwellers, a television set was owned by most of the households, 35.6%. A significant proportion, 42.4%, also owned further household items. The land was also owned across the settlement with 5.1%.

**Livelihood activities (economic activities, employment and incomes):** The key livelihood activity in Munyaka settlement is employment indicated by 35.6% with 27.1% employed in the formal sector. 22.0% were doing business/commercial trade while 1.7% were practising agriculture or reared livestock. For those doing business, data showed that the main location of the business was along the road within the settlement with 40.7% followed by the home/household 22.0%. A significant proportion, 27.1%, also indicated that their business was located outside the settlement but there was no designated market place in the settlement. Further, in Munyaka settlement majority of the households, 30.5% had an income of between Kshs. 6,001-9,000, 22.0% had income of between Kshs. 9,001-13,000 and 16.9% had an income of between Kshs. 3,001-6,000 while 11.9% had an income of between Kshs. 13,001-18,000.

From Focus Group discussions, a tenant, in describing livelihood activities in Munyaka settlement said that;

*“Livelihood activities in Munyaka are mainly business such as mama mboga, retail shops, hotels, carpentry, mechanics and employment. Many people go to town for formal employment. Most people are in informal employment.”*

During these discussions, it also emerged that employment opportunities are lacking. According to a businessperson and member of SEC in Munyaka complained that

*“Even university graduates do not have employment- graduates go and look for unskilled work in construction sites or they are idlers”.*

**Challenges:** Challenges to livelihoods abound in Munyaka, key among, low incomes indicated by 35.6%, 20.3% lack of capital or credit, 13.6% poor infrastructure, 10.2% poor market for their produce while 8.5% indicated unemployment was the main challenge. On acquisition of skills the main challenges encountered, 60.7% was of funds/fees to pay for training. A significant proportion, 25.0%, indicated lack of government support in terms of free tuition in the training institutions or bursaries while 14.3% cited lack of training institutions in or near the settlement as a challenge to acquiring skills. When analysing the challenges in the acquisition of education most of the respondents in the three settlements indicated that lack of fees was the major challenge with Huruma 67.1%, Kamukunji 83.3% and Munyaka 64.1%. Similarly, on education, the main challenge was inadequate education facilities in the settlement with 20.5% followed by overcrowded institutions 10.3% and 5.1% that cited lack of government support in terms of grants/bursaries. Similarly, on health issues, 81.3% indicated that the major challenge in the settlement was inadequate health facilities. From the focus group discussions, there is only one public school in the settlement namely Munyaka primary school. It has a high population of 1530 pupils. The others are private academies.

#### **4.5.3. Kamkunji informal settlement: Livelihoods typologies**

**Capabilities (skills, education, health):** The household survey in Kamkunji showed that 27.5% possess some form of skills whereas 72.5% do not indicate skill inadequacy in the settlement. The common basic skills according to FGD in Kamkunji include skills in carpentry, electrical, tailoring, baking and professional skills include clinical doctors and teachers. On education, however, a majority, 87.5% indicated that household members had an education while only 12.5% indicated no education. Education, according to a settlement executive committee member during Focus Group discussions in Kamkuji;

*“Majority is up to standard 8 although there is a number that has gone up to form four and very few in colleges and university. There is no government school within the settlement, only academies and private schools. Children are forced to go to nearby public schools”.*



On health, household data showed that the major illnesses in the settlement or household were malaria and typhoid as indicated by 97.5% and 70.0% respectively. Other minor illnesses in the households were cholera, diarrhoea, tuberculosis, respiratory problems and common cold/flu with 2.5%, 5.0%, 2.5%, 10.0% and 5.0% respectively. A woman community representative, during focus group discussions in Kamkunji, had this to say about the health status of Kamkunji residents;

*“Community is generally healthy except for poor hygiene due to open blocked drains, pit latrines garbage. Key diseases are typhoid and malaria”*

Kamkunji also lacked a public health facility within the settlement and residents relied on private clinics that were not fully manned, did not have adequate medications and equipment but were expensive. Most of them sought treatment from the government county hospital located near Huruma settlement.

**Assets (Housing unit, land, property):** Research data showed that in Kamkunji, unlike Huruma settlement, majority 47.5% have semi-permanent housing units while 27.5% had permanent structures and 25.0% indicated that housing units were temporary. The majority, 92.5% of the structures are however one-roomed, only 5% have two rooms and 2.5% have three rooms. The external walls of these structures in Kamkunji were predominantly bricks/blocks indicated by 37.5%, which is much lower than Munyaka’s 52.5% and Huruma’s 63.3%. Mud and wood were also highly present with Huruma 18.4%, Kamkunji 25.0% and Munyaka 23.7%. Consequently, Kamkunji has a higher percentage of 27.5% of walls made up of mud and cement, 25% mud and wood and 2.5% corrugated iron sheets. The type of roofing material across all the settlements was generally corrugated iron sheets indicated by 100% in Kamkunji while the common flooring material was cement indicated by 75.0% although earth/clay floors were also present in the settlement cited by 22.5%. According to a youth settlement executive committee, a tenant in Kamkunji, during Focus Group discussions in Kamkunji settlement said this of housing in Kamkunji settlement; *“Housing is mainly semi-permanent and mud houses. Rooms are small, measuring 10x10”* These housing conditions are depicted in figure 4.17. They are mainly of iron sheet roofs, mud and semi-permanent walls. It also shows the overcrowding in the settlement, one of the challenges of informal settlements.



*Figure 4.17: Housing conditions in Kamkunji settlement. Source: field survey, 2015*

In respect to the assets owned by the respondents, most, 52.5%, households owned a television set. Other assets owned by households were household items cited by 22.5% while 12.5% also owned land.

**Livelihood activities (economic activities, employment and incomes):** Business/commercial trade is the main livelihood activity in Kamkunji cited by 42.5%, unlike Huruma and Munyaka who cited employment. For Kamkunji, employment came second with 22.5% either in formal or informal employment and with 7.5% in self-employment. Agriculture and livestock rearing were cited by 2.5% as their form of livelihood. On the location of businesses, majority, 37.5%, indicated along the road within the settlement similar to Huruma and Munyaka, as shown in figure 4.18. This was followed by the individuals' home/household at 25.0%. A significant proportion also indicated that their business was located outside the settlement pointed out by 25.0%. Oddly, only 5.0% indicated that they did their business in a designated market place in the settlement, a phenomenon that is not common in the three settlements. On incomes, most households, 22.5% had an income of between Kshs. 13,001-18,000, followed by 15.0% with an income of between Kshs. 6,001-9,000 and Kshs. 9,001-13,000, 12.5% with an income of between Kshs. 22,501-30,000 while 10.0% had an income of between Kshs. 18,001-22,500 or Kshs. 30,001-37,500, pointing to generally lower incomes in Kamkunji compared to Huruma. A woman Settlement Executive Committee member during Focus Group discussions in Kamkunji, in describing livelihood activities said that:

*“Livelihood activities in Kamkunji are mainly businesses such as vegetable selling, charcoal selling, fishmongers and hardware. Incomes, however, are low due to low paying activities and employment. Formal employment is mainly in the town centre and nearby industries and self-employment in posho mills, shops, supermarkets, motorbikes, hardware and bicycle repairs.”*

Some of the livelihood activities are shown in figure 4.18. It shows fruit and charcoal vending along the roads.



*Figure 4.18: Nature and location of some businesses along roads in Kamkunji settlement. Source: Field survey,2016.*

**Challenges:** Various challenges were cited concerning livelihoods in Kamkunji. From the household survey, delays in payment of rent and low incomes are the leading challenges with a sum of 35%, poor market for their produce, 10%, unemployment 10%, while competition in business, poor sanitation and insecurity had 7.5% each, poor infrastructure 5% and lack of capital/credit, 2.5%. Other challenges were those relating to the acquisition of skills where the majority, 78.3% indicated lack of funds/fees to pay for training, lack of government support in terms of free tuition in the training institutions or bursaries 17.4% and lack of training institutions in or near the settlement 4.3%. On education, the main challenge was lack of fees, 83.3% followed by lack of government support in terms of grants/bursaries 16.7%. On health, the major challenge is inadequate health facilities pointed out by 95% of respondents. Housing challenges for Kamkunji were mainly poor sanitation 28.6%, unaffordable/expensive rent, 21.4%, inadequate social amenities in the settlement 17.9%, while the poor standard/state of the housing structures was cited by 14.3%. On acquisition of assets the main obstacle mentioned was lack of money or capital at 96.3% while 3.7% indicated delays in the acquisition process.

#### **4.6. The state of Tenure, Infrastructure and Livelihoods: Defining elements**

This chapter has examined the state of tenure, infrastructure and livelihoods in informal settlements, based on case study settlements of Huruma, Munyaka and Kamkunji in Eldoret

town. This is aimed at answering the first research objective of examining the type, nature and approaches of existing tenure systems, infrastructure provision and livelihoods in informal settlements in Eldoret. This is done to lay a foundation for thesis argument for an integrated nexus approach to upgrading informal settlements as opposed to the current single sector and silo approaches that have had limited impact.

From the study findings, key issues emerged, that is critical for this study and have implications for both practice and policy on slum upgrading. These include the single sector approach, the “spaghetti” nature of provisioning, the livelihoods neglect in upgrading, the movers and shakers in these processes, the unique tenure dynamics, the land professional: a barrier or facilitator, the benefits and challenges of upgrading interventions. Each of these issues is discussed below.

#### **4.6.1. Informality on tenured land: A contradiction**

**The road to secure tenure:** The findings indicated that the case study settlements have the legal security of tenure, though in varying stages. Unlike the majority of informal settlements or slums in Kenya that emanated from squatting on public or private land, these areas initially had legal ownership with titles. This is unique. Evidence from the research showed that typically informal settlements are areas characterized by a lack of tenure security, this study found that this is not always the case. The move from formality to informality and back to the formality that is found in informal settlements in Eldoret differs from the widely held notion that “large numbers of people in cities all over the world, including most of the 1 billion currently living in slums and informal settlements, have no security of tenure”. The question, therefore, is why, having had secure tenure, did the settlements exhibit characteristics of informality?

According to studies in Mexico City expansion of informal neighbourhoods was a result of illegal sub-division and in Bogota, it was ‘pirate sub-divisions’ done outside the formal procedures (Wu, Zhang, and Webster, 2013, Gilbert and Ward, 1985). According to Wu et al, (2013) informality is attributed to weak development control laws that contribute to an efficient ‘informal’ land market.

In the case of Huruma, Munyaka and Kamkunji informal settlements in Eldoret, the process of insecure tenure begun with informal subdivisions of formally large tracks of agricultural freehold white settler farms which were bought by land buying companies at the advent of independence in the early 60s. Farm directors, who issued share certificates to members who bought the plots, did the informal subdivisions and land transactions. According to existing research, this situation obtained for several years where further unregulated land subdivisions and transfers continued unabated until the late 80s and 90s when the government intervened and did the planning that facilitated formal survey and subsequent registration and issuance of titles in Huruma and Kamkunji in the 90s. Munyaka, at the time of research, was yet to get titles.

This unique tenure security process depicts a cyclic approach from the formal tenure security to informality and insecurity due to informal subdivisions, transfers and unregulated developments and formalization of tenure. These networks of processes are illustrated in figure 4.19.

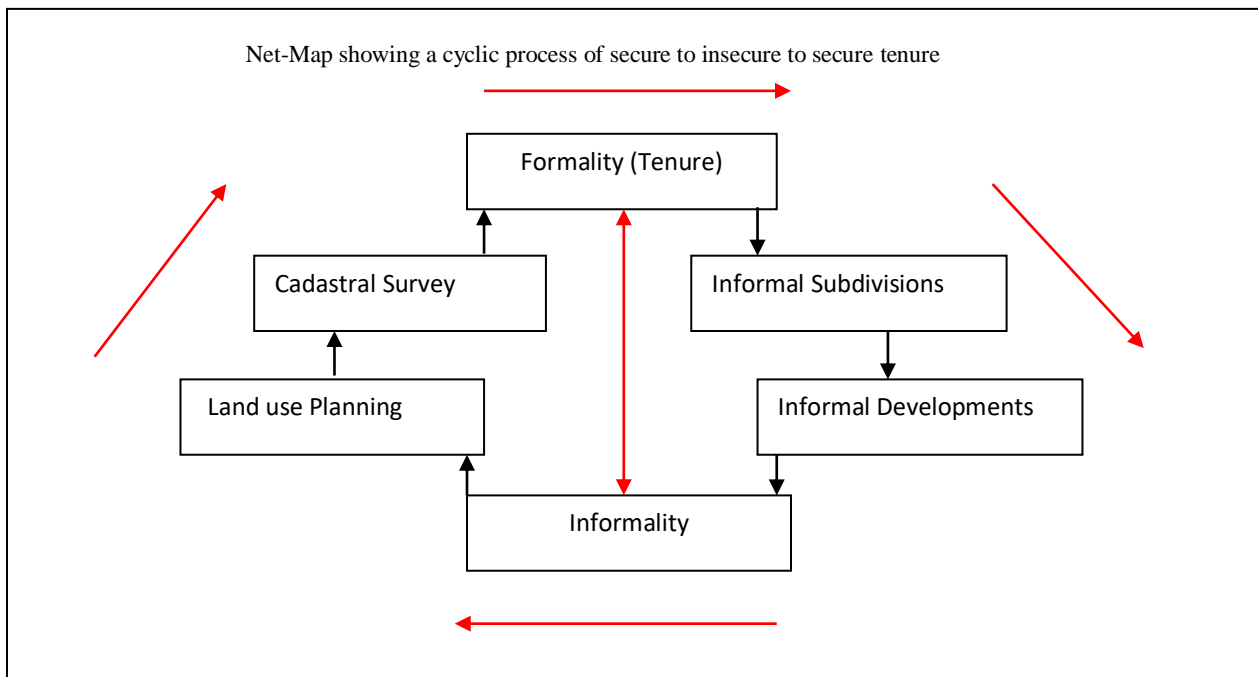


Figure 4.19: Net-Map showing a cyclic process of secure to insecure to secure tenure. Source: Author

The Net-Map shows the cyclic tenure status transformation from formal secure tenure to informality and back to formality depicted by the red arrows. The red arrow in the middle illustrates the possibility of secure tenure turning insecure and vice versa. The black arrows on the other hand show the networks in the degeneration process that include informal subdivisions,

followed by informal developments subsequently leading to informality. This was followed by state intervention that undertook processes of regularization of tenure commencing with land use planning then cadastral survey and finally titling thus the achievement of formality once more but this time for a larger group of persons since the illegal transactions and subdivisions were formalised. Another reason cited for the deterioration to insecurity was lengthy and costly land administration and management processes that saw dwellers opt for the easier and cheaper informal transactions and developments. This finding is similar to what was observed by Galiani and Schargrodsky, (2016) who argued that “as time goes by, and as the beneficiary titleholders pass away, divorce or migrate, if these poor households cannot afford the costs entailed in remaining formal, we will observe a gradual process of de-regularization that will eventually lead to a new need for costly public interventions”. Deregulation entails these new owners losing their legal tenure rights. Gutierrez and Molina, (2016) on the other hand argued that titling programs have failed to address sustenance of formal tenure. This, according to their study, led to de-regularization due to illegal transactions subsequently threatening to undo the success of the titling program in the long run” (Gutierrez and Molina,2016)

The implication of this to policy and practice in upgrading is, first, that secure tenure can turn insecure if other interventions are not put in place meaning that tenure security alone is not adequate to improve living conditions in informal settlements. Various researchers have made similar findings that security of tenure is not a silver bullet and it should be one among other interventions (Habitat for Humanity and Cities Alliance, 2015). Secondly, the land professional plays a key role in facilitating or constraining the acquisition of tenure security.

### ***The Land Professional: Barrier or Facilitator***

The findings of the study, especially from the lived narratives, brought into sharp focus on the role of the land professional in the process of securing tenure. In Munyaka, for example, it was reported in FGD that the “*Subdivision of the farm was undertaken by a non-qualified surveyor. Each person was required to pay 9,500 for processing of titles but the titles are not yet and the same person is following up on their titles*”. In Huruma / Mwenderi farm, retired land adjudicators, for a small fee, subdivided the land. Due to these illegalities, the settlements were

irregularly subdivided into small uneconomical plot sizes, sometimes disputed and overlapping and with inadequate provision for public utilities contributing to the proliferation of informality. To this end, the land professional is seen as a hindrance to secure tenure. This situation obtained until the 90s when there was state intervention to regularize these settlements. The land professional was instrumental in planning, surveying, valuation and issuance of titles and became a facilitator to the reinstatement of tenure security. However, these land administration and management processes were lengthy, bureaucratic and costly spanning more than 20 years, and still counting for Munyaka settlement where the land professionals and officials have taken over 30 years to convert share certificates to titles.

The implication of this is that though titling is seen as the highest form of security, the land professional and the respective institutions and processes remain a constraint. According to Leduka, (2001) the restricted access to land through formal state rules and access to land in delivery systems, which are uncertain, and frustrating cause most people to resort to private illegal sub-divisions and access land through informal rule systems which are quick and also attractive. Galiani and Schargrodsky, (2016) on the other hand argues that “transactions costs may be one of the main reasons for the high rates of de-regularization found in informal settlements”. There is, therefore, need to simplify tenure processes and the land professional must be a facilitator and not a barrier to such reforms.

#### **4.6.2. The upgrading silos**

Single sector approach is the dominant approach in informal settlement upgrading. According to the study findings, tenure and infrastructure improvements, and a lesser extent livelihoods intervention, have been provided through largely isolated and mono-sectoral planning and implementation processes lacking adequate coordination and integration. This single sector approach is mainly two-fold, sectoral and intra-sectoral. Sectorally, about individualized sectors and intra-sectoral concerning silo approaches within the sectors.

In the case of tenure, the approach was sectoral but different for different actors. For land buying companies it was willing buyer willing seller followed by informal subdivisions and issuance of share certificates, in the case of Huruma, it was Huruma Farmers Land Buying

Company and for Kamkunji it was Uasin Gishu Farmers Land Buying Company who led these processes with little regard to the state processes. The State came in several years later to regularise the settlements through the Ministry in charge of Lands that had the responsibility of granting legal ownership to land and property. The ministry undertook most of the processes with no clear indication of active involvement of other sectors such as environmental, economic and social sectors. Secondly, the intra-sectoral silo approaches were evident. The departments of physical planning, survey and land administration, valuation and registration worked independently of each other although the output of one affected the other. For Huruma settlement 88.9% indicated that these tenure processes were undertaken individually, in Munyaka 68.8% and in Kamkunji, 85.7% as discussed in section 4.3. These silo uncoordinated approaches contributed to the lengthy, bureaucratic and costly processes of securing tenure characterized by long-drawn, unrelated piecemeal land administration and management processes of planning, surveying and titling. This has rendered the land ownership process ineffective, costly and may be a contributory factor to the growth of informal settlements since the dwellers resort to informal transactions and constructions. Furthermore, the lack of meaningful partnerships with other sectors contributed to encroachments and inadequate provision for public utilities. In other instances, locations for utilities such as cemeteries and sewer lagoons within the settlements of Kamkunji and Huruma, are a health hazard and have remained contentious.

In the case of infrastructure and service provision, the study findings showed that the approach is also a single sector. Unlike the tenure, the infrastructure provision was varied and undertaken by multiple sectors but like tenure, it was undertaken disjointedly through piecemeal and uncoordinated approach especially in the period before 2014. In Kamkunji, for example, sanitation (few pit latrines) was done in the 80s, water in early 90s and electricity in late 90s and a sewer line. All these were done in some sections of the settlement and were therefore inadequate. The multiple players provided their core technical sector-specific improvements with little regard to, first, the impact it would have on other infrastructures for example provision of water or electricity which was provided but uprooted and relocated later to pave way for roads and drainages thus waste of resources. These were some of the challenges expressed in Huruma, Munyaka and Kamkunji case study areas as discussed in section 4.4. Secondly, the effect of the infrastructure on other sectors such as environment, economic and social sectors such as issues of environmental degradation, business losses or relocation, affordability of the infrastructure



and gentrification resulting from upgraded infrastructure. Thirdly, the piecemeal provisioning negated the argument that infrastructure services are often best provided by large networked systems characterized by large economies of scale and scope if the goal is to minimize average production costs. The intra-sectoral single sector approach within the infrastructure sector is even more complicated. In the case of water provision, for example, the water sector has numerous agencies that provide water. These include County Government, State Department of Water and Irrigation, Eldoret Water and Sanitation Company, Water Resource Management Authority, Water Services Regulatory Authority, National Environmental Management Authority, Water Resources Users Association, Water Group Associations, CSOs in the water sector and other water-related agencies. These have conflicting mandates and their activities are uncoordinated. In the transport sector similarly, it is acknowledged that each mode of transport operates largely on its own without deliberate logistic linkages, that planning and development of transport programmes and projects are not harmonized and synchronized due to the fragmented institutional framework for the organisation of the transport sector (GoK, 2012)

Livelihoods provisioning also although minimal, had a single sector approach. The only sector that directly contributed to livelihoods enhancement in the settlements was the education sector that provided education facilities and staff in Huruma and Munyaka public primary schools and nearby schools in Kamkunji. According to findings, the Ministry in charge of education does the provisioning for the education sector although, according to a key Ministry of Education key informant, there is still;

*‘Proliferation of unstructured academies providing very poor education in the settlements’.*

From the foregoing, the existing approach to upgrading in the areas of tenure, infrastructure and livelihoods is a single sector characterized by uncoordinated activities undertaken by a mosaic of sectors that seldom integrate their approaches or activities. For instance, “within the urban water sector, such services as clean water supply, wastewater treatment and floodwater drainage are typically delivered by separate entities and not coordinated, as well as being isolated from other urban planning processes” (Bahr, 2012)

This approach is not sustainable as it contributes to lengthy, costly bureaucratic and piecemeal interventions that constrain rather than enhancing poverty reduction and improvement efforts.

According to, Oliveira et al., (2015) “conventional approaches often fail to achieve long-term objectives because they focus on limited, siloed or less-relevant aspects of the problem or fail to integrate insights and knowledge from these various domains”. There is a need, therefore, according to GIZ and ICLEI, (2014) to turn away from dis-integrated “silo” planning, to integration that optimizes synergies and manages trade-offs through collaborative, cost-effective and integrated planning and implementation.

What this portends to poverty reduction policies, upgrading of informal settlements and for this study is two-fold. First, there is the need to understand the links between tenure security, infrastructure and access to livelihoods. Secondly, there is the need for integrated approaches that go beyond these individual sectors to address cross-sectoral challenges and synergies for sustainability and greater efficiency in resource use since these are intricately linked and interconnected determinants of improvement of dwellers’ wellbeing and living conditions in informal settlements.

This research aims to contribute to these efforts, by seeking to clarify the nature of the interplay between tenure security, infrastructure and livelihoods as will be discussed in chapter five.

#### **4.6.3. Spaghetti system: Different approaches same results**

It emerged from the study findings that tenure, infrastructure and livelihoods provisioning is spaghetti and entangled. Tenure security acquisition was through spaghetti processes; from illegal subdivisions by entities such as land buying companies not recognized by policy or laws to further informal subdivisions and unregulated transfers by farm directors. From beneficiary plot owners informally subdividing, transferring or construction introducing tenure insecurity to the state intervention of formalization through planning and re-planning followed by to and from processes of plan rejections and approvals, which gave way to survey carried over previous informal surveys sometimes causing disputes due to double ownership and succession challenges. These were coupled with overlapping tenure systems of tenancy, freehold, leasehold, share certificates and squatting modes of tenure in the same settlements provided through entangled and sometimes competing institutions comprising of the former municipal council,

ministry in charge of lands, land control boards and lately National Land Commission and its land management boards created and abolished, County and National government. This web of actors, activities and counter-activities helped to accentuate vulnerability in the settlements.

Similarly, in infrastructure, the common spaghetti provisioning was evident. From field observations and narratives from dwellers, before the upgrading of infrastructure in 2014, a labyrinth of crisscrossing water lines snaked through the settlements, oftentimes for illegal consumption of water. This spaghetti provisioning of water is still common in some parts of the settlements. Electricity lines, on the other hand, hang precariously and crisscross from one house to the other especially on the back roads, exposing dwellers to dangers. Other research reveals that electricity is illegally connected jeopardizing the quality and safety as it also increases the cost (Bhatkal and Lucci, et al., (2015) According to them, slum communities in Thailand previously would pay a premium to buy basic services informally from utilities. Further, according to dwellers, most power poles were placed in the middle of roads and they had to be relocated during the construction of roads causing delays of the project. Similarly, sewer lines were constructed within road corridors with manholes way above the road surfaces providing an unsightly scene of protruding and often overflowing manholes spewing raw sewage on the only pathways in the settlements. These, according to the lived experiences of the dwellers had to be relocated and aligned during the upgrading of roads and rehabilitation of the sewers that was done in 2015-2016.

This spaghetti provisioning is attributed to lack of coordination and lack of sharing of information among utility providers allowing service providers to fix their lines most cheaply without any consideration for safety and impact on other utilities.

Spaghetti systems in informal settlements are a sign of fragmented approaches that are reactionary. They result in duplicity and wastage of resources. For policy and practice, there is a need to untangle by integrating efforts.

#### **4.6.4. Movers and losers in upgrading**

From the findings, the case study settlements have been shaped by movers both from within and from without the settlements in the areas of tenure, infrastructure and livelihoods. Some lost in the process.

The movers in tenure security and infrastructure in the three settlements of Huruma, Munyaka and Kamkunji are the land buying companies, the state and the community as discussed in detail in chapter six. The land-buying companies midwived the acquisition and occupation of the land on which the settlements currently occupy. As discussed in section 4.3, they bought land from the departing white settlers, informally subdivided and sold the plots to members thus orchestrating the informal land delivery processes. They subsequently issued share certificates to the buyers granting initial informal security in occupation and ownership and meeting a demand for urban land. They were later instrumental in facilitating and acting for the community in tenure regularization process that was undertaken by the state in the 90s.

The state, on the other hand, was instrumental in regularising the settlements through planning, surveying and registration thus providing the settlement communities with legal tenure with land rights. However, the long and costly bureaucratic processes were a constraint especially to the very poor in the settlement. The state was also a prime mover in infrastructure, supported by international agencies. The early small-scale stand-alone infrastructures were provided by different government agencies with minimal community participation. However, from 2014, according to key informants and FGDs held in the respective settlements, international agencies supported the national government in providing more comprehensive infrastructures. These were more comprehensive, the package of investments was meant to be demand-led, and community-led approach, however, the investment menu was pre-determined, limiting the community's options on the type of infrastructure. The dwellers, therefore, missed key priority infrastructures such as schools and health facilities.

The community, composed mainly of the individual plot beneficiaries were intimate participants in the tenure process since each had to pay a fee to the farm directors to facilitate the acquisition of a title. They played an active role in Infrastructure in planning and implementation through community organ, Settlement Executive Committee (SEC). With time, SEC became influential organizations that rivalled elected civic leaders. This was by virtue of their acquired powers to determine locations of infrastructure, relocation of affected persons, dispute resolutions, determining persons to be employed by contractors, mobilizing the community for or against the contractor and the government in instances of disagreements on the scope of work among other self-acquired controls in the settlements. These institutional dynamics are discussed in chapter

six of this thesis. Institutional dynamics affect upgrading, they can constrain or enhance the process.

The other key movers in this infrastructure upgrading process were the contractors. According to the workers working at the site and the community, the contractors undertook, managed and supervised actual construction of infrastructure. They were therefore instrumental in the realization of physical improvements in the settlements. Also, they offered employment opportunities to dwellers in the settlements and were, therefore, a source of livelihoods for some. According to International Labour Organization, “appropriate conditions include; minimum wage; minimum age; non-discrimination (affirmative action in favour of women); elimination of forced labour; workers’ compensation for work accidents; and safety and health” (Bentall, et al., 1999). The communities, however, pointed out issues of safety, communication barriers especially with the Chinese contractor and inadequacy of employment opportunities. These key movers though they were both enablers and a constraint, they facilitated upgrading of the settlements which in turn improved living conditions.

The prime mover on livelihoods is the people themselves. As discussed in 4.5, livelihoods are a neglected feature in the upgrading in Huruma, Munyaka and Kamkunji. There is no direct support for livelihoods upgrading from other agencies. The people, therefore, strive to make a living through their fragile abilities, skills, assets and economic activities.

The losers in these upgrading processes were varied. On tenure, some beneficiaries have not received their title due to what the community attributed to failure to pay the fees and others did not receive their full shares as was the case in Huruma. However, all the dwellers of the settlement lost because of privatization of hitherto public utility plots that were appropriated by land buying company directors to themselves, family members and friends. In Kamkunji for example, the land set aside for the graveyard had been reduced from four to two acres since had grabbed been for a quarry, a market was reduced from half an acre to less than a sixteenth of an acre. In Huruma, land meant for a school was reduced from 5 acres to two and a half acre while the other half was sold by company officials and it was a similar situation in Munyaka. Under infrastructure upgrading, the key losers were those who were relocated to give way for infrastructure, those who could not afford to pay for the connection to utilities such as electricity,

water and sewer and those who had to move out of the settlements due to market forces otherwise referred to as gentrification.

For practice and policy, it is essential to take stock and understand the roles of the diverse movers in an upgrading process to take advantage of comparative advantages and synergies while minimizing power plays and politics that can derail upgrading process. More importantly, there is a need to focus on those who are likely to miss out on the whole upgrading process and strategies should be put in place to cushion them. This calls for integrated approaches as advocated by this study.

#### 4.6.5. Livelihoods: The neglected feature in upgrading

The study findings indicate that upgrading has been undertaken in the three settlements through direct interventions in tenure and infrastructure improvement but livelihoods component remains largely ignored as illustrated in figure 4.20.

Net-Map showing the current and the nexus approach to Tenure-Infrastructure-Livelihoods provisioning

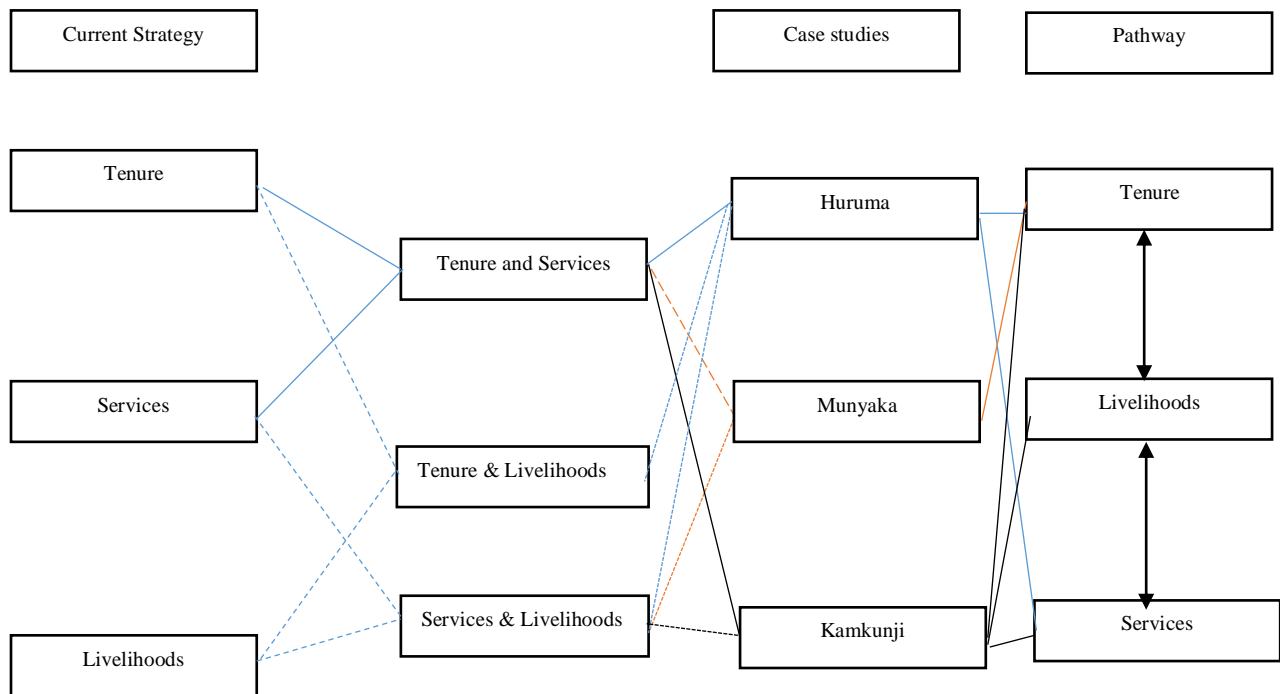


Figure 4.20: Tenure, infrastructure, livelihood provisioning status in the nexus. Source: Author

The illustration in figure 4.20 shows the network of interventions of tenure, infrastructure and livelihoods that have been provided in varying degrees in the three settlements. The network shows the current interventions and strategy in each case study settlement and the single sector pathway. The full lines signify direct provisioning while the dotted signify indirect and weak provisioning. The current strategy focuses on the physical aspects of infrastructure and tenure in the three case study settlements demonstrated by the full lines. In contrast, there is weak and indirect support to livelihoods in all the three settlements as shown by the dotted lines. The effect of these is a strategy biased towards physical improvements of tenure and infrastructure and less in livelihoods.

From the observations made during the field visits, household survey and narratives from dwellers, livelihoods in informal settlements are precarious and they are not fully supported. The capabilities of dwellers in informal settlements, expressed in this study in terms of education, skills, and health facilities, are not adequate to provide meaningful and productive livelihoods. Their access to assets, which were looked at in terms of housing unit, land, property, similarly indicates that the informal dwellers are not fully empowered and can barely access tangible assets such as housing and land. Livelihood activities (economic activities, employment and incomes) are equally inadequate. On employment and incomes, for example, Mansour-Ille, (2018) argues that there are limited job opportunities in the formal sector so people resort to the informal sector to earn an income through self-reliant strategies, such as self-employment, but these do not offer guarantees that would protect their rights in terms of pay, working hours, abuse and exploitation.

The implication of this is that whereas there is a relative improvement of conditions in the settlements, the strategy focuses on the physical improvements but not the poor people themselves leading to inadequacy in the areas of skills, employment, incomes, health, education capabilities, assets and livelihood activities which enhance rather than curing the cycle of poverty. Other researchers have found this neglect of livelihoods in upgrading. According to Jones, (2017), “livelihoods are given limited consideration in planning and transforming the lives of residents who are disadvantaged and already marginalized remains flawed”. Using the case of Kampung in Indonesia, he questioned whether governments in formalizing the informal, through upgrading, is not “replacing one slum with another by not considering residents’ genuine

concerns and addressing underlying poverty and human development issues, such as health and education”. Similarly, Minnery, (2013) in his study found that there was still a need to augment livelihoods in the post-upgrading phase of slum upgrading calling for the incorporation of economic activities in upgrading.

Empowerment and access to livelihoods are more likely to give informal settlement dwellers better livelihood opportunities with which to enhance their living and lessen poverty. What this portends for informal settlement upgrading is the need to re-focus upgrading strategies to incorporate aspects of livelihoods that will facilitate the urban poor access better livelihood opportunities, health and education for sustainability. The pathway for upgrading, therefore, is an integrated nexus approach that incorporates tenure, services and livelihoods as opposed to the current largely silo and sectoral approaches.

#### **4.7. Benefits: The positive outcomes**

The findings from this study showed that the settlements have benefitted from upgrading. When households were asked whether tenure and infrastructure were beneficial to them, the majority answered in the affirmative with 95% on tenure and 67% on the infrastructure as shown in figure 4.21.



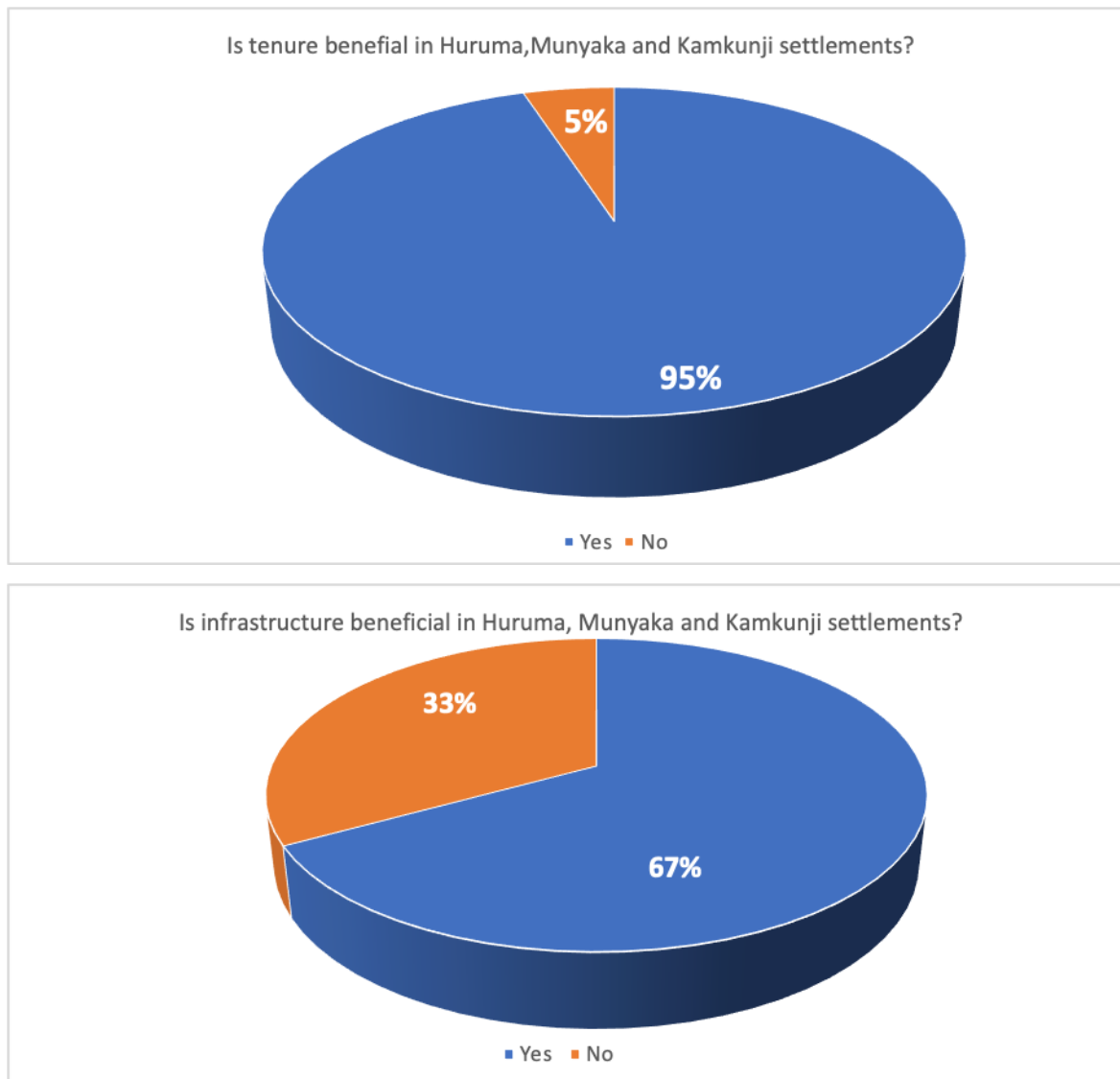


Figure 4.21: Are tenure security and infrastructure beneficial in settlements?

Source: Field data 2016

On tenure, both tenants and landowners benefitted. For the tenants, the tenancy tenure had given them shelter, a form of security while for plot and structure owners the freehold and leasehold titles had given them what is regarded as the highest form of security from which they derived security from evictions. They also have property rights that include the right to sell, lease, borrow loans or give as an inheritance. In respect to the rights on the land, 58.6% indicated they could sell the land while 41.4% said they could not. On the right to lease/rent, the land 77.2% indicated they could lease/rent while 22.8% could not. 31.6 percentage indicated they could use the land as collateral for a loan while 68.4% could not take a loan using the land. 35.1%

indicated that they could inherit the land while 64.9% could not inherit the land as shown in figure 4.22

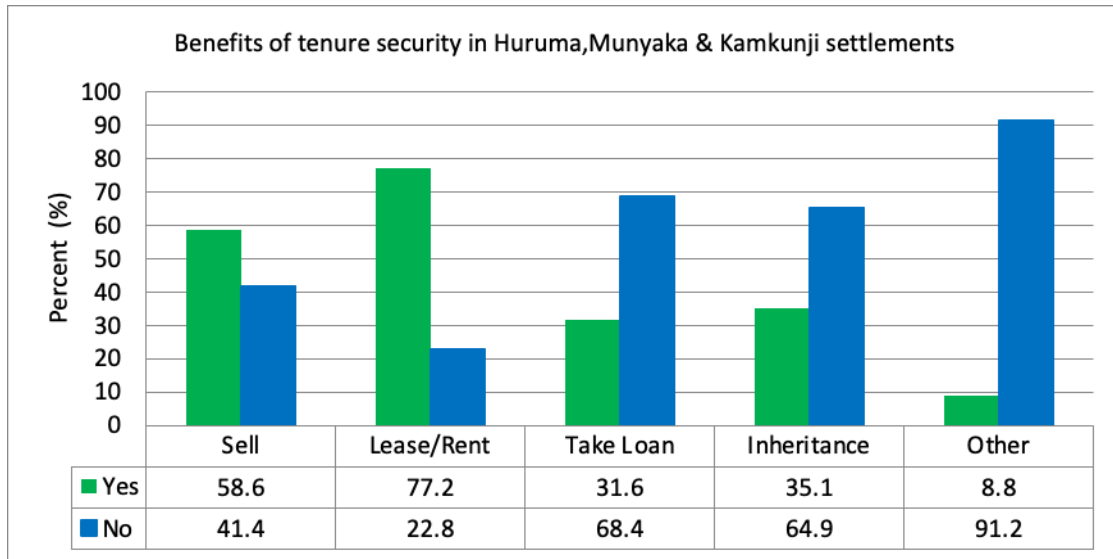


Figure 4.22: Benefits of tenure security in settlements Source: Field Data 2016

The benefits identified by the dwellers imply that tenure contributes to the improvement of livelihoods. This finding concurs with other research but as it will be discussed in chapter five of this thesis, the contribution to livelihoods is limited to the area of acquisition of assets but less in other livelihood areas such as employment, incomes, capabilities and health an indicator that tenure security alone is not adequate to address constraints in informal settlements.

On infrastructure, data obtained from the research indicate that the infrastructure is beneficial. As pointed out by dwellers, before the upgrading of the infrastructure, the situation in the settlements was deplorable. This information was triangulated with data from secondary sources. For example, according to a baseline survey undertaken in informal settlements in Eldoret in 2012, only 28% of households, on average, had access to infrastructure (World Bank, 2014). The current average of 51% indicates a significant improvement. For the dwellers, the main improvements were on roads, walkways, storm drains, electricity, water and sanitation. From the household survey, 29.0% indicated the improvement of transport including the accessibility of the settlement while 21.5% indicated there was increased lighting leading to improved security. Further, 15.9% said there was increased investment in the settlement, 9.3% indicated the improvement of sanitation and similar percent for Electricity for domestic use, 5.6% indicated

the proper demarcation of boundaries especially for infrastructure while 3.7% indicated the commercial use of the electricity to generate an income as shown in figure 4.23.

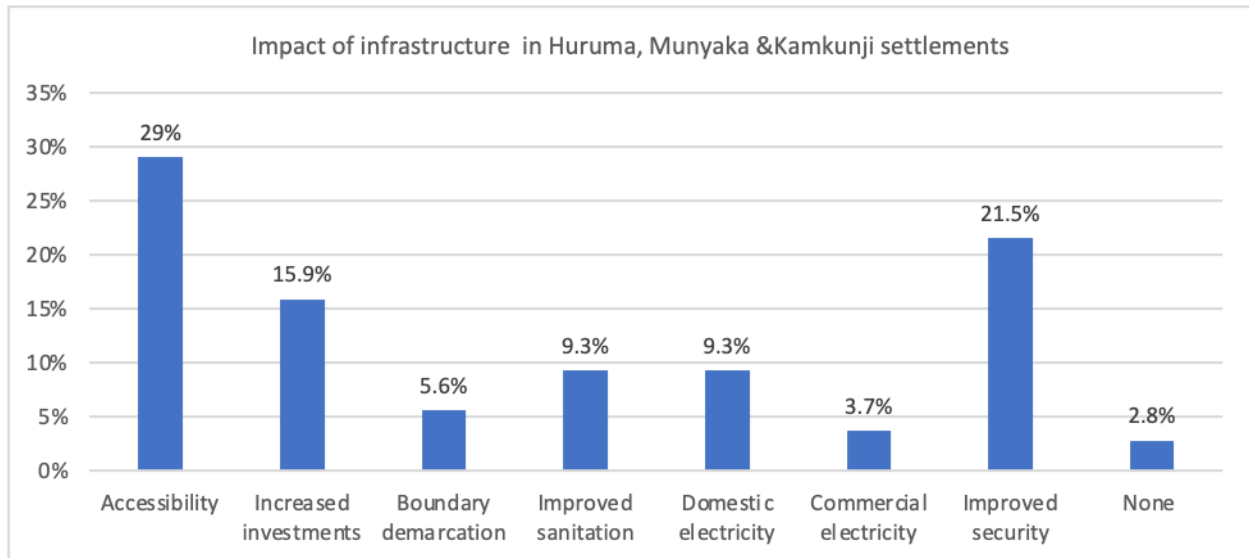


Figure 4.23: Benefits/Impacts of infrastructure in settlements Source: Field Data 2016

From Focus Group Discussions, other additional benefits of infrastructure include separation of vehicular and human traffic thus reduced accidents, reduced flooding due to improved drainage reduced insecurity due to lighting, increased working hours thus increased business, clean and safe drinking water thus reduced waterborne diseases and employment from construction sites.

These infrastructures have improved conditions in the settlement. However, as it will be discussed in chapter five, the benefits are mainly physical and the need therefore to integrate other interventions that address the softer areas of livelihoods.

According to this research that was undertaken in the case study settlements of Huruma, Munyaka and Kamkunji, the dwellers indicated that provision of infrastructure is beneficial to them. Of the households that were interviewed, on average, 67% said yes, infrastructure is beneficial while 33% said it is not and these were mainly those who did not have an adequate supply of infrastructure in their zones. The benefits pointed out during the household survey include increased accessibility, reduced flooding due to the drainages, improved security, and safety, availability of water and electricity and improved sanitation especially for those who were connected to the sewer line.

## 4.8. Challenges

The improvements in the settlements have not been without challenges. On tenure security, the majority, 35.6%, cited lack of funds or the expensive tenure security acquisition, 32.2% indicated that delays in the process of acquiring title were the challenge, 6.8% said corruption was a challenge while 3.4% indicated ownership disputes and the lease, 1.7%, indicated poor coordination between the institutions involved in the tenure security. Surprisingly 20.3% indicated that there were no challenges in tenure security processes as shown in figure 4.24.

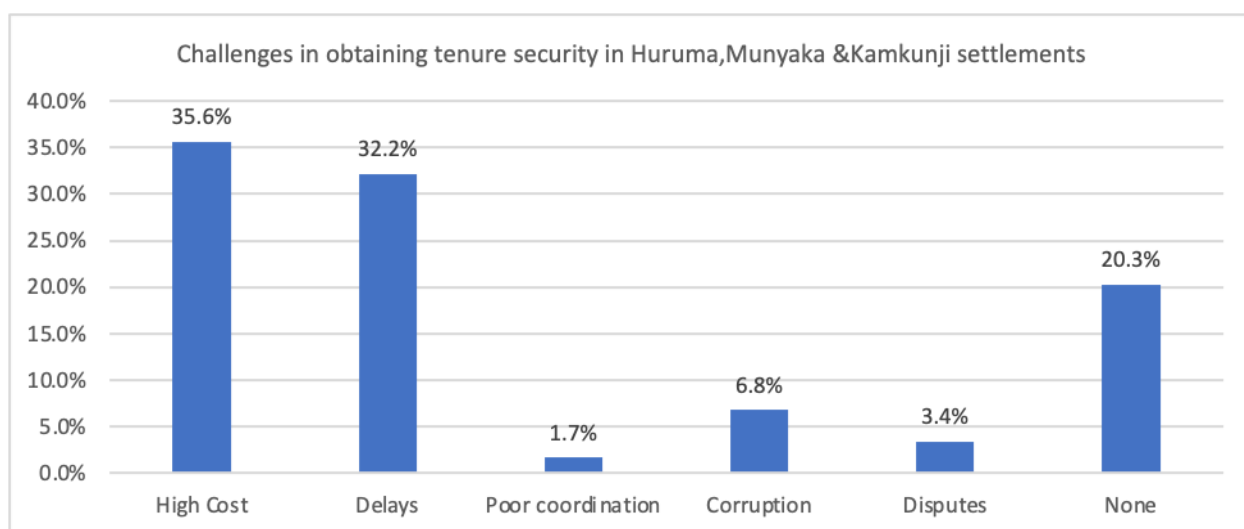


Figure 4.24: Challenges experienced in the acquisition of tenure security Source: Field Data 2016

Long, costly and bureaucratic processes involving planning, survey and issuance of titles that require numerous approval processes both at the local and national levels Government, as well as bribery and corruption, exacerbate illegal subdivisions and informality in the settlements which tend to reduce the gains legal tenure was intended to achieve.

On infrastructure, although dwellers indicated that they have benefitted from infrastructure, challenges abound. According to information from a landowner and opinion leader during a focus group discussion in Kamkunji settlement;

*“Although there is piped water, it is inadequate. It comes twice a week. People have had to sink their boreholes and others buy from water kiosks (1 public kiosk and 3 private) in the settlement (20-litre jerrycan costs Kshs. 20 but sometimes goes up to Kshs. 100). Illegal connections to the sewer line and dumping of waste, both solid and greywater, in the drains are some of the settlement challenges. Further, there is an encroachment on*

*roads – traders have put their wares on top of drains and others are selling on the road creating serious safety issues. Besides, due to the smooth road, vehicles and motorbikes are driven at high speed and this has caused many accidents. A female landowner and opinion leader in 135.5%*

Similarly, in Huruma challenges faced by dwellers were raised during focus group discussions;

*“Utilities are costly for residents. The cost of connecting sewer and water is too high so some people have continued to use pit latrines and borehole water. In some areas, the pit latrines are next to the boreholes. For the headmaster of Huruma Primary School, water is still a challenge. It is inadequate, almost non-existent. It comes once in two weeks. It is not adequate for the high population in the settlement and it is worse for the school which is forced to purchase 200 litres of water at Kshs 2,500 every day. This is not sustainable. The toilets in the new school building are not being used for lack of water, even teachers are forced to use the pit latrines. Electricity is also costly especially the connection and monthly bills. The school pays Kshs 6000 per month, which is too high for the school since they do not get adequate allocation for paying electricity. Sometimes they are forced to stay without electricity for non-payment of bills. On roads, according to a resident, accidents are becoming a common occurrence due to high speeding motorists both vehicles and motor bicycles because there are no bumps. Headteacher of a primary school in Huruma”*

Apart from the functional challenges, dwellers raised fundamental challenges on the upgrading of the settlement. First, the unequal treatment arising from the fact that not all areas of the settlement were upgraded and secondly the gentrification attributed to high rents in the upgraded areas. From Huruma the sentiments were that;

*“Not all areas benefitted from the upgrading project. Some roads are still mud – they were not improved or tarmacked. This is not fair. These areas are not developing like the other areas that have roads. People are moving out of the settlement and creating another slum in Kingongo because of high rents. Poorer people are going to cheaper areas, which are more affordable. A community leader in Huruma”*

Several other challenges were brought out by dwellers through the household survey. These challenges included lack of adequate space for the infrastructure, lack of community participation, misuse of funds due to lack of monitoring and destruction of water pipes by road contractors. Other challenges were the demolition of houses that were on road reserves, harassment to pay for garbage collection fee by County Government, relocation of people from where they resided to pave way for infrastructure, encroachments, and period was too long, insufficient funds to build infrastructure in the whole settlement- some areas were left out.

## 4.9. Summary

Tenure security, infrastructure and livelihoods are critical elements in the upgrading of informal settlements. From the study findings, the three case study settlements of Huruma, Munyaka and Kamkunji have benefitted from direct tenure security (section 4.3) and infrastructure improvements (section 4.4) but there has been general neglect of direct support to livelihoods as discussed in sections 4.5 and 4.6.1. According to the findings, upgrading of infrastructure and tenure regularization has improved their assets base and living conditions in the settlements but their capabilities, health, skills, employment and incomes are still low, meaning that they are still vulnerable. This study advocates the inclusion of livelihoods in slum upgrading. This agrees with the latest thinking which calls for approaches that are integrated and “which simultaneously generate livelihoods alongside physical improvements” (Cronin, 2010) since, as Olajide, (2013) puts it, there is a need for an all-encompassing approach which takes into consideration and addresses the magnitude of poverty.

It has emerged that tenure security is still a critical element in improving informal settlements. It provides the dwellers, both tenants and landowners, with security that deters eviction. Besides, the ownership and legal property rights granted to landowners by the title has contributed to improvements especially in housing and facilitated the provision of infrastructure by the state as discussed in section 4.7.1. Other scholars have similarly pointed out that provision of security of tenure, has shown positive impacts that include private investment in housing and general neighbourhood improvement and increased infrastructure investment, (Rakodi, 2014, Reerink, 2011, Nyametso 2010, Almansi 2009).

The process of obtaining tenure security involving titling, however, is marred by challenges of complexity, cost, bureaucracy, and single-sector approaches as pointed out in section 4.7.2. Other scholars have equally criticized this type of tenure as being complicated, expensive and time-consuming (Annez, 2014, Durand-Lasserve, 2007). In this research, however, it also emerged that there are different routes to the attainment of this tenure security that are not necessarily provided in law such as the intermediary share certificates issued by land buying companies which for a long time were the basis of ownership but eventually converted into titles.

For policy and practice, such intermediary options could be explored since they are cheaper and less time-consuming.

Further, the finding in all the three settlements of Huruma, Munyaka and Kamkunji that there are more renters than owners has implications for upgrading approaches especially at the backdrop of the critical role of renting in urban areas. WSUP, (2013) and Gilbert, (2003) argue that it is fundamental to cities and is an important shelter option for the poor. Whereas emphasis has been on granting title to plot owners, the significant number of renters should be reason enough to develop multi-sector approaches that are inclusive of renters' interests. Rakodi, (2014) observed that ownership rights are rarely allocated to tenants who get disadvantaged when rents are increased following regularization. Solutions to this lie in people-focused, well-being approaches over and above the physical provisions.

All these lead to the conclusion that tenure security must be accompanied by other interventions for greater impact since tenure alone is not adequate to address the constraints of the poor. Huchzermeyer and Karam, (2006) argued that securing tenure on its own may not prevent the devastating effects of the vicious cycles that deepen poverty in informal settlements and need therefore for multi-sectoral approaches that combine social, economic and human development with the effectual empowerment of the poor. Similarly, other scholars have argued that security of tenure in itself is not adequate to break the cycle of poverty rather it forms only part of a more comprehensive and integrated approach to informal settlement upgrading" (Velasco, et al., 2014, Fernandes, 2011, Khemro and Payne 2004).

Infrastructure similarly was found to be beneficial in upgrading as pointed out in section 4.7.1 where it was shown that it contributes to health, education, security, housing, business and incomes as well as employment but as shown in chapter five of this thesis, these outcomes are not adequate. Other scholars argued that it should not only "be the primary goal and central component of upgrading projects" (Gulyani and Connors, 2002) but it ought to be at the top of the poverty eradication agenda. Others have however argued that access to infrastructure can have "little effect if services are not affordable" (Akhmat and Khan, 2011). In a case study in India, infrastructure did not address livelihoods, but it addressed a "significant "quality of life" and/or hassle factor dimension that *does matter* to the urban poor" (Amis, 2001). According to

Boonyabancha, (2005), the physical improvements are critical but there is need to beyond the physical aspects. This implies that infrastructure alone is not sufficient on its own to remove all challenges existing in informal settlements.

The approach in provisioning also affects the outcomes of upgrading. According to the findings of this study, the approach to these interventions of tenure security, infrastructure and livelihood is mainly silo and sectoral as discussed in sections, 4.3.1.3, 4.4.3.3 4.5.3.1. These have the effect of duplications and thus waste of resources. There is need to shift from such rigid sectoral programs towards multi-sectoral strategies and policies which support collaborative and integrated approaches for sustainability (World Bank, 2017, 2016, Corburn and Sverdlik, 2017, UN, 2017, Jones, 2017, Weitz, 2014, Stringer, 2014, Bazilian et al., 2011, Mbathi, 2011, Syagga, 2011). Integration underlies the current policy in development as contained in the indivisible Sustainable Development Goals (SDGs), which have emphasized the interweaving of economic, environmental and social dimensions to realize sustainable development.

The argument for this study, therefore, is that interventions and strategies in slum upgrading efforts, in this case, tenure security, infrastructure and livelihoods, are all critical in upgrading but they should be integrated due to their intrinsic linkages. Sustainability can be achieved by leveraging their interlinkages. The next chapter discusses these interlinkages in detail, specifically tenure security, infrastructure and livelihoods nexus in upgrading.



## Chapter 5: Tenure, Infrastructure and Livelihoods Nexus

*“.....Title without infrastructure is useless!  
Whereas in areas with infrastructure a shop is rented for Ksh. 5000,  
in areas without infrastructure, the same shop size goes for Ksh.1500.....”  
A resident of Munyaka settlement.*

### 5.1 Introduction

This chapter focuses on the tenure, infrastructure and livelihoods nexus in upgrading. From chapter four it emerged that the case study settlements of Huruma, Munyaka and Kamkunji benefitted from upgrading interventions of tenure security and infrastructure but less in direct support to livelihoods. This chapter builds on this to determine the linkages in these interventions in upgrading processes. It addresses the second research objective which is to:

*To determine the interplay of tenure security, infrastructure and livelihoods in the process of slum upgrading in Eldoret.*

This is in response to the second research question which is:

*How do tenure security, infrastructure and livelihoods interact in the process of slum upgrading in Eldoret?*

The study examines both the process-based and functional forms of interactions and uses both descriptive and inferential statistics to determine the interplay of these interventions which include nexus and network mapping tools as well as chi-square statistic to analyse the linkages and test the hypothesis. The study finds that the interventions of tenure, infrastructure and livelihoods are linked and thus rejects the null hypothesis in favour of the alternative hypothesis that these elements are interlinked. Therefore the study argues that informal settlement upgrading should not treat these elements in isolation but jointly through a synergistic multi-sector approach that integrates sectors as well as interventions in one single strategic package through a T-I-L nexus approach.

The chapter presents the findings and analysis by answering the following questions;

- i. How do tenure security and infrastructure interact in the upgrading process?*
- ii. How does tenure security interact with livelihoods in the upgrading process?*
- iii. How do infrastructure and livelihoods interact in the upgrading process?*
- iv. What are the institutional aspects?*
- v. What are the defining elements in tenure, infrastructure and livelihoods nexus?*

## **5.2 Theoretical underpinnings**

Tenure security, infrastructure and livelihoods improvement are key elements in informal settlement upgrading. These interventions have, however, been looked at singly and sectorally. For instance, some scholars have argued that tenure security alone is adequate (Turner, 1968, De Soto 1989). Both argued for the formalization of tenure which they argued is necessary for the alleviation of poverty since this would enable the urban poor to free up capital and resources tied up in housing and other investments. Deininger and Feder, (1998) in concurring with this argument noted that secure tenure provides credit access and higher investment.

However other researchers have argued that “secure tenure alone cannot address the needs of the urban poor” and that it should instead form part of an integrated development approach (Mangíra, et al., 2020, 2019, Collier et al., 2017, Fernandes, 2011, Durand- Lasserre 2007, Payne 2006, Khemro and Payne, 2003). Payne and Durand- Lasserre (2012) argued that infrastructure services must accompany any tenure formalization or upgrading.

Gulyani and Connors, (2002) have argued that, in fact, “the provision of basic service infrastructure should be the primary goal and central component of upgrading projects”. They argued that infrastructure investments provide “de facto security of tenure and improve living conditions –by providing access to potable water at prices that are lower than that of vended water, building drains that have reduced the threat of flooding, improving access to toilets and solid waste management” (Gulyani and Basset, 2007).

Taking this theory further, Gulyani and Talukdar, (2008), argued for simultaneous deployment of both infrastructure or tenure instead of choosing either as a single-entry point. They argued that neither De Soto’s title-based and World Bank’s infrastructure upgrade approaches would function independently since the two are linked and should, therefore, be done simultaneously.

This study builds on this theory of simultaneous approach to tenure and infrastructure and goes further to argue for a third dimension, that of livelihoods as advanced by Chambers and Conway, (1991) that emphasizes the improvement of the people. Though the provision of tenure and infrastructure can remove some constraints and improve living conditions in informal settlements, they remain largely physical interventions (Mangíra, et al., 2020, 2019). There is a need to go beyond these and include interventions that target the poor themselves –their capabilities (skills, education, health), assets, (housing, land, property) and livelihood activities (employment and incomes) as well as institutions that allow people to achieve sustainable livelihoods. It has been argued that it is the capabilities of the people that can transform tenure and infrastructure into earnings, employment, skills, education, food or other necessities “that can enhance productivity and constitute a ‘resilience’ strategy”. Such transformation can occur through strengthening livelihoods of the poor.

This study thus argues for the combined and multi-pronged tenure-infrastructure-livelihoods approach as a strategic package in improving living conditions and lives of informal settlement dwellers. This is in step with the new thinking, which emphasizes integrated strategies which address livelihoods and physical developments simultaneously (Cronin, 2010). Unlike Cronin, who investigated the sustainability of slum upgrading interventions with a focus on physical interventions using stakeholder perceptions, this study focuses on infrastructure, tenure and livelihoods linkages using a nexus approach. The study adopts a nexus-oriented approach to address unsustainable patterns of slum upgrading. Nexus philosophy emphasises linkages, interdependencies, and integration in development efforts (Stringer, 2014, Bazilian et al., 2011) to increase effectiveness through synergies while minimizing trade-offs (Jones, et al., 2017).

This study adds to this debate by determining the relationships and interdependencies of tenure security, infrastructure and livelihoods.

### **5.3 A framework of Nexus Analysis**

The framework of analysis used to describe and analyse the interactions between the upgrading interventions of tenure security, infrastructure and livelihoods improvements in settlement upgrading is based on the nexus analysis approach as advanced by Scollon and

Scollon, (2004) and the closely linked network mapping (Net-Map) by Eva Schiffer (Schröter, et al., 2018).

The Nexus approach dates back to the early 2000s where for example, Scollon and Scollon, (2004), observed that “nexus analysis is the study of how ideas or objects are linked together ideas”. Like pragmatics, nexus analysis is a multidisciplinary enterprise (Östman and Verschueren, (2014) used to clarify the many complex relations. Nexus analyst identifies a social issue, the primary actors and observes the interactions and determines the most significant cycles of discourse or discourse itineraries (Östman and Verschueren, 2014, Scollon, 2008). Closely related to the nexus analysis is the nexus thinking that is associated with “water-energy-food nexus ('the nexus')”. Middleton, et al., (2015) points out that since 2008 it has been promoted as an “emerging global development paradigm and research agenda”. In simple terms, a nexus, in this context, means “one or more connections linking two or more things.” According to Leck, et al., (2015) proponents of this approach “emphasize its potential for ‘joined-up thinking’, recognizing connections and coordinating policy and decision-making to minimize negative externalities and unforeseen consequences in tackling interconnected local to global challenges”. This nexus approach gained prominence in the SDGs framing. Lately, this approach has been used under the SDGs to analyse linkages, the trade-offs and synergies between goals and therefore promote the integration across sectors for sustainable development with Weitz, (2014) arguing that it provides a framework for assessing cross-sectoral interplays and therefore their integration.

The study also used a simplified form of the Network Mapping (Net-Map) tool to depict the nexus or the links in the elements of tenure security, infrastructure and livelihoods. According to Stein et al, (2014), nexus domains are interconnected with a network mapping approach since the latter can contribute to assessing the complex actor linkages that characterize the nexus. The Net-Map tool was advanced recently by Eva Schiffer and the International Food Policy Research Institute (Schröter, et al., 2018, IFPRI 2007). Schröter, et al., (2018) add that Net-Map is a tool for Social Network Analysis (SNA), used in both qualitative and quantitative research. Net-Map is a method whose strength lies in visualizing the interplay of networks, power relations, conflicts and potentials in networks and to develop policy and strategies for achieving a common goal (Schiffer and Hauck, 2010). They point out that this tool is based on the need to understand

processes, structures, links and dynamics (such as power and control) that determine the success or failures of policies and projects. Graphically the Net-Map analysis uses links to draw a network, which is done by drawing different coloured arrows between linked processes with each colour representing different linkages.

This chapter uses this nexus and network mapping analysis to identify, analyse and visualize the processes and functional relations and networks underlying the upgrading interventions of tenure security, infrastructure and livelihoods. Also, this chapter uses the Chi-Square statistic to test the hypothesis on whether or not the three elements are linked. For each case study settlement, the key interplays examined are between tenure and infrastructure, tenure and livelihoods and infrastructure and livelihoods as illustrated in table 5.1.

Table 5.1: Net-Map showing the Nexus Framework

<b>TENURE SECURITY – INFRASTRUCTURE –LIVELIHOODS NEXUS</b>			
	<b>Tenure</b>	<b>Infrastructure</b>	<b>Livelihoods</b>
<b>Tenure</b>	<p><b>Within tenure security</b></p> <ul style="list-style-type: none"> <li>- Silo approaches</li> <li>- Complex, costly, bureaucratic Processes</li> <li>+ Tenure security</li> <li>+ Orderly land optimal and use</li> <li>+ Enhanced property values</li> <li>+ Security from evictions</li> <li>+ Informal subdivision leading to informality</li> </ul>	<p><b>Infrastructure on tenure</b></p> <ul style="list-style-type: none"> <li>- Single sector approach</li> <li>- Duplicated processes</li> <li>- Displacements</li> <li>- Gentrification</li> <li>+ Infrastructure solidifies tenure security</li> <li>+ Enhances property value</li> </ul>	<p><b>Livelihoods on tenure</b></p> <ul style="list-style-type: none"> <li>- Single sector approach</li> <li>- The threat to tenure security (temporary businesses taking over the frontages)</li> <li>+ Strengthened tenure security (incomes, employment, housing, health facilities)</li> </ul>
<b>Infrastructure</b>	<p><b>Tenure on infrastructure</b></p> <ul style="list-style-type: none"> <li>+ Provides layout for infrastructure</li> <li>+ Basis for infrastructure investment</li> <li>+ Incentive for institutions to provide infrastructure</li> <li>- Duplication of tenure infrastructure processes (e.g. RAPs, EIAs, survey, designs)</li> <li>- Delayed tenure delayed infrastructure</li> <li>- Encroachments</li> </ul>	<p><b>Infrastructure on infrastructure</b></p> <ul style="list-style-type: none"> <li>- Approach- Single sector</li> <li>- Duplicated processes for different infrastructure</li> <li>- Relocations which are costly (water pipes to pave the way to roads)</li> <li>- Service interruptions</li> <li>+ Complementary infrastructure efficiency and + cost-effectiveness</li> <li>+ Improved conditions in the settlement</li> </ul>	<p><b>Livelihoods on infrastructure</b></p> <ul style="list-style-type: none"> <li>- Single sector approach</li> <li>- Encroachments</li> <li>- Deterioration of infrastructure</li> <li>- Illegal connections</li> <li>+ Sustained infrastructure (e.g. incomes facilitate connections and payment of bills)</li> </ul>
<b>Livelihoods</b>	<p><b>Tenure on livelihoods</b></p> <ul style="list-style-type: none"> <li>- Single sector approach</li> <li>+ Improved housing and assets</li> <li>+ Investment/construction</li> <li>+ Security- free from evictions</li> <li>+ Multiplier effect</li> </ul>	<p><b>Infrastructure on livelihoods</b></p> <ul style="list-style-type: none"> <li>- Single sector approach</li> <li>- Relocations</li> <li>- Interruptions</li> <li>- High costs-illegal connections-safety</li> <li>+ Improved living conditions</li> <li>+ Improved livelihoods (education, skills, employment, economic activities, incomes, health, safety and security)</li> <li>+ Accessibility</li> </ul>	<p><b>Livelihoods on livelihoods</b></p> <ul style="list-style-type: none"> <li>- Sectoral approach (education, employment, health, economic activities, housing, land)</li> <li>+ Enhancement of livelihoods from the multiplier effect of education, employment, health, economic activities, housing, land</li> </ul>

Source: Author

As shown in the illustration, each of these interactions leads to both positive and negative outcomes in the upgrading process. These interplays are discussed in the section below.

## **5.4 The interplay of tenure security and infrastructure in upgrading**

Traditionally, tenure security and infrastructure are largely administered and implemented independently (Ducrot, 2010). This research found this to be true in the study settlements of Huruma, Munyaka and Kamkunji in Eldoret. The research found that these settlements have benefitted from both tenure and infrastructure upgrading as discussed in chapter four, section 4.3 and 4.4 on the state of tenure and infrastructure respectively but the provision of these was through single sector silo approaches where certain aspects of these interventions were implemented over a 25-35-year period. Nonetheless, the study found that tenure security interplays with infrastructure in various ways in the respective case study settlements of Huruma, Munyaka and Kamkunji as discussed in the section below.

### **5.4.1 Huruma Settlement**

Huruma settlement, according to findings of this study, has been upgraded. From the household survey, 94% indicated that the settlement has benefitted from both tenure security and infrastructure provision. Further, according to information received from Huruma Focus Group Discussions composed of community opinion leaders and Settlement Executive Committee members and the household survey, the two components of tenure security and infrastructure interlink in various ways on both domain functions and processes. Data analysis using chi-square test and cross-tabulation on tenure and various types of infrastructure in Huruma showed a mixed set of domain interlinkages presented below.

On the water, in the case of Landlords/Structure owners, the chi-square statistic showed that the nature of water source is dependent on the tenure security, determined by the likelihood ratio  $0.039 < 0.05$   $\alpha$  – sig. level, giving enough evidence that the two variables are associated. Similarly, the cross-tabulation established that majority (73.9%) of Landlords/Structure owners

with the security of tenure have piped water from the shared compound tap but only 8.7% of those without tenure security have the same. None of those without the security of tenure has piped water from a private individual connection inside the housing unit or borehole in the compound as shown in Table 5.2. This not only indicates that the settlement has piped water but also shows a linkage between tenure and infrastructure (water).

*Table 5.2: Cross-tabulation of security of tenure (owners) and infrastructure (Water) in Huruma settlement*

Security of Tenure * nature of infrastructure water Cross-tabulation						
			Infrastructure (water)			Total
			pipled water from private individual connection inside the house	pipled water from the shared compound tap	The borehole in a shared compound	
<b>Security of tenure</b>	No		0.0%	8.7%	0.0%	8.7%
	Yes		8.7%	73.9%	8.7%	91.3%
		Total	8.7%	82.6%	8.7%	100.0%

Source: Field Data 2016

Similarly, there is a linkage between tenure security and sanitation. The cross-tabulation indicates that most Landlords/Structure owners with tenure security have some form of sanitation with 69.6% having a shared a pit latrine and bathroom inside the compound, 13% have a toilet and bathroom in the house while 4.3% of Landlords/Structure owners are connected to a sewer line. On the contrary, those without the security of tenure have minimal sanitation with only 4.3% having private toilet and bathroom inside the house or shared pit latrine and bathroom outside the house but within the compound and none are connected to the sewer as shown in table 5.3 below.

*Table 5.3: Cross-tabulation of Security Tenure (owners) and infrastructure (Nature of Sanitation) in Huruma settlement*

Security of Tenure * sanitation Cross-tabulation						
			Infrastructure (Sanitation)			Total
			private toilet and bathroom in the house	shared pit latrine and bathroom outside the house but within the compound	public facility /ablution block	
<b>Security of Tenure</b>	No		4.3%	4.3%	0.0%	8.7%
	Yes		13.0%	69.6%	4.3%	91.3%
		Total	17.4%	73.9%	4.3%	100.0%

Source: Field Data 2016



Electricity was also found to be interlinked with tenure security determined by the Fisher's exact test  $0.017 < 0.05$  sig. level. Cross-tabulation showed that majority (87%) with the security of tenure have formal electricity connection in their housing units with 4.3% having an informal connection but those without the security of tenure, only 4.3% have either formal or informal electricity connection to the housing unit as shown in table 5.4 below. This further indicates a connection between tenure and infrastructure.

*Table 5.4: Showing cross-tabulation of security of tenure (owners) against infrastructure (Nature of Electricity) in Huruma settlement*

Security of Tenure * nature of electricity Cross tabulation					
			Infrastructure (electricity)		Total
			formal connection to the housing unit	informal connection to the housing unit	
Security of tenure	No		4.3%	4.3%	8.7%
	Yes		87.0%	4.3%	91.3%
		Total	91.3%	8.7%	100.0%

*Source: Field Data 2016*

However, on roads, the chi-square test revealed that the nature of roads is independent of the security of tenure with a likelihood ratio of  $0.775 > 0.05$   $\alpha$  - sig level. However, the cross-tabulation shows that the majority of those with the security of tenure had roads in the settlement, with 52.2% earth roads, 8.7% gravel and 30.4% tarmacked. This point to likely interlinkages between tenure and infrastructure (roads).

Information obtained from focus group discussions brought out the outcomes of the interactions of tenure and infrastructure highlighting both benefits and challenges. The positive outcomes and impacts obtained from the group discussions were that: tenure facilitated the development of infrastructure; provided utilities such as electricity, water, and sewer connection; the government provided infrastructure because the settlement had tenure and both tenure and infrastructure improved the settlement. The negative outcomes arising from the linkages, on the other hand, included tenure-related encroachments that led to a reduction of public space meant for infrastructure. Others are illegal connections to utilities such as sewer and electricity exposing dwellers to calamities and safety issues such as houses being built under electricity transmission lines. Delays in tenure security were

also cited as having led to delay in the provision of infrastructure and it also contributed to the reallocation of spaces for public utilities to private use.

Other challenges arising from tenure and infrastructure linkages, according to a resident, opinion leader, landowner and Secretary of Settlement Executive Committee (SEC) during FGD, included;

*“Infrastructure and tenure have brought about good areas and bad areas in the settlement- it has zoned the settlement into these categories- the areas that have tenure security and infrastructure are good (mainly near the main roads), the areas that do not have them are bad and in poor condition (mainly the lower parts near the sewerage ponds). For this reason, tenure security and infrastructure provision are regrettable. Poor people have also moved out to poorer areas and are creating another slum in Kingongo because landlords have increased rents which the poorer people cannot afford. The landlords have benefitted from both tenure security and infrastructure because now they are building new storied houses or renovating the old ones and then charging high rents. Rents should be controlled so that poor people do not suffer”.*

Institutional challenges were also raised by the dwellers. As presented in chapter six, the key challenge raised was lack of coordination between and within the institutions that deal with tenure and those that provide infrastructure with 89.8% indicating that there was no collaboration and 10.2% indicating that there was collaboration. This demonstrates the sectorial nature of upgrading where synergies across the sectors have not been harnessed.

Despite these challenges, an overwhelming majority (85%) indicated that both tenure and infrastructure improved conditions in the settlement. However, 51% still said that the provision of tenure and infrastructure is not adequate to remove constraints of the poor while 49% indicated that it was adequate.

#### **5.4.2 Munyaka Settlement**

Munyaka has similarly been upgraded but, from observation and key informants, the upgrading is to a lesser degree compared to Huruma as discussed in chapter four. 86% indicated that the settlement has benefitted from both tenure security and infrastructure provision. Information

obtained from the household survey, focus group discussions and key informants indicate that these two components of tenure and infrastructure are interlinked in diverse ways.

Using a chi-square test and cross-tabulation data showed that tenure security and the nature of water source are interlinked. This was determined by the Likelihood ratio of  $0.024 < 0.05 \alpha - \text{sig. level}$ , which is evidence that the two variables are associated. On cross-tabulation, the majority of those with tenure security have water with 53.3% having piped water from shared compound compared to only 6.7% of those without tenure. 20.0% with tenure have a private tap or a private borehole while there are none without tenure as shown in table 5.5 below.

Table 5.5: Cross-tabulation of Security of Tenure (owners) and infrastructure (Water) in Munyaka Settlement

Security of Tenure * nature of infrastructure water Cross-tabulation						
		infrastructure (water)				Total
		pipled water from private individual connection inside the house	pipled water from the shared compound tap	private borehole own compound	a shared compound in own compound	
Security of Tenure	No	0.0%	6.7%	0.0%	0.0%	6.7%
	Yes	20.0%	46.7%	20.0%	6.7%	93.3%
	Total	20.0%	53.3%	20.0%	6.7%	100.0%

Source: Field Data 2016

This indicates that the settlement has piped water as described in chapter four and also shows a linkage between tenure and infrastructure (water).

Similarly, there is a linkage between tenure security and sanitation. The cross-tabulation indicates that most Landlords/Structure owners with tenure security have some form of sanitation with 86.7% having a shared a pit latrine and bathroom inside the compound, 6.7% have a toilet and bathroom in the house while none is connected to a sewer line. On the contrary, those without the security of tenure have minimal sanitation with only 6.7% having shared pit latrine and bathroom outside the house but within the compound and none is connected to the sewer as shown in table 5.6. However, the two are independent of each other determined by Fisher's exact test statistic of  $0.133 > 0.05 \text{ sig. level}$ .

Table 5.6: Cross-tabulation of Security of Tenure (owners) and infrastructure (Nature of Sanitation) in Munyaka settlement

Security of Tenure * sanitation Cross tabulation				
		Infrastructure (sanitation)		Total
		private toilet and bathroom in the house	shared pit latrine and bathroom outside the house but within the compound	
Security of tenure	No	0.0%	6.7%	6.7%
	Yes	6.7%	86.6%	93.3%
Total		6.7%	93.3%	100.0%

Source: Field Data 2016

On electricity, the analysis showed that it is dependent on tenure security as determined by Fisher's exact test  $0.026 < 0.05$  sig. level. Cross-tabulation further accentuates this since those with the security of tenure have electricity connected to their houses with the majority 73.3% with formal connection and 20% on the informal connection while only 6.7% of those without tenure security were connected and more critically is that they were connected informally as shown in table 5.7.

Table 5.7: Cross-tabulation of Security of Tenure (owners) and infrastructure (Nature of Electricity) in Munyaka settlement

Security of Tenure * nature of electricity Cross-tabulation				
		Infrastructure (electricity)		Total
		formal connection to the housing unit	informal connection to the housing unit	
Security of tenure	No	0.0%	6.7%	6.7%
	Yes	73.3%	20.0%	93.3%
% of Total		73.3%	26.7%	100.0%

Source: Field Data 2016

However, data showed that there is no sufficient evidence that the tenure security is linked to the nature of roads. Based on Fisher's Exact test statistic of  $0.867 > 0.05$   $\alpha$  - sig level, there is no association/interlinkage between tenure security and the nature of roads. Cross-tabulation, however, shows that majority with the security of tenure had roads in the settlement, with 50% earth roads, 40.4% gravel.

On processes of tenure and infrastructure, the key linkage identified by residents is that tenure security facilitates the development of infrastructure. This was further supported by the finding that a significant percentage, 39%, acknowledged that lack of ownership document prevents dwellers from connection to utilities while 61% thought it was not a hindrance. Further a majority, 65.5% indicated that provision of infrastructure did not depend on tenure security while 34.5% pointed to infrastructure provision depending on completion of infrastructure. This finding could be also attributed to the illegal connections to utilities found in the settlement.

Further information obtained from Focus Group discussions held in Munyaka, revealed that the interactions of tenure and infrastructure have both negative and positive outcomes. The positive impacts of the interactions are increased investments especially in permanent buildings, improvement of housing units, higher land values, connections to utilities such as water and electricity and improved business and environment in the settlement. However, challenges are arising from the linkages. These include encroachments on the road wayleaves that had to be demolished during road construction and areas set aside for public utilities allocated to individuals by farm directors leaving no space for such infrastructure.

Other challenges cited were that water lines and power poles were uprooted during the construction of roads because they were placed on the road corridor and on the other hand, there were illegal connections to utilities such as water and electricity due to high cost. Safety concerns were raised due to the crisscrossing and low hanging power lines in the settlement as shown in figure 5.1. Additionally, increased flooding was a challenge due to tarmacked roads and inadequate drainage. Institutional challenges were also raised by the dwellers. As presented in chapter six, the key challenge raised was the lack of coordination between and within the institutions that deal with tenure and those that provide infrastructure.



*Fig: 5:1 Crisscrossing power lines in the settlement. Source Field survey,2016*

Despite these challenges, an overwhelming majority (86.4%) indicated that both tenure and infrastructure improved conditions in the settlement. However, 51% still said that the provision of tenure and infrastructure is not adequate to remove constraints of the poor while 49% indicated that it was adequate.

### **5.4.3 Kamkunji Settlement**

Kamkunji settlement has been upgraded over time but from observations and key informants, Kamkunji is less developed compared to Huruma and Munyaka. Data from the household survey showed that 97.5% indicated that the settlement has benefitted from both tenure security and infrastructure provision. A lesser percentage, 50%, compared to Huruma and Munyaka indicated that these two components of tenure and infrastructure are interlinked with a significant per cent, 36%, noting that there are no linkages. The key linkage identified by residents is that tenure security facilitates the development of infrastructure. This was further supported by the finding that a significant percentage, 43%, acknowledged that lack of ownership document prevented dwellers from connecting to utilities while 57% thought it was not a hindrance. Further, a majority, 67.5% indicated that provision of infrastructure did not depend on the tenure security while 32.5% pointed to infrastructure provision depending on completion of infrastructure.

Data analysis using chi-square test and cross-tabulation on tenure and various types of infrastructure in Kamkunji showed various interlinkages. Water is dependent on tenure security determined by the likelihood ratio of  $0.047 < 0.05$   $\alpha$  – sig. level, showing that the two variables are associated/interlinked. Further, a cross-tabulation showed that majority with tenure security have water with 59% had piped water from shared compound tap compared to only 12.8% of those without tenure. 2.6% with tenure security had a private tap or a private borehole while there are none without tenure. Sanitation on the other hand, however, there was insufficient evidence to link with tenure security determined by the Likelihood ratio of  $0.245 > 0.05$  sig. level. However, a cross-tabulation indicates that most Landlords/Structure owners with tenure security have some form of sanitation with 69.2% having a shared a pit latrine and bathroom inside the compound, 23.1% are connected to a sewer line, 5.1% have a toilet and bathroom in the house while 2.6% of Landlords/Structure owners use a public facility. On the contrary, those without the security of tenure have minimal sanitation with only 5.1% having shared pit latrine and bathroom outside the house but within the compound and none has a private toilet and bathroom in the house. But surprisingly 7.7% without tenure are connected to the sewer as shown in table 5.8

Table 5.8: Cross-tabulation of Security of Tenure (owners) and infrastructure (Sanitation) in Kamkunji

		Infrastructure (sanitation)				Total
		private toilet and bathroom in the house	shared pit latrine and bathroom outside the house but within the compound	public facility /ablution block	connected to sewer	
Tenure security	No	0.0%	5.1%	0.0%	7.7%	12.8%
	Yes	5.1%	64.1%	2.6%	15.4%	87.2%
Total		5.1%	69.2%	2.6%	23.1%	100.0%

Source: Field Data 2016

Electricity was found to be dependent on tenure security determined by the Likelihood ratio statistic of  $0.039 < 0.05$  sig. level. Cross-tabulation showed that those with the security of tenure have electricity connected to their houses with the majority 59.0% with formal connection and 23.1% on the informal connection. On the other hand, only 12.8% of those without tenure security are connected and 2.6% rely on high mast lighting as shown in table 5.9.

Table 5.9: Cross-tabulation of Security of Tenure (owners) and infrastructure (Electricity) in Kamkunji

Security of Tenure * nature of electricity Cross-tabulation					
			Infrastructure ( electricity)		Total
			formal connection to the housing unit	informal connection to the housing unit	
Tenure security	No	% of Total	15.4%	0.0%	15.4%
	Yes	% of Total	59.0%	25.6%	84.6%
		% of Total	74.4%	25.6%	100.0%

Source: Field Data 2016

On roads, the analysis indicated that most of those with the security of tenure had roads in the settlement, with 71.8% tarmacked and 10.3% earth roads as shown in table 5.10.

Table 5.10; Cross-tabulation of Security of Tenure (owners) and infrastructure (roads) in Kamkunji

Security of Tenure * nature of road Cross-tabulation						
			Infrastructure ( road)			Total
			earth road	gravel/murram	tarmacked	
Security of tenure	No	% of Total	0.0%	0.0%	12.8%	12.8%
	Yes	% of Total	10.3%	5.1%	71.8%	87.2%
		% of Total	10.3%	5.1%	84.6%	100.0%

Source: Field Data 2016

Further information obtained from Focus Group discussions held in Kamkunji, revealed that the interactions of tenure and infrastructure have both benefits and challenges in upgrading. In Kamkunji the FGD members said that;

*“Peoples plots and structures had encroached on spaces set aside for infrastructure e.g. roads. Power lines, water and sewers were constructed in areas set aside for roads and they had to be relocated during road construction. Sometimes water was disconnected as the road was being constructed because the previous water pipes were crisscrossing the road. There is competition for space between plot owners and infrastructure. Areas set aside for market and school were sold by directors. They were sold as plots so there is no school in Kamkunji. People are building permanent houses because of titles, roads, lighting and water. But the problem is that the plot prices have gone up and even the rents tenants are paying more now because of the improvements in the settlement.”*

The narrative points to a linkage between tenure security and infrastructure that has brought both constructive and undesirable effects. For Kamkunji the positive effects of the interactions were given as; ease of construction of infrastructure since planning provided space for infrastructure, improved security from lighting and improved security from eviction, improved businesses, increased land values and rents, development of houses and general improvement of the



settlement. The interactions of tenure and infrastructure are however not without challenges. Among them; displacement of structures and people due to the construction of roads; people moving into the settlement has created congestion. Institutional challenges were similar to those of Huruma and Munyaka, the key one being lack of coordination between and within the institutions that deal with tenure and those that provide infrastructure. From the analysis, 77.5% indicated that there was no collaboration and 22.5% indicating that there was collaboration.

Despite these challenges, an overwhelming majority (97.5%) indicated that both tenure and infrastructure improved conditions in the settlement. However, 65% still said that the provision of tenure and infrastructure is not adequate to remove constraints of the poor while 35% indicated that it was adequate.

## **5.5 The interplay of tenure security and livelihoods in upgrading**

It has been argued that “secure tenure is a necessary condition to improve access to economic opportunity, including livelihoods” (Payne, Piaskowy, and Kuritz, 2014) and a key catalyst to achieving the transformation of slums into sustainable communities in the new urban agenda (Parry, 2015). Further, it contributes to improved conditions in the settlements (UN-HABITAT and GLTN, 2011, UN-Habitat 2012, Cities Alliance, 2004). Granting of legal tenure not only protects proprietors from eviction but also provides several other socio-economic benefits such as investment in housing, infrastructure, increase in property values and improved livelihoods (Payne, Piaskowy, and Kuritz, 2014, Syagga, 2011, Nyametso 2010, Almansi 2009, de Soto, 2000, Fernandes, 2011, Field 2005). However, other scholars have argued that secure tenure is necessary, “but not sufficient condition for creating sustainable urban livelihoods” (Lloyd-Jones and Rakodi, 2014).

This study found that tenure security positively impacts livelihoods in the areas of income, housing and assets but data analysis showed no evidence of linkage to education, employment and skills suggesting, therefore, that tenure alone is not adequate. These interactions are discussed settlement per settlement in the section below.

### 5.5.1 Huruma Settlement

This study established, as stated in chapter four, that Huruma settlement has tenure security with 86.7% having freehold titles. It investigated the linkage between tenure security and livelihoods and the data showed mixed outcomes. On incomes, the chi-square statistic showed that there is a relation between tenure security and household incomes determined by the Likelihood Ratio statistic of  $0.021 < 0.05$  ( $\alpha$  - significance level). Those with the security of tenure have higher incomes than those without. However, the security of tenure does not determine the nature of employment, determined by a Likelihood ratio of  $0.097 > 0.05$   $\alpha$ - significance level. Housing, on the other hand, is interlinked with tenure security in Huruma settlement determined by a Likelihood ratio of  $0.021 < 0.05$   $\alpha$  - significance level. This is about the status of the housing unit whether permanent, semi-permanent or temporary structure. From the cross-tabulations analysis, majority, 52.2%, of those with the security of tenure live in the permanent housing unit, 30.4% in semi-permanent and 13.0% in temporary. On the contrary, those without the security of tenure 8.7% have temporary housing units while there is none of them with semi-permanent or permanent housing unit shown in table 5.11.

*Table 5.11; Showing cross-tabulation of Security of Tenure (owners) and Households Nature of Housing in Huruma*

Security of Tenure * type of house unit Cross-tabulation						
			type of house unit			Total
			temporary	semi-permanent	permanent	
Security of tenure	No	% of Total	8.7%	0.0%	0.0%	8.7%
	Yes	% of Total	4.3%	30.4%	52.2%	91.3%
		% of Total	13.0%	30.4%	52.2%	100.0%

*Source: Field Data 2016*

On education, data analysis showed that the level of education is not interlinked to the tenure Security as determined by the Fisher's exact test  $0.114 > 0.05$   $\alpha$  - sig level. Similarly, the majority of those with tenure security, 79.5%, have an education compared to only 7.7% who do not have the security of tenure indicated by the cross-tabulation. On skills data analysis showed

possession of skills is independent of the tenure security status determined by the Fisher's exact ratio  $0.605 > 0.05 \alpha - \text{sig. level}$ . On assets owned, tenure security determines the nature of assets owned by the Landlords/Structure owners sampled from the settlements determined by the Likelihood ratio of  $0.029 < 0.05 \alpha - \text{sig level}$ . Across tabulation shows that of those with the security of tenure, 13.0% own land compared to 4.3% without the security of tenure. On the other hand, 8.7% own shops and 17.4% own a car compared to none without the security of tenure. Similarly, 34.8% own television sets compared to 4.3%.

The study also examined the effects of tenure security on livelihoods. From the household survey, dwellers identified various ways in which tenure security has affected livelihoods, among them is that tenure security facilitated the initiation and development of businesses, improved individual incomes, improved living standards, enhanced land security, acquisition of loans (though people are fearful of loans) and capital for investment, employment, shelter, education of children, freedom from fear of eviction, empowerment, increased income from leasing and rent, acquisition of assets besides, the establishment of projects. On the negative side tenure security in the settlement led to some people being rendered homeless because they did not get their share from farm directors, those without tenure security has slowed the rate of acquiring income and therefore poor livelihoods and fear of eviction.

### **5.5.2 Munyaka Settlement**

Similarly, in Munyaka, the study established, as stated in chapter four, that Munyaka settlement has some form of tenure security different from Huruma and Munyaka with 55.9% having share certificates. On tenure security and livelihoods linkages, various scenarios emerged from data analysis. On incomes, unlike Huruma and Kamkunji, the analysis of data showed that the evidence of a relation in the case of the tenure security and household incomes is not clear, determined by the Likelihood Ratio statistic of  $0.740 > 0.05 (\alpha - \text{significance level})$ . Similarly, there is no evidence that security of tenure determines the nature of employment determined by the Fishers' Exact test statistic of  $0.400 > 0.05 \alpha - \text{significance level}$ . For housing, like in Huruma, the security of tenure determines the nature of housing, that is, whether permanent, semi-

permanent or temporary structure determined by a Likelihood ratio  $0.044 < 0.05$   $\alpha$  - significance level. From the cross-tabulations analysis, 40.0% of those with the security of tenure have semi-permanent housing units and 26.7% have permanent or temporary as depicted in table 5.12.

Table 5.12: Cross-tabulation of Security of Tenure (owners) and Households Nature of Housing in Munyaka

Security of Tenure * type of house unit Cross-tabulation						
			type of house unit			Total
			temporary	semi-permanent	permanent	
Security of tenure	No	% of Total	0.0%	6.7%	0.0%	6.7%
	Yes	% of Total	26.7%	40.0%	26.7%	93.3%
		% of Total	26.7%	46.7%	26.7%	100.0%

Source: Field Data 2016

On education, tenure security is not interlinked to the household's education determined by Fisher's exact test  $0.400 > 0.05$   $\alpha$  - sig level. On skills data analysis showed possession of skills is independent of the tenure security status determined by the Fishers' Exact test statistic  $0.791 > 0.05$   $\alpha$  - sig. level. On assets owned, data analysis showed that tenure security does not determine the nature of assets determined by the Likelihood ratio of  $0.724 > 0.05$   $\alpha$  - sig level.

Cross-tabulation shows that those with the security of tenure, 13.0% own land compared to 4.3% without the security of tenure. On the other hand, 8.7% own shops and 17.4% own a car compared to none without the security of tenure. Similarly, 34.8% own television sets compared to 4.3% and 13.0% own household items.

The study also examined the impacts of tenure security on livelihoods. From the household survey, dwellers identified various ways in which tenure security has affected livelihoods, among them that tenure security enables one to acquire money from loans, increases confidence to do business and invest. Further, it leads to the installation of electricity and facilitates shelter /housing which improves living conditions and livelihoods. On the negative side tenure insecurity in the settlement led to uncertainty, people do not have full confidence to invest and some fear of eviction due to lack of ownership documents especially titles.

### 5.5.3 Kamkunji Settlement

In Kamkunji the study established, as stated in chapter four, that Kamkunji has legal tenure security similar to Huruma but different from Munyaka, with 80% having freehold titles. Results on tenure security and livelihoods linkages are mixed. On incomes, like in Huruma, the data analysis showed that there is clear evidence of a relation in the case of the tenure security and household incomes. This is determined by the Likelihood Ratio statistic of  $0.016 < 0.05$  ( $\alpha$  - significance level). There is, however, no evidence that security of tenure determines the nature of employment determined by the Likelihood ratio of  $0.069 > 0.05$   $\alpha$ - significance level. For housing, like in Huruma, the security of tenure determines the nature of housing that is whether permanent, semi-permanent or temporary structure determined by a Likelihood ratio of  $0.040 < 0.05$   $\alpha$  - significance level. From cross-tabulations, 28.2% of those with the security of tenure live have permanent housing units, 46.2% semi-permanent and 25.6% temporary compared with 5.1%, 5.1% and 2.6% respectively for those without the security of tenure as illustrated in table 5.13.

Table 5.13: Cross-tabulation of Security of Tenure (owners) against Households Nature of Housing in Kamkunji

Security of Tenure * type of house unit Cross tabulation						
			type of house unit			Total
			temporary	semi-permanent	permanent	
Security of tenure	No	% of Total	5.1%	5.1%	2.6%	12.8%
	Yes	% of Total	20.5%	41.0%	25.6%	87.2%
		% of Total	25.6%	46.2%	28.2%	100.0%

Source: Field Data 2016

On education, tenure security is not interlinked with the households' education determined by the Fisher's exact test  $0.114 > 0.05$   $\alpha$  - sig level. On skills, data analysis shows that the possession of skills is independent of the tenure security status. This is determined by Fisher's exact ratio of  $0.302 > 0.05$   $\alpha$  – sig. level. On assets owned, data analysis showed that tenure security does not determine the nature of assets owned determined by the Likelihood ratio of  $0.418 > 0.05$   $\alpha$  – sig

level. Cross-tabulation shows that for those with the security of tenure, 12.8% own land and 7.7% own shops compared to none without the security of tenure. Similarly, 43.6% own television sets compared to 7.7% and 20.5% own household items compared to 2.6%.

The study also examined the effects of tenure security on livelihoods. From the household survey, dwellers identified various ways in which tenure security has affected livelihoods in Kamkunji. Among them, is that it is a source of income from leasing and renting and it provides land ownership security and thus guarantees against evictions. Further, it meets basic needs for instance shelter, improvements in businesses through loans. On the negative side tenure security in the settlement led to encroachments on public utilities and overcrowding due to many uneconomical plot sizes.

## **5.6 The interplay of infrastructure and livelihoods in slum upgrading**

It has been argued that infrastructure is vital to the socio-economic development especially in the advancement of “pro-poor growth” (Hope, 2011) and in improving informal settlements (AfDB, 2013, UN Habitat, 2011, Almansi, 2009, Majale, 2008). Further, they are essential for the improvement of livelihoods, welfare, incomes and reduced vulnerability (Richmond, Myers and Namuli, 2018, Uddin, 2018, Calderón and Servén 2004). However, Devas, (2004) pointed the out that on the contrary, without direct support to livelihoods, infrastructure is not likely to be beneficial to the poor and may instead drive them deeper into vulnerability. The data obtained in this study shows a mixed bag of interactions and outcomes between infrastructure and livelihoods in the various settlements as discussed below.

### **5.6.1 Huruma Settlement**

The data obtained, when cross-tabulated, revealed that 77.6% of the respondents indicated that there are interlinkages between infrastructure and livelihoods while 22.4% said there were no interlinkages. On income, data shows there is an association/interlinkages between the nature of

infrastructure and income level, determined at a 5% significance level and the Likelihood ratio of  $0.037 < 0.05$  ( $\alpha$ ). Those with infrastructure have higher income compared to those without infrastructure as shown in table 5:14. This shows that the nature of infrastructure affects the amount of household income in Huruma settlement.

Table 5.14: Cross-tabulation of infrastructure and household incomes in Huruma

the interaction between infrastructure and livelihoods * total household income Cross tabulation														
		total household income											Total	
		<3000	30001-6000	6001-9000	9001-13000	13001-18000	18001-22500	22501-30000	30001-37500	37501-45000	45501-60000	60001-75000		>75000
infrastructure	No	0.0%	0.0%	1.0%	5.1%	2.0%	6.1%	1.0%	3.1%	3.1%	0.0%	0.0%	1.0%	22.4%
	Yes	1.0%	3.1%	9.2%	10.2%	13.3%	14.3%	11.2%	6.1%	4.1%	2.0%	2.0%	1.0%	77.6%
Total		1.0%	3.1%	10.2%	15.3%	15.3%	20.4%	12.2%	9.2%	7.1%	2.0%	2.0%	2.0%	100.0%

Source: Field Data 2016

On employment, however, the statistic, at the 5% significance level, the Likelihood ratio sig. value is  $0.968 > 0.05$  ( $\alpha$ ) shows that there is not enough evidence to conclude that there is an association/linkage between the infrastructure and the households' form of employment. This could be explained by the fact that the infrastructure in the settlement was newly built and the long-term effects are yet to manifest fully. It is noteworthy that the highest percentage with some form of employment are those with infrastructure as presented in table 5.15.

Table 5.15: Cross-tabulation of infrastructure and Form of Employment in Huruma

the interaction between infrastructure and livelihoods * type of livelihood Cross tabulation										
		type of livelihood							Total	
		formal employment	informal	Self-employment	business/commercial trade	agriculture	unemployed	other		
infrastructure	No	7.1%	7.1%	3.1%	4.1%	0.0%	1.0%	0.0%	22.4%	
	Yes	25.5%	22.4%	9.2%	16.3%	1.0%	2.0%	1.0%	77.6%	
Total		32.7%	29.6%	12.2%	20.4%	1.0%	3.1%	1.0%	100.0%	

Source: Field Data 2016

In housing unit, the statistic, at 5% significance level, the Likelihood ratio sig value is  $0.001 < 0.05$  ( $\alpha$ ) thus concluding that in Huruma settlement there is an interlinkage between infrastructure

and the type of housing unit in the settlement. From the cross-tabulation, most of those with infrastructure have semi-permanent or permanent housing units as provided in table 5.16.

Table 5.16: Cross-tabulation of infrastructure and the type of housing unit in Huruma

the interaction between infrastructure and livelihoods * type of house unit Cross tabulation						
			type of house unit			Total
			temporary	semi-permanent	permanent	
Infrastructure	No		1.0%	1.0%	14.3%	22.4%
	Yes		11.2%	21.4%	44.9%	77.6%
		Total	12.2%	22.4%	59.2%	100.0%

Source: Field Data 2016

On skills, since the Chi-Square p-value is  $0.816 > 0.05$  ( $\alpha$ ), there is not enough evidence to conclude that there is an association/interlinkages between the infrastructure and the household skills. Similarly, Fisher's Exact test statistic is  $0.614 > 0.05$  ( $\alpha$ ) indicates that there is not enough evidence to conclude that there is association/interlinkages between the infrastructure and education. There is, however, an interlinkages between the infrastructure and the household assets based on a Likelihood ratio sig. value of  $0.001 < 0.05$  ( $\alpha$ ). Further analysis yielded a Cramer's V value of 0.536, which suggests a very strong association between infrastructure and assets for respondents in Huruma settlement.

Beyond these interlinkages, infrastructure has contributed both positively and negatively to livelihoods. According to information obtained from the Focus Group discussions in Huruma, people have benefitted from infrastructure in the following ways;

*“Crime rate has gone down; the business has improved; school enrolment has increased from 1000 to 1,500; separation of vehicles and human traffic so accidents are reduced; no mud and potholes and therefore transport is faster leading to saving time; less flooding due to improved drainage; reduced insecurity due to lighting and we can sell for long hours beyond 10 pm in the night unlike before when we used to close at p.m. due to lack of street lighting and fear of being attacked. However, some people had to be relocated to give space for roads and these lost their businesses”.*



## 5.6.2 Munyaka Settlement

In the case of Munyaka settlement data showed an association/interlinkages between the nature of infrastructure and income level with a Likelihood ratio of  $0.011 < 0.05$  ( $\alpha$ ) and a 5% significance level. Further, cross-tabulation shows that households with infrastructure have higher incomes as presented in table 5.17.

Table 5.17: Cross-tabulation of infrastructure and household incomes in Munyaka

infrastructure and livelihoods * total household income Cross tabulation												
		total household income										Total
		<3000	3001-6000	6001-9000	9001-13000	13001-18000	18001-22500	22501-30000	30001-37500	37501-45000	45501-60000	
infrastructure	No	0.0%	8.5%	18.6%	6.8%	3.4%	1.7%	0.0%	0.0%	0.0%	0.0%	38.9%
	Yes	3.4%	8.5%	11.9%	15.3%	8.5%	3.4%	5.1%	1.7%	1.7%	1.7%	61.1%
Total		3.4%	16.9%	30.5%	22.0%	11.9%	5.1%	5.1%	1.7%	1.7%	1.7%	100.0%

Source: Field Data 2016

On employment, however, the statistic shows no association/linkage between the infrastructure and employment determined by a Likelihood ratio sig. value of  $0.615 > 0.05$  ( $\alpha$ ) at 5% significance level. The minority of households are in farming with 1.7% in agriculture or livestock rearing as depicted in table 5.18.

Table 5.18: Cross-tabulation of infrastructure and Form of Employment in Munyaka

the interaction between infrastructure and livelihoods * type of livelihood Cross tabulation									
		type of livelihood							Total
		formal employment	informal	Self-employment	business/ trade	agriculture	livestock	other	
infrastructure	No	16.9%	10.2%	1.7%	11.9%	0.0%	0.0%	1.7%	42.4%
	Yes	18.6%	16.9%	6.8%	10.2%	1.7%	1.7%	1.7%	57.6%
Total		35.6%	27.1%	8.5%	22.0%	1.7%	1.7%	3.4%	100.0%

Source: Field Data 2016

Housing and infrastructure, on the other hand, are interlinked determined by a Likelihood ratio sig value of  $0.003 < 0.05$  ( $\alpha$ ) at a 5% significance level. From the cross-tabulation, those households with infrastructure most of them live in permanent housing units compared to those without infrastructure majority of who are in temporary housing units as indicated in table 5.19.

Table 5.19: Cross-tabulation of infrastructure and the type of housing unit in Munyaka

the interaction between infrastructure and livelihoods * type of house unit Cross tabulation						
			type of house unit			Total
			temporary	semi-permanent	permanent	
infrastructure	No		15.3%	13.6%	8.6%	37.4%
	Yes		16.9%	16.9%	28.7%	62.6%
		Total	32.2%	30.5%	37.3%	100.0%

Source: Field Data 2016

Infrastructure and household skills, on the other hand, data showed that there is no sufficient evidence to conclude that they are interlinked determined by Fisher's Exact test statistic of  $0.641 > 0.05$  ( $\alpha$ ). On education, a Chi-Square test yields a p-value of  $0.019 < 0.05$  ( $\alpha$ ) which shows there is a linkage between infrastructure and education however further analysis gives a Phi value of 0.237 that suggests a weak association. Similarly, there were interlinkages between the infrastructure and the household assets based on the Likelihood ratio sig. value of  $0.001 < 0.05$  ( $\alpha$ ). Further analysis yielded a Cramer's V value of 0.554 that suggests a very strong association between infrastructure and assets in Munyaka settlement.

Apart from these linkages between infrastructure and livelihoods obtained from household data, Focus Group Discussions brought out specific areas of linkages and impact. For Munyaka, the focus group indicated that;

*“Because of good roads business has improved; There is more security because of electricity; Munyaka used to flood a lot and water used to enter our houses but the drains have reduced this problem; There is clean drinking water so there are fewer sicknesses due to dirty water; There are many constructions that have started and youth are getting employed in these construction sites; People are extending and improving their houses. Others are building new ones. In areas where drainage is not good, there is flooding, there were people who were displaced by the roads and water and electricity were interrupted during road and drainage construction”.*

### 5.6.3 Kamkunji Settlement

The study, from data analysis, established that in Kamkunji settlement, infrastructure and livelihoods are linked determined by a Likelihood ratio of  $0.008 < 0.05$  ( $\alpha$ ) at a 5% significance level. The linkage is that infrastructure contributes to the amount of household income in the settlement, therefore there is an association/interlinkage between the nature of infrastructure and income level. 70.0% of the respondents agreed that there are interlinkages between the nature of infrastructure and livelihoods while 30.0% said there were no linkages. Majority of those with higher incomes have infrastructure as presented in table 5.20.

Table 5.20: Cross-tabulation of infrastructure and household incomes in Kamkunji

the interaction between infrastructure and livelihoods * total household income Cross tabulation												
		total household income										Total
		<3000	30001-6000	6001-9000	9001-13000	13001-18000	18001-22500	22501-30000	30001-37500	37501-45000	45501-60000	
Infrastructure	No	2.5%	0.0%	10.0%	2.5%	5.0%	2.5%	5.0%	0.0%	0.0%	0.0%	27.5 %
	Yes	0.0%	7.5%	5.0%	12.5%	17.5%	7.5%	7.5%	10.0%	2.5%	2.5%	72.5%
	Total	2.5%	7.5%	15.0%	15.0%	22.5%	10.0%	12.5%	10.0%	2.5%	2.5%	100.0%

Source: Field Data 2016

However, on employment, the analysis showed no linkage with infrastructure determined by the Likelihood ratio sig. value of  $0.851 > 0.05$  ( $\alpha$ ) at 5% significance level. However, data analysis showed the linkage between infrastructure and housing determined by the Likelihood ratio sig value of  $0.039 > 0.05$  ( $\alpha$ ) at a 5% significance level. This finding is similar to that of Huruma and Munyaka where data analysis showed a linkage between the two interventions. For Kamkunji there is also no linkage between infrastructure and household assets determined by a Likelihood ratio sig. value of  $0.227 > 0.05$  ( $\alpha$ ), at 5% significance level. Kamkunji, the focus group discussion members pointed out the benefits of infrastructure as;

*“Faster communication and better transport mode e.g. the use of matatu which was not possible before because there were no roads and no matatus; Increased business due to improved roads and security lighting that allows the business to go on up to late hours in the night and banking agencies have come to the settlement so it is easy to transact; For women, they have used electricity for rearing chicken, water for food and cleanliness in*

*the home; For men its more employment for example in welding, use of motorbikes to raise income.”*

According to a key informant, in the Ministry of Roads, Transport and Public Works at the County Government of Uasin Gishu

*“Development is synonymous with infrastructure. An upgrade in infrastructure instantly leads to improved access to the settlement thus raising the economic activities. It leads to improved access to social amenities, health facilities and education facilities and overall improvement of livelihoods of communities”.*

## **5.7 Validating the Hypothesis: Tenure-Infrastructure- Livelihoods**

This study proposed that there is a nexus in the tenure security, infrastructure and livelihoods improvement in upgrading thus its conceptual framework calls for integrated approaches to upgrading that capitalize on these intrinsic interconnections to make upgrading more impactful and sustainable. Based on this premise, the study hypothesis was:

- Null hypothesis: There are no inter-linkages in tenure security, infrastructure, and livelihoods in slum upgrading processes.
- Alternative hypothesis: There are inter-linkages in tenure security, infrastructure, and livelihoods in slum upgrading processes

To test the null against the alternative hypothesis the study used the Chi-Square test of homogeneity at a significance level of 0.05 ( $\alpha$ ). In summary, the analysis of the three case study settlements was as follows:

### **5.7.1 Huruma**

Using the security of tenure as a control variable the study established that for respondents with the security of tenure there was an interlinkage in the nature of infrastructure and the type of livelihood of the respondents. This is determined by the Chi-Square statistic of 26.057 and a p-value of 0.001. Since the p-value  $0.001 < 0.05$  ( $\alpha$ - level of significance) as presented in table

5.21, there was enough evidence to conclude that there are interlinkages between the security of tenure, infrastructure and livelihoods for respondents with the security of tenure.

Table 5.21: Chi-Square statistic for Security of Tenure, infrastructure and livelihoods for Huruma

Chi-Square Tests						
Security of Tenure		Value	of	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
no	Pearson Chi-Square	1.593 <sup>e</sup>	1	.207		
	Likelihood Ratio	1.596	1	.207		
	Fisher's Exact Test				.293	.249
yes	Pearson Chi-Square	26.057 <sup>d</sup>	1	.001		
	Likelihood Ratio	26.145	1	.001		
	Fisher's Exact Test				.001	.001
Total	Pearson Chi-Square	27.061 <sup>a</sup>	1	.001		
	Likelihood Ratio	27.134	1	.001		
	Fisher's Exact Test				.001	.001
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.43.						
b. Computed only for a 2x2 table						
c. 4 cells (100.0%) have expected count less than 5. The minimum expected count is 1.92.						
d. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.53.						

Source: Field Data 2016

The Phi coefficient of 0.554 indicated that tenure, infrastructure and livelihoods have a very strong interlinkage/association as indicated in table 5.22.

Table 5.22: Phi and Cramer's V values for Security of Tenure, infrastructure and livelihoods for Huruma

Security of Tenure		Value
no	Phi	.350
	Cramer's V	.350
yes	Phi	.554
	Cramer's V	.554
Total	Phi	.525
	Cramer's V	.525

Source: Field Data 2016

Cumulatively, the study concluded that in Huruma settlement, there are interlinkages in the security of tenure, infrastructure and livelihood of the respondents determined by the Chi-Square

statistic of 27.061 and a p-value of 0.001. Since the p-value  $0.001 < 0.05$  ( $\alpha$  - level of significance), there is adequate evidence supporting the alternative hypothesis and rejecting the null hypothesis that there are interlinkages between Security of Tenure, infrastructure and livelihoods. The Phi coefficient of 0.525 indicated that Security, infrastructure and livelihoods have a very strong interlinkage/association.

### 5.7.2 Munyaka

Finally, in Munyaka, using the security of tenure as a control variable the study also established that for respondents with the security of tenure there is an interlinkage in the nature of infrastructure and the type of livelihood of the respondents determined by the Chi-Square statistic of 12.508 and a p-value of 0.001. Since the p-value  $0.001 < 0.05$  ( $\alpha$ - level of significance) as shown in table 5.23 there was enough evidence to conclude that there are interlinkages between Security of Tenure, infrastructure and livelihoods for respondents with Security of Tenure.

Table 5.23: Chi-Square statistic for Security of Tenure, infrastructure and livelihood for Munyaka

Chi-Square Tests						
Security of Tenure		Value	of	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
no	Pearson Chi-Square	.629 <sup>c</sup>	1	.428		
	Likelihood Ratio	.960	1	.327		
	Fisher's Exact Test				1.000	.636
yes	Pearson Chi-Square	12.508 <sup>d</sup>	1	.001		
	Likelihood Ratio	13.264	1	.001		
	Fisher's Exact Test				.001	.001
Total	Pearson Chi-Square	11.733 <sup>a</sup>	1	.001		
	Likelihood Ratio	12.752	1	.001		
	Fisher's Exact Test				.001	.001
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.25.						
b. Computed only for a 2x2 table						
c. 3 cells (75.0%) have expected count less than 5. The minimum expected count is .36.						
d. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.15.						

Source: Field Data 2016

The Phi coefficient of 0.510 shown in table 5.24 indicated that tenure, infrastructure and livelihoods have a very strong interlinkage/association

Table 5.24: Phi and Cramer's V values for Security of Tenure, infrastructure and livelihoods for Munyaka

Security of Tenure		Value
no	Phi	.239
	Cramer's V	.239
yes	Phi	.510
	Cramer's V	.510
Total	Phi	.446
	Cramer's V	.446

Source: Field Data 2016

Cumulatively, the study concluded that for Munyaka there are interlinkages in the security of tenure, infrastructure and livelihood of the respondents. This was determined by the Chi-Square statistic of 11.733 and a p-value of 0.001. Since the p-value  $0.001 < 0.05$  ( $\alpha$  - level of significance). There is, therefore, sufficient evidence to reject the  $H_0$  for the  $H_1$  that there are interlinkages between the security of tenure, infrastructure and livelihoods. The Phi coefficient of 0.446 indicates that Security, infrastructure and livelihoods have a strong interlinkage/association.

### 5.7.3 Kamkunji

In the case of Kamkunji, the analysis established that for respondents who have the security of tenure there is an interlinkage in the infrastructure and the type of livelihood of the respondents. This was determined by the Chi-Square statistic of 5.106 and a p-value of 0.024. Since the p-value  $0.024 < 0.05$  ( $\alpha$  - level of significance) shown in table 5.25. There was enough evidence to conclude that there are interlinkages between the security of tenure, infrastructure and livelihoods for respondents with the security of tenure.

Table 5.25: Chi-Square statistic for Security of Tenure, infrastructure and livelihoods for Kamkunji

Chi-Square Tests						
Security of Tenure		Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
no	Pearson Chi-Square	5.000 <sup>c</sup>	1	.025		
	Likelihood Ratio	6.730	1	.009		
	Fisher's Exact Test				.100	.100
yes	Pearson Chi-Square	5.106 <sup>d</sup>	1	.024		
	Likelihood Ratio	5.276	1	.022		
	Fisher's Exact Test				.035	.028
Total	Pearson Chi-Square	8.640 <sup>a</sup>	1	.003		
	Likelihood Ratio	9.096	1	.003		
	Fisher's Exact Test				.008	.004
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.50.						
b. Computed only for a 2x2 table						
c. 4 cells (100.0%) have expected count less than 5. The minimum expected count is .80.						
d. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.83.						

Source: Field Data 2016

The Phi coefficient of 0.382 shown in table 5.26 indicates that tenure, infrastructure and livelihoods have a moderately strong interlinkage/association.

Table 5.26: Phi and Cramer's V values for Security of Tenure, infrastructure and livelihoods for Kamkunji

Security of Tenure		Value
no	Phi	0.765
	Cramer's V	0.765
yes	Phi	.382
	Cramer's V	.382
Total	Phi	.465
	Cramer's V	.465

Source: Field Data 2016

Cumulatively, the study concluded that there are interlinkages in the security of tenure, infrastructure and livelihoods. This is determined by the Chi-Square statistic of 8.640 and a p-



value of 0.003. Since the p-value  $0.003 < 0.05$  ( $\alpha$  - level of significance). There is, therefore, sufficient evidence to reject the  $H_0$  for the  $H_1$  that there are interlinkages amongst the interventions of tenure, infrastructure and livelihoods.

In conclusion, the study concludes that there are interlinkages in tenure security, infrastructure and livelihoods improvements.

## **5.8 Tenure-infrastructure-livelihoods: Process and function-based interactions**

From the data findings and analysis given in the above sections, it is evident that tenure security, infrastructure and livelihoods are intertwined. These interlinkages are grounded in the process and functions which are analysed below.

**Process-based interactions:** The study found that tenure, infrastructure, and livelihoods slum upgrading processes interact. Some processes directly link, those that are dependent on, and those that influence the other.

In the case of tenure security and infrastructure, the research found that their upgrading processes that directly link are mainly those processes that are common to both interventions. These include preliminary activities such as community mobilization and sensitization which ideally are meant to lay the ground for the upgrading project whether infrastructure or tenure security. Others are socio-economic surveys, which are necessary for establishing the existing situation as a basis for Physical Development Plans for tenure purposes and engineering designs for infrastructure. Environmental Impact Assessments are other activities that provide the magnitude of the impact and mitigation measures in both tenure and infrastructure. Also, Relocation Action Plans that provide strategies and actions on the relocation of services and relocation of affected persons including their compensation that apply to both tenure and infrastructure. These processes are necessary for both tenure and infrastructure that should once to serve both purposes of infrastructure and tenure.

Some processes influence either of the processes. For example, a Local Physical Development Plan prepared under tenure security processes influences infrastructure socio-economic surveys, feasibility studies, community infrastructure priorities, slum upgrading plans, engineering designs, Environmental Impact Assessments, relocation action plans, compensation of affected persons, construction of infrastructure, operation and maintenance. This clear interaction requires a multi-sector concurrent approach to tenure and infrastructure.

From the case study settlements of Huruma, Munyaka and Kamkunji however, and as described in chapter four, tenure and infrastructure processes proceeded independently through single sector silo approaches. As a result, common processes that were required in both tenure security and infrastructure were undertaken separately with no linkage, leading to duplication and waste of resources and worse still, as described by the residents of these settlements led to, well-meaning infrastructure projects undermining tenure security. This study argues for a multi-sector approach, which allows complementarity and synergies in these interlinked interventions for cost-effectiveness and efficiency.

**Function-based interactions:** Findings of the study have shown that functionally, tenure security, infrastructure and livelihoods interventions interact intricately. To start with, tenure security and infrastructure positively and negatively interrelate. In sum, the study findings showed that tenure security enhances infrastructure provision since the later lays a foundation upon which the former is laid. Statistically, tenure security was shown to be significantly linked to water, sanitation and electricity connections to households where those with the security of tenure are more likely to have water, sanitation and electricity connections. This indicates that infrastructure projects can easily be implemented and can succeed if tenure has been secured. Infrastructure, on the other hand, enhances tenure security since it facilitates access and other services to plots and contributes to higher land values and improvement of housing, which are tenure-related aspects. Infrastructure however negatively affects tenure security for those who had to be moved to provide space for the construction. There are also instances where infrastructure makes an area unsuitable for habitation- for example, the sewage lagoons located

next to Huruma settlement, which has lowered the property values around them and increased insecurity or where infrastructure such as roads increases flooding putting people and property downstream or adjacent neighbourhoods in jeopardy such as was found in Munyaka settlement. Similarly, tenure negatively affects infrastructure about encroachments on wayleaves that may be costly to remove and may delay infrastructure construction. This calls for integration to minimize negative effects. Ideally, according to Cromwell, (2002), there is need to focus on actual infrastructure needs of the poor as this will act as a catalyst for other improvements such as secure shelter and efficient use of land.

Further, both tenure security and infrastructure provision though they both foster development and even for those who may sell and move out receive income from higher purchase prices or rents but they nonetheless contribute to gentrification. According to Durand-Lasserve, (2007) settlement upgrading that includes tenure and infrastructure may heighten market eviction especially of the poor. This, together with the single sector approach, causes duplication and waste of resources. This calls for new approaches. The argument of this study is for nexus approaches that mainstream tenure security aspects in infrastructure and vice versa and integrates these with livelihoods improvement for holistic upgrading and sustainability.

On tenure security interactions with livelihoods, the narratives from the dwellers in the three case study settlements show that tenure security has linkages with the improvement of livelihoods, shelter, income from rent and accessibility to services and the rights to sell, lease and take a loan all of which support livelihoods. However, data has also shown that tenure security is necessary but is not adequate to improve livelihoods. This research has established that despite the benefits of tenure security, the incomes are still relatively low, housing is still largely temporary and semi-permanent; health facilities are inadequate, employment and skills are inadequate and the asset base of the dwellers is still basic especially for tenants. Tenure security, therefore, is not sufficient to alleviate the myriad challenges of the urban poor. This agrees with findings of other scholars, who argued that the provision of land titles is not a “‘silver bullet’ that can solve all these problems” (Huchzermeyer and Karam, 2008, Khemro and Payne, 2003). A comprehensive

and integrated approach is a prerequisite for a real transformation of lives and living conditions in informal settlements. This entails, according to Parry, (2015) the creation of livelihoods alongside the provision of socio-economic amenities and services, “either by the government, private sector or through the efforts of communities themselves”. This study argues for direct support of livelihoods interventions in such areas as incomes, employment generation, housing, skills enhancement, education, health facilities, and strengthening asset bases. This should be done alongside tenure and infrastructure provision. From the study, it was established that there was no direct intervention on livelihoods improvements in the case study settlements.

On the interplay between infrastructure and livelihoods data showed that infrastructure remains valuable to those in informal settlements in the areas of efficiency in road transport, increased services (water, drainage, electricity, walkways) and businesses, increased construction of houses, increased security, improved safety and sanitation. Further analysis of the data yielded threefold results; not significantly linked with livelihoods, moderately linked and weak linkages with livelihoods. Those, which are not significantly linked, are infrastructure and incomes where nature of infrastructure (tarmac, gravel, mud) does not affect the amount of household income in the settlement. Infrastructure and employment showed no association/linkage between the infrastructure and the households’ form of livelihood (employment). Similarly, it was established that infrastructure and adequacy of health facilities had no inter-linkages in the settlements. Infrastructure and housing are linked. The strength of association in infrastructure and the households’ type of housing is however weak. Similarly, an association/inter-linkage was found between the infrastructures and whether respondent possesses any education through the strength of the association is weak. On infrastructure and assets, a likelihood ratio sig. value of  $0.001 < 0.05$  (a), established that there is an inter-linkage between the infrastructure and the household assets. Further analysis yielded a Cramer’s V value of 0.389, which suggests a moderate association between infrastructure and assets.

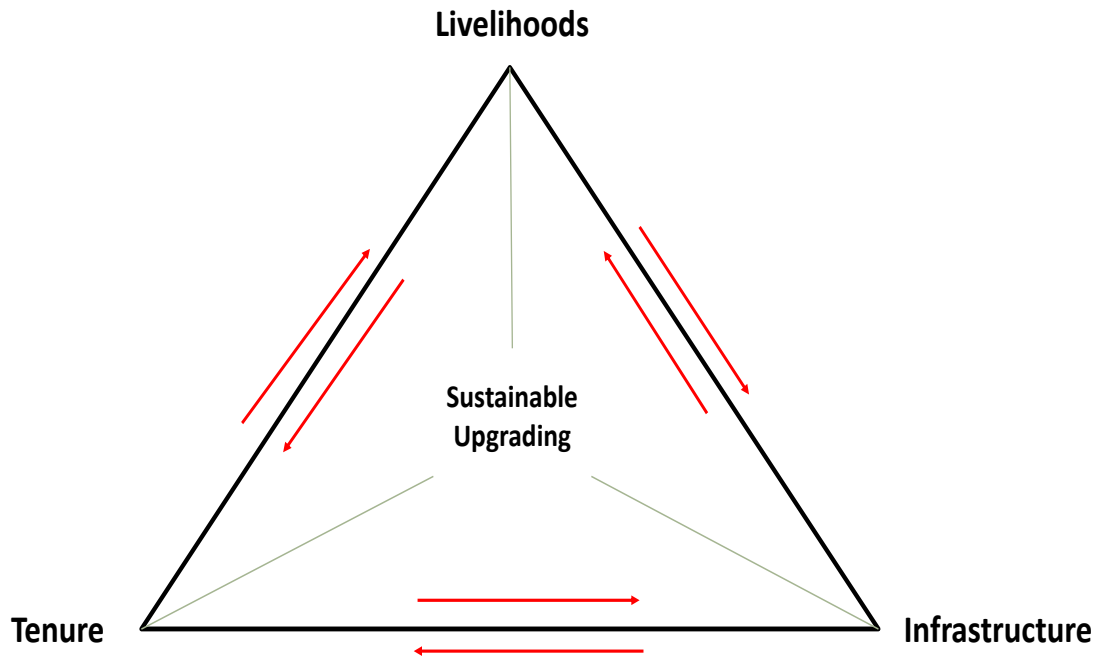
Overall, infrastructure is vital for the sustainability of livelihoods vice versa. However, the weak linkages between various infrastructures with livelihoods show that infrastructure alone is not

adequate to remove all constraints from the urban poor in informal settlements. This requires integrated multi-sector approaches that directly address livelihoods alongside security and physical infrastructure. This argument becomes more apparent when the processes of tenure, infrastructure and livelihoods are examined as shown in the next section.

## **5.9 The Tenure-Infrastructure-Livelihood (T-I-L) Nexus**

From the study findings, tenure security, infrastructure and livelihoods are linked and interdependent. Tenure security impacts infrastructure and livelihoods, infrastructure similarly impacts tenure security and livelihoods while livelihoods influence both tenure and infrastructure. Taking cognizance of this symbiotic and synergetic relationships, the study advances a theory of Tenure-Infrastructure-Livelihood (T-I-L) nexus as a framework for sustainable informal settlements upgrading as demonstrated in figure 5.2

## T-I-L Nexus



*Fig. 5.2: Tenure-Infrastructure-Livelihoods Nexus Source: Author*

The concept of T-I-L Nexus upgrading framework advances an upgrading approach comprised of the three key elements in upgrading, namely tenure, infrastructure and livelihoods that should be deployed simultaneously to address both the physical conditions and the human facets. It calls for balancing of these three elements in upgrading efforts, for impactful outcome and sustainability. Current silo practises having skewed the balance towards one direction either tenure or infrastructure and much fewer livelihoods have overlooked synergies, constraining the process and limiting outcomes and impacts. T-I-L also facilitates the integration of the respective sectors by identifying the interconnectedness of these interventions and the need therefore for sectors to work together in synergy. It aims to reduce compartmentalised, uncoordinated but eventually ineffective and costly upgrading approaches.

## **5.10 Tenure-Infrastructure- Livelihoods NEXUS: Defining elements**

### **5.10.1 The common agenda in tenure and infrastructure processes**

This study found that tenure and infrastructure processes have commonalities that are often overlooked. According to the Ministry of Lands and Physical Planning, the tenure processes broadly entail planning, surveying, registration and issuance of ownership documents. Similarly, according to the Ministry of Infrastructure, Transport, Housing and Urban Development, provision of infrastructure entails various processes. Broadly, these include feasibility studies, designs, construction and operation of various infrastructures but with several other processes. According to AfDB (2018) “project, preparation includes project identification, feasibility and feasibility studies (proof of concept), detailed studies (feasibility, environmental and social impact, and design), project structuring, and procurement and concession agreements (including contract negotiation)”. From the study findings, these processes of securing tenure are intricately linked with processes of infrastructure provision. These inter-linkages are shown in a Net-Map illustration in figure 5.3

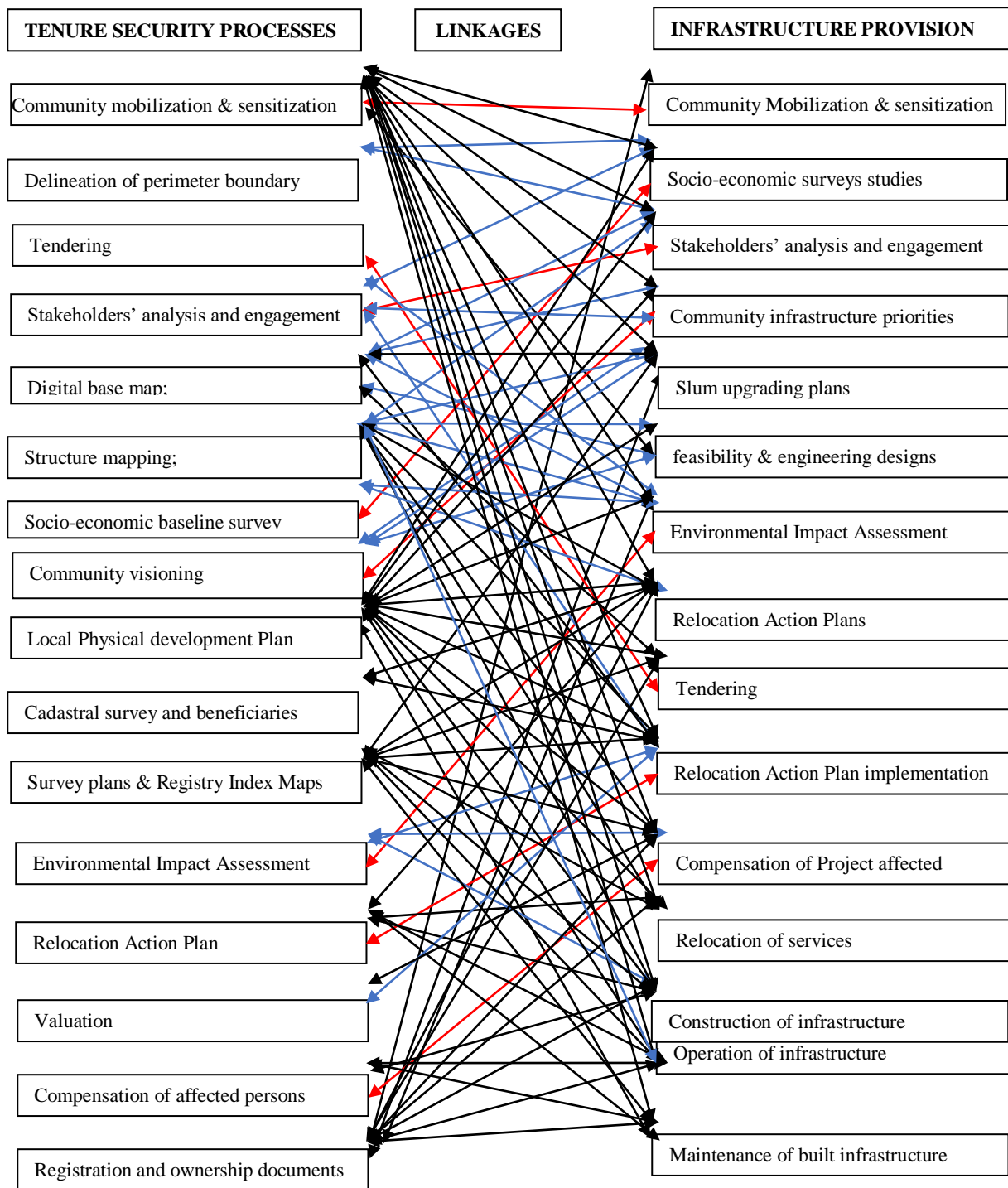


Figure 5.3: Netmap showing the interplay between tenure and infrastructure processes

Source: Author



The illustration above shows a network of intricate linkages between tenure and infrastructure upgrading processes. Some processes are common to both demonstrated by the red lines. Such processes include community mobilization and sensitization which ideally are meant to lay the ground for the project whether infrastructure or tenure security; socio-economic surveys which are necessary for establishing the existing situation as a basis for Physical Development Plans for tenure purposes and engineering designs for infrastructure; Environmental Impact Assessments which provide the magnitude of the impact and mitigation measures in both tenure and infrastructure; Relocation Action Plans that provide strategies and actions on the relocation of services and relocation of affected persons including their compensation which apply to both tenure and infrastructure. As indicated, these processes are necessary for both tenure and infrastructure, which could ideally be done once to serve both purposes of infrastructure and tenure. Some processes have a direct impact or are a precursor to either of the processes. These are indicated in black lines. For example, a Local Physical Development Plan prepared under tenure security processes influences infrastructure socio-economic surveys, feasibility studies, community infrastructure priorities, slum upgrading plans, engineering designs, Environmental Impact Assessments, relocation action plans, compensation of affected persons, construction of infrastructure, operation and maintenance. This clear interaction requires a multisector concurrent approach to tenure and infrastructure. There are also processes which indirectly influence or inform either of the processes shown in blue lines.

Although these processes are linked, tenure and infrastructure processes proceeded independently through single sector silo approaches in the case study settlements of Huruma, Munyaka and Kamkunji however, and as described in chapter four. As a result, common processes that were required in both tenure security and infrastructure were undertaken separately with no linkage, leading to duplication and waste of meagre resources and worse still, as described above by the residents of these settlements led to, well-meaning infrastructure projects undermining tenure security. This study argues for a multi-sector approach that allows complementarity and synergies in these interlinked interventions for cost-effectiveness and efficiency.

### **5.10.2 The tenure security spurs livelihoods: Myth or reality.**

Findings from the study established that tenure security stimulates livelihoods. Data analysis showed that those with tenure security have higher incomes than those without. However, incomes are relatively low. This shows that the dwellers, despite the security of tenure still have low incomes and it is worse for those without the security of tenure. This finding is similar to those of other researchers. Galiani, (2016) for example found that it has null effects on income and labour earnings, and the beneficiaries' consumption capacity is, therefore, the same before and after the program. According to the World Bank, (2016), titling did not bring about higher incomes. Though this was the case in this study, the findings showed that more land and structure owners earn more compared to tenants. This situation of tenants is aggravated by rising rents as 95% pointed out that rent had increased in the last 2 years. This is detrimental as it undermines the already fragile livelihoods of these tenants who, according to Haysom, (2013) may be forced into insecure arrangements which makes them more vulnerable to exploitation or abuse.

Tenure security, however, is linked to better housing especially for those with titles. Data analysis showed a significant linkage with most of those with titles having permanent units unlike those without security, the majority of who had temporary and at most semi-permanent units. This is attributed to the confidence to invest in the improvement of their housing units which according to findings of this study, was bolstered by property rights engraved in the leasehold and freehold titles that the proprietors had including rights to sell, lease, take a loan and give out as an inheritance. This compares with other research that plots with titles had higher quality housing (World Bank, 2018) and a positive effect on investment because of the reduced risk of eviction and households' attachment to their house (Nakamura, 2017, Rakodi, 2014, Roth and McCarthy, 2014, Galiani and Schargrodsky, 2010 and Gelder, 2013).

Though tenure security reinforced livelihoods, surprisingly there was not sufficient evidence to link it to the nature of employment, the level of education, skills and assets owned (apart from land and structure ownership) which were found to be independent of the tenure security. This

finding compares with other studies. For example, Olajide, (2015) in his research “found that the urban poor has inadequate access to livelihoods assets. This inadequacy is manifested in both the quantity (generally limited) and quality (generally poor) of livelihood assets” (Olajide, 2015). Lloyd-Jones and Rakodi, (2014) therefore concluded tenure security, though essential, it is not enough to sustain urban livelihoods. Similarly, this study argues that though tenure security serves as a key element in upgrading for enhancing incomes, housing and betterment of environment and living conditions in the settlements it is not adequate to remove the constraints of the poor and it should, therefore, be part of multi-sector and integrated solutions to informal settlement upgrading. This study suggests a T-I-L nexus approach where tenure plays a pivotal role but must be integrated with infrastructure and livelihoods for it to be fully impactful.

### **5.10.3 Pathways to tenure security and implications for livelihoods**

The approach or process of securing tenure in the informal settlements of Huruma, Munyaka and Kamkunji, as described in chapter four, was that of moving from secure legal tenure held by the white settlers who, upon attainment of independence, sold of their freehold land to the indigenous communities and land buying companies who subsequently subdivided informally which led to uncontrolled and haphazard development.

These tenure security processes had an influence and shaped livelihoods in the three settlements. According to Focus Group discussions and key informant interviews, these processes interacted both positively and negatively with livelihoods. The secure freehold tenure on agricultural land had the positive effect of granting security to the white settlers who used the lands for their economic development but negatively affected the indigenous communities. A similar finding to that of other researchers who have argued that the local people were dispossessed of their livelihood security (Odhiambo 2006, Boone 2009).

At the advent of independence, European farmers sold their farms to Africans based on a “willing seller and willing buyer principle”. According to key informants, land buying companies were among those who bought the land upon which Huruma, Munyaka and Kamkunji

settlements sprawl today. Due to informal subdivisions, transactions and construction of rows and rows of haphazard houses that lacked public utilities and this contributed to the propagation of informal settlements causing further deterioration of the already precarious livelihoods.

According to a key informant, Focus Group discussions and existing literature, the government intervened in these settlements in the 90s to restore the security of tenure. The Uasin Gishu Physical Planning Department district office prepared advisory plans for Huruma/Mwenderi, Kamkunji and Munyaka. The advisory plans were aimed at providing a physical layout plan showing the orderly arrangement of various land uses that would maximize the use of land and to support the socio-economic strategies and activities of institutions and the poor. This process and the subsequent surveying and issuance of titles (though the later took inordinately long in Huruma and Kamkunji and yet to be completed in Munyaka) had direct and indirect impacts on livelihoods. Apart from securing the resident's assets and improving their houses, their livelihoods benefitted from access to assets held in common such as roads of access and other public utility areas such as schools in the case of Huruma and Munyaka and market in the case of Kamkunji that were established by the Eldoret Municipal Council. This finding resonates with other scholars who have argued that tenure security that comes with the upgrading programme results in increases in the likelihood that households upgrade their homes, take out loans, plan to use savings for upgrading purposes in the future and obtain rental income through tenants.” (Tissington, 2012).

On the other hand, registration of title gives the highest form of security but the challenge is the associated high cost and according to Kieyah and Kameri-Mbote, (2010) it has not increased productivity and investment that the proponents promised. The delay and high cost in these processes had negative effects on livelihoods because their timely access to tenure security and opportunities thereof were constrained by the regulatory processes. As pointed out by scholars, livelihoods of urban poor are fragile and easily disrupted or threatened, even by well-intentioned actions by authorities (Housing Development Agency, 2014) that constrain the poor from making a living (Jayaratne and Sohail, 2005).

Further, livelihoods go beyond assets to include the people's capabilities (education, skills) and activities (employment and incomes) strategies to make a living which in the case study settlements of Huruma, Kamkunji and Munyaka were not addressed alongside tenure security. There is need therefore to consider livelihoods in parallel with tenure security so that lengthy and costly tenure security processes that may weaken livelihoods do not undermine the livelihoods. What is needed is an integrated approach that holistically addresses the various needs.

#### **5.10.4 Pathways to infrastructure and impact on livelihoods**

Study findings found that infrastructure-upgrading pathways have generated various livelihood dynamics as dwellers sought to cope with the shocks generated by physical changes in their environments. As seen in chapter four, the approach to the provision of infrastructure has for a long time been single sector, piecemeal and uncoordinated approaches until the period 2014-2016 when there was an attempt by the Government to provide comprehensive infrastructure in the three settlements of Huruma, Munyaka and Kamkunji. The outcome of the silo approach in the earlier years was minimal impact on livelihoods. The findings of a study undertaken in informal settlements in Eldoret (Huruma, Munyaka and Kamkunji) showed that only 10% of households had access to piped water, 10% had access to home toilet and only 13% had access to usable roads during the rainy season and 53% were below the poverty line (World Bank, 2014). In the 2014- 2016, infrastructure upgrading in the three settlements of Huruma, Munyaka and Kamkunji, was more comprehensive. According to key informants, the infrastructure was multi-sector and was provided more or less simultaneously. According to key informants, the procedures and processes were equally wide-ranging and each of them had an impact on livelihoods as shown in table 5.27.

Table 5:27: The impact of infrastructure on livelihoods

PATHWAY	IMPACT ON LIVELIHOODS	OUTCOME
<p><b>Preliminary</b>  <i>community mobilization, socio-economic surveys and feasibility studies, community infrastructure priorities; engineering designs; environmental impact assessment; relocation action plan; bidding documents; tendering and procurement of contractors.</i></p>	<p><b>LOW</b></p>	<ul style="list-style-type: none"> <li>+ No immediate disruption of livelihoods.</li> <li>+ Community buy-in/ownership</li> <li>- Long-term effect of delays, limited menu/options</li> </ul>
<p><b>Implementation</b>  <i>Relocations, site clearing and construction of infrastructure i.e. roads, walkways, drainage, lighting, water and sanitation</i></p>	<p><b>MODERATE</b></p>	<ul style="list-style-type: none"> <li>+ Employment and business from civil works</li> <li>- Loss or reduced livelihoods due to relocations</li> <li>- Loss/disruption of services i.e. water, electricity,</li> </ul>
<p><b>Operation</b>  <i>Transport (vehicles, motorcycles), Lighting, Water and Sewer connections and payment of bills, drainage</i></p>	<p><b>HIGH</b></p>	<ul style="list-style-type: none"> <li>+ Improved road transport</li> <li>+ Increased access to the settlement</li> <li>+ Increased security and safety due to lighting</li> <li>+ Improved business</li> <li>+ Improved housing</li> <li>+ Improved water and sanitation</li> <li>+ Reduced flooding</li> <li>+ Improved environmental conditions</li> <li>- High costs (water and power bills)</li> <li>- Increased rent leading to market evictions</li> <li>- Accidents</li> </ul>

As shown in (Table 5:27) the illustration, infrastructure pathways have an impact on livelihoods. From Focus Group discussions, it came out that during the preliminary phase community consultations were done but they felt that it was not adequate and not all priorities of the community were included in the final designs due to government and donor limited infrastructure menu. This has a long-term effect of limiting livelihoods in the softer areas of education, health and business. This thesis argues that improvements can be achieved through integrated multi-sector approaches by coupling the infrastructures with improvements in tenure security and indirectly strengthening livelihoods. These should be conceptualized at the design/preparatory stage of projects and programs.

During the second phase, it emerged from findings that there were disruptions to livelihoods due to relocations of both persons and services especially water lines, electricity and sewer lines to pave way for various infrastructure. This finding is similar to other research findings where Turok, (2016) found that “fixed urban infrastructure is complicated and socially disruptive, especially if it means retrofitting after the land has already been settled and built upon”. On the positive side, however, the construction of infrastructure provided both temporary employment and business.

The highest impact on livelihoods, however, came when the infrastructure was operationalized. Lighting increased working hours; roads improved transportation for goods and people, water and sanitation improved cleanliness and health and reduced incidence of diseases all of which enhanced the living conditions. In the same vein, Rakodi and Lloyd-Jones, (2002), pointed out that infrastructure has both the direct and indirect benefits where the former include improved health, increased knowledge, easier working and living conditions, and access to income-generating opportunities through transport infrastructure and services and the latter being income and time for other work. On the negative side, high utility costs, rents and increased land values triggered gentrification. This observation is in tandem with the theories on market evictions which are seen to create a cycle of poverty where the poorer members are forced out by market dynamics to poorer areas (Durand Lesserve, 2007). The argument for this study is the need for T-I-L nexus approach that address both physical and livelihoods improvements to minimize or altogether remove constraints that lead to market evictions.

### **5.10.5 Evolving livelihoods midwifed by tenure and infrastructure**

Livelihoods in this study were categorized into three parts based on Chambers and Conway, (1991) definition. These are; capabilities (education, skills, and health), assets (housing unit, land, property) and livelihood activities (economic activities, employment and incomes). It has been argued that these factors are indicators of the well-being of a population. The poor also draw upon these to achieve their livelihoods. Studies have however shown that slum dwellers' choices of livelihoods are restricted by various constraints (Abu -Salia, et al., 2015)

The livelihoods in the three case study settlements of Huruma, Munyaka and Kamkunji, evolved but were influenced largely by the provision of tenure security and infrastructure. In the 60s-80s, the settlements had limited tenure security and almost no infrastructure contributing to precarious livelihoods. In the 90s through to 2016, the informal subdivisions were formalised and isolated infrastructure upgraded with comprehensive infrastructure; however, there were no direct interventions on livelihoods as shown in figure 5.4.



## Evolving livelihoods dynamics in Huruma, Munyaka and Kamkunji settlements

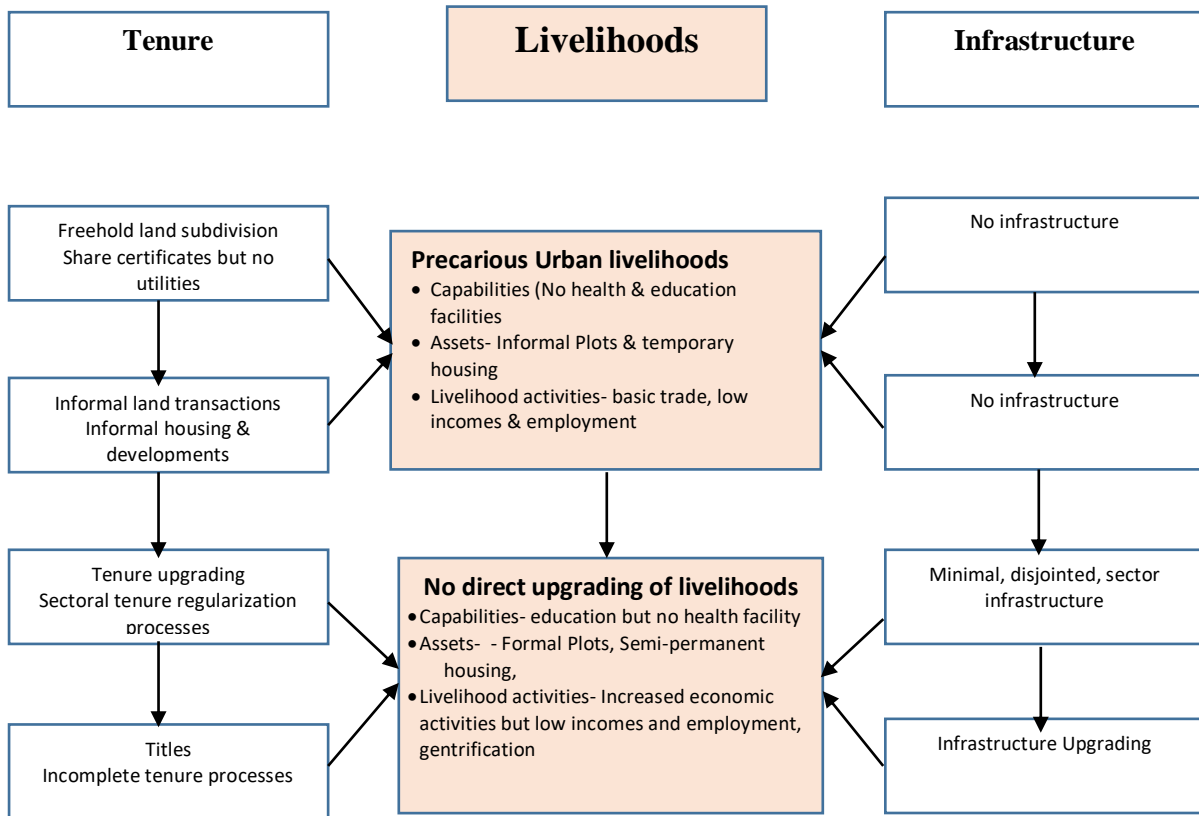


Figure 5.4: Netmap showing evolving livelihoods dynamics in case study settlements Source: Author

From the illustration, the livelihoods of the dwellers are precarious. This is attributed to, among other factors, the ensuing threat to tenure security characterized by uncontrolled subdivisions, informal land transactions, unregulated developments and a substandard housing coupled with lack of public utility spaces and basic infrastructure. These adversely affected and increasingly threatened the poor person's abilities, properties and livelihood activities that the dwellers would draw upon to achieve their livelihoods. Specifically, the lack of educational and health-related facilities meant lack of access to these facilities thus negatively affecting the health, skills development and education. Their asset base composed of insecure plots and temporary housing while basic trade, employment, characterized livelihood activities incomes all of which contributed to dwellers to vulnerability.

According to the focus group discussions, upgrading of infrastructure and tenure regularization improved their assets base and livelihood activities but their capabilities, health, skills employment and incomes were still low. As shown in the second box under livelihoods in the illustration, this is attributed to the lack of direct support for upgrading livelihoods. Upgrading activities focused on improving physical aspects and not the people themselves who despite these physical improvements their livelihoods were still vulnerable.

#### **5.10.6 The relative significance of tenure security, infrastructure and livelihoods**

The study findings have shown that tenure, infrastructure and livelihoods interventions are significant in improving the physical conditions in informal settlements. On relative significance, however, it emerged that the upgrading was done in the three case study settlements of Huruma, Munyaka and Kamkunji, there is a variance in the upgrading already done and the priority upgrading that the dwellers would have prioritized. As shown in the preceding chapter, on average, 90% of the respondents said that tenure and infrastructure have been upgraded in the settlement and only 4% indicated that livelihoods were directly upgraded. This finding indicates that the focus of upgrading has mainly been on the physical aspects of improving the conditions in the settlement. When asked about their priority improvements against what has been provided, respondents prioritized livelihoods, tenure security and infrastructure in that order. These findings were corroborated by FGDs where it emerged that tenure and infrastructure are necessary and are beneficial but there is need to include livelihood areas such as employment, incomes, education, health, housing, and skills in upgrading interventions.

The finding was strengthened by a finding that neither tenure security, infrastructure nor livelihoods alone is adequate to address constraints in informal settlements with the majority, 81% on tenure, 82% of infrastructure and surprisingly 89% on livelihoods indicating that the respective interventions on their own are not adequate. From the research, it emerged that tenure security, infrastructure and livelihoods interventions are all critical elements in upgrading. This was very well put by a landowner and opinion leader in Munyaka, during an FGD who said;

*“The three interventions are like parts of a body. All should be provided if they are to function well. You need both eyes to see well. The eyes cannot be the nose. The titles cannot be the roads so you need both. Also, business and employment cannot grow without the titles and the roads, water and electricity. The three are linked together and together they will help us improve.”*

From these findings, it is concluded that tenure security matters and infrastructure is critical to improving living conditions in informal settlements. However, there should be direct interventions supporting livelihoods in such areas as employment opportunities, income-generating activities, improved housing, health facilities, education, and improvement of skills. Other studies have had similar conclusions. For example, Minnery et al, (2013) in his study found that physical improvements did not translate into skills, income or livelihoods thus leaving dwellers “in a state of income poverty”.

This solidifies the argument of this study of a tenure-infrastructure-livelihoods nexus in upgrading and the need to adopt a multi-sector approach that brings these interventions in one strategic package that addresses both the physical and the people aspects of improvement

The 2030 global Sustainable Development Goals (SDGs) emphasizes the interconnectedness of sectors and the need therefore for integration to achieve sustainable development (UN, 2015) because it is increasingly apparent that “there is no place in an interlinked world for isolated solutions aimed at just one sector” (Dodds and Bartram, 2016). "Nexus" has now emerged as a theory for understanding linkages and integrating goals across sectors for cost-effectiveness and efficiency while minimizing risks of goals and targets undermining one another (Weitz, 2014)

## **5.11 Summary**

This chapter was aimed at addressing the study’s second objective, which is *to investigate the interplay of tenure security, infrastructure and livelihoods in the process of slum upgrading in Eldoret* and answering the research question: *How do tenure security, infrastructure and livelihoods interact in the process of slum upgrading in Eldoret?*

From the findings and analysis, the three upgrading interventions of tenure security, infrastructure and livelihoods are intricately linked. The study concludes that there is, sufficient evidence to reject the null hypothesis ( $H_0$ ) for the alternative hypothesis ( $H_1$ ) that there are interlinkages between the security of tenure, infrastructure and livelihoods. A Phi coefficient indicates that tenure security, infrastructure and livelihoods have a very strong inter-linkage/association.

In conclusion, this study argues for a tenure-infrastructure-livelihoods nexus approach to informal settlement upgrading. It argues that tenure, infrastructure, and livelihoods are inherently linked. Tenure security impacts infrastructure and vice versa while livelihoods are mediated by both tenure and infrastructure. These interventions should, therefore, be deployed simultaneously calling for a transformation from the current mono-sectoral to nexus based multi-sector approaches that take cognizance of inter-linkages, interdependencies, and cross-sectoral interactions. Slum upgrading should be designed to explicitly make use of the inter-linkages found in these interventions. This study thus advances a theory of T-I-L Nexus as a framework for sustainable upgrading. It is acknowledged, however, that this T-I-L Nexus upgrading framework is not a magical solution that can address all constraints in informal settlements, but rather a justifiable contribution to addressing the multiple pressing needs of the slum dwellers.

Existing institutional frameworks however may stand in the way of this Tenure-Infrastructure-Livelihood nexus approach, an area that is discussed in detail in the next chapter.

## Chapter Six: Actors, Policies and Practices

.... *“Sio mtu moja, ni jukumu la taasisi zote na watu wote kuboresha maisha- this is not a person’s responsibility, but a multi-agency and everyone’s responsibility to improve lives.” Former chairman of a land-buying company in Kamkunji.*

### 6.1 Introduction

Institutions are a pillar for integrated and sustainable development. North, (1990) defines them as the “rules of the game”. This chapter discusses the role of institutions in tenure security-infrastructure-livelihoods nexus. Chapter five established that these elements are interlinked thus recommending a synergistic and integrated T-I-L nexus upgrading approach in their provisioning. However, institutions can present obstacles to this nexus. These come in the form of fragmented and siloed government departments, restrictive sector funding mechanisms, legislative and regulatory barriers and sector-based agencies all of which complicate coordination and integration (Nilsson, 2017, Satterthwaite, 2016 Bradshaw et al., 2014, GIZ and ICLEI, 2014). There is need therefore to address these by aligning institutions in a way that they become responsive to connectivity and integrated approach to development. However, there is limited knowledge on what this entails. This research contributes to this knowledge gap with a specific focus on tenure security, infrastructure and livelihoods institutional dynamics in slum upgrading. There is a need to understand the underlying institutional dynamics that shape, influence, control and determine the outcomes of the nexus. This chapter, therefore, addresses the study’s third objective:

*To determine institutional dynamics of tenure, infrastructure and livelihoods in informal settlements in Eldoret Town*

To meet this objective and to respond to the research question “*what are the institutional dynamics of tenure, infrastructure provision and livelihoods in informal settlements in Eldoret Town?*” this chapter will answer the following questions:

- i. What are the institutional dynamics in Huruma, Munyaka and Kamkunji settlements?*
- ii. Who are the actors: Enablers and inhibitors in tenure- infrastructure- livelihoods nexus*
- iii. What are the policies and legal frameworks?*
- iv. What are the key institutional elements shaping tenure, infrastructure and livelihoods nexus?*

## 6.2 Institutions and actors: Theoretical underpinning

The 2030 global development agenda calls institutions to be effective, accountable, inclusive and transparent, to eradicate poverty and attain sustainable development (UN, 2016). Slum upgrading initiatives have been delivered through various institutions that include Government, National and Local, Non-Governmental Organizations, Civil Society, Communities and International agencies (Mbathi, 2011, Gulyani and Talukdar, 2008, Durand-Lasserve and Selod, 2007). These, in turn, are guided by various policies, laws and regulations, some of which are conflicting. The primary concern is “what are the appropriate institutions for implementing upgrading?” (Gulyani and Basset, 2007). Is it government, the international community, the private sector, NGOs, CSO’s or the community?

The earlier upgrading strategies advocated for a minimal state (UN-Habitat, 2007, Turner, 1968). Recent research has however questioned this and asserted that ‘minimal state’ is incapable of dealing with the challenges emanating from slum improvements (Werlin, 1999) arguing instead for an effective and “strong state to ensure clear property rights, land acquisition and secure tenure (Gulyani and Connors, 2002, Werlin, 1999, De Soto, 1989) as well as monetary, organisational and technical resources to execute large-scale developments (Otiso, 2003, 2000). However, it has been argued that state policies and strategies tend to be sectoral, fragmented, bureaucratic, uncoordinated, marginal, extremely underfunded, sometimes contradictory approaches, top-down and more often are controlled by the political elite who pursue their benefits at the cost of the poor (Resnick, 2014, Otiso, 2003, Syagga and Kiamba, 1992).

Non-Governmental Organisations (NGOs), on the other hand, have been common in slum upgrading throughout Africa (Gulyani and Habib, 2009, Connors, 2002). Though NGOs can support the poor in settlements (Satterthwaite, 2012) mainly through the provision of health, education, water and sanitation, community organisations and mobilisation, “some experts are sceptical of NGO activities in slum development” (Habib 2009, Ananya 2005). Their approaches are piecemeal, poorly resourced, limited accountability and transparency, driven by foundations and donors, overlapping mandates and are mistrusted by both the dwellers and by the state (Practical Action, 2012, Rakodi, 2004). The private sector has also been identified as playing a role in slum upgrading but they are criticized for the poor record in urban services to deprived

neighbourhoods due to limited profits (Baker, 2009, Otiso, 2003). Similarly, international institutions provide financial and technical support to slum upgrading efforts but, according to McLeod, (2004) they tend to work in isolation and “interventions are frequently designed on a one-off basis rather than being linked to longer-term strategic planning”. From the late 1990s, community-driven solutions in upgrading programs have emerged especially in collaborations and partnerships in areas of housing, finance, unemployment, and sanitation (Ngau, 2013, Etyyang, 2011, UN-Habitat, 2007). However, there is a serious concern with community participation in decision making in Africa, (Gulyani and Connors, 2002) thus limiting their effective role in upgrading.

All these institutions are critical and there is a need for a more collaborative model that should consider all actors including the state, urban poor themselves, NGOs and CBOs as resourceful and contributors to improved urban environments (Albrechts, 2012, Mitlin 2008). Ideally, these institutions ought to partner and collaborate. This study builds on this thinking but in reference to institutions of tenure security, infrastructure and livelihoods. The study findings show the state playing a major role and wielding a lot of power and control in tenure and infrastructure unlike Turner’s concept of a minimal state. Further, emerging community institutions and intermediary institutions such as land buying companies and international institutions played a facilitative role but a lesser role by NGOs. Thus the study points to comparative advantages of each institution and therefore recommends that institutions should metamorphose from siloed approaches to multi-sector integrative and synergized upgrading approaches in particular T-I-L nexus approach to achieve sustainable development as espoused by the SDGs.

### **6.3 Institutional dynamics of Tenure, Infrastructure and Livelihoods**

To analyse the institutional dynamics, the study used information obtained in the field and secondary data to develop network tables and descriptions to demonstrate the linkages and the critical role of institutions in the upgrading of settlements through tenure security, infrastructure and livelihoods and the need to transform from the current silo to integrated T-I-L nexus approach as discussed in chapter five. The study first established the institutions that undertook upgrading of tenure, infrastructure and livelihoods improvement in the three case study

settlements of Huruma, Munyaka and Kamkunji and subsequently their roles, community participation, institutional collaboration and cooperation as well as their power and control. The section below focuses on each of the case study areas and brings out these dynamics. Although the case study settlements have similar experiences, it was discernible that Huruma settlement exhibited a stronger community approach while Munyaka a land-buying company and government approach while Kamkunji a mixed community, land buying and government approach.

### **6.3.1 Institutional dynamics in Huruma Settlement: Community-Driven Approach**

**Institutions and their role:** According to focus group discussions held in Huruma with the opinion leaders and Settlement Executive Committee members, various institutions undertook the upgrading of the settlement but a noteworthy finding was that the community organization played a role in representing their members' interests in tenure security processes indicated by 75% and infrastructure provision, indicated by 80% in the household survey data. Other key institutions that participated in the upgrading of the settlement were the government, both National and County and their agencies. On tenure, the Ministry in charge Lands was instrumental in processing and issuing the title deeds indicated by 92.9%, planning of the settlement, 46.4% and surveying indicated by 44.9%. The County Governments' (the municipal council at the time) key role was in approvals of the subdivision plans indicated by 56.2%.

Community's participation in infrastructure, according to the study findings, was evident. This was mainly through an elected community representation termed Settlement Executive Committee, formed during comprehensive infrastructure upgrading in the settlement in years 2012-2016. However, data analysis showed that the government and its agencies provided the bulk of infrastructure where the national government provided roads, drainage and footpaths indicated by 53.1%, the Eldoret Water and Sanitation Company provided water and sewerage in the settlement indicated by 69.1% and 38.5% respectively while the Kenya Power Company provided electricity indicated by 73.4%. Other notable institutions involved in the upgrading of infrastructure were named as Non-governmental Organizations indicated by 20.9% and



Development Partners 22.0% while the Civil Society a much lesser role with 9.9%. On the specific role of other agencies, the Huruma SEC secretary and opinion leader had this to say:

*“Civil society and NGOs sometimes mobilize communities and creates awareness on various issues such as on health, e.g. HIV aids education and awareness, water and sanitation and education but they have not built any infrastructure”*

Interestingly the focus group discussion members could not pinpoint specific agencies that directly dealt with the improvement of livelihoods in the settlement only pointing out *“that people hustle to get jobs in informal and self-employment, educate their children, and build their own houses without much support from the government”*. The household survey data showed that both National and County Governments provided livelihoods but minimally, specifically on employment, 31.9% indicated employment by the National Government, 29% indicated County Government, 4.1% informal sector. On housing 13.3% pointed to national, 15.8% county, 70.9 % to private/informal sector; health 43.4% ,45.2% and 11.4% attributed to National Government, County and private/informal sector respectively while education, 60.2%, 20.3% and 12.5% respectively.

**Community Participation:** On tenure security, the study established that a majority of 76.9% of the structure owners indicated that they participated in land acquisition and the subsequent processes of tenure. For tenure security, the Huruma Farmer's land-buying company was the key agency that facilitated community participation in land acquisition and other subsequent tenure processes. According to a community leader during the group discussions, the community made payments for their plots and were persistent in their pursuit of ownership documents from the farm directors. Similarly, on infrastructure, the community participated through Settlement Executive Committee. According to the committee members, they were instrumental in mobilizing the community, participating in the project planning such as identifying community and settlement challenges, prioritization of infrastructure and providing labour during the implementation of infrastructure. According to a member of the Settlement Executive Committee (SEC) during a Focus Group discussion in Huruma said that:

*“The community was sensitized on the project and 18 community representatives were elected to represent the community in the project. Our role was to participate in activities of the project such as enumerations, identifying project affected persons, identifying roads to be upgraded, and identifying spaces for high mast lighting, assisting contractors in identifying local labour, resolving disputes and presenting grievances.”*

**Collaboration and coordination:** In Huruma settlement, majority, 89.8% of households indicated that there was a limited collaboration between the various institutions involved in the acquisition of tenure security, provision of infrastructure and livelihoods improvement. On tenure security, the government (Ministry of Lands), Land Buying Companies and the Municipal Council undertook tenure processes independent of each other. Further, collaboration within the respective institutions was minimal. For example, the community explained that various departments of the Ministry of Lands such as planning, surveying, valuation, registration and titling undertook their activities separately although these activities are linked. A key informant, a chairperson of Huruma Land Buying Company put it this way:

*“Huruma farmers subdivided the land and sold to shareholders without involving the government or the municipal council. The Council rejected the subdivision because it was not done properly and it did not provide public utilities and some of the plots were too small. Later the physical planning department prepared a plan, which was revised several times before approval by the Eldoret Municipal Council and the Department of Lands. The area had to be re-surveyed by a licenced surveyor before submission to the Ministry of Lands for processing of titles”.*

On infrastructure upgrading, however, it emerged, according to a key informant at the County Government, that there was a collaboration between the two levels of government, National and County in implementing the upgrade but they felt that the National Government had more say in the project more than the County government. However, the community collaborated with the two levels of government in the implementation of the infrastructure upgrade. The foregoing shows the silo approaches of various institutions, which ultimately led to long delays in securing tenure and provision of infrastructure in the settlement.

Coordination of upgrading interventions by institutions in these settlements was largely average with 54.1% indicating that there was no coordination while 45.9% indicated that there was coordination between the institutions of tenure, infrastructure and livelihoods. The resultant effects of lack of coordination led to uncertainty among the dwellers as indicated by 33.3% while 28.6% indicated that it led to encroachments or total lack of land for infrastructure development or led to delay in infrastructure development.

It also emerged from focus group discussions and key informants that lack of coordination led to the duplication of roles. According to a key informant, this duplication of roles resulted in project delays as the institutions argued on whose responsibility it was to provide these services.

**Power and control:** According to research data, the land buying company had a lot of power and control during the initial acquisition of the land, informal subdivision and the issuance of share certificates to the beneficiaries in the community, indicated by 81.6%. According to focus group discussions, the farm directors had overriding powers since they were the decisions makers. In regards to the formal processes of planning, surveying and issuance of titles however, 58.1% indicated that the government had more power and control. According to key informants, the municipal council had powers to approve or reject the subdivision of Huruma settlement while the central government used the existing laws, to determine, prescribe and approve the planning, surveying and tenure system as well as the procedures and fees payable when tenure was being regularised in Huruma settlement. On infrastructure, the state was seen as having the most power and control in the provision of infrastructure as compared to other institutions indicated by 93.9%, community organizations 3.1%, development partners at 2% and Civil society indicated by 1%. The reasons advanced as to why the government had more power and control over the other institutions in the provision of infrastructure was largely attributed to the mandate of government to provide and because it controlled resources compared to other institutions which were seen to be less endowed.

Further, it emerged from study findings that mandates and functions of various government agencies are a subject of power and control. In Huruma, according to information from focus group discussions, the institutions who upgraded roads, walkways and drainages were the Ministry of Lands, Housing and Urban Development whereas such functions are the mandate of the County Government since the upgraded roads are categorised as county roads. Similarly, the same Ministry provided water and sanitation which is the mandate of Eldoret Water and Sanitation Company (ELDOWAS) and Lake Victoria North Water Services Board. This was a demonstration of the power dynamics between the two levels of governments where the National still exercised control over the County level despite constitutional provisions that conferred functions on the latter and not the former.

### **6.3.2 Institutional dynamics in Munyaka Settlement: Land Buying Company and government-driven**

**Institutions and their role:** Munyaka settlement upgrading was driven by land buying company and the government. According to information from focus group discussions, tenure security was initiated and driven by the Land Buying Company, Munyaka Housing Society, during land acquisition and subdivision but unlike Huruma, they sought government intervention during the early stages of the subdivision through the Ministry of Lands as shown in figure 4.2 but at the time of research, the process was not completed, several years after the process was initiated. The titles were yet to be issued more than 30 years since the land was bought and subdivided. Nonetheless, the company was instrumental in mobilizing members to buy plots, in doing initial subdivision and issuing share certificates to shareholders indicated by 83.3%. The municipal council and the Ministry of Lands were the key institutions that undertook the formal processes of tenure security, the key ones being given as planning 54.2% and Surveying 48.3%.

On infrastructure, according to the focus group discussion with community representatives, opinion leaders and Settlement Executive Committee members, like Huruma, the role of the state and its agencies in provisioning was substantial. Municipal Council provided basic services including water and murrum roads. Later the provision of water was taken over by the ELDOWAS while the Government with, World Bank funding, built the existing tarmac roads in 2014-2016 including paved drainages, footpaths, four high mast lighting and four ablution blocks. Lake Victoria North Water Services also provide water. Household data showed roads, walkways, stormwater drainages and electricity (Kenya Power) were attributed to the national government with 54.1%, 55%, 50.8% and 71.2% respectively. The county institutions provided mainly water (ELDOWAS), 45.8% and garbage disposal indicated by 55.9% and to lesser extent roads, and drainages. Other institutions involved in upgrading in the settlements were named as community organizations with 5.1%, Non-governmental organizations with 1.7% and the Development Partners with 1.7%.

On livelihoods, although data showed that both National and County Governments supported livelihoods, these were minimal. Only 21.8% and 18.8% indicated that the National Government

and County government provided employment respectively. However, a higher percentage, 30.6%, pointed out that employment emanated from the informal sector. Housing on the other hand 13.3% national, 9.6% county and 50% private/informal sector; health 40.7%, national government, 42.2% county and 10% private/informal sector respectively; Education, 43.8%, 37.6% and 16.3% respectively. On support to livelihoods, a SEC member in Munyaka focus group discussion said that:

*“The County has planned to build a market and a health centre. However, the County always promises but no action. The Municipal Council built the Munyaka primary school. There is no government health facility in the settlement, only private clinics. Individuals build their housing most people are in self -employment. There are some self-help groups mainly merry go rounds for women groups that help women with loans”.*

**Community participation:** The study established that a majority, 49.1%, indicated that they participated in the process of acquisition of secure tenure especially in the purchase of the land. Similarly, there was community participation in the upgrading of infrastructure. According to the focus group discussion, the Settlement Executive Committee represented the people in the project but the challenge was that some community priorities, such as the sewer line, was not implemented but instead ablution blocks were built which have never been used because they are incomplete and they are not well located.

**Collaboration and coordination:** Data analysis showed that there was a limited collaboration between the various institutions involved in the acquisition of tenure security, infrastructure provision and livelihoods improvement in Munyaka. For tenure, 84.7% indicated that collaboration was limited between the government, the land buying company and the Municipal Council. However, the land buying company, according to focus group discussions engaged the government when they were subdividing the land. The planning and survey were approved by the municipal council but the process has taken too long. For infrastructure, however, the government was in control. Both the national and county government worked together but the specific agencies sometimes worked at cross purposes.

Coordination of the institutions in Munyaka, on the other hand, was indicated at 50.8% no coordination and 49.2% coordination. Unlike Huruma the land buying company worked with the

municipal council and the Ministry of Lands in undertaking proper subdivision. Though the tenure securing processes were undertaken much earlier, the clear spatial layout of the settlement showed clear and wider wayleaves for public services such as roads of access, unlike Huruma and Kamkunji which was characterized by narrow wayleaves. However, despite this, delays were still experienced. According to an opinion leader and Settlement Executive Committee member

*“The farm directors bought and subdivided the land and sold to shareholders. Later in the 90s, the ministry prepared a subdivision plan which up to now is with the Ministry of Lands and the National Land Commission in Nairobi and we don’t know what is happening.”*

Similarly, on infrastructure, according to a SEC member, during the focus group discussions,

*“Sometimes the various agencies that were providing infrastructure did not collaborate very well. For example, water provision in Munyaka was provided when the roads had been paved and the water agency had to cut the tarmac road. This was not good”.*

**Power and control:** In Munyaka, according to findings, the land buying company was influential in tenure processing. According to a community opinion leader, *“the farm directors directed and controlled the buying and subdivision of the land and they required people to pay and when the Government came in, they required further payments”*. People would be issued with share certificates only when they completed the payments. The state on the other hand, by virtue of their legal mandate, was influential in formal tenure processes of planning and survey of the settlement executed through its offices at the local level.

On infrastructure, the government, according to the community, oversaw the funding, procurement of contractors and construction of infrastructure in Munyaka settlement that included roads, drains, lighting, water and sanitation. However, it was indicated that it was the National rather than the County government, controlled the funding and the process. This explains the statistics from the household survey, where 72.9%, indicated that National government had more power and control concerning upgrading interventions attributed to more resources indicated by 30.8% and more authority, 21.2% on the issues of tenure security and infrastructure improvement. The community representatives (Settlement Executive Committee) though instrumental in facilitating community participation, some of them, according to an

opinion leader in the settlement, used their positions to influence the location of high mast lighting and even hiring of their kin during the construction of works. On livelihoods, however, the community and individuals made their efforts to provide for themselves.

### **6.3.3 Institutional dynamics in Kamkunji Settlement: Government, land buying and community-driven**

**Institutions and their role:** Data obtained from field survey showed that institutions that undertook upgrading in Kamkunji settlement were mainly government agencies but with significant land buying and community participation. The institutions that facilitated land ownership were given as Ministry of Lands, the former Eldoret Municipal Council and land buying company. The community organization (Uasin Gishu farmers land buying company) were instrumental in land acquisition indicated by 47.5% but the Ministry in charge of Lands was the key institution that provided titles indicated by 45.5%. Other roles played by the Ministry were given as planning 50% and Surveying 50%.

Government institutions upgraded infrastructure in Kamukunji. Roads, walkways and stormwater drainages were attributed to national government indicated by 75%. Electricity provision was attributed to Kenya Power Company although the National government had a role indicated by 27.5%. The county institutions provided mainly water (ELDOWAS) indicated by 70% and sanitation indicated by 67.5% and to lesser extent roads, footpath and drainages indicated by 25%. Other notable institutions involved in the upgrading were given as Community Organizations indicated by 15.0%, Non-governmental Organizations, 5.0%, the Development Partners with 7.5% and the Civil Society 5.0%.

On livelihoods, data showed that both the National and County Governments supported livelihoods though minimally. On employment, 31.4% indicated National Government, 25.7% County Government, 11.4% informal sector; housing 23.3% national, 11.7% county and 65% private/informal sector; health 51.4%, 29.7% and 10% respectively; Education, 50%, 45% and 16.3% respectively.- However, according to focus group discussions held in Muniyaka settlement, the support to livelihoods is minimal. An opinion leader, during the group discussions, indicated that;

*“There are no health and education facilities in the settlement and residents rely on the nearby public schools. People themselves construct houses and employment is mainly in the informal sector and self-employment. Businesses are self-driven but many traders face harassments from the government”.*

This was corroborated through field observations, especially noting that Kamkunji is a small settlement, it was observable that no public health facility existed in the settlement. Further, the physical development plans for the town did not depict a health public utility user.

**Community participation:** Similarly, the study established that a majority of 66.7% indicated that they participated in the process of acquisition of security of tenure especially land acquisition. Participation was also in the form of each beneficiary following up for their ownership documents with the company directors. On infrastructure, however, the Settlement Executive Committee member, during focus group discussion, said that they were elected by the community to represent them in the government upgrading project in the settlement. They participated in choosing the priority infrastructure, enumeration and solving disputes in the settlement.

**Coordination and collaboration:** On the coordination of institutions in these settlements upgrading interventions, however, the majority 55%, unlike Huruma and Munyaka, indicated that there was coordination in the provision of tenure and infrastructure while 45% indicated that there was no coordination. This was attributed to the collaboration between the state, the land buying company and the community members. However, in areas of non-coordination, especially between tenure security and infrastructure provision institutions, the adverse effects included demolitions to make way for infrastructure development indicated by majority 54.5% while 27.3% indicated that there was encroachment or total lack of land available for infrastructure development while 18.2% indicated that there was delayed infrastructure development.

**Power and control:** Tenure security in Kamkunji was mediated by a powerful land buying company namely, the Uasin Gishu Land Buying Company, according to the focus group discussions held in Kamkunji settlement. The company mobilised member’s resources to acquire Kamkunji land and other parcels of land in Eldoret. They also influenced the municipal council to construct the main road running through the settlement, worked with the municipal council



and ministry of lands to do proper subdivision and championed the inclusion of the settlement in the third urban project supported by the World Bank. Unlike the other land buying companies, they initially involved all the 100 members in their deliberations on subdivisions, sizes of plots, member's contributions and they held annual meetings where farm directors briefed the members on various issues about the land. However, with time this ceased leaving members at the hands of the increasingly powerful directors some of who sold out portions of land set aside for public utilities.

On infrastructure, like in the case of Huruma and Munyaka, the government was the sole provider but according to community opinion leaders and group discussions, the World Bank-funded the infrastructure that was newly constructed in the settlement. The National government procured the contractors that did the construction of the roads, drainage, water and sanitation facilities. This arrangement, according to a key informant in the County Government, was initially contested by the County Government since these were county functions. The community participated through Settlement Executive Committee which according to some opinion leaders, did not fully represent the interests of the community since some of them became employees of the contractor, presenting a conflict of interest.

The institutional dynamics of tenure, infrastructure and livelihoods in the three case study settlements of Huruma, Munyaka and Kamkunji looked at from the roles, coordination, collaboration and the power and control, were mediated by existing policies and legal frameworks which are discussed in the next section.

## **6.4 Policies, legal framework and programs**

The research found that there are policies and legal frameworks that guided upgrading of the three informal settlements of Huruma, Munyaka and Kamkunji as shown in table 6.1. Each of these is subsequently discussed separately.

Table 6.1: Net-Map showing policies, legal framework and upgrading programs

	<b>Huruma</b>	<b>Munyaka</b>	<b>Kamkunji</b>
<b>Policies</b>	<ul style="list-style-type: none"> <li>• Kenya Vision 2030</li> <li>• National Land Policy</li> <li>• National Slum Upgrading and Prevention policy</li> <li>• National Housing Policy</li> <li>• National Urban Development Policy</li> <li>• Integrated National Transport Policy</li> <li>• Energy Policy</li> </ul>	<ul style="list-style-type: none"> <li>• Kenya Vision 2030</li> <li>• National Land Policy</li> <li>• National Slum Upgrading and Prevention policy</li> <li>• National Housing Policy</li> <li>• National Urban Development Policy</li> <li>• Integrated National Transport Policy</li> <li>• Energy Policy</li> </ul>	<ul style="list-style-type: none"> <li>• Kenya Vision 2030</li> <li>• National Land Policy</li> <li>• National Slum Upgrading and Prevention policy</li> <li>• National Housing Policy</li> <li>• National Urban Development Policy</li> <li>• Integrated National Transport Policy</li> <li>• Energy Policy</li> </ul>
<b>Legal framework</b>	<ul style="list-style-type: none"> <li>• Constitution of Kenya</li> <li>• Water Act 2016</li> <li>• County Government Act, 2012</li> <li>• Land Act of 2012</li> <li>• Land Registration Act of 2012</li> <li>• National Land Commission Act, 2012</li> <li>• Urban Areas and Cities Act-2011</li> <li>• Occupational Health and Safety Act (OSHA 2007)</li> <li>• The Public Health Act (Cap.242)</li> <li>• National Transport and Safety Authority Act</li> <li>• EMCA 2015</li> <li>• Public Roads and Roads of Access Act</li> <li>• Physical Planning Act, 1999</li> <li>• Survey Act, cap 299- 1961; revised 2012 edition</li> </ul>	<ul style="list-style-type: none"> <li>• Constitution of Kenya</li> <li>• Water Act 2016</li> <li>• County Government Act, 2012</li> <li>• Land Act of 2012</li> <li>• Land Registration Act of 2012</li> <li>• National Land Commission Act, 2012</li> <li>• Urban Areas and Cities Act-2011</li> <li>• Occupational Health and Safety Act (OSHA 2007)</li> <li>• The Public Health Act (Cap.242)</li> <li>• National Transport and Safety Authority Act</li> <li>• EMCA 2015</li> <li>• Public Roads and Roads of Access Act</li> <li>• Physical Planning Act, 1999</li> <li>• Survey Act, cap 299- 1961; revised 2012 edition</li> </ul>	<ul style="list-style-type: none"> <li>• Constitution of Kenya</li> <li>• Water Act 2016</li> <li>• County Government Act, 2012</li> <li>• Land Act of 2012</li> <li>• Land Registration Act of 2012</li> <li>• National Land Commission Act, 2012</li> <li>• Urban Areas and Cities Act-2011</li> <li>• Occupational Health and Safety Act (OSHA 2007)</li> <li>• The Public Health Act (Cap.242)</li> <li>• National Transport and Safety Authority Act</li> <li>• Emca 2015</li> <li>• Public Roads and Roads of Access Act</li> <li>• Physical Planning Act, 1999</li> <li>• Survey Act, cap 299- 1961; revised 2012 edition</li> </ul>
<b>Upgrading Programs/ Projects</b>	<ul style="list-style-type: none"> <li>• European Union market upgrade</li> <li>• LATIF road construction</li> <li>• Municipal Council water and sewer upgrading</li> <li>• Ministry of Lands tenure regularization</li> <li>• Kenya power consumer connections</li> <li>• KENSUP construction of Huruma Primary School</li> <li>• Kenya Informal Settlement Improvement Project- Roads, walkways, water and sanitation, stormwater drainage, high mast lighting</li> </ul>	<ul style="list-style-type: none"> <li>• ELDOWAS water provision</li> <li>• Ministry of Lands tenure regularization</li> <li>• Kenya power consumer connections</li> <li>• Kenya Informal Settlement Improvement Project - Roads, walkways, water and sanitation, stormwater drainage, high mast lighting</li> </ul>	<ul style="list-style-type: none"> <li>• Amref sanitation (toilets)upgrade</li> <li>• Third Urban Program (Road, water drains, piped water, solid waste and electricity)</li> <li>• ELDOWAS water provision</li> <li>• Ministry of Lands tenure regularization</li> <li>• Kenya power consumer connections</li> <li>• Kenya Informal Settlement Improvement Project- Roads, walkways, water and sanitation, stormwater drainage, high mast lighting</li> </ul>

Source: Research data 2016

### **6.4.1 The policy framework**

From documents and key informant interviews, it emerged that the upgrading of the three-case study informal settlements was based on existing policies which have made direct and indirect provisions on upgrading. Key among them was the Kenya Vision 2030 development framework whose objective was to transform the country into “a newly-industrializing, middle-income country providing a high quality of life to all its citizens in a clean and secure environment” (GoK, 2012). Specifically, it provides for securing and servicing urban land including slums.

The National Land Policy concisely provides for “efficient, sustainable and equitable use of land for prosperity and posterity” (GoK, 2009) and recommends recognition and improvement of slums and informal settlements. The National Housing Policy also requires upgrading of the same as one of the strategies to meeting the demand for housing arguing for the prioritization of “in-situ upgrading” with minimal displacement through “proper planning and provision of necessary infrastructure and related services”. The policy further outlines the role of various actors in the improvement of informal settlements emphasising the need to fully involve the local communities. The National Urban Development Policy equally recommends security of tenure in slum areas and provision of social and physical infrastructure in urban areas but under a decentralized system of government.

The National Slum Upgrading and Prevention Policy of 2016 is considered the mother policy framework for upgrading informal settlements and preventing the emergence of new ones with a key recommendation to provide infrastructure and tenure security, planning and environmental protection, promotion of livelihoods including security and safety, shelter and housing while facilitating the participation of all stakeholders.

Other policies that have a bearing on informal settlements include the energy policy which gives KPLC virtual monopoly in power transmission and distribution. National Policy on water resources and management provides a framework for Water Resources Management, Water and Sewerage Development, Institutional Framework and Financing of the Sector. It emphasized water programmes that have a direct impact on the vulnerable sections of society. Integrated

National Transport Policy of 2012 provides a framework to develop, operate and maintain an efficient, safe, cost-effective, secure and integrated transport system including roads and “Non-Motorized. Policies that touch on livelihoods include employment, housing, health and education.

In conclusion, it is clear that policy recommendations are comprehensive and tackles most of the critical areas but the key challenges lie in the lack of an integrated institutional framework that harmonises these highly sectoral policies and the costs of implementation. For sustainability, there is a need for holistic, integrated and multisector approaches towards policy formulation and implementation.

#### **6.4.2 Legislative Context**

From key informants and existing literature, upgrading of Huruma, Munyaka and Kamkunji was based on the vast existing legal frameworks starting with the Constitution of Kenya, (2010) that provides for; tenure security where every person has been given “the right to, acquire and own property of any description and in any part of the country either individually or in association with others” and the state has no right to deprive such a person. It also makes provisions on infrastructure such granting “every person the right to the highest attainable standard of clean and safe water in adequate quantities” and on livelihoods rights to health, adequate food, adequate housing, social security and education and rights to equality and freedom from discrimination.

Based on this broad framework, specific legislations have been enacted that have provided further legal frames for upgrading. On tenure security, the Land Act 2012 is a foundational law governing land management and administration in Kenya. “It categorizes land in Kenya into public, community and private” and provides forms of tenure in Kenya which include freehold, leasehold, partial interests and customary land rights all of which have equal recognition and enforcement of land rights and non-discrimination in ownership of, and access to land under all tenure systems. The Land Registration Act 2012 which facilitates security of tenure through registration of land and gives registered persons absolute ownership with all rights and privileges. The National Land Commission Act, 2012 that created the National Lands Commission “to manage public land on behalf of the National and County Governments, to

monitor and have oversight responsibilities over land use planning throughout the country” and alienate public land, among others. This Act was a source of conflict between the National Government and the Commission in regards to functions and powers. The Urban Areas and Cities Act-2011 that is a framework for integrated development planning and a basis for the provision of services. The Physical and Land Use Planning Act, 2019 that “provides for the planning, use, regulation and development of land,”. The two acts have parallel provisions on what type of plans should cover use and development of land with the former providing for integrated urban areas and city development plans while the latter provides for Physical and Land Use plans with overlapping scope. The Survey Act, cap 299, makes provision for surveys of land for purposes of registration of transactions in or of title to land. It provides for beaconing to define boundaries of any holding or land and the same should be shown on the plan

On Infrastructure, some of the legislations that influenced upgrading included the Water Act 2016 that “provides for the regulation, management and development of water resources, water and sewerage services”. The Act vests the function of developing water and sanitation infrastructure (sewerage and water supply) to counties. It establishes 5 agencies; the Water Resources formulates and enforces standards, procedures and regulations; the National Water Harvesting and Storage Authority undertakes the development of national public waterworks for storage and flood control; The Water Works Development Agencies undertake the development, maintenance and management of the national public waterworks within its area of jurisdiction; The Water Services Regulatory Board whose principal object is to protect the interests and rights of consumers in the provision of water services and the Water Sector Trust Fund to assist in funding and administration of water services in marginalized areas including poor urban areas. Though the act aligned the water sector functions of National and County Government to the devolved structure of government, it has been argued that challenges of duplication of roles, conflict and inadequate funding still mar the sector.

Other legislation that guides infrastructure include the Occupational Health and Safety Act of 2007 that provides the occupational health and safety guidelines to guide constructions; The Public Health Act (Cap.242) which provides guidelines on the management of all wastes (Liquid and Solid Wastes); The Environmental and Management Coordination Act of 2015 which “is the framework law on environmental management and conservation” administered through four

regulations, namely EMCA (Waste Management) Regulations of 2006 Legal Notice No. 121; EMCA (Water Quality) Regulations, 2006 Legal Notice No. 120; EMCA (Noise and Excessive Vibration Pollution) (Control) Regulations of 2009 Legal Notice No. 61 and EMCA (Air Quality Regulations 2014).

On the road sector, the government enacted several legislations to fit the devolution structure in the management and construction of roads. Among them: The Public Roads and Roads of Access Act (Cap 399) which mandates boards to receive and approve an application to construct roads of access, notification of affected landowners and registration of such roads; The Kenya Roads Board Act, which establishes the Kenya Roads Board whose function is “to coordinate the implementation of programmes relating to the maintenance, rehabilitation and development of the road network and provides for the establishment of the Kenya National Highways Authority, the Kenya Urban Roads Authority and the Kenya Rural Roads Authority”. The National Transport and Safety Authority Act No. 33 of 2012 which provide “for the establishment of the National Transport and Safety Authority” to advise, plan, manage, regulate and implement policy; the County Government Act, 2012 provides “for county governments' powers, functions and responsibilities to deliver services”. However despite the benefits, challenges of overlapping mandates, disputes on control and unclear responsibilities have led to confusion, poor coordination and a lack of co-operation between the different actors thus undermining the efficiency of the sector (ODI, 2016)

On livelihoods, the guiding legal framework is strewn across various legislations. Among them the Employment Act of 2007 which “declares and defines the fundamental rights of employees, basic conditions of employment of employees”. The Health Act, which establishes a unified health system, regulation of health care service, health products and health technologies facilitates equitable and highest attainable standard of health services to all persons in Kenya including vulnerable groups. The Basic Education Act that promotes and regulates free and compulsory basic education.

In conclusion, the legislative frame is wide-ranging. However, they are sectoral and though they provide for some form of consultation with other stakeholders, they are sector-specific. This explains the sectoral approaches to upgrading witnessed in the three settlements of Huruma,

Munyaka and Kamkunji. Secondly, laws and practice are inconsonant. For example, whereas the constitution provides for rights to tenure security, services and even livelihoods to all, the research showed that this is not entirely the case – some people have still missed out. Horn et al., (2018) argue that efforts by governments to improve existing situations through legislative reform fall short because “there remains a gap between legal discourse and practice, particularly in contexts where the government is under-capacitated, lack adequate resources and/or follow different political priorities”. The other issue is the duplication of tasks resulting from overlapping functions assigned to different agencies by these laws. Mwangi, (2017) argues that this is an issue that causes processes to be marred by technicalities which lead to litigations.

### **6.4.3 Upgrading programs and projects**

The study found that there have been various upgrading projects in the three settlements of Huruma, Munyaka and Kamkunji as shown in table 6.1.

**Huruma settlement**, according to Focus Group Discussions and key informants, had undergone several stand-alone upgrading activities as discussed in chapter four, sections 4.3.2 and 4.4.1. In the 70s through to 90s upgrading in the settlement included the provision of a market in settlement funded by European Union, construction of one road in the settlement by the defunct Eldoret Municipal Council through Local Authority Transfer Fund (LATIF), provision of water and sewer line though few connections were realised while Kenya power provided electricity and consumer connections to those who could afford. In the late 90s, the state regularised the settlement through planning, subdivision/surveying and registration of titles, essentially granting ownership to the owners who hitherto held share certificates.

However, according to the community, the key upgrading projects were undertaken in recent years under KENSUP and KISIP projects discussed in chapter two, section 2.3 on upgrading approaches in Kenya. KENSUP upgraded Huruma primary school by replacing the old dilapidated mud-walled classrooms with a modern two-storey stone building with inbuilt flush toilets which, however, according to the Headteacher were not in use due to lack of water in the settlement. KISIP, on the other hand, provided more comprehensive upgrading that included the

construction of roads, stormwater drains, footpaths, high mast lighting and restoration of the dilapidated sewer line and connections.

**Munyaka settlement** experienced the same stand-alone upgrading activities in the earlier years as presented in chapter four, section 4.3.2 and 4.4.2. In the 90s there were water and electricity provisions undertaken by ELDOWAS and Kenya Power Company respectively but this was at different times in a few areas of the settlement. The tenure upgrading from the interim share certificates to titling commenced in the early 80s continued through the 90s and was yet to be completed. Like Huruma, the settlement was upgraded more comprehensively in recent years under the KISIP. Through this project, roads, walkways, water and sanitation (ablution blocks), stormwater drainage, high mast lighting was provided.

**Kamkunji settlement**, on the other hand, benefitted from a World Bank-funded Third Urban Project in the 80s that comprised upgrading of the main artery to bitumen standard, water drains, piped water and sanitation (sewer), solid waste and electricity but these were limited in scope and area. Earlier there had been attempts at improving sanitation (toilets) with support from Amref though the community indicated that it was not popular since it required cost-sharing. Formal tenure upgrading was undertaken in the mid-90s that culminated in titling the subdivided plots as discussed in section 4.3.3. KISIP project came in the years 2012-2016 and upgraded the dilapidated roads, footpaths, drainages, water and sewerage as discussed in section 4.4.3.

The key actors in these upgrading programs and projects are discussed in the next section.

## **6.5 Key actors in tenure- infrastructure- livelihoods nexus**

The state, the land buying companies and the people were the key enablers in the tenure, infrastructure and livelihoods improvements in all the three case study settlements of Huruma, Munyaka and Kamkunji. However, on the flip side, they can be a constraint. They therefore influence and control the nexus of these interventions as shown in figure 6.1 below. All the actors have their processes as shown in the second column. These processes yield an outcome, shown in the third column with attendant challenges in the fourth column and lastly the potential for synergy, collaboration in the last column and therefore integration in upgrading



Table 6.2: Netmap showing institutional Actors: Their processes, outcomes, challenges and potentials for integration in upgrading

Actors	Process			Outcomes	Challenges	Potential for integration in upgrading
	Tenure	Infrastructure	Livelihoods			
<b>People</b>	<ul style="list-style-type: none"> <li>• Purchase land</li> <li>• Ownership document</li> <li>• Settle on the allotted plot</li> </ul>	<ul style="list-style-type: none"> <li>• Identify needs and priorities for the settlement</li> </ul>	<ul style="list-style-type: none"> <li>• Mainly informal employment</li> <li>• Small scale Businesses</li> <li>• Shelter/Housing</li> <li>• Assets</li> </ul>	<ul style="list-style-type: none"> <li>• Improved livelihoods</li> <li>• economic activity in settlements</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of resources limits their power and control</li> <li>• Inadequate capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitates ownership of upgrading through mobilizing communities</li> <li>• Bottom-up approaches</li> </ul>
<b>Land buying Company</b>	<ul style="list-style-type: none"> <li>• Willing buyer willing seller</li> <li>• Purchase land through pooling resources</li> <li>• Informally subdivide</li> <li>• Issue share certificates</li> <li>• Submit to the government for formal processes of acquiring title</li> </ul>	<ul style="list-style-type: none"> <li>• Minimal infrastructure especially mud roads and borehole for water done through community efforts</li> </ul>	<ul style="list-style-type: none"> <li>• Land asset provided a place to occupy</li> <li>• Minimal business in the beginning</li> </ul>	<ul style="list-style-type: none"> <li>• Intermediate tenure</li> <li>• sprawling temporary housing</li> <li>• lack of public utility spaces due to reallocation</li> </ul>	<ul style="list-style-type: none"> <li>• Share certificates not adequate to guarantee tenure and cannot be used as collateral</li> <li>• Haphazard Development</li> <li>• Lack of infrastructure</li> <li>• Inadequate capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Mobilizing resources to purchase land to settle the poor</li> <li>• Injecting private capital in upgrading</li> </ul>
<b>State</b>	<ul style="list-style-type: none"> <li>• Tenure regularization according to existing policy and legal framework that includes several processes including <ul style="list-style-type: none"> <li>• Planning</li> <li>• Survey</li> <li>• Valuation</li> <li>• Registration</li> <li>• Title</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Baseline surveys</li> <li>• Engineering Designs</li> <li>• Bidding documents</li> <li>• Advertisement</li> <li>• Evaluation of bids and award of the tender</li> <li>• Contractors</li> <li>• Relocation</li> <li>• Construction</li> <li>• Operation</li> <li>• Maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Minimal direct livelihood support</li> <li>• Indirect livelihood support through tenure regularization and infrastructure provision</li> </ul>	<ul style="list-style-type: none"> <li>• Legal tenure security- the highest form of security</li> <li>• Improvement of living conditions through infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Long, complex and expensive</li> <li>• Silo sectoral approaches</li> <li>• Neglect of livelihoods</li> <li>• Top-down approach</li> <li>• Limited resources lead to limited coverage of the settlements</li> </ul>	<ul style="list-style-type: none"> <li>• Provide policy and legal framework</li> <li>• Provide funding</li> <li>• Leverage funding from International institutions</li> <li>• slum upgrading</li> <li>• Top-down approach can complement the bottom up</li> </ul>

Source: Author

Each of these is discussed below with a focus on their approaches and challenges to tenure security, infrastructure and livelihoods improvement.

### 6.5.1 State Actors

In this study, the state actors include all state agencies at the National and the County level that had a significant role in tenure security, infrastructure and livelihoods improvement. From study findings, the state played a role in these in the three case study settlements as illustrated in figure 6.3.

*Table 6.3: Role of state actors in tenure, infrastructure and livelihoods improvements*

	<b>Huruma</b>	<b>Munyaka</b>	<b>Kamkunji</b>
<b>Tenure</b>	Land administration and management including Titling (complete)	Land administration and management including Titling (Titling was still in process)	Land administration and management including Titling (complete)
<b>Infrastructure</b>	Provision of roads, walkways, drainage, lighting, water and sanitation	Provision of roads, walkways, drainage, lighting, water and sanitation	Provision of roads, walkways, drainage, lighting, water and sanitation
<b>Livelihoods</b>	1 primary school (Huruma)	1 primary school (Munyaka)	-

*Source: Field Data 2016*

From the table above the state actors were instrumental in tenure security through titling processes in the three settlements which were completed in Huruma and Kamkunji but were still ongoing in Munyaka. The state also upgraded infrastructure but interventions on livelihoods were limited to only education facilities but interventions on capabilities and economic activities were inadequate. These state interventions were deployed through varied processes as discussed in the section below.

**Tenure security approaches:** In all the three informal settlements of Huruma, Munyaka and Kamkunji, the state took a legal approach to tenure security. The Ministry of Lands was the primary mover and it entailed land administration and management tenure processes that culminated in the issuance of titles. Formal land administration activities in Kenya are largely restricted to government departments in the Ministry of Lands (Kameri-Mbote, 2016, Siakilo, 2014).

In the three case study settlements, the land administration and management processes included subdivision of land involving planning and surveying of the settlement and eventual issuance of titles to respective plot owners mainly in Huruma and Kamkunji. For Munyaka, titles had not been issued at the time of field survey, as explained in chapter four.

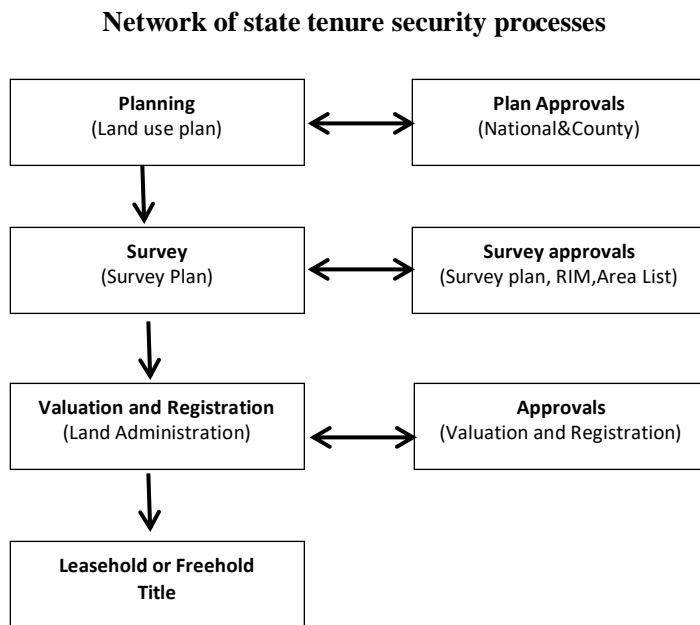


Figure 6.2: Netmap showing the state tenure security processes Source: Author

Figure 6.2 is a simplified tenure process undertaken by the state, picking up from the land buying companies who had initially undertaken their irregular subdivisions. The Physical Planning Department prepared the subdivision plans. Thereafter the same was circulated to various government agencies, including the Land Control Board and the Municipal Council for approval. Various fees were charged for these processes. According to dwellers of the settlement, these processes took a very long time. Once approved, the subdivision plans were submitted to the Lands office for further approval before the survey was undertaken. The land-buying companies were subsequently required to engage qualified surveyors to survey the plots and public utilities according to the approved subdivision plan. Fees were charged per plot. From field research data, this cost was transferred to the plot owners including the cost of the registered private surveyors. The survey plan together with the approved subdivision plan would be submitted to the Commissioner of Lands. Subsequently, the owners were required to surrender the old title, subsequently the Ministry, before submission to the registry to undergo registration process and

production of individual plot titles, did the valuation. All these were done after the payment of prescribed fees. These processes were completed for Kamkunji and Huruma after several years. For Munyaka, 35 years later the process is not complete.

According to findings of this study, the majority of the dwellers received their titles, their tenure was therefore secured, and the plot owners got the confidence to invest and improve their houses as discussed in chapter four and five. Although the titling provides the highest form of secure tenure, the key challenges are the silo approaches, bureaucratic, lengthy, costly and complex land administrative processes. As pointed out the existing laws during this period were numerous and complex resulting in very complex processes of administering tenure security (World Bank, 2016). At the time, according to key informants, over 75 laws were dealing with land administration and management. This together with various uncoordinated and sometimes conflicting institutions and the existence of a dual land regime system made land administration complex and ineffective.

For dwellers of the Huruma, Munyaka and Kamkunji, this resulted in further informal subdivisions and transactions and for some loss, reallocation or reduction of plot sizes by land buying company directors as the pressure for land and housing in the settlements continued to rise. As found out by other researchers, bureaucracies and procedures of the state are used by certain persons for their benefit (Peters, 2004).

For Munyaka the titling journey was not yet over. This was accentuated by institutional conflicts and power games between the Ministry of Lands and the National Land Commission. Constitutional changes made in 2010 ushered in a new institutional framework in land management and administration. It occasioned a transfer of several functions and powers, previously assigned constitutionally and legally to the centralized and overly bureaucratic Ministry to the County Governments and the National Land Commission. Subsequent new land laws, according to key informants, though they amalgamated the numerous laws, created misunderstanding in the powers and functions of these institutions. For a long time, therefore, the Ministry and the National Land Commission engaged in wrangles and power struggles on functions and roles especially on issues of land registration, survey, planning, adjudication and settlement.

These institutional conflicts and power play served to delay and exasperate efforts to complete tenure security in Munyaka. For example, this study found out during research, from Focus Group Discussions and key informants that in the case study settlement of Munyaka, titles have not been issued even though the relevant documentation that includes approved subdivision /advisory plan and survey, the area beneficiary list had been forwarded to the Ministry. Due to lack of clear roles and conflicts between the Ministry and NLC, these ownership documents have remained pending for the last four years.

The approach to tenure security by the state actors offers the ultimate legal (de jure) security but is constrained by complex, lengthy bureaucratic processes and silo approaches that complicate rather than facilitate tenure security. Professionals were found to be both enablers and constraint in this.

**Tenure professionals:** Professionals, from various fields, administer the functions of the state institutions. These include planners, surveyors, land administrators and management, lawyers, valuers, GIS specialist and cartographers.

According to the findings of this research, the key challenges presented by the professionals in tenure security regimes were mainly two-fold- the professional neglect and bureaucracy- both of which are costly and serve to constrain attainment of tenure security for many. The land professionals, through professional neglect or use of unqualified personnel, aided some of these. The bureaucracy arises from the silo and uncoordinated approach pursued by land professionals aided by existing institutional policy frameworks and legislations. The challenge is that several authorities play a role in the process of recognizing, recording, registering and managing the land tenure, and they may each maintain their own land information sets (Lemmen,2018) leading to long, complex and costly processes of securing tenure. Also, the several professionals that include planners, surveyors, cartographers land administrators, valuers and lawyers increase costs, complexities and delays all of which make the attainment of security of tenure a mirage for many.

This has led to other scholars arguing that security of tenure is a notion that is less about title and registration systems and one that emphasizes the need for functioning and transparent legal

systems that benefit from a government that adjudicates fairly in the broad public interest (Ellsworth, 2002).

**Infrastructure state provisioning:** According to the findings of this study, the government provides infrastructure. The data showed that the National Government provided roads, storm drains, walkways and electricity while County government provided water and sanitation. Other key institutions that played a role in provisioning are specialized government agencies such as Kenya Power (KPLC) and Eldoret Water and Sewerage Company that provided electricity and water and sanitation respectively. This compares with findings and arguments of other scholars who have argued that infrastructure is a public good and the key actor is the government (Adebayo and Iweka, 2014, Estache and Fay, 2009, Gulyani and Talukdar, 2008).

However, in the case study settlements of Huruma, Munyaka and Kamkunji, there was a clear indication from the community that the International Institutions such as the World Bank were supporting the government in the implementation of the upgrading project. From key informants, the upgrading of roads, walkways, drainages, high mast floodlighting, water and sanitation was being undertaken with funding from three international agencies namely the World Bank, Agence Française de Développement and Swedish International Development Cooperation Agency. There was also mention of the European Union having aided in building a market in Huruma settlement. Other scholars have acknowledged the important role of international institutions in supporting improved urban services (Stren, 2014). However, as evidenced in the three case study settlements, the infrastructure menu was limited and the needs were far greater than the combined support of the international agencies could achieve.

Community participation was significant in upgrading as discussed in the section on the role of the people. Civil society and NGOs had a minimal role in infrastructure upgrading. According to a key informant an official with County Government of Uasin Gishu community representatives in the settlements, there were no civil society organizations or Non-Governmental Organizations that were providing infrastructure in the settlement only those who engaged in education and awareness creation on various aspects.

**Infrastructure state approaches:** Government institutional approach to infrastructure provisioning was mainly through public procurement of services. Public Procurement and

Oversight Authority, defines public procurement as the purchase of commodities and contracting of construction works and services if such acquisition is effected with resources from state budgets or foreign loans guaranteed by the state, foreign aid as well as revenue received from the economic activity of the state. The items involved in public procurement range from simple items or services to large commercial projects such as the development of infrastructure including roads, power stations and airports (GOK,2009).

In this study, it was established from focus group discussions in the three case study settlements of Huruma, Munyaka and Kamkunji that infrastructure works were undertaken by contractors. According to existing literature, infrastructure in these settlements that were undertaken in 2014-2016 was done through a six-point approach. These were; initial discussions with the settlement; a socio-economic survey in the settlement; Community Development Plan; infrastructure upgrading plan; conceptual design and feasibility studies for the prioritized infrastructure; detailed design and tender documentation; Carry out Environmental Impact Assessment, Resettlement Action Plans and Environmental Management Plans; Construct the prioritized infrastructure (through contractors but in cooperation with the community (GOK, 2011). Key informants, in the Ministry of Transport, Infrastructure, and Housing and Urban Development, corroborated this information as they substantiated that the World Bank supported these infrastructures and therefore the procurement processes followed World Bank procurement guidelines.

**Challenges:** This approach, however, was not without challenges. In Huruma, a member of the Settlement Executive Committee, during focus group discussion, pointed out that the earlier improvements were undertaken in the 80s and 90s such as sewer and water adding that there was no community participation during this period. As a result, and up to date, some of the facilities have never functioned adequately and some people had not connected to them. On the new improvements, community consultations were not regular leading sometimes to mistrust and conflict. Further, there was a lack of coordination due to the sectoral orientation of the institutions providing infrastructure. According to the focus group discussion, a landowner and opinion leader in the settlement pointed out that;

*“Institutions are not working together. For example, once you pay, Kenya Power comes and fixes for you the electricity without following any plan. Water also they come and fix*

*the pipe when someone has paid and the pipe could be crossing the road. There was no consideration for the future. There is also competition for space by various companies for example water, electricity, sewer and the roads”.*

Other institutional challenges pointed out by key informants in the County Government of Uasin Gishu were related to devolution. Some infrastructure development and management are among those that were devolved to the Counties. However, according to study findings, the National Government was still engaged in some of these resulting in duplications and conflicts amongst these institutions. According to a key informant at the County Government of Uasin Gishu;

*“There are various government institutions and agencies, both National and County facilitating upgrading of the settlements. There is, however, lack of policies and legislative frameworks that encourage interplay of these institutions e.g. under provision of water, there are several institutions namely State Department of Water and Irrigation, Water Resource Management Authority (WARMA), Water Services Regulatory Authority (WASP), National Environmental Management Authority (NEMA), Water Resources Users Association (WRUs), Water Group Associations (WGA) CSOs in the water sector and other water-related agencies- there are conflicting mandates. There is also conflict between WARMA and County Government”.*

The constitution of Kenya 2010, under schedule four, devolves water and sanitation provision as a function of the County Government. However, according to the County official, these functions had not yet been aligned to this with much of the provision being undertaken by the National Government, outside the control of counties. According to the findings of this study, the National Government through Kenya Informal Settlement Improvement Project (KISIP) provided water, in Munyaka settlement through the Lake Victoria North Water Services Board and not ELDOWAS. This duplication of responsibilities between the two levels of government and agencies was also noted in the transport sector. According to the Constitution of Kenya 2010, the responsibility for managing the National Trunk Roads is vested in the National Government and that of managing County Roads to County Governments. The constitution, however, does not identify these roads thus causing confusion. Also, according to a key informant, various other agencies managed roads in Kenya including the Kenya Roads Board, Kenya National Highways Authority, Kenya Rural Roads Authority, Kenya Urban Roads Authority and Kenya Wildlife Service. This means higher coordination costs and unclear responsibilities. Other scholars have argued that various infrastructure systems tend to be planned and implemented individually, in isolation from each and rarely do these different efforts converge (Thieme and Kovacs, 2015). These isolationist approaches are unsustainable.



According to literature, lack of technical capacity in the county governments has undermined their ability to take over the devolved functions though there is a registered improvement (GOK, 2013). According to key informants, the existing institutional framework is weak and non-responsive. The County government was yet to develop a framework for policy implementation. This lack of clear institutional framework, policies and legal frameworks resulted in weak linkages with inherited legal and institutional frameworks from the defunct local governments and the county governments' statutes. This had made the transition challenging.

**Livelihoods and the state:** Unlike tenure security and infrastructure that were provided by the state, livelihoods were people specific with little direct support from the government. It has been argued, however, that the situation of poor households is determined not just by their resources but by the economic, social and political context in which they live-global and local economic forces, social and cultural change, policy and government action (Lloyd-Jones and Rakodi 2002). People living in informal settlements need access to income-generating opportunities (Huchmzermeyer and Karam, 2002)

**State approaches to livelihoods:** The state approach to livelihoods in the three case study settlements, according to key informants, was not direct. The state institutions provided an enabling environment through the provision of both social and physical infrastructure and tenure security. These were expected to have a multiplier effect of improving livelihoods but as discussed in chapters four and five, the impact was constrained. The livelihoods were also affected by the general economy of the country. Nonetheless, the support to livelihoods was fragmented since there is no coordination amongst the various agencies.

**Challenges:** According to household data, focus group discussions and key informants, state actor's role in facilitating livelihoods was minimal as established in chapter four. From the analysis, it was clear that public education facilities were minimal in Huruma and Munyaka but altogether absent in Kamkunji. Similarly, state employment opportunities and housing were negligible in the three case study settlements of Huruma, Munyaka and Kamkunji. It is not surprising therefore when there was a high proportion of respondents that indicated that none of

the livelihoods was provided by the state and dwellers relied on the private sector. It has been argued that with the near absence of public or state actors, the private sector dominates the market in health care and other social sectors in slums (Vijver et al., 2015)

According to focus group discussions held with opinion leaders, and Settlement Executive Committee in Huruma, on livelihoods a member had this to say;

*“There is no direct support for livelihoods. There is no specific agency that deals with livelihood improvement. The economy is down, there is a lack of opportunities, people have no money; there are inadequate facilities such as health, education (no training facilities). People resort to private health clinics, which are many but are expensive. Incomes are inadequate due to low paying jobs. There is generally poor hygiene, poor clothing /dressing and poverty. There is inadequate food- the school has introduced a school feeding program. Children keep a portion of their school food and carry to their parents/siblings after school”.*

Similarly, in Kamkunji focus group comprised of community leaders, opinion leaders and representatives of Settlement Executive Committee, a member had this to say about livelihoods and institutions;

*“Livelihoods such as incomes, employment, skills, housing and health are not well supported compared to infrastructure and tenure security. The few that deal with livelihoods include Ministry of Education, Ministry of Health, Ministry of Housing but low incomes, low education, inadequate health facilities leading to sicknesses, there is a lot of idleness especially of youth which has led to theft and increases in betting- e.g. Sport Pesa- leading to waste of time and resources”*

In Munyaka, according to a community leader, during focus group discussions in Munyaka said;

*“A quarter (1/4) of dwellers in Munyaka settlement are well off but the majority, three quarters (3/4) are poor. These poor people require to be supported to improve their livelihoods. The support should include medication, employment, skills training and income-generating economic activities”.*

The lack of direct support for livelihoods such as income generation, skills, health, housing and employment serves to further constrain the poor.

## 6.5.2 Land Buying Companies

The research established that Land buying companies were significantly involved in the acquisition of tenure security in the three case study settlements of Huruma, Kamukunji and Munyaka, but a minimal role in infrastructure and livelihood activities as shown in table 6.4.

Table 6.4: Role of Land Buying Companies in tenure, infrastructure and livelihoods improvements

	Huruma	Munyaka	Kamkunji
<b>Tenure</b>	Acquisition of large-scale farm Informal Subdivision to initial 37 members and issuance of share certificate	Acquisition of large-scale farm Informal Subdivision to 600 members and issuance of share certificate	Acquisition of large-scale farm Subdivision to 100 members in collaboration with the municipal council and issuance of share certificates
<b>Infrastructure</b>	-	-	Provision of one marram road
<b>Livelihoods</b>	-	-	-

Source: Field data 2016

The key roles in land ownership were through the issuance of share certificates and representing their members' interests in tenure security processes at the national and local level especially in relation to title documents. Similar findings have pointed out that land buying companies are meant to enable the individual membership access land cheaply, often because of the location and lack of services (Makachia, 2015).

**Land buying companies approach:** It emerged from study findings that land-buying companies adopted an approach of buying large-scale farms through bank loans or pulling resources together from members, subdividing the land and availing it to its members through the allocation of plots and provision of respective share certificates. To this extent, tenure security was achieved for large numbers of the poor.

In Huruma/Mwenderi, according to a key informant, a former secretary of Huruma land buying company and a landlord in this settlement said that;

*“Huruma was a 120-acre piece of land, land registration number 1092 which belonged to a white settler who sold it to Huruma farmers land buying company. The land-buying*

*company subdivided the land into quarter-acre plots and sold to shareholders who bought according to their abilities”.*

In Munyaka, the approach to tenure security was through a land-buying company, according to a key informant who is a long-time landowner in Munyaka, said;

*“The white settler sold the land to 3 people. The land had a title for 100 years for the period 1907-2007. They were required to pay 10% of the price and the rest through a loan. Each of the three got a title. The three subsequently subdivided the land into three portions amongst themselves and these have overtime been named Silas, Munyaka and Mwitiriria. Each of them later subdivided and sold to shareholders. The portions were initially 1 acre but with time and increase of population they were further subdivided into portions of the half, quarter, an eighth and currently a sixteenth of an acre”.*

In Kamkunji, according to the Chairman of Uasin Gishu Farmers land buying company

*“Kamkunji was a 605-acre piece of agricultural land sold in 1964 by Indians. A 100-member group of people, under the umbrella of Uasin Gishu Farmers land buying company, came together and pulled their resources to purchase the land. The directors of the farm facilitated the subdivision of the land amongst the 100 members. 20 acres were subdivided into 60 x 100 size plots and each of the 100 members was given a share certificate by the company upon completion of payment”.*

These narratives show the critical role played by land buying companies in the acquisition of land that benefitted large numbers of people through subsequent subdivision and issuance of share certificates. This finding is in line with the findings of other researchers. For example, Boone (2012) found that land-buying companies purchased farms in the former White Highlands and then subdivided these holdings among individual (family) shareholders. According to him, many ordinary Kenyan citizens acquired land in the Rift Valley by purchasing shares in the companies. Rakodi, (2007) and Musyoka, (2002) agree that in Eldoret, subdivision by land-buying companies has, since independence, provided plots for both initial shareholders in the companies and subsequent purchasers of plots.

From the narratives obtained in this study, the approach to the subdivision of the large-scale farms was mainly informal. According to key informants and Focus Group discussions, these hitherto large farms numerously subdivided and turned into informal settlements, are attributed to institutional challenges. The directors and committees of the land buying companies did not initially, in a majority of cases, involve the government, both the Ministry of Lands and the

Eldoret Municipal Council who were charged with the responsibility of managing and administering private and government and trust lands respectively, in subdividing the land. According to Lado, (2009), the land was allocated from incomplete or unapproved survey or town planning maps, which cannot be used to issue certificates of title and further, all this land was allocated completely devoid of usual infrastructure facilities. As a result, these areas were transformed into sprawling squatter settlements with rows and rows of rental units with inadequate basic services, land for public purposes and other social amenities ( UNDP, 1991).

These illegal subdivisions were exacerbated by the action of the Eldoret Municipal Council in their decision to expand municipal boundaries to include these private and freehold land areas without proper development control and failing to require the change from freehold to leasehold tenure that would allow regulation of development. This, coupled with unscrupulous and unqualified surveyors who undertook illegal subdivisions for a fee, and the highly bureaucratic, complex and costly subdivision processes in the Ministry of Lands aggravated the proliferation of these informal areas (Muysoka, 2002).

The point to note from the findings of this study is that land-buying companies played a key role in securing tenure. Their benefit was in facilitating land ownership in substantial volumes to meet the felt needs (Muysoka, 2002). Though they facilitated the delivery of land, albeit informally, to low-income communities, their directors gained immense powers in the process. They determined and controlled the informal subdivisions of the settlements, the prices, the locations and allocations of plots, payments and issuance of share certificates. This subjugated and subordinated the shareholders who, some of whom missed their shares due to reallocations, resale or unresolved disputes. If streamlined, such institutions could play a significant role in tenure security processes.

**Land buying companies and professionals:** According to key informants and Focus Group discussions, professionals contributed to the informality of the settlements. . Some unqualified personnel were engaged by the land buying directors and committees to undertake planning and surveying of the hitherto large farms. As pointed out, these plans and surveys were later rejected by the Municipal Council for failure to adhere to regulations even though the dwellers had paid for the services. This was costly and the delays led to informal subdivisions and unplanned

developments that lacked spaces for public utilities transforming the hitherto farmlands into informal settlements.

**Challenges:** The study findings showed that the key challenges experienced, apart from the informality in the settlements brought about by informal subdivisions and unregulated transactions and constructions mentioned above, the tenure security processes of land buying companies were beset with other challenges including lack of transparency and withholding of information, improper allocation of public plots to directors and relatives, high fees required by directors for processing land ownership documents and the process of securing tenure took inordinately too long.

According to an opinion leader during a focus group discussion with opinion leaders, settlement executive committee in Huruma settlement had this to say;

*“There has been a lot of ‘hide and seek’ between directors and shareholders. Members would only have their documents processed after paying 30,000 to directors of the farm. Subsequently, the council issued them letters of allotment. Some have never received their letters or plots. There was no community participation. It was farm directors and individual buyers. Some people did not get the rightful share. They paid more money but got less land. There were disputes among members with others not getting a share or less than what they bought. Others have not been able to locate their plots up to now. Also, the process took so long to produce the titles and this process was too costly because there were many payments.”*

In Munyaka, like in Huruma and Kamkunji, the challenge was misappropriating land set aside for public utilities to directors thus depriving the community of this facility as reported during focus group discussion held with opinion leaders and some members of settlement executive committee that;

*“Originally 8 acres had been set aside for a school but the size that is existing now is 2 ½ acres for Munyaka primary school. 2 acres had also been set aside for a shopping Centre/market but this has since been reduced to 50x80. These portions of lands were sold by the directors of the company”.*

For Kamkunji the challenges were similar to those of Huruma and Munyaka but the constraint, according to a resident in Kamkunji settlement during a focus group discussion in Kamkunji, was a transfer of agreements/ share certificates to new owners. According to him;

*“The original owners of the land got titles but most of the original farmers have passed on. Some of those people who bought from them have written agreements but the process of succession after the death of the original owners has taken a long time. The process of transfer to new buyers takes long and they keep on asking for money to follow up on letters of administration. Though they feel secure, and may not be evicted, they still want to get their titles. People with money followed their titles on their own in the lands offices and got their titles. They were required to pay 12,000 shillings to the directors for processing of titles”.*

### 6.5.3 The People

Study findings indicated that the people also played a critical role in the upgrading process since they were the beneficiaries of the process. Their key roles in tenure security, infrastructure and livelihoods are shown in table 6.5. It has been recognized that people are the primary stakeholders and they have a better understanding and knowledge of their situations (Radha, et al., 2010).

*Table 6.5: Role of the people in tenure, infrastructure and livelihoods improvements*

	<b>Huruma</b>	<b>Munyaka</b>	<b>Kamkunji</b>
<b>Tenure</b>	<ul style="list-style-type: none"> <li>• Purchase and ownership</li> <li>• Occupation of settlement</li> </ul>	<ul style="list-style-type: none"> <li>• Purchase and ownership</li> <li>• Occupation of settlement</li> </ul>	<ul style="list-style-type: none"> <li>• Purchase and ownership</li> <li>• Occupation of settlement</li> </ul>
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>• Prioritizing infrastructure</li> <li>• Labour</li> </ul>	<ul style="list-style-type: none"> <li>• Prioritizing infrastructure</li> <li>• Labour</li> </ul>	<ul style="list-style-type: none"> <li>• Prioritizing infrastructure</li> <li>• Labour</li> </ul>
<b>Livelihoods</b>	<ul style="list-style-type: none"> <li>• Capabilities (Housing, Health, education, skills)</li> <li>• Assets (Land, Housing, household assets)</li> <li>• Economic activities (employment, incomes, livelihood activities)</li> </ul>	<ul style="list-style-type: none"> <li>• Capabilities (Housing, Health, education, skills)</li> <li>• Assets (Land, Housing, household assets)</li> <li>• Economic activities (employment, incomes, livelihood activities)</li> </ul>	<ul style="list-style-type: none"> <li>• Capabilities (Housing, Health, education, skills)</li> <li>• Assets (Land, Housing, household assets)</li> <li>• Economic activities (employment, incomes, livelihood activities)</li> </ul>

*Source: Field data 2016*

**Peoples’ approaches:** According to the findings of this study, people’s participation was mixed. On tenure security, their key role was in purchase and occupation of land, facilitated by the land buying companies. According to the household survey, a significant majority of respondents across all the three settlements participated in the process of acquisition of security of tenure. The

process entailed payments of the cost of the plot or share done in instalments and receipt of a share certificate upon completion of the payment.

On infrastructure, people led approaches were minimal during the earlier periods with government agencies using top-down silo approaches to provide piecemeal infrastructure. However, during the upgrading of the case study settlements from 2011 to 2016, there was increased community participation particularly in the provision of infrastructure that was done under the Kenya Informal Settlement Improvement Project (KISIP). According to a key informant who deals with community mobilization and development at the County Government of Uasin Gishu and who participated in the upgrading under KISIP pointed out that;

*“The communities in the three settlements of Huruma, Munyaka and Kamkunji were engaged from the inception of the infrastructure upgrading process in 2010. First, we, the community and social development officials of the then Municipal Council of Eldoret, were sensitized about the Kenya Informal Settlement Improvement Project (KISIP). Thereafter we held meetings with opinion leaders in the settlement to sensitize and get their buy-in into the project. We then mobilized and sensitized the communities in the three settlements about the upcoming upgrading project. On different dates, we held public barazas during which time we were to facilitate the community to elect their representatives who would form the Settlement Executive Committee (SEC). They were to represent the community in the project. Since then they have participated in socioeconomic surveys, prioritizing infrastructure, identifying the spaces for proposed infrastructure, facilitating the consultants and contractors in getting unskilled labour, addressing grievances and complains from the community, solving community conflicts and disputes relating to the upgrading.*

According to another key informant, an official with KISIP project said that;

*“Community participation in the upgrading project is through Settlement Executive Committees (SEC). SEC is a community institution formed to facilitate the people’s involvement in the upgrading process. They also serve as an entry point to the settlement/community by the various stakeholders including the project team, consultants and contractors. These committees are composed of members of the community of the respective informal settlement where the upgrading is being done. Each settlement has a committee comprising representatives of tenants, landlords, youth, widows, physically challenged, Faith-Based Organizations, Community Based Organizations, Non-Governmental Organizations, ex-officials including the local leaders such as councillors (currently MCA) and the area chief. These representatives, around 18 in number, are elected democratically by each settlement community and must have gender balance. The elected SEC members subsequently elect the Chairperson, the Vice-Chairperson, Secretary and Organizing Secretary from among themselves. The KISIP officials from National Office together with the County (previously Municipal) Community and Social Development Officers train the elected SEC on their roles. The key ones being*



*representing the community interests in the project in planning, providing infrastructure priorities, preparation of settlement upgrading plans to realize it, approve the final infrastructure designs, participate in settlement enumeration, socio-economic surveys and preparation and implementation of Relocation Action Plans. The SEC also deal with community disputes and conflicts. Despite challenges that include high expectations, requests for sweat equity/compensation for work done, obstruction due to gatekeeping, self-interests especially in directing infrastructure to own plot the SEC largely improved participation and ownership of the upgrading project in the various settlements thus facilitated near smooth implementation of the upgrading of the settlement enabling the realization of improvements.*

The two narratives from key informants were corroborated with information from Settlement Executive Committee members during focus group discussions with them in Huruma, Munyaka and Kamkunji. They confirmed that they were elected in their respective settlements in 2012 and all of them were still in office by the time of the interview in 2016. Since formation, they have been representing the interests of the community in the upgrading project. In Huruma the Secretary to the SEC said that they

*“Mobilised the community and rallied them to attend several sensitization meetings, for example, one such meeting held in 2012 at the PCEA church in Huruma where the community was given details about the infrastructure upgrading project and they engaged the consultants and the government officials on their infrastructure priorities. During such meetings, we tabled the challenges in the settlement, which were poor roads, insecurity, poor sewer system, flooding and solid waste, and after long deliberations, we put our top infrastructure priorities like roads, electricity, lighting, sewerage, solid waste management and stormwater drainage. We participated in the designs of this infrastructure and identifying and relocation of people affected by the infrastructure. In 2014-2016 roads, water drainage, walkways, high mast floodlighting, sewer improvement and community ablution blocks were implemented in the settlement with our participation.*

Similarly, in Munyaka, the SEC chairperson said that

*“They organized meetings between the community, the consultants and contractors in meetings held in 2012 at Munyaka Primary School to learn about the project and to express their challenges and infrastructure priorities. We gave our priorities like roads, sewerage, solid waste management, stormwater drainage and public lighting in that order. However, the infrastructure provided in 2015 excluded sewerage and instead ablution blocks were provided. We had not asked for ablution blocks. We engaged the government officials who explained that the funding was not adequate to do a sewerage system because Munyaka did not have a trunk sewer to connect*

*to. Although the ablution blocks were built, they are not functional. However, the community supported the projects and was happy with the roads, the walkways, the drainage and public lighting, which were built”*

In Kamkunji, according to the chairperson of SEC,

*“We participated in community meetings held at the Christian Outreach Ministries in Kamukunji and other venues where the community was sensitized about the upgrading project, which was being supported by the World Bank. At first, we were suspicious of this project. With time and because of many meetings and consultations we developed some trust as the project progressed. In these meetings said our infrastructure problems and priorities. We debated a lot before arriving at the top priorities like roads, stormwater drainage, sewerage, solid waste management, lighting and water provision. SEC members were the ones mobilizing the community to attend and deliberate in these meetings. We facilitated community enumerations, identifying affected persons and ensuring compensation and relocation, we identified spaces for infrastructure and even the settlement boundaries. We presented complains to the County and the contractors and consultants and we assisted in resolving disputes. We identified those who had encroached the roads and talked to them and consensus was arrived at to remove their structures voluntarily”.*

**Benefits of Peoples’ approach:** From the narratives, it is clear that the community played a key role in the realization of infrastructure upgrading undertaken in the three case study settlements of Huruma, Munyaka and Kamkunji in the years 2012-2016 (the time of this study’s field research). The community participated from the project initiation period in 2012 and through the planning and implementation processes of the project cycle. Participation was mainly through the representation of the people by the SEC and direct engagement with the communities in the three settlements despite the more than six years of the project. The benefits, distilled from the narratives, include the ownership and acceptability of the project due to first, the opportunity to present their settlement pressing needs and thus their priorities and second, participation in planning and implementation of the identified priorities and third in decision-making. This people approach had multiplier effects of quick resolutions of disputes, voluntary relocation by those who were identified as falling within way leaves, job opportunities for community members during construction, access to services and general well-being in the settlement following the successful implementation of infrastructure. This finding aligns with what has emerged in other studies. In a study on Baan Mankong programme in Thailand, the researchers

concluded that having the community at the centre of the upgrading process delivers maximum benefits to slum dwellers in addressing their specific needs and empowers poor communities (Bhatkal and Lucci, et al.,2015). However, a point of caution emerging from this study is that other institutions must support communities to ensure full ownership and support of the project. There was evidence of a tendency to ignore communities in the mainstream upgrading activities as attested by the findings. Other scholars who argued that community-led approaches could never reach their full potential in isolation and need to be embedded within wider partnerships, strategies and funding opportunities (Crisp et al, 2016) have also advocated this point.

**Challenges of peoples' approach:** This people-led approach was however not without challenges. From the narratives, at the initial stages of the project, the communities were suspicious and therefore a lot of time was put into sensitizations. This together with other time-consuming processes such as reaching a consensus on a certain set of infrastructure priorities served to delay and thus overrun the schedule of the project. Effective participation in planning and decision-making is an iterative and time-consuming process and may lead to increased project cost and delayed project completion (Thwala, 2009). He argues therefore that proper planning and efficient decision-making processes are imperative for community participation to be successful.

External and political interference was also a challenge. This was evidenced especially in the location of infrastructure where political elites in the settlements tried to have infrastructure installed in their areas of interest. According to the focus group discussions with a representative of SEC from the three settlements, the SEC was also seen as competitors to the elected leaders and this sometimes created some tension in the settlements. The key challenge raised by the SEC was the lack of compensation for the role they played. They felt that they had put so much of their time into the project for no pay although they understood from the beginning that it was a voluntary task, they nonetheless argued for a token form of compensation to cover the loss of time in their businesses. Another key informant from the County Government pointed out that the SEC had sometimes acted as gatekeepers and were at times an obstacle to the progress of the project especially when they would threaten to hold demonstrations or protests if their demands

on additional infrastructure were not met. This was, however, “resolved through dialogue and provision of information”, the key informant added.

## **6.6 Institutions: Shaping tenure security, Infrastructure and livelihoods nexus**

### **6.6.1 A paradigm shift: From evictions to upgrading**

The study findings from the case study settlements of Huruma, Munyaka and Kamkunji indicate that there is an institutional shift from the previous approaches of ignoring, evictions and demolitions to the more encompassing and effective approach of informal settlement improvements. As indicated in chapters four and five, the three settlements benefitted from tenure security and infrastructure improvements, largely undertaken by the state but with some measure of participation by the community, land buying companies and the international institutions. This is similar to what other scholars have documented governments’ change in strategy from the ineffective approach of ignoring, eviction, clearance, bulldozing or demolitions of informal settlements to upgrading (Corburn and Sverdlik, 2017, Nassar and Elsayed 2017, Hermanson, 2016, World Bank, 2016, Khalifa, 2015, UN, 2015, Muchadenyika, 2015, Rakodi, 2014). Kenya has embraced this new strategy evidenced in both policy and practice.

The challenge, however, is that impact of upgrading efforts has not been fully realized in Kenya. This study’s findings suggest the need to relook the approach by focusing on the linkages in upgrading interventions that have hitherto been ignored, adopting integrated approaches and incorporating human aspects in physical upgrades to empower the dwellers to convert tenure and infrastructure to livelihoods and wellbeing. Further, the policy shift to more progressive approach in dealing with informal settlements in the case study settlements does not negate the current reality in Kenya that demolitions and evictions still occur in urban areas, especially in informal settlements. In 2018 for example, over 20,000 households were forcibly evicted and structures demolished due to the construction of a road (Mwau et al, 2020) The strides that have been made should not be eroded but upscaled by implementing the favourable portions of the

policy and legal provisions but transforming those that provide loopholes to retrogressive strategies.

### **6.6.2 Enabling policy, legal framework and practice**

Kenya currently has a facilitative legal and policy framework on slum upgrading. The Kenya Constitution 2010 has given a broad legal framework that has guaranteed a broad range of rights for all its people's whether in formal or informal areas. Policies have gone a step further to provide a framework for actualising some of these rights as discussed in section 6.4.1, and have specifically recognized the existence of informal settlements and have recommended strategies for upgrading. Various laws have also been put in place to support the realisation of tenure, infrastructure and livelihoods. Further, the country has two main government-led upgrading programmes, the Kenya Slum Upgrading Programme and the Kenya Informal Settlement Improvement Project and several NGO- led slum improvement projects throughout the country. These have provided a conducive environment for upgrading and although evictions and demolitions have not completely ceased, there is a shift towards recognition and upgrading. Coburn and Sverdlik (2017), argued that state-sponsored slum upgrading initiatives and a supportive state policy framework can have a greater impact on the slum dwellers. Indeed, across the three case study settlements of Huruma, Kamkunji and Munyaka, the research findings show that the government and its agencies played a leading role in the upgrading particularly in the areas of tenure security and infrastructure improvement. However, it has been argued that though there are an enabling policy and legal framework, the implementation, enforcement and compliance mechanisms are not effective (Kameri-Mbote, 2016) which Horn, et al., (2018) attribute to a gap between legal discourse and practice, particularly in contexts where government officials are under-capacitated, lack adequate resources and/or follow different political priorities.

Further, the study findings showed that the upgrading was not adequate in all the three settlements especially the infrastructure provision. It was evident from field observations that not all areas of the three settlements were upgraded. This, according to key informants in government, was attributed to inadequate funds. This study argues therefore that the public sector cannot do it alone and there is much need for integrated and collaborative efforts between

government, civil society, NGOs, International Organizations and more importantly the affected communities to facilitate scalable impact. This requires reforms in the existing legal and policy framework to accommodate institutional collaborative frameworks in the tenure-infrastructure-livelihoods upgrading approach proposed by this research.

### **6.6.3 Enablers and Inhibitors**

The state, according to study findings, is an enabler in the tenure, infrastructure and livelihoods improvement in informal settlements. As discussed in chapter four, the state was instrumental in securing tenure and providing infrastructure in Huruma and Kamkunji and Munyaka. However, the State's bureaucratic, complex and costly processes coupled with inadequate financial resources constrain the realisation of the intended full benefits of these improvement efforts. Similarly, professionals in the sector through professional neglect and or the silo and uncoordinated approach to these interventions is a drawback. Van Der Molem, (2014) argues that land surveyors create 'painstaking slow work processes that hamper the completion of the cadastre while master planning is too much top-down, isolated and deploys unrealistic planning regulations that force the poor to violate the law to survive. Also, according to Mwangi and Nyika, (2010) administrative corruption perpetrated by employees and cartels is manifested through loss/manipulation of records, abuse of office and demands for kickbacks in exchange for service.

Study findings also showed that land- buying companies are enablers in tenure security and livelihoods improvement but a minimal role in infrastructure in the three case study settlements of Huruma, Munyaka and Kamkunji. These companies were the genesis of the three settlements because through their ingenuity they pulled resources, purchased large tracts of land, subdivided (albeit informally) and availed, in large volumes, plots to low-income groups. The share certificates they issued to shareholders were quick and for a long time served as proof of ownership for the majority of the dwellers. This finding indicates that private sector institutions involving community participation can be an enabler in securing tenure. However due to the informal approach to the land subdivision, limited capacity in tenure regularization, lack of transparency and political propensities they, according to Makachia, (2011), hardly offer the

security most dwellers desire and due to non-adherence to formal standards the settlements they create constitute a recipe for slum formation. They also lack resources to do infrastructure in the settlements they create.

People or the community are an enabler in upgrading. From the study findings, it came out clearly that they were instrumental in securing their livelihoods and in tenure security and infrastructure provision. From the findings, the community was instrumental in facilitating the ownership of the project since they participated and mobilised the communities from the three case study areas to participate in the planning, decision-making and implementation of infrastructure upgrade thus the successful implementation. This supports Bakari and Said, (2018) argument that effective community participation can lead to the realization of the project objective. Currently, according to Wahid, et al., (2016), there is a gradual shift from top-down centrally-managed planning procedures to participatory, bottom-up, community-driven strategies that are seen to be more sustainable. The downside of community's involvement, however, according to the study findings, was the inadequate engagement due to funding constraints, limited infrastructure options due to donor conditionalities, community suspicions requiring time-consuming sensitizations, individual and political interests in location and choice of infrastructure prolonged and delayed consensus on priorities thus delaying the project implementation. This study thus calls for a clear policy and legislative framework on participation, providing sufficient funding for sustained engagement in addition to empowering communities through training and skills upgrade.

Overall, it is clear that institutions can enable but can also constrain upgrading efforts. This study argues for a collaborative framework that minimizes constraints while enhancing the efficiency and sustainability of upgrading strategies.

#### **6.6.4 Power and Control**

The relationship between power and institutions is an intimate one (Lawrence, 2008). Lawrence argues that institutions exist to the extent that they are powerful - the extent to which they affect the behaviours, beliefs and opportunities of individuals, groups, organizations and societies.

It emerged across all the three case study settlements that the National Government had more power and control over upgrading compared to other institutions, the key reason being its supremacy regarding resources, mandate and political power. These conditions are a direct pointer to the existing legal and policy framework, rules, structures, procedures and processes that confer authority, power and control to the state. Though the constitution has provided for public participation in all areas of development, the lack of a clear framework on this has limited its effectiveness particularly formal recognition of the poor as key actors in upgrading. There are a host of documented complaints of inadequate engagement, particularly related to claims of insufficient involvement by the community in decision-making (USAID, 2018). For upgrading to be impactful and sustainable, effective and meaningful participation is critical and so is empowering communities and agencies to fully contribute.

#### **6.6.5 Coordination of tenure, infrastructure and livelihood investments**

The study findings show that the institutions of tenure security, infrastructure and livelihoods are not well coordinated both within and across the three sectors. Tenure security proceeded on its own in the early 70s to 90s, the focus at the time being the acquisition of land and ownership documentation. This was to the extent that the informal subdivision plans prepared by land buying companies expressly provided for plots leaving no space for other basic facilities and infrastructures. Though this was corrected later by the state, the bureaucratic, costly, complex silo departmental approach within the institution of Lands contributed to the delay to not only the delay not only of tenure documentation but also to the delay in infrastructure provision. By the time infrastructure was provided, about 30 years later, the way leaves had been encroached on and public utility areas had been reduced or reallocated. It was, therefore, necessary to, at a cost, relocate services and persons who had encroached and fitting infrastructure within the remaining limited space, which in some areas was grossly inadequate. Further, the infrastructure institutions acted independently leading to incompatible infrastructures such as water and electricity, or water and sewer lines competing for the same space, in turn, comprising safety and sanitation. All these contributed to delays, duplications and eventual escalation of costs and thus waste of resources. The disjointed activities compromised the already fragile livelihoods of the dwellers.



Iweka and Adebayo, (2015) point out that one of the challenges in slum upgrading is the lack of coordination among stakeholders especially at the inter-agency level of government where different ministries are in charge of different components of the slum upgrading exercise – housing, infrastructure, physical planning, environment. This calls for policy change. This study argues that tenure security, infrastructure and livelihoods improvement are interconnected the actors and institutions ought to be equally connected. This calls for multisector integrated approaches that embrace the complexity and interconnections of sectors and actors for sustained impact. The recent shift to the broader and more inclusive Sustainable Development Goals has accelerated the emphasis on the integration of and required coherence among multiple sectors (FAO, 2017).

### **6.6.6 The new actors in upgrading**

Some new actors are playing a critical role in upgrading. These are the Settlement Executive Committees (SECs), the County Governments, the National Land Commission (NLC) and the Civil Society. The SEC has become an instrumental community organ that represents community interests as well as facilitating meaningful participation in project planning and implementation. The County Government and the National Land Commission, on the other hand, have constitutional and legal mandates that are critical in upgrading. The NLC is mandated to manage and administer public land on behalf of National and County Governments and to monitor and have oversight responsibilities over land use planning throughout the country. In the case study settlements, the tenure was largely private but due to the public tenure areas within the settlements, the NLC had a role in the processing and approval of the unfinished tenure processes in Munyaka settlement.

County Governments are constitutionally mandated to undertake a wide variety of functions that would place them on the steering wheel if these were considered as upgrading interventions. These are County health services, refuse removal, refuse dumps and solid waste disposal, county transport and roads, electricity and gas reticulation, stormwater management systems in built-up areas, water and sanitation services, street lighting, markets, county planning and development, land survey and mapping, boundaries and fencing, housing, pre-primary education, village polytechnics, home craft centres and childcare facilities and ensuring and coordinating the

participation of communities. In the case study settlements, the County played a critical role in ensuring participation of communities, not so much in the provision since these were being undertaken by the National Government. The Civil Society, on the other hand, is assuming a growing responsibility within communities. In the study settlements, they played a role in sensitizations and community mobilizations especially on issues of health.

These new entrants should find a place in a collaborative institutional framework. It has been argued that Governance and institutional arrangements are crucial elements of slum upgrading in the longer term (Minery, 2013).

### **6.6.7 Institutional focus and collaborative approaches**

From the household survey, it emerged that the Government was highly involved in upgrading attributed to its mandate and resources. Community Organizations participated in championing their needs for tenure security and in prioritizing infrastructure according to the settlement needs. The Non-governmental Organizations and civil society though they had a minimal role in upgrading informal settlements in the case study settlements, its role in education and awareness creation can be harnessed. From field information, Development Partners were critical in supporting the government with funding and provision of technical support to the infrastructure upgrading undertaken in the three settlements.

From this data, state agencies were indicated as having played a greater role in upgrading. It has however been argued that it is important to nurture synergistic coproduction between these actors to avoid wasteful duplication of efforts and waste of scarce resources. Collaborative engagements between the state and civil society not only quicken the process but also allow each actor to concentrate its efforts where they are most likely to yield the greatest benefits (Danso-Wiredu and Midheme, (2017). Studies have shown that there is need to engage the community in the implementation of projects to enhance project outcomes and for sustainability (Allah and Mueke, 2017, Hes, 2017, Vijver et al., (2015, Ahmed, 2016). Of interest, here is the ability of the poorest urban residents to be actors in, and affect the design and delivery of, development programmes (Shand, 2017). The challenge, however, is that adequate community consultation and engagement requires time and commitment (Ahmed, 2016). Another challenge is that community

leaders and the community, in general, tend to be somewhat suspicious of any new project or research activities, and might even be reluctant to participate. On the other hand, community leaders, once they realize the important position that they occupy as custodians of the community interests, might exploit their positions and act as gatekeepers (Vijver et al., (2015).

This study proposes that rather than the current segmented institutional approach, a collaborative approach to upgrading that brings together these actors, based on their comparative advantage, is a desirable and more efficient approach as demonstrated in the illustration shown in figure 6.3.

INSTITUTIONAL APPROACHES

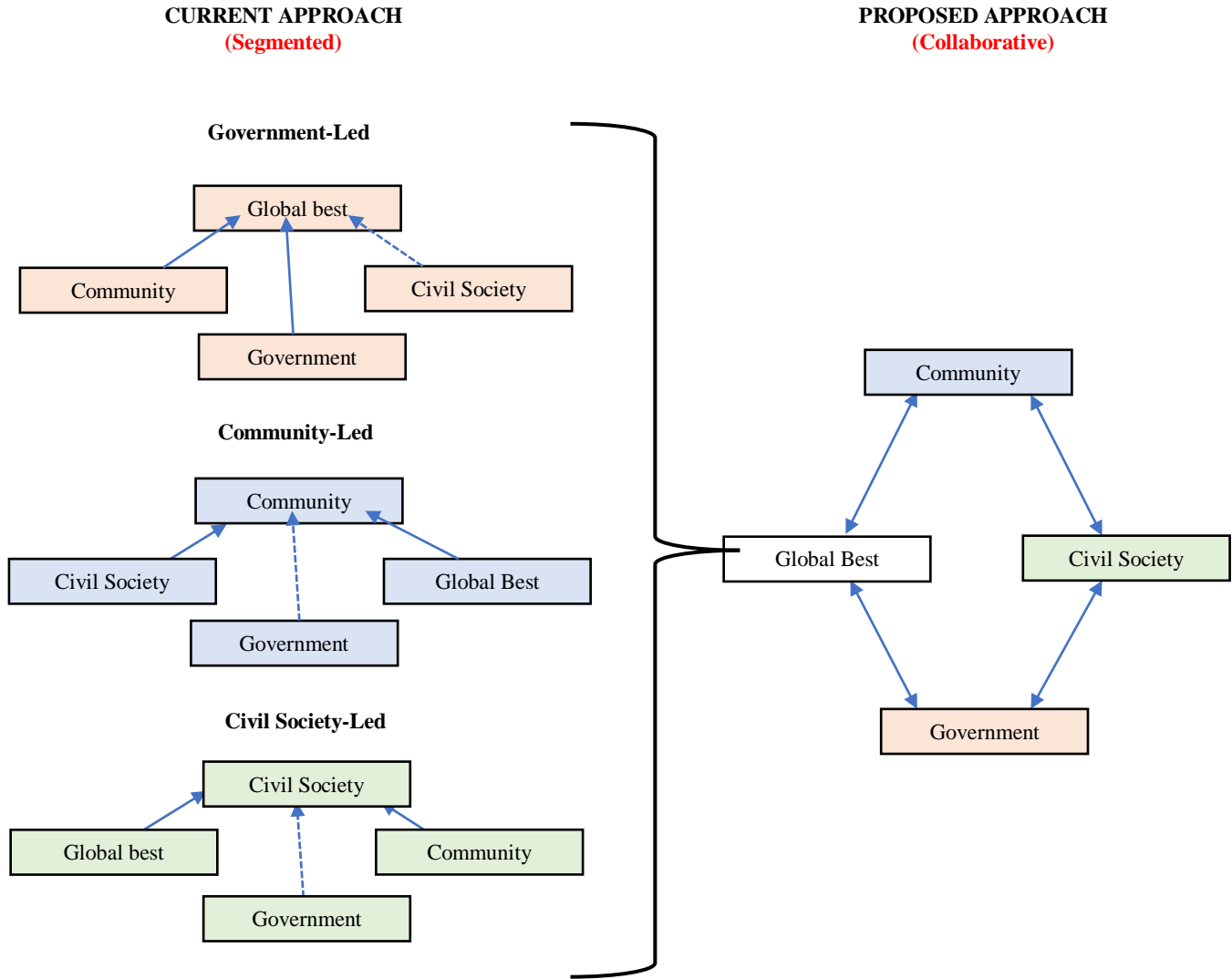


Figure 6.3: Netmap showing a collaborative Institutional Approach

Source: Author

Figure 6.3 shows the current prevailing segmented approach to upgrading where government, community and civil society-led upgrading are divergent with no point of convergence. The study proposes an integrated approach where the institutions collaborate meaningfully for greater efficiency and effectiveness of upgrading. Only if all institutions collaborate can we address the

Sustainable Development Goals (SDGs) commitments to "leave no one behind" and achieve the implementation of SDGs and the New Urban Agenda (Horn, et al.,(2018), an approach that this study advocates.

## **6.7 Approach, Outcomes and Emerging Dynamics**

### **6.7.1 Disjointed institutional approach**

Institutional approaches to tenure, infrastructure and livelihoods improvement are fragmented limiting the impact of upgrading efforts. The state and the land buying companies followed their processes to the extent that the former nullified the initial informal subdivisions that the latter had undertaken while both were using the communities with a top-down patronising approach. For the state, though there was an attempt at integrating infrastructure provision, the characteristic approach was largely sector-specific and silo. The state-led the tenure security process in the three settlements was found to be fragmented, principally departmental oriented, lengthy, costly and bureaucratic propelled by institutional frameworks, policies, existing laws and professional segmentation. A similar finding by Collier et al., (2017) where they found that tenure security processes are long, complicated, and expensive, pointed out the need for an active role for government in leading a coordinated, large-scale and government-funded programme of land registration which enables the process of land registration to be far more efficient, cost-effective and politically acceptable.

Infrastructure provision in the settlements was for a long-time sector-specific, piecemeal and disjointed until the period 2010-2016 when institutions used an integrated approach to provide more comprehensive and coordinated infrastructure. The challenge of coordination was however still prevalent with agencies working at cross purposes for example when water agency had to cut through a road that had just been tarmacked to provide water ducts to supply water to the same settlement. Marten, (2015) found that fragmented actors are an obstacle due to their heterogeneous logics of acting that oppose cross-sectoral coordination in urban infrastructures. There is need therefore for coordination frameworks that allow integration of efforts by the various institutions.

### **6.7.2 Power dynamics and outcomes**

Power and control play a role in the implementation and outcomes of tenure, infrastructure and livelihoods improvement in informal settlements. From the study findings, it emerged that the state wields a lot of power due to its constitutional mandate, its position as a policymaker, decision-maker and implementer and the purse holder. The upgrading undertaken in the three case study settlements were conceived, planned and undertaken largely by the state indicating the critical role of the state in the upgrading of informal settlements. Within it, however, its levels of government and multi-agencies exhibited a fragmented approach to upgrading due to its sectoral institutional framework. For example, National Government was still seen to be holding on and undertaking functions of the county government such as provision of roads, water and sanitation functions which constitutionally belong to the County were a factor of power plays since the former still controlled resources and decision making.

The other actors such as the land buying companies and the community though they played a critical role in upgrading, were limited by lack of a clear policy and legal framework, resources and capacities. Other factors such as opportunistic acquisition, conflicts, contestations and power struggles, interests and political interferences served to limit their efforts in both tenure and infrastructure improvement. It has been argued that policy implementation is not a neutral exercise that occurs in a vacuum but is influenced by power dynamics, class interests and conflict, financial constraints and institutional deficits (Cirolia et al., (2016). There is need therefore for meaningful collaboration and integrated approaches

### **6.7.3 Change of tack**

Government response to informal settlements in the 60s-70s was characterised by demolitions and evictions. The current practice, however, is recognition and upgrading attributed to the documented positive outcomes of upgrading. Although aspects of evictions are still witnessed (Dupont et al., 2016, Syagga, 2011) there is a clear paradigm shift by government institutions which was notable in the settlements of Huruma, Munyaka and Kamkunji, a finding documented elsewhere by Lucci et al., (2015) who argued that there were fewer evictions in Brazil, Colombia, Thailand and India where the state embraced upgrading. The findings showed that the three settlements had benefited from the upgrading of tenure security and infrastructure. Although the

tenure security was an effort begun by communities through the land buying companies, the state stepped in later to regularize. The infrastructure was purposefully provided by the state with the support of international agencies. Upgrading is a welcome strategy and the state and other players need to embrace interventions and approaches that work such as an integrated tenure-livelihoods-infrastructure approach advocated by this study.

## **6.8 Summary**

This chapter was aimed at analysing the institutional dynamics of tenure security, infrastructure and livelihoods improvement and their importance in the nexus. From the study findings, it emerged that institutions do indeed play a critical role in the tenure-infrastructure-livelihoods nexus – they make or constrain the nexus. Unlike the minimal state argument of Turner, (1968), the findings of this study showed a significant role by the government, especially in tenure security and infrastructure which, as discussed, in chapter four has improved the conditions in the settlements.

It emerged also that institutions of tenure security, infrastructure and livelihoods are diverse and largely operate through sectoral approaches. Collaboration between the various institutions both within themselves and across the sectors was minimal or absent altogether. This served to fragment these interventions and, in the process, limited their impact and sustainability. There is a need to move away from these silo approaches to embrace multisector and multi-institutional approaches for synergy as well as coherent nested approaches that are sustainable and impactful. This study argues for integrated multisector approaches that recognize linkages and promotes cross-sectoral collaboration and integration for sustainable development.

It has been argued therefore that new institutional arrangements that move beyond sectoral or silo governance structures can encourage cooperation between government departments and form partnerships with business and other stakeholders that discourage silo thinking, tackle cross-sectoral problems and implement integrative solutions (UNDP, 2016, The Water Institute, 2014). Another important element for integrating the crosscutting issues of sustainable development, according to Olsen and Zusman, (2014) is institutional coordination. They argue that coordination is essential for treating competing development priorities in a balanced and holistic

manner. The importance of the institutional aspect is well recognized in strategizing, planning and implementing stages of development where coordination can help avoid separate but parallel processes that increase fragmentation, overlap and confusion (Olsen, and Zusman, (2014).

This comes out clearly in the subsequent chapter that synthesizes the findings of this study from the existing typologies and approaches of tenure security, infrastructure and livelihoods to their nexus and institutional dynamics that show the interconnectedness of tenure, infrastructure and livelihoods and the critical role that institutions play in their approach, implementation and impact and the need therefore for integrated multisector approaches to upgrading.



# **Chapter Seven: Synthesis: Putting the upgrading blocks together**

## **7.1. Introduction**

This chapter is aimed at synthesizing the study findings and analysis presented in chapters' four to six. It shows that in chapter four the first research question and objective on existing tenure, infrastructure and livelihoods improvements was addressed. Findings and analysis determined that the upgrading was mainly physical with a focus on tenure and infrastructure but neglect of livelihoods through a disjointed sectoral approach. However, chapter five, which addressed the second research question and objective of determining the interplay of the three upgrading interventions, established that there exists a nexus amongst them in both their processes and functions in upgrading. Through testing the hypothesis, it established that the three are interlinked thus rejecting the null hypothesis in favour of the alternative, challenging the sectoral approach, the strategies of physical aspects such as tenure only, infrastructure only or dual entry of both and the neglect of livelihoods. It thus advanced an upgrading approach that shifts from current sectoral and fragmented strategies to an integrated physical and people-focused, Tenure-Infrastructure-Livelihoods (T-I-L) nexus approach to upgrading. An approach that brings all the elements together to improve physical conditions in informal settlements as well as ameliorate livelihood vulnerability of the dwellers therein. It recognizes and leverages not just on their significance but more importantly on their linkages in a synergistic cross-sectoral approach to upgrading for impact and sustainability.

For the nexus approach to thrive however, institutional dynamics must be contextualized since they are a foundation upon which upgrading can either be constrained or enabled. Based on the chapter six data and analysis, where the third research question and objective were addressed, institutional dynamics involving different players, their roles, power and control, influenced upgrading outcomes. The largely sectoral and compartmentalized model of provisioning and weak cross-sectoral and intra-sectoral institutional linkages constrained effectiveness and efficiency of upgrading efforts. The study thus advanced an integrated and collaborative

institutional framework to support a synergized T-I-L nexus approach to informal settlements upgrading.

This chapter synthesizes these findings to bring out the key issues in each objective using the following key areas:

- i. *Tenure, infrastructure and livelihoods fundamentals*
- ii. *Meeting human needs: A priority?*
- iii. *Sustainability Dimension: Tenure- Infrastructure-Livelihoods nexus approach to upgrading*
- iv. *Giving tenure-infrastructure- livelihoods upgrading an institutional perspective*

## **7.2. Tenure, infrastructure and livelihoods fundamentals**

This section sought to answer to the objective; *to determine the type, nature and approaches of existing tenure systems, infrastructure provision and livelihoods in informal settlements in Eldoret*. The findings in chapter four showed that the three case study settlements of Huruma, Munyaka and Kamkunji had the security of tenure, albeit in different degrees, and infrastructure but limited livelihoods.

### **7.2.1. Which comes first?**

According to the study findings, tenure security is a foundation upon which other upgrading developments, particularly infrastructure, are laid as discussed in chapter four. Tenure proceeded from land-use planning which provided a spatial framework that guided and regulated development. In the case study settlements, the formal subdivision plans provided a structured space layout of land uses leading to orderly, efficient, economical and optimal use of land that lacked previously. Other research has established that planning provides effective urban designs that provide access, appropriate densities, a mix of land-uses, and safety for vulnerable populations and connect people to jobs, markets, essential services (Richmond, et al., 2018, Purwanto, 2017, Locke and Henley, 2016). Several years after the planning and regularization of the case study areas, developments and constructions loosely followed the planning layout, thus slowly transforming the facade of the settlements from the previously haphazard and chaotic

developments to orderly growth. Similar findings show that securing tenure and ownership in slum areas is key to improving conditions and transforming slums into developed, formal settlements (State of the Tropics, 2017). However, the study also found that without other supporting interventions, the planned area can deteriorate back to informality.

It was also apparent from the findings that the state only commenced provision of infrastructure when tenure security was in place in the case of Huruma and Kamkunji settlements. For a long time, the dwellers grappled with a lack of infrastructure due to the uncertainty of land ownership that emerged as a result of informal subdivisions and transactions. Once regularised, the state and even international agencies supported the provision of infrastructure in the settlements. According to key informants, it was a requirement from the government and international development partners that only settlements with tenure would benefit from infrastructure upgrading under the KISIP program. This finding differs from that of Okyere et al (2016) who found that formalization did not enable the provision of services. However other scholars have comparably pointed out that provision of security of tenure increased infrastructure investment and governments' willingness to invest (Locke and Henley, 2016, Mahabir, 2016, Lucci, et al., 2015, Rakodi, 2014). However, study findings also showed that this may not always be the case. In Munyaka settlement, for example, the legal processes of tenure security were still underway but the state nonetheless provided infrastructure indicating that infrastructure can proceed even if tenure is incomplete. Nonetheless, it is critical to emphasize that a level of tenure security had been achieved in the settlement before the provision of infrastructure. Annamalai et al., (2016) argue that such conditional tenure security facilitates access to basic services, which reflects the political commitment towards fulfilling the basic needs of the urban poor. For policy and practice, there should be more emphasis on these foundational stages.

Findings also showed that legal connectivity to infrastructural utilities was mediated by tenure. According to data analysis, illegalities reigned supreme in the absence of tenure security. In the case study settlements, utilities such as water, electricity and even sewer lines were not connected to housing units unless they had proof of land ownership, in most instances, the title. Illegal connections were rampant where affected dwellers had no proof of ownership. Other studies have shown that where tenure security is lacking, electricity, water and sewer connections are done through illegal connections (Annamalai et al., 2016, Valdivieso, 2015). The study found

that the reason for illegal connections is mainly affordability. Connection to services and associated bills were found to be costly. Moreover, the illegal connections exposed them to life-threatening dangers and risk of arrest and harassment by the authorities which only served to accentuate their vulnerabilities and precarious livelihoods.

A critical finding, however, was that, unlike tenure security and infrastructure, there was no direct upgrade of livelihoods in the three settlements. The study, therefore, found that the peoples' capabilities (education, skills, and health) access to assets (housing, land, and property) and livelihood activities (economic activities, employment and incomes) were still basic and therefore inadequate to generate resilience and sustainability.

### **7.2.2. The positive outcomes of tenure and infrastructure**

In terms of outcomes on tenure and infrastructure upgrading, however, it emerged that both are critical elements in improving informal settlements as discussed in section 4.7. Tenure security provided the dwellers, both tenants and landowners, with security that deterred evictions. From the study findings, the dwellers in the three settlements expressed their confidence that they would not be evicted since they owned the plots and they had legal documents as proof. This was especially true for Huruma and Kamkunji where the majority of the land or structure owners had titles. This ownership empowered them since their proprietorial interest was legally registered as private property thus giving them control over their occupation, use and transfer. The clear beaconed plot boundaries reduced boundary disputes and dwellers were able to erect their fences and apply for building approvals. However, these benefits accrued mainly to owners and less to tenants.

It emerged however that tenants were the majority occupiers of these settlements with data showing that majority have lived in the settlement for more than 10 years. The reasons for these were; affordable rental housing; business in the settlement, job opportunities, security, access to infrastructure facilities and the proximity of the settlement to places of work and business. Other studies have pointed out this prevalence of tenants in informal dwellings arguing that it is far more prolific than previously thought (Gunter and Massey, 2017). Although it has been argued that it leads to exploitation and gentrification, consistent evidence shows that renting in poor communities increases the range of choices for those who cannot afford the price of

ownership, supports income generation, financing housing and boosts the micro-scale economy at the neighbourhood level (Marcelo, 1996). For tenure upgrading, understanding these dynamics is key to developing tenure options that address the needs of both the tenants and owners in informal settlements. Tenure should be broadly focused to include households and settlements with tenure arrangements beyond homeownership (Shirgaokar and Rumbach, 2018). Nonetheless, tenure security is critical for housing security. This contributes to the achievement of ensuring access for all to affordable housing by 2030 as espoused by the Sustainable Developments Goals.

The findings of this study indicate that infrastructure enhances living conditions. Before the upgrading of the infrastructure, the situation in the settlements was deplorable. The main improvements were on roads, walkways, storm drains, electricity, water and sanitation leading to enhanced transport and accessibility of the settlement, increased security due to lighting, increased investment in the settlement and improved housing. In the same vein, other research findings have shown that physical improvements and a full package of basic services are crucial to improve the living conditions, reduce vulnerabilities, improve the safety of informal settlement dwellers and can foster resilient and sustainable urban development. But these need to be supported by social and economic programmes to bring about tangible improvements in people's life circumstances (Luthango et al., (20.,16).

### **7.2.3. The downside of tenure and infrastructure**

Study findings showed that tenure processes are complex, lengthy, costly and bureaucratic. These include land administration and management process notably planning, surveying, valuation, registration and titling as discussed in section 4.8. Each of these functions had other several layered processes both at the local and national levels. These findings are similar to those by Iweka and Adebayo, (2015) who found that bureaucracy is the greatest impediment to slum dwellers. In the case study settlements, it took several years before these processes were completed and titles issued but still counting for Munyaka settlement, 35 years since the process started. Other scholars have equally criticized this type of tenure as being complicated, expensive and time-consuming (Satterthwaite et al., 2018, Annez, 2014). There is, therefore, need to simplify tenure processes.

This study further confirms that secure tenure can turn insecure if no other interventions are put in place to safeguard it. The case study settlements emanated from the tenured status that deteriorated to informality due to informal subdivisions and transactions, increased demand for land as well as mushrooming of uncontrolled development. This differs from the widely held notion that large numbers of people in cities all over the world, including most of the 1 billion currently living in slums and informal settlements, have no security of tenure. The question, therefore, is why, having had secure tenure, did the settlements exhibit characteristics of informality? Some of the reasons put forward include; illegal sub-divisions, as in the case of the case study settlements, which are attractive because they are quick (Wu et al., 2013, Leduka, 2001), weak development control laws that contribute to an efficient 'informal' land market (Wu et al, 2013), unaffordability of the costs entailed in remaining formal (Galiani and Schargrotsky, 2016) which they argued leads to a gradual process of losing legal tenure status eventually leading to a new need for costly public interventions which threatens to undo the success of the titling program in the long run (Gutierrez and Molina, 2016). This raises the question, is upgrading in such instances the solution? This study argues that secure tenure can turn insecure if other interventions are not put in place to support it. To safeguard communities from vulnerabilities, other interventions, particularly infrastructure and livelihoods improvements must be integrated with the intervention of tenure.

Infrastructure, on the other hand, can be disruptive to tenure security and livelihoods. Due to the need to obtain space to construct these infrastructures, affected persons, in the case study settlements, had to be relocated and structures demolished. Though this was not on a large scale and the affected persons compensated, nonetheless for a period their sense of tenure and livelihoods were interrupted. This finding is similar to other research findings where it was found that fixed urban infrastructure is complicated and socially disruptive, especially if it means retrofitting after the land has already been settled and built upon (Turok, 2016). Further infrastructure is also a trigger to gentrification. From the case studies, it emerged that land values and rents had more than doubled when the infrastructure was provided and the poorer members moved out to cheaper areas. This corroborates the concept and theories on market evictions which are seen to create a cycle of poverty where the poorer members are forced out by market dynamics to poorer areas (Durand Lesserve, 2007). The argument for this study is the need for

nexus approaches that address both physical improvements and livelihoods to minimize or altogether remove constraints that lead to market evictions.

This research showed that infrastructure investment is costly regarding time delays and additional costs incurred in relocations of persons and services to pave way for infrastructure construction. Infrastructure was provided years after dwellers had already settled and constructed houses, in some instances, leaving no space for wayleaves and earlier infrastructure upgrades of water and power lines had not followed the laid out plan and therefore had to be relocated to the appropriate areas. This had cost implications. This finding is supported by Collier et al., (2018) who argued that retrofitting infrastructure investment is both expensive and difficult to implement in areas that are already settled the cost being up to three times more expensive. Besides the questions of costly provision, there were also cost demands on operations and maintenance that must be factored in. From the study findings, it emerged that there was limited or total lack of maintenance of the infrastructure as evidenced by the clogged stormwater drains. These high costs associated with infrastructure provision requires rethinking the current unsustainable ways of provisioning by embracing collaborative and integrated approaches that minimize trade-offs. It has been suggested that solutions will only be found through inclusive discussions, collaboration and co-production between states, communities and the private sector on meeting costs and efficacy of infrastructure (Shand et al., 2017).

From the foregoing discussions, tenure and infrastructure are critical elements in upgrading but they are not adequate, either individually on their own as had been argued by (De Soto, 2002) or in combination as argued by Gulyani and Talukdar, (2010). This thesis argues for a third dimension to make upgrading more sustainable- meeting the human need through a direct upgrade of informal settlement dwellers' livelihoods.

### **7.3. Meeting human needs: A priority?**

A critical finding of this study was that, unlike tenure security and infrastructure, there was no direct government support to upgrade dwellers livelihoods in the three settlements as shown in section 4.4 and 4.6.5. This study confirmed that the upgrading programmes in the settlements, from conception, planning to implementation, restricted the upgrading menu to tenure security

and infrastructure. The softer, yet essential areas of capabilities and livelihood activities were not considered. The study found that whereas the living conditions in the settlements had improved as a result of these interventions, the prevailing precariousness of livelihoods was still evident. This was mainly in the areas of capabilities of the dwellers (skills, education, health), assets owned (housing unit, land, property) and livelihood activities engaged in (economic activities, employment and incomes). For example, housing was found to have improved but surprisingly there was not sufficient evidence to link tenure and infrastructure to the nature of employment, the level of education and skills all of which were found to be independent of the tenure security and infrastructure. Moreover, incomes although improved, they were still relatively low and the asset base of the dwellers is still minimal.

This indicates that tenure and infrastructure alone are not sufficient to transform their well-being and move out of poverty. This differs with the argument of Gulyani and Talukdar (2008) on dual entry of tenure and infrastructure as a panacea to informal settlements upgrading but it agrees with what other researchers who found that livelihoods are given limited consideration (Jones, 2017) in turn resulting in less impact on income, employment, health and education (Lucci et al., 2015, Jaitman and Brakarz, (2013) in the absence of which it merely becomes, according to Roy, (2005) and Duminy, (2011) “aestheticization of poverty ...that equates upgrading with aesthetic upgrading rather than the upgrading of livelihoods. For this reason, this generation of upgrading has been criticized as being “place-based initiatives” with public space acting as an agent of change but with limited empowerment of the people (Schwab, 2018) and therefore meaningless in protecting people’s lives and livelihoods (Matsouka and Yoshida, 2014) and detrimental to the long-term reduction of poverty (Schwab, 2018, Magalhães, 2016, Roy 2005).

In this context, providing tenure and infrastructure alone without support to the poor people’s livelihoods does not make sense, it is particularly meaningless to the poorest. Although inroads have been made in tenure security and infrastructure improvement and positive outcomes pointed out, the desired results have not been fully achieved. Norman Ernest Borlaug Nobel Laureate of 1970 said: “*You can’t build a peaceful world on empty stomachs and human misery.*” Similarly, the study established that tenure and infrastructure on empty stomachs are not sufficient to address the vulnerabilities that the urban poor are exposed to. Empowering the people through



direct and deliberate improvement or upgrading of livelihoods will go a long way in mitigating this. The focus should be to invest in the people who will turn around their wellbeing and the informal settlements they live in for greater sustainability of urban development and resilience of the community.

### **7.3.1. Which Approach?**

Single sector approach is the dominant approach in informal settlement upgrading. According to the study findings, tenure and infrastructure improvements, and a lesser extent livelihoods intervention, were provided through largely isolated and mono-sectoral planning and implementation processes with limited coordination and integration. Though connected, the three interventions of tenure security, infrastructure and livelihoods interventions were undertaken independently of each other, both in time and space. The mono sectoral approach was evidenced by the findings that in all the three case study settlements, tenure took a long winding process commencing from the early 60s- 90s (and was still ongoing in Munyaka) with key actors, mainly land buying companies and the state, acting independently of each other. The piecemeal infrastructure provided in the early 80s and the more comprehensive infrastructure in 2012- 2016 were independent of tenure security while the few direct support to livelihoods, through education facilities, were provided in between the periods away from tenure and infrastructure services.

The study findings also showed that even within the same sectors, the solo approach was commonplace. Under tenure security, the different departments of physical planning, survey and land administration, valuation and registration worked independently of each other although the output of one affected the other. These silo uncoordinated approaches contributed to the lengthy, bureaucratic and costly processes of securing tenure characterized by long-drawn, unrelated piecemeal land administration and management processes of planning, surveying and titling. Similarly, departments within the infrastructure sector provided services of water, sanitation, electricity, roads and drainages initially through piecemeal provisioning in the three settlements independent of each other and over different periods. The multiple players provided their core technical sector-specific improvements with little regard to, first, the impact it would have on

other infrastructures for example provision of water or electricity which was provided but uprooted and relocated later to pave way for roads and drainages thus waste of resources. These were some of the challenges expressed in Huruma, Munyaka and Kamkunji case study areas where it became necessary to expensively relocate those same services to pave way for roads and drainages. Study findings also showed that livelihoods provisioning although minimal, had a single sector approach. This was mainly the direct support to education facilities and staff in Huruma and Munyaka public primary schools and nearby schools in Kamkunji.

From the foregoing, the existing approach to upgrading in the areas of tenure, infrastructure and livelihoods is a single sector characterized by uncoordinated activities undertaken by a mosaic of sectors that seldom integrate their approaches or activities. For instance, “within the urban water sector, such services as clean water supply, wastewater treatment and floodwater drainage are typically delivered by separate entities and not coordinated, as well as being isolated from other urban planning processes” (Bahr, 2012). This approach is not sustainable as it contributes to lengthy, costly bureaucratic and piecemeal interventions that constrain rather than enhancing poverty reduction and improvement efforts. According to, Oliveira et al., (2015) “conventional approaches often fail to achieve long-term objectives because they focus on limited, siloed or less-relevant aspects of the problem or fail to integrate insights and knowledge from these various domains”.

#### **7.4. Sustainability dimension: Tenure-Infrastructure-Livelihoods (T-I-L) nexus approach to upgrading**

This section sought to answer to the objective; *to determine the interplay of tenure security, infrastructure and livelihoods in the process of slum upgrading in Eldoret.*

This study established that the upgrading interventions of tenure, infrastructure and livelihoods are intrinsically linked. Tenure is a basis for infrastructure and affects livelihoods while infrastructure impacts tenure and livelihoods but livelihoods are necessary for the sustainability of tenure security and infrastructure. The study showed that the processes of achieving these interventions are intricately linked and so were the outcomes. From the study findings, the linkages in these tenure-infrastructure-livelihoods interventions are through common or reciprocal processes and impacts that could be leveraged to enhance either of the interventions.

Based on the study findings and the network and nexus analysis, the upgrading interventions of tenure, infrastructure and livelihoods are mediated by processes that are common to each and interdependent from initiation to implementation. Examples are common processes such as baseline surveys, stakeholder engagements, community engagement and designs that could be simultaneously done for all the three interventions. On impacts, the study findings showed that tenure security enhances infrastructure provision since the later lays a foundation upon which the former is laid. Statistically, tenure security was shown to be significantly linked to water, sanitation and electricity connections to households where those with the security of tenure were more likely to have formal water, sanitation and electricity connections and vice versa. This indicates that infrastructure projects can easily be implemented and can succeed if tenure has been secured.

Infrastructure, on the other hand, enhances tenure security since it facilitates access and other services to plots and contributes to higher land values and improvement of housing, which are tenure-related. Tenure security is also linked to livelihoods in varying degrees. It is linked to better housing where those with property rights (titles) have permanent housing units but temporary units for those without. While infrastructure was linked to improved living conditions (water, sanitation, lighting, drainage, transportation). This shows that tenure and infrastructure are critical elements in an informal settlement in upgrading. Gulyani and Basset, (2010) argued that tenure and infrastructure interact and they posited that either one could lead to improvements in the other and should therefore not be considered in isolation with Colin et al., (2012) similarly positing that tenure or infrastructure are complementary.

Data analysis using chi-square test showed that there exists a nexus between tenure security, infrastructure and livelihoods and based on a Chi-Square statistic of 44.166 and a p-value of 0.001 and since the p-value  $0.001 < 0.05$  (a- the level of significance), the study findings indicated that there is enough evidence to reject the null hypothesis ( $H_0$ ) for the alternative hypothesis ( $H_1$ ) that there are interlinkages between the security of tenure, infrastructure and livelihoods. A Phi coefficient of 0.491 indicates that tenure security, infrastructure and livelihoods have a very strong inter-linkage/association. The study further established that the

nexus of tenure security, infrastructure and livelihoods are in their interdependent processes and functions as discussed in chapter five, sections 5.9.1 and 5.9.2.

What this portends to poverty reduction policies, upgrading of informal settlements and for this study is two-fold. First, the need to understand the links between tenure security, infrastructure and access to livelihoods. Secondly, the need for integrated approaches that go beyond physical aspects and individual sectors to address cross-sectoral challenges and synergies for sustainability and greater efficiency in resource use since these are intricately linked and interconnected determinants of improvement of dwellers' wellbeing and living conditions in informal settlements. Other researchers have argued for integrated approaches and structures as a progressive approach to development (World Bank, 2017, 2016, Corburn and Sverdlik, 2017, UN, 2017, Jones, 2017, Weitz, 2014, Stringer, 2014, Bazilian et al., 2011, Mbathi, 2011, Syagga, 2011).

## **7.5. Giving tenure-infrastructure-livelihoods upgrading an institutional perspective**

This section seeks to answer the objective; *to determine institutional dynamics of tenure, infrastructure and livelihoods in informal settlements in Eldoret Town*. The study, in chapter six, analysed the institutional dynamics of tenure security, infrastructure and livelihoods and how they shape and influence these interventions in upgrading. It emerged that the state and the people or community play a critical role in upgrading and so do intermediary agencies such as land buying companies. The role of international agencies was found to be increasingly critical in supporting the state in upgrading although that of civil society was found to be insufficient.

### **7.5.1. Different players same goals**

The study findings showed that the government, land buying companies and the people played a critical role in the upgrading of case study informal settlements of Huruma, Munyaka and Kamkunji while civil society and Non-Governmental Organizations had a minimal role while the private sector, mainly through contracting, was instrumental in the construction of the infrastructure. On tenure, the state was the prime mover being the custodian and provider of legal security to land and property. However, the tenure process in the three case study settlements was

midwifed by other drivers, mainly the land buying companies and individual community members who relentlessly pursued ownership documents. On infrastructure, the government and its agencies were instrumental in initiating, planning, funding and in the execution of the infrastructure. The construction was undertaken by the private sector (contractors) procured by the government. Similar findings in Peru and Mexico and Brazil, have shown that governments tend to be in charge of tenure regularization and similarly, provision of infrastructure services is considered a core function of governments (Avis, 2016, Estache and Fay, 2009) which facilitates access to services and it removes or greatly reduces the risk of eviction (Satterthwaite, et al., 2018). Noting this critical role of the state in upgrading, governments must provide enabling environments to develop and implement appropriate policies to bring about change. However, this is hampered by inadequate institutional frameworks, top-down, centralized, silo and uncoordinated approaches, lack of funding and political constraints. There is a need for collaborative approaches that bring together various actors such as civil society, NGOs, community, private sector and international best practices.

The land-buying companies, on the other hand, were instrumental in the 60s-80s in contributing to tenure security through purchasing and large-scale farms, informally subdividing and availing it to its members through the allocation of plots and provision of respective share certificates. To this extent, some form of tenure security was initiated for large numbers of the poor as discussed in section 6.5.2. Study findings also showed that the community or the people, for whom upgrading is targeted, are pivotal in the upgrading endeavour as discussed in chapter six, section 6.5.3. Community participation, though not adequately done in the earlier years when tenure security was being pursued, it became paramount when the recent comprehensive infrastructure upgrading was undertaken. The peoples' participation, through elected representatives, facilitated ownership and acceptance of the project thus easing implementation and successful completion of the infrastructure upgrade. Community participation has been seen as crucial for successful upgrading. In other research, Community participation was a key strategy in the physical upgrading projects undertaken from project identification and planning to the procurement of materials and provision of labour, although the level and form of this participation varied enormously, this led to long-term success (Minnery, 2012).

However, despite the efforts of these institutions, the study findings showed that the upgrading was not adequate in all the three settlements especially the infrastructure provision since not all areas of the three settlements were upgraded due to inadequate funding. It is apparent therefore that the public sector cannot do it alone and there is much need for integrated and collaborative efforts between government, civil society, NGOs, International Organizations and more importantly the affected communities to facilitate scalable impact.

### **7.5.2. Institutional power dynamics: Shaping the outcomes of upgrading**

Power is an element in all human relationships (Lloyd, 1979). From study findings, power and control within and across institutions greatly influence informal settlement upgrading, from inception to implementation. According to study findings, the government secured funding from international institutions, to upgrade infrastructure in informal settlements, among others, the three case study areas of Huruma, Munyaka and Kamkunji. From a power perspective, first, there were the conditionalities from the international lending institutions that the government had to adhere to, including a fixed menu of infrastructure options, second, this was a government initiative thus making the upgrade more supply-driven than local community demand-driven. Essentially the government controlled the process including the allocation of resources, implementation and supervision of the project thus having a “power over” others, and “power to” achieve things (Gray and Purdy, 2018). The approach was more top-down but still had a positive impact in that the much-needed services were provided and settlement conditions improved. Top-down approach was mitigated through community participation in prioritizing infrastructure (though the menu was already set) and in the implementation of the project. Nonetheless, the effects of top-down approach included a focus on physical upgrade and non-inclusion of livelihoods support in upgrading. For the early period, the 70s-90s the effects of top-down approach were unsustainable and fragmented infrastructure that had to be relocated in later years.

Further, the policy and legal framework depicted as pragmatic is influenced by power dynamics revolving around control of resources, authority, mandates and functions. In infrastructure, such power dynamics were evident for example in the upgrading of road, water and sanitation infrastructure in the settlements which was undertaken by the National Government, yet the constitution, policies and laws mandate the County Government to undertake such functions.

According to Dewulf and Elbers, (2018), actors differ regarding control over resources, interests and the high stakes to a point where one of the actors can impose its will on the others(Gray and Purdy 2018). Beyond this, overlapping and inadequate coordination mandates within government agencies accentuated the competition for control and in the process constraining upgrading efforts. For example, in the water provision, numerous agencies included the County Government, State Department of Water and Irrigation, Eldoret Water and Sanitation Company, Water Resource Management Authority, Water Services Regulatory Authority, National Environmental Management Authority, Water Resources Users Association, Water Group Associations and CSOs all of which were mandated to provide water. These brought contentions and coordination challenges. Annamalai, (2016) similarly attributes these challenges to unclear responsibilities among government agencies for service delivery in poor settlements. In Kenya, though most policies provide for stakeholder engagement and coordination there is a gap in how this is to be actualised.

Tenure security, on the other hand, was a more bottom-up approach as compared to infrastructure provision. The process was initiated and driven by land buying companies and the communities persistently followed up their ownership documents from the farm directors. These documents were for some time not forthcoming as the directors exercised their “power over” the shareholders. At some point, as discussed in chapter four, section 4.3 the government came on board to regularise the settlement. The government bureaucratic and complex processes both at the national and local level influenced impact by imposing constraints that delayed the titling process for more than 30 years and still counting for Munyaka settlement.

The communities on the other hand, according to study findings, had no control over tenure security and infrastructure provision. Even though they participated in these processes and facilitated ownership of the upgrade, they did not have the mandate, resources and capacity thus making them dependent on the state for these provisions. The communities have not been empowered to improve their conditions. What exists currently in Kenya is a framework for their participation which is an improvement from the earlier approaches when communities were ignored and even evicted.

It is critical to understand the opportunities and constraints that power relations can have in upgrading. There is a need to minimize areas of conflict, completion and duplication by leveraging institutional strengths while minimizing weaknesses. The challenge of informal settlement is complex and enormous, requiring institutions to collaborate meaningfully through an integrated multisector approach that brings together institutions and resources

## **7.6. Summary**

This chapter was aimed at synthesising the findings of the study contained in chapters' four to six. They indicate that the three case study settlements have undergone upgrading mainly through tenure security and infrastructure improvements and but limited in direct support to livelihoods. The findings further indicated that the approach of provisioning was largely sectoral and compartmentalized with weak cross-sectoral and intra-sectoral institutional linkages. However, the findings showed that in reality these interventions are intricately linked in processes and functions and although individually they are beneficial, there was the need to take advantage of opportunities of synergy and minimization of conflicts, duplications and other trade-offs by deploying them simultaneously for upgrading to be impactful and sustainable through T-I-L-nexus upgrading approach.

This comes out more clearly in the next chapter that summarises the study findings regarding each objective upon which the study provides the conclusions and recommendations for policy and practices of informal settlement upgrading.



# Chapter Eight: Summary, conclusions and recommendations

## 8.1. Introduction

This chapter provides the summary, conclusions and the recommendations of the study. The recommendations answer the fourth research question and objective which was:

*“to recommend measures that are required to strengthen tenure security, infrastructure and livelihoods in slum upgrading”.*

The first section gives the summary. This includes the synopsis of the entire study from chapter one to chapter eight comprising the context, literature review, conceptual framework, research methodology, findings and analysis as well as the conclusions and recommendations. The second section dwells on the study conclusions. Based on findings and analysis, the study concludes that first, that tenure security and infrastructure, despite constraints, are critical foundational elements in slum improvements but are not adequate, secondly, that livelihoods do not receive adequate attention in upgrading, thirdly tenure security, infrastructure and livelihoods improvements in informal settlements upgrading are interlinked in processes and functions, fourthly, that the approach to upgrading is largely sectoral with the three elements of tenure, infrastructure and livelihoods being provided through siloed institutions that are characterized by power plays and control, powered by existing sector-specific policies, laws and regulations.

The third section answers the fourth research question and objective on recommendations for integrating tenure, infrastructure and livelihoods. It recommends, therefore, that since there is a nexus in tenure-infrastructure-livelihoods, there is need to first, move away from the current (dominant) single sector approach to multi-sectoral integrated and synergistic approaches to upgrading, second, incorporate human elements in the physical upgrade by explicitly integrating livelihoods in tenure and infrastructure upgrading and third the need for a collaborative nexus institutional approach. It recommends the Tenure- Infrastructure- Livelihoods (T-I-L) nexus approach to upgrading as an integrated, sustainable and justifiable linked up approach that brings together the three interventions to tackle not just the physical conditions but also the people through a nexus institutional framework. The policy implications being the need to significantly transform existing policy frameworks, laws and upgrading strategies to embrace T-I-L nexus

approach for synergy, wholeness and optimum use of scarce resources that will lead to resilience, sustainability and greater impact.

To present these, the chapter is organized into the following sections:

- i. Summary*
- ii. Conclusions: Research questions revisited*
- iii. Recommendations and implication for policy and practice of upgrading*
- iv. Theoretical Implications*
- v. An epistemological account*
- vi. A personal reflexivity account*
- vii. Areas for further research*

## **8.2. Summary**

The purpose of this study was to determine the interplay of tenure security, infrastructure and livelihoods interventions in slum upgrading in Kenya as well as the institutional dynamics that shape, influence, control and determine their nexus to inform policy and practice on how upgrading can be more impactful and sustainable. The context being slum upgrading currently seen as the best practice in addressing the pressing challenge of slum growth, especially in the global south. However, as a strategy, it has sometimes failed to achieve the intended purpose partly due to compartmentalization of upgrading interventions along sectoral lines which make it less impactful. The study, therefore, focused on this, specifically the interlinkages in upgrading interventions an area that has received limited attention, in particular, tenure security, infrastructure and livelihoods nexus in upgrading.

The research objectives, stated in chapter one, were to determine the type, nature and approaches of existing tenure systems, infrastructure provision and livelihoods in informal settlements in Eldoret, their interaction in the process of upgrading and the institutional dynamics that influence and shape these interplays. The research hypothesized that there were inter-linkages in tenure security, infrastructure, and livelihoods in slum upgrading processes while the alternative was that there were no linkages. The literature review presented in chapter two, on the other hand, revealed extensive research on the individual elements, conceptions and debates but found a

knowledge gap, limited research and understanding of linkages in upgrading interventions, specifically the nexus in tenure security, infrastructure and livelihoods, a gap which this study sought to contribute to.

To establish this and to answer the research questions, the study adopted a case study design composed of three case study informal settlements of Huruma, Munyaka and Kamkunji within Eldoret municipality as discussed in chapter three on research methodology. Both Eldoret and the case study settlements were purposely selected since they presented an opportunity in which the objectives of the study would be met and research questions answered. Household survey, focus group discussions, key informant interviews and field observations were used to collect primary data while secondary data was obtained from existing literature. Since this study was based on the philosophical foundation of realism, as discussed in chapter two, both qualitative (interpretivist) and quantitative (positivist) techniques were used to collect and analyse the data thus formed the basis for interpretation and conclusions. The combination of both approaches provided a better understanding and analysis than either approach could on its own. The qualitative data were subjected to content analysis to establish themes, trends and networks. Net-Mapping tool was used to analyse and visualize the interplay of networks in upgrading interventions, processes and institutions. Quantitative data obtained were analysed using the Statistical Package for Social Sciences (SPSS). The results were then presented using various statistical tools such as tables, percentages and graphs. Due to the nature of research data, which was categorical, the Chi-Square Test of Independence (association), at ( $\alpha=0.05$  significance level) was used to analyse the interlinkages in the tenure security, infrastructure and livelihoods while Phi coefficient and Cramer's V coefficient were used to measure the strength of the association between two variables or more respectively. Chi-Square Test analysis using SPSS yielded 3 statistics and p-values which were used for hypothesis testing namely Pearson Chi-Square, Fisher's Exact test and Likelihood ratio.

These were used to analyse the study findings presented in chapters' four to six. Each of these chapters addresses an objective and relevant research question. Chapter four speaks to the first objective which was to determine the type and approaches of existing tenure systems, infrastructure provision and livelihoods improvements while chapter five addressed the interplay

of these elements and chapter six their institutional dynamics. Each of these chapters has a theoretical foundation, the findings, data analysis and emerging key issues.

The key findings of the study, discussed in chapter four to six, were, first, that there is an emphasis on physical aspects of tenure security and infrastructure provision in upgrading but general neglect of human factors – the livelihoods component and that the approach to tenure, infrastructure and livelihoods is largely sectoral and not integrated as discussed in chapter four. Secondly, there is a linkage in tenure security, infrastructure and livelihoods in upgrading since the research hypothesis was validated in chapter five. Thirdly, institutions play a critical role in upgrading but the sectoral silo approach, as discussed in chapter six, is a constraint. Based on these findings the study challenges the dominant single sector approach to upgrading that do not take cognizance of linkages and the neglect of livelihoods and thus calls for an understanding of linkages in tenure infrastructure and livelihoods in upgrading and proposes a Tenure-Infrastructure-livelihoods (T-I-L) nexus approach to upgrading which is linked up, multisector and integrated approach that emphasises synergy and minimizing trade-offs for greater impact and sustainability of upgrading efforts.

The next section revisits the research questions and objectives to provide conclusions on each of them based on the findings and emerging key issues in the study.

### **8.3. Conclusions: Research questions revisited**

This section gives conclusions of the study based on the study research questions. The study had four research questions namely:

- 1. What is the type, nature and approaches of existing tenure systems, infrastructure provision and livelihoods in informal settlements in Eldoret?*
- 2. How do tenure security, infrastructure and livelihoods interact in the process of slum upgrading in Eldoret?*
- 3. What are the institutional dynamics of tenure, infrastructure provision and livelihoods in informal settlements in Eldoret Town?*
- 4. What measures are required for effective integration of tenure security, infrastructure and livelihoods in slum upgrading?*

### **8.3.1. Pathways to tenure security, infrastructure and livelihoods**

This section deals with the first research question which was; *what are the type, nature and approaches of existing tenure systems, infrastructure provision and livelihoods in informal settlements in Eldoret?*

This question was aimed at understanding and establishing the state of tenure, infrastructure and livelihoods interventions in the informal settlements in Eldoret using the case study settlements of Huruma, Munyaka and Kamkunji which were presented in chapter four. This was to lay the foundation for the investigation of the tenure-infrastructure-livelihoods nexus in upgrading and the attendant institutional dynamics in the subsequent chapters. The study concludes that there are various typologies and approaches to tenure security systems, infrastructure provision and livelihoods improvements in informal settlements presented in sections 4.3, 4.4 and 4.5. On land tenure security, the study concludes that the two informal settlements of Huruma and Kamkunji had formal legal tenure, mainly freehold, obtained at different times but Munyaka was still in the process of completing the process. The formalization was state-driven while the initial informal subdivisions and transactions that contributed to informality, in the first instance, were driven by land buying companies. However, on occupancy, there were more renters compared to the owners. Although the process was similar, the approach for each of the settlement was unique, with Huruma being more community-driven, Kamkunji having engaged the state (municipality) early in their subdivisions, saw both state and land buying company role in the tenure pursuit and for Munyaka being more land buying company driven and which to date is still pursuing the elusive titles, unlike Huruma and Kamkunji where the titling was completed. For both of these settlements, the freehold titles were predominant. According to Colier et al., (2018), freehold and leasehold titles are the predominant form of land rights in developed economies and they term this “ the gold standard of land ownership” since they confer full benefits of legal security, enforceability and marketability of land rights. For tenants, however, rental tenure was the most prevalent in the three settlements with the majority being renters compared to the owners. According to Gunter and Massey (2017), the prevalence of tenants in informal dwellings is far more prolific than previously thought and though it offers advantages of affordability, flexibility

and proximity to livelihoods, they are also sites of exploitation and poor living conditions (Naik, 2015). This study calls for upgrading interventions and approaches that support renters and not owners only that would include simultaneous tenure, infrastructure and livelihoods improvements.

On infrastructure, the study concludes that the three case study settlements have benefitted from infrastructure upgrading, initially through piecemeal stand-alone infrastructure in the 70s to 90s and more comprehensive integrated upgrade in 2012-2016 as discussed in section 4.4. The latter involved construction of roads, walkways, drainages, lighting, water and sanitation that was provided by the government with the support of development partners and with the participation of respective communities while the former were ad hoc sectoral provisions with minimal community engagement. In both instances, the infrastructure was state-driven, sectoral and despite challenges, the study concludes that it improved the conditions in all the three settlements. It has been argued that the provision of infrastructure is the responsibility of the public sector (Indranil, 2017, Adebayo and Iweka, 2014, Estache and Fay, 2009) and empirical studies have also shown that infrastructure is a critical element in improving informal settlements (Akhmat and Khan, 2011, Almansi, 2009, Majale, 2008). However, it is also argued that access to infrastructure and services compromises tenure security through the market competition for these infrastructure improvements (El-hadj et al., 2018). This study calls for rethinking strategies that only address physical challenges to incorporate strengthening of livelihoods to counter such market competitions and evictions.

On livelihoods, however, the study concludes that livelihoods improvement received minimal direct intervention in upgrading as discussed in section 4.5. The study found out that the livelihoods i.e. capabilities (skills, education, and health), assets (housing unit, land, property) and livelihood activities (employment and incomes) are still low. Upgrading of infrastructure and tenure regularization had improved their assets base and livelihood activities but their capabilities, health, skills employment and incomes were still relatively low. This study attributes this to the lack of direct support to livelihoods upgrade.

The study, therefore, concludes that upgrading in the three case study settlements focused on improving physical aspects and not the people themselves who despite these physical

improvements, their livelihoods were still vulnerable. Jones, (2017) also found out that livelihoods are given limited consideration in upgrading as he questioned whether governments in formalizing the informal, through upgrading, is not replacing one slum with another by not addressing underlying poverty since according to Minnery, (2013) the post-upgrading phase of slum improvement showed that there was still much to be done.

The study also concludes that a single sector approach is a dominant approach in informal settlement upgrading since tenure and infrastructure improvements, and to a lesser extent livelihoods intervention, were provided through largely isolated and mono-sectoral planning and implementation processes lacking adequate coordination and integration except for the infrastructure upgrade undertaken in 2012-2016 where there was an attempt to integrate various infrastructure and to involve various stakeholders. Nonetheless, it was evident that tenure, infrastructure and livelihoods improvements were largely public sector driven. This sectoral approach is not sustainable as it contributes to lengthy, costly bureaucratic and piecemeal interventions that constrain rather than enhance the upgrading efforts.

This approach is not sustainable as it contributes to lengthy, costly bureaucratic and piecemeal interventions that constrain rather than enhance the upgrading efforts. There is a need, to shift from dis-integrated to integrated approaches to optimize synergies between sectors and minimize trade-offs. Based on similar findings on sector-based approaches in upgrading, Mitra, et al., (2017) argued that projects that are multi-sectoral and integrated have stronger potential to effectively address multiple risks compared to single-sector interventions. There is need to shift from such rigid sectoral programs towards multi-sectoral strategies and policy which reflects the pillars of sustainability based on collaborative and integrated approaches and structures (World Bank,2017, Corburn and Sverdlik, 2017, UN, 2017, Jones, 2017, Weitz, 2014, Stringer, 2014, Bazilian et al., 2011, Mbathi, 2011 Syagga, 2011).

The study finally concludes that upgrading was found to have both positive outcomes that should be enhanced and negative outcomes that should be minimized in upgrading processes as discussed in section 4.7. For tenure dwellers obtained titles, regarded as the highest form of security. From these they derived security from evictions and property rights that included the right to sell, lease, borrow loans or give as an inheritance while infrastructure, improved living

conditions in the settlements including transport and accessibility of the settlement, improved security due to increased lighting, improved sanitation, clean and safe drinking water. However, a contrary finding by Soyinka and Siu, (2017) was that informality still exists despite the improvement of infrastructure with Brown-Luthango, (2016) concurring that although physical improvements are of absolute importance, without accompanying social and economic programmes, they will not bring about transformation and the impacts will be minimal and unsustainable in the long run. This study found that this is exacerbated by challenges such as the costly, lengthy and bureaucratic tenure processes and high cost, delays, duplications and displacements resulting from infrastructure that this study found to have negatively impacted the dwellers. Similar findings on challenges of tenure, by Miller, (2018), showed that land registration processes are complicated and time-consuming because of the nested land ownership system and the cumbersome process of assessing “who owns what”. The study suggests a nexus approach that integrates tenure, infrastructure and livelihoods as a way of overcoming these challenges.

### **8.3.2. Tenure-Infrastructure-Livelihood Nexus: An emerging upgrading paradigm**

The second research question was; *how do tenure security, infrastructure and livelihoods interact in the process of slum upgrading in Eldoret?*

The study tested and validated the hypothesis that there are linkages amongst these three elements and they have a very strong interlinkage/association. This was determined by the Chi-Square Test of Independence (association), at (a-0.05 significance level) and Phi coefficient and Cramer's V coefficient was used to measure the strength of the association consequently the study made the following conclusions:

Tenure security and infrastructure are linked in both processes and functions or outcomes. Using network mapping analysis of findings, this study showed and concludes that the two interact, first through processes and secondly through their functions or outcomes. On processes, some processes were common to both interventions and secondly, there were those that directly or



indirectly impacted the processes of the other. The shared processes were mainly found in preliminary activities meant to lay the ground for the project whether infrastructure or tenure security upgrading. Those activities that directly impacted the activities of the other were mainly implementation processes such as surveying, titling and construction of infrastructure. Apart from processes, the functions of tenure and infrastructure similarly interlink. Data analysis using chi-square test and cross-tabulations on tenure and various types of infrastructure showed that infrastructure (water, sanitation and electricity) are dependent on tenure security. From these, it is deduced that tenure security is a catalyst for infrastructure. For example, dwellers with the security of tenure were more likely to have tap water in the compound than those without. Similar findings showed that access to water as in the comparative case study of Zambia and Botswana showed that security of tenure was associated with higher water coverage level (Sjöstedt, 2011). Gulyani and Basset, (2010) argued that tenure and infrastructure interacted and they posited that either one could lead to improvements in the other and should therefore not be considered in isolation with Colin et al., (2012) arguing, that tenure or infrastructure are complementary. This study, however, found that there is a need to go beyond this and link the two to their impacts on livelihoods.

On the approach, the study found and concludes that though linked, tenure and infrastructure processes proceeded independently through single sector silo approaches. This led to duplication and waste of resources and worse still, well-meaning infrastructure projects undermining tenure security and vice versa. Further, the upgrade was undertaken mainly by the government with an emerging role of the community, supporting findings of Adegun, (2015) who found that although the state's role is significant in improving informal settlements, its top-to-bottom approach is a constraint and so is the community's bottom-up effort.

The study also concludes that there are tenure security and livelihood dependencies as discussed in section 5.5. These were evident in the study -both their processes and outcomes. On processes, the study found that the initial secure freehold tenure on agricultural land had the positive effect of granting security to the white settlers who used the lands for their livelihoods but negatively affected the indigenous communities. At the advent of independence, land buying companies bought the land upon which Huruma, Munyaka and Kamkunji settlements sprawl today. Informal

subdivisions and transactions, construction of rows and rows of haphazard houses, lack of public utilities such as schools, markets, access roads and other basic services degenerated the previous farmlands into informal settlements. These conditions exposed the dwellers to insecurities and vulnerabilities and subsequently precarious livelihoods. The government intervened in these settlements in the 90s to regularize the settlements and restore the security of tenure that had become precarious for many. This process (though it took inordinately long in Huruma and Kamkunji and yet to be completed in Munyaka) had direct and indirect impacts on livelihoods. Apart from security from evictions and improved houses, their livelihoods benefitted from access to assets held in common such as roads of access and other public utility areas such as schools in the case of Huruma and Munyaka and market in the case of Kamkunji that were established by the Eldoret Municipal Council.

Beyond the processes, study findings showed that tenure security stimulates livelihoods in the areas of income, housing and assets although data analysis showed no evidence of linkage to education, employment and skills suggesting, therefore, that tenure alone is not adequate. In the three case study settlements, a chi-square statistic showed that there was a relation between tenure security and household incomes determined by the Likelihood Ratio statistic. Those with the security of tenure had higher incomes than those without. Tenure security was also linked to better housing especially for those with titles. Data analysis showed a significant linkage with most of those with titles having permanent units unlike those without security, the majority of who had temporary and at most semi-permanent units. This was attributed to the confidence to invest in the improvement of their housing units which, according to findings of this study, was bolstered by property rights engraved in the leasehold and freehold titles that the proprietors had, including rights to sell, lease, take a loan and give out as an inheritance. Although tenure security reinforced livelihoods, surprisingly the evidence to link it to the nature of employment, the level of education, skills and assets owned (apart from land and structure ownership) was not sufficient since they were found to be independent of the tenure security. Comparable findings by Rakodi (2014) showed that tenure (titling) was insufficient to enable investment in human capital in such areas as social facilities such as schools, access to infrastructure and services and the opportunities and skills needed to earn an adequate living, and a voice in local decision making.

Similarly, based on the hypothesis test, the study concludes that infrastructure and livelihoods interact in their processes and outcomes and that infrastructure-upgrading pathways have generated various livelihood dynamics as dwellers sought to cope with the shocks generated by physical changes in their environments as shown in section 5.6. The outcome of the silo approach in the earlier years was minimal impact on livelihoods. In 2014- 2016, infrastructure upgrading procedures and processes were wide-ranging and each of them had an impact on livelihoods. In the preliminary phase, not all priorities of the community were included in the final designs due to government and donor limited infrastructure menu. Though this phase did not have an immediate impact on livelihoods, it would have a long-term effect of limiting livelihoods in the softer areas of education, health and business. During the implementation phase, there were disruptions to livelihoods due to relocations of both persons and services especially water lines, electricity and sewer lines to pave way for various infrastructure. On the positive side, however, the construction of infrastructure provided both temporary employment and business. The highest impact on livelihoods, however, came when the infrastructure was operationalized. Lighting increased working hours; roads improved transportation for goods and people, water and sanitation improved cleanliness and health and reduced incidence of diseases all of which has improved the living conditions. However, high utility costs, rents and increased land values triggered gentrification in the settlements.

Further, using chi-square statistic with likelihood ratio analysis, the study established that there are interlinkages between infrastructure and livelihoods. Specifically, on incomes, household assets and housing where those with infrastructure have higher incomes and live in permanent housing units compared to those without. However, on employment and skills, data analysis showed that there was not enough evidence to conclude that there was a linkage between the infrastructure and the households' form of employment. This could be attributed to the fact that the infrastructure in the settlement was newly built and the long-term effects are yet to manifest fully. Nonetheless, other studies have shown that provision of infrastructure, though it has an impact that is very significant in terms of improvements in the "quality of life" and/or environmental dimensions of urban poverty, it is much less successful in addressing the problems of survival and security, which have been identified as important dimensions (Amis and Kumar, 2000) and the need, therefore, to develop a new kind of upgrading – about people's lives and

rights, not just a few new drains and roads (Boonyabancha, 2005). The argument for this study is the need for nexus approaches that address both physical improvements and livelihoods improvements to minimize or altogether remove constraints that lead to market evictions.

Considering the intricate interlinkages in tenure, infrastructure and livelihoods improvements and their equal level of importance in addressing the complex yet entwined challenges facing the urban poor, this study proposes a Tenure-Infrastructure-Livelihoods (T-I-L) nexus as a more comprehensive, holistic and sustainable approach to the upgrading of informal settlements.

### **8.3.3. Institutional Dynamics**

The third research objective was; *what are the institutional dynamics of tenure, infrastructure and livelihoods in informal settlements in Eldoret Town?*

This research question, focused on the dynamics of institutions in tenure security-infrastructure-livelihoods nexus, discussed in chapter six. In doing this, the study looked at the key institutions and their dynamics which were looked at in terms of their roles, approaches, community participation, coordination, collaboration, power and control.

The study concludes that institutions play a key role in the upgrading of the settlements. In the case study settlements, these were mainly government and its agencies, land buying companies, the community, and international agencies with the minimal role of civil society and NGOs as discussed in chapter six. The government played a key role in tenure regularization (planning, surveying, valuation, registration and issuance of titles) and provision of infrastructure (roads, lighting, stormwater drainage, water and sanitation). This indicated a paradigm shift from evictions to the current best practice of upgrading guided by the policy and legal framework that provides for the upgrading of informal settlements. Other authors have pointed out this shift from previous strategies of ignoring, eviction, clearance, bulldozing, demolition and resettlements that failed, to upgrading that is currently seen as the best practice (Kamiya and Zhang, 2017, Marais 2017, UN, 2016, World Bank, 2016, Macharia, 1992).

Apart from the government, the study concludes that other agencies such as land buying companies facilitated tenure security through informal land delivery mechanisms which they used to avail plots, in large numbers, to the low income and the poor, on a willing buyer willing seller basis. This informal land delivery system was in part a response to the failures of the formal tenure and land administration systems including cumbersome and costly regulatory procedures (Rakodi and Leduka, 2004, Musyoka, 2002). The community, on the other hand, worked with land buying companies to push for their titles and they played a key role in prioritization and implementation of infrastructure through the Settlement Executive Committee. The international community was instrumental in providing funding support to the infrastructure provision. While civil society and NGOs role, according to the finding of this study, was not so apparent. Other scholars have acknowledged the important role of international institutions in supporting improved urban services (Stren, 2014) while civil society and NGOs role, according to the finding of this study, was not so apparent. This finding contrasts the findings of Danso-Wiredu and Midheme, (2017) who found a strong partnership between the state and civil society institutions in carrying out settlement upgrading in Kambi Moto in Nairobi Kenya (Midheme, 2010). This study argues for collaboration between the various actors in line with Lucci, et al., (2015) who found that cooperation between different actors – the government, experts (e.g. architects, engineers), civil society organisations and communities – helps leverage the comparative advantage of each of these stakeholders.

Interestingly the focus group discussion members could not pinpoint specific agencies that directly dealt with the improvement of livelihoods in the settlement only pointing out that people hustle to get jobs in informal and self-employment, educate their children, build their own houses without much support from the government.

From the community angle, the study concludes that the community participation in both tenure security and infrastructure is necessary for smooth implementation of the upgrading but must be managed to avoid negative outcomes. On infrastructure 18 community representatives were elected to represent the community in the project their role being to participate in activities of the project such as enumerations, identifying project affected persons, identifying roads to be upgraded, identifying spaces for high mast lighting, assisting contractors in identifying local

labour, resolving disputes and presenting grievances. The community facilitated smooth execution of the project but also rivalled elected civic leaders and sometimes acted as gatekeepers. Community participation has been seen as a pillar to successful upgrading. Bhatkal and Lucci, (2015) based on their research on Baan Mankong upgrading program in Thailand, concluded that having the community at the centre of the upgrading process delivers maximum benefits to slum dwellers in addressing their specific needs and empowers poor communities. However, a point of caution emerging from this study is that other institutions must support communities. Other scholars who argued that community-led approaches could never reach their full potential in isolation and need to be embedded within wider partnerships, strategies and funding opportunities (Crisp et al., 2016) have also advocated this point. However, the community approach was not without challenges. The narratives indicate mistrust, suspicions and diverse interests thus making the processing time consuming, costly and delays on project timelines. Thwala, (2009) pointed out this effective participation is an iterative and time-consuming process and may lead to increased project cost and delayed project completion and therefore argued that proper planning and efficient decision-making processes are imperative for community participation to be successful. Moreover, more funds should be injected in empowering and building capacity to communities through training and technical support (Bakari and Said, 2018) if they are to participate more effectively.

On approach to upgrading, the study concludes that there was minimal institutional collaboration across the sectors of tenure, infrastructure and livelihoods in the upgrading of the settlements. On tenure security, the government (Ministry in charge of Lands) departments, Land Buying Companies and the Municipal Council undertook tenure processes independent of each other. Further, collaboration within the respective institutions was minimal. For example, the community explained that various departments of the Ministry in charge of Lands such as planning, surveying, valuation, registration and titling undertook their activities separately although these activities are linked. This contributed to the complexity, high cost and delays in concluding the tenure regularization process. On infrastructure upgrading, however, it emerged, that though there was a collaboration between the National and the County government in implementing the upgrade it started with a standoff when the County felt that the National Government was running the show and had more say in the project more than the County government. The rocky start coupled with suspicion within the two levels of government served

to delay implementation of the project but when this was overcome, the project gained momentum.

Coordination of upgrading interventions by institutions of tenure, infrastructure and livelihoods the study concludes that this was largely average. The resultant effects of lack of adequate coordination led to uncertainty among the dwellers especially regarding tenure, it led to encroachments or total lack of land for infrastructure development, led to delay in tenure processes and infrastructure development and duplication of roles. For example, the institution that upgraded roads, walkways and drainages was the Ministry of Lands, Housing and Urban Development whereas such function is the mandate of the County Government since the upgraded roads are considered as county roads. Similarly, the same Ministry provided water and sanitation which is the mandate of ELDOWAS and Lake Victoria North Water Services Board. Initially, this brought a lot of contention as agencies debated whose constitutional mandate it was to undertake the various infrastructure but was also seen as a duplication of roles. Marten, (2015) found that fragmented actors are an obstacle due to their heterogeneous logics of acting that oppose cross-sectoral coordination in urban infrastructures.

As far as institutional dynamics are concerned, the study concludes that institutions have powers and control over their constitutional and legal jurisdictions. However, there was a mixed bag during the upgrading of the settlements. On tenure security, the land buying companies had a lot of power and control during the initial acquisition of the land, informal subdivisions and in the issuance of share certificates to the beneficiaries in the community due to governments' lack of development control. The control by land buying companies however eased when the government took over and regularised the tenure through processes of planning, surveying and issuance of titles. These were largely top-down processes by the government attributed to the constitutional, policy and legal mandate which confer immense power to the state on securing tenure for the citizenry. Though the community received the highest form of security through titles issued by the state, the process took inordinately long and still counting for one of the settlements, more than 30 years on. On infrastructure, the state exercised its power and control in the provision of infrastructure but for a long time, there were deficiencies in infrastructure provision in the informal settlements.

From the above, the study concludes that the state still wields a lot of power and control attributed to various reasons key among them supremacy of the state, resources and devolution. These conditions are a direct pointer of the existing legal and policy framework, rules, structures, procedures and processes that confer authority, power and control to the state. According to Bandiera et al., (2019) the state's importance lies in its legitimacy, oversight over critical institutions, laws, and regulations, the power to regulate others, can raise more foreign aid and can do larger-scale programmes with more impact than NGOs and other institutions. However, this study found that power structures and frameworks negatively influenced cross-sectorial collaboration and coordination. For upgrading to be impactful, sustainable, effective and meaningful, the various actors must embrace collaboration, transparent engagements and integrated approaches where the intrigues of power plays could be minimized.

## **8.4. Recommendations and implication for policy, practice and theory of upgrading**

Drawing from the findings, analysis and conclusions, the study makes recommendations for policy, practice and theory of informal settlement upgrading which are presented in the succeeding sections. This response to the fourth research question and objective *“to recommend measures that are required to strengthen tenure security, infrastructure and livelihoods in slum upgrading”*.

### **8.4.1. Recommendations for policy on informal settlement upgrading**

According to the findings and conclusion of this study, the approach to informal settlements was upgrading which denotes a shift from the previous negative approaches of evictions and demolitions to the more encompassing and effective approach of informal settlement upgrading. Based on the positive effect of this on the settlements, this study recommends upgrading as an important strategy in addressing the slum challenge. However, there is a need to make it more effective and impactful through significantly transforming policy frameworks, including content and processes, through multiple fronts. First, the study recommends a shift from the dominant sectoral and silo approach to tenure, infrastructure and livelihoods upgrading that was evident in



the case study settlements where these interventions were planned and implemented independent of each other, to integrated multi- intervention approaches that go beyond these individual sectors to cross-sectoral strategies. This will enable greater efficiency in resource use and greater impact. Integration underlies the current global policy in development espoused in the Sustainable Development Goals (SDGs). To achieve the target to upgrade slums under goal 11 on making cities inclusive, safe, resilient and sustainable, the upgrading policy must shift to multi-sector integrated approaches. This study has however shown that in Kenya, though integrated policy approaches have been embraced in informal settlement upgrading, the policy and legal framework are still largely sector-based constraining sector integration at implementation.

Secondly, based on the study finding and conclusion that upgrading mainly focused on physical conditions and not the people, this study recommends a policy. The question is- what takes precedence? Key upgrading interventions deployed in the case study settlements were the physical aspects of tenure security and infrastructure improvements. These two were found to be necessary as they addressed some of the constraining conditions of the settlements and the study recommends them as essential elements in upgrading. However, this study established that despite these benefits, the livelihoods were still precarious. In this study, the critical areas of people empowerment such as skills, employment, incomes, health, education capabilities, assets and livelihood activities remained basic thus constraining poor people's ability to make a living sustainably. This limited the ability of the urban poor to lift themselves out of poverty. Mesplé-Somps et al., (2016) had similar findings that upgrading had limited impact on employment and incomes. What this portends for informal settlement upgrading is the need to re-focus upgrading policies and strategies to incorporate aspects of livelihoods that improve dwellers capabilities, asset base and access to livelihood opportunities to enable them to achieve productive, resilient and meaningful living.

Thirdly, study findings showed and conclusion made that the interventions of tenure, infrastructure and livelihoods are intricately linked in their pathways and functions where one depended or influenced the other thus ultimately affecting the outcome. Tenure is a foundation and a driver for infrastructure and a catalyst for livelihoods. Similarly, infrastructure spurs livelihoods and strengthens tenure security while livelihoods strengthen both tenure and

infrastructure by capacitating the people to effectively transform them into livelihoods and productivity. For policy, the study recommends that interventions and strategies in slum upgrading efforts should be integrated due to their intrinsic linkages and thus recommends a multisector linked approach to upgrading for achieving sustainable upgrading outcomes. Specifically, the study recommends a Tenure-Infrastructure-Livelihoods (T-I-L) Nexus policy approach to informal settlements upgrading to address, not only the constraining conditions in the settlements but also and more importantly empowering the dwellers to lift themselves out of destitution.

A fourth policy recommendation, is an institutional makeover, particularly institutions charged with tenure, infrastructure and livelihoods improvements. The study showed that institutions that implemented these interventions were largely sector-based functioning through largely isolated and mono-sectoral planning and implementation processes both within and between the sectors. These isolations resulted in coordination challenges, delays, conflicts, duplications, escalation of costs thus limiting the impact. Further, the disjointed activities compromised the already fragile livelihoods of the dwellers. The downside of these fragmented institutional approaches to upgrading is sustainability. For policy, first, the need for integration, coordination and collaboration of institutions of tenure, infrastructure and livelihoods and secondly, considering the enormity of informal settlement proliferation, there is a need for a collaborative institutional policy approach to tenure-infrastructure-livelihoods in upgrading. The study recommends that this should incorporate community-based organizations, civil society, NGOs and government as resourceful contributors to upgrading efforts. In upgrading it is critical to nurture synergistic coproduction by these actors, allow each actor to exercise its comparative advantage and avoid duplication of efforts and waste of scarce resources. Lucci et al.,(2015) in her research found that there were benefits of working in partnerships and cooperation between different actors – the government, experts (e.g. architects, engineers), civil society organisations and communities since it helped in leveraging the comparative advantage of each of these stakeholders.

#### **8.4.2. Recommendations for practice in informal settlement upgrading**

Cascading from the policy recommendations, the study makes recommendations on the practice of upgrading. On the issue of the dominant sectoral and single sector approach to upgrading and policy recommendation to shift to integrated approaches, for practice, the study recommends the establishment of a collaborative interdisciplinary institutional framework that integrates the sectors of tenure, infrastructure and livelihoods and further recommends a reengineering of their respective processes in these interventions to make them more collaborative, coordinated and shorter for synergy, cost-effectiveness and efficiency. On the institutional framework, the study recommends a super-institution that brings together all these actors under a commission or a programme governed by a board comprising of government, civil society, community, international partners and the academia. This institution should have relative autonomy to facilitate collaboration between different actors. This would require fundamental transformations in institutions as well as upgrading project designs from the isolationist to integrated frameworks to achieve sustainability of upgrading efforts. For a start, there should be knowledge sharing and integration of professionals – they should talk to each other –to understand the critical links and synergize. “It is time to leave behind the mono-sectoral planning and management practices of the past, in favour of enhanced coordination between sectors thus resulting in accelerated access to resources and overall resource efficiency” (GIZ and ICLEI, 2014).

On reengineering of processes, the study recommends, for tenure security a reduction and simplification of the lengthy, complex and red tape processes of obtaining formal tenure through intergovernmental and interdepartmental integration and shifting from manual to digital platforms. For infrastructure upgrading processes the study recommends simplification and shortening of procurement processes and time frames but more importantly revisiting the investment menu to customize it to the dweller community priority needs.

On the bias towards physical aspects of upgrading against the softer elements of livelihoods that left dwellers still exposed to vulnerabilities, the recommendation for the practice of upgrading is to incorporate livelihood interventions in tenure and infrastructure upgrading- moving beyond physical interventions to incorporate people-centred livelihood strategies that can assist them to cope with the shocks generated by physical changes in their environments. This can include

interventions such as income-generating activities, providing markets, loans, training and skills development, cash transfers to vulnerable groups such as the elderly and disabled. Further, there is a need to re-think the strategy of pre-determined options. When dwellers identify their genuine and pressing needs and priorities, which in the case study areas included livelihoods support, these should be evaluated and considered for implementation. Brady and Mohanty, (2014) suggest that this fragility of livelihoods points to a clear need to intervene in longer-term livelihood programmes such as safety nets, provision of grants, promotion of group savings lending and skills training for poor households for livelihood protection and promotion.

On the finding that the interventions of tenure, infrastructure and livelihoods are intricately linked, for the practice of informal settlement upgrading, the linkages in interventions must be understood and deliberately taken into consideration in any project upgrade. Due attention should be given to activities that can be leveraged, synergized and trade-offs managed for greater impact and sustainability of upgrading efforts. Specifically, the study recommends a Tenure-Infrastructure-Livelihoods (T-I-L) nexus approach to the upgrading of informal settlements as a real-world approach that will first and foremost address the people as well as improving their living conditions. Procedurally, it recommends that for infrastructure projects to be easily implemented and to succeed tenure has to be secured. Infrastructure, on the other hand, enhances tenure security since it facilitates access and other services to plots and contributes to higher land values and improvement of housing, which are tenure-related. Tenure security is also linked to livelihoods in varying degrees. It is linked to better housing where those with property rights (titles) have permanent housing units but temporary units for those without. While infrastructure was linked to improved living conditions (water, sanitation, lighting, drainage, transportation).

This approach also facilitates the integration of sectors by identifying their interconnectedness and the need therefore to synergise. It is acknowledged that T-I-L approach is not a magical solution that can address all constraints in informal settlements, but rather a justifiable contribution to addressing the pressing needs of the slum dwellers. Though this multisector integrated framework to slum upgrading may have challenges that include complexity, insufficient financial resources, existing silo policies, rules, regulations and existing sectoral institutional setting, the costs of duplications and waste of resources arising from single-sector

approaches, the untapped potentiality of the people due to blind focus on the physical aspects of upgrading more than capacitating them may outweigh these challenges.

### **8.4.3. Recommendations for theory on informal settlement upgrading**

The findings of this study have implications for the theories on slum upgrading and the interventions of tenure security, infrastructure and livelihoods in general. First, on the prevailing sectoral approach to upgrading, the study challenges the theories of yesteryears that dignified sectoral approaches to upgrading and development in general. The study challenges but also builds on the tenure only (De-Soto, 2000, Turner, 1968) the infrastructure (Handzic, 2010) and the simultaneous tenure and infrastructure (Payne and Durand-Lasserve, 2013, Gulyani and Talukdar, 2008, Durand-Lasserve, 2007) theoretical approaches to upgrading to recommend a Tenure-Infrastructure-Livelihoods approach to slum upgrading.

Secondly, the finding of a bias towards physical more than the human components in upgrading, calls for a reexamination of the existing theories. The critical role of tenure security and infrastructure as vital components in upgrading on their own, as advocated by De-Soto, (2000), Turner, (1968) and Handzic, (2010) respectively, cannot be gainsaid. However, this study recommends an interlinking with the theories on livelihoods approaches such as advocated by Carney et al., (1999), Chambers and Conway, (1992) and advanced further by Haidar, (2009) Moser, (2005), Lloyd-Jones and Rakodi (2002) and Krantz, (2001). The livelihoods approach, according to these scholars, place persons and their needs at the core of development and focus on endowing the poor with abilities that enable them to build on their capacities which they can draw upon to make a living. Linking this to the physical aspects of tenure and infrastructure will provide a more comprehensive theoretical framework of addressing the indivisible social, economic and environmental spheres of sustainable development.

Thirdly, the study's recommendation of a Tenure-Infrastructure-Livelihoods (T-I-L) nexus approach to the upgrading of informal settlements, where the three elements are deployed simultaneously due to their interlinkages and interdependencies, has implications to theory. Unlike the view that infrastructure should be an alternative to tenure security as advocated by Handzic, (2010) who argued that land titling is not essential in the slum upgrading process, this

study agreed with the theory that infrastructure should accompany tenure (Durand-Lasserve 2002, Gulyani and Talukdar, 2008) and agrees with Gulyani and Talukdar's (2008) theory, that these interventions are inter-dependent and they should be acted upon simultaneously. However, the challenge with this perspective is that it views upgrading in terms of physical dimension and not the poor people whom themselves are living in poverty. This study thus advocates a theory of change to a Tenure-Infrastructure-Livelihoods approach that is integrative and more comprehensive.

Fourthly, on the role of institutions, the study recommends a collaborative and integrated multisector and interdisciplinary institutional set up that incorporates government, civil society, NGOs, the international community and the local community which deviates from earlier upgrading theories. Turner, 1968, for example, argued for 'minimal state' where the dwellers in the settlements would progressively improve their living conditions if tenure was secured. But which Werlin, (1999) pointed out the this was incapable of dealing with the challenges of slum upgrading and arguing instead "for an effective and strong state to ensure clear property rights, land acquisition and secure tenure" (Gulyani and Connors, 2002, Werlin, 1999, De Soto, 1989) and harness its strengths in "garnering financial, administrative, and technical resources to undertake large-scale projects and influence other housing and service providers to meet poor people's urban needs" (Otiso, 2003). This study, however, contends that government alone cannot meet the needs and must work with other agencies through a collaborative and synergistic approach, attention being deliberately given to the role of communities.

## **8.5. Framework for implementation of the T-I-L nexus approach**

Based on the recommendations in section 8.4.2, the study proposes a practical framework for the implementation of the T-I-L Nexus approach to informal settlements upgrading. Its main focus is to move away from the current isolationist and exclusionist sectoral approaches where tenure, infrastructure and livelihoods improvements in slum upgrading are deployed individually in slum upgrading. The strategy is to transform from the infrastructure only, tenure only or livelihoods only style of slum improvement to an integrated multisector T-I-L nexus approach that brings together these intricately linked sectors and interventions through a collaborative institutional framework. The aim is to optimize synergies while minimizing tradeoffs ingrained in the

linkages, for efficiency and effectiveness in resource use, greater impact and sustainability of upgrading efforts.

A practical framework for achieving this is provided in table 8.1. This framework is based on the basis that informal settlements are varied regarding their upgrading status. The table shows the existing settlement upgrading status, the sequencing of T-I-L interventions and the implementation approach.

*Table 8.1: T-I-L Nexus upgrading approach in different settlement situations*

	Existing settlement upgrading status	Sequencing of T-I-L Interventions			Implementation Approach
		1 <sup>ST</sup>	2 <sup>ND</sup>	3 <sup>RD</sup>	
1	No intervention	Livelihoods	Tenure	Infrastructure	Simultaneous deployment of interventions but in that order of incremental development. This is to be done through a collaborative multisector institutional framework with the community as the lead actor, the state as a foundation, CSOs, and the international community as pivotal facilitators.
2	Existing livelihoods, no tenure & no infrastructure	Tenure	Infrastructure	Livelihoods	
3	Existing tenure, no infrastructure & limited livelihoods	Infrastructure	Livelihoods	Tenure	
4	Existing infrastructure, no tenure & limited livelihoods	Tenure	Livelihoods	Infrastructure	
5	Existing tenure & infrastructure, limited livelihoods	Livelihoods	Tenure	Infrastructure	

Table 8.1 provides the various scenarios that exist in informal settlements and provides the interventions as well as the approach to upgrading. These are explained as follows:

**Situation 1: No Intervention.** This is a typical situation in most informal settlements where there is no upgrading intervention. Rojas, (2010) observed that only a small part of the population has benefited from the investments in infrastructure, urban services, and tenure regularization. In this instance, the T-I-L nexus approach would entail a simultaneous

deployment of the three elements through a collaborative multisector institutional framework where livelihoods are supported as tenure is being secured and infrastructure-related preparations are being made. In this study tenure activities include planning, surveying and tilting and infrastructure comprises roads, footpaths, stormwater drains, lighting, water and sanitation improvements while livelihoods include capabilities (education, skills, and health), assets (housing unit, land, property), and livelihood activities (economic activities, employment, and incomes). The upgrading would commence with the commonly shared preliminary activities of reconnaissance, community mobilization and sensitization, community needs assessments, baseline surveys, Environmental Impact Assessments, Environmental and Social Impact Assessments, socio-economic surveys, and feasibility studies. These would be tailored to cover data requirements for tenure, infrastructure, and livelihoods improvements. Subsequently, preparation of physical development plans, community priority-need-plans, surveys, initial engineering designs, and relocation action plans for structures, services, and or people affected through a multi-professional agency.

In the implementation phase, the identified livelihoods improvements and priority infrastructure would proceed concurrently with the processing of ownership documents or titles. Gulyani and Talukdar (2008) argued for simultaneous deployment of tenure and infrastructure in upgrading with Gulyani and Basset (2010) further reiterating this dual entry but with an added component of improving the neighbourhood's layout and circulation arguing that each would not be adequate on its own to improve living conditions. This study builds on this simultaneity of tenure and infrastructure but argues for triple entry which incorporates the third dimension on livelihoods. Livelihoods factor is critical in empowering dwellers to make use of these physical aspects to create livelihoods and improve their wellbeing. Cherunya et al., (2020) and Mangira et al., (2020, 2019) found that livelihoods are fundamental in fortifying infrastructure and tenure as well as lifting dwellers out of poverty.

**Situation 2: Existing livelihoods but no tenure and no infrastructure:** In a settlement where some level of livelihoods exist but lacking tenure security and infrastructure, the T-I-L nexus approach would entail concurrent deployment of tenure and infrastructure improvements and strengthening of existing livelihoods through a collaborative institutional framework. From study findings and conclusions, tenure and infrastructure processes are intricately linked. Therefore, to



avoid duplication and waste of meagre resources and guarding against either of the processes undermining the other, the first phase would start with preliminary activities that are common to these interventions, similar to those in situation 1. Consequently, processes that have a direct impact or are a precursor to either of the processes would be implemented. These would include preparation of Local Physical and Land Use Development Plans and surveys under tenure security processes concurrently with infrastructure engineering designs and relocation action plans. As pointed out in the study, tenure is a foundation to infrastructure and would therefore precede. The last phase would entail the construction of infrastructure, operation, and maintenance. Meanwhile, completion of titling, as well as interventions aimed at strengthening livelihoods, would proceed alongside infrastructure construction and maintenance. Study findings found that infrastructure-upgrading pathways generated various livelihood dynamics including temporary employment that assisted dwellers to cope with the shocks generated by physical changes in their environments. On the other hand, strong livelihoods would support dwellers in maintaining their tenure status and meeting the costs of utilities. Richmond, et al, (2018) in their study, found that infrastructure is necessary to improve livelihoods and decrease vulnerability in informal settlements while Royston, (2014), Payne and Durand Leserve, (2013) and De Soto, (2000) argued that tenure security improves livelihoods. Livelihoods alone therefore are not adequate to remove constraints in settlements but requires both tenure and infrastructure for resilience and sustainability. For this case, therefore, where livelihoods upgrading has been undertaken, the approach would be a dual entry of tenure and infrastructure.

**Situation 3: Existing tenure security but no infrastructure and limited livelihoods.** In a settlement where tenure has been regularized and limited livelihoods exist but lack infrastructure, the T-I-L nexus approach would proceed with infrastructure upgrading, buttressing of livelihoods, and strengthening tenure where necessary. Similarly, this would entail a collaborative approach. As found out in the study, tenure security is a catalyst and drives infrastructure, but it was also found that retrofitting infrastructure in an already built-up settlement can entail displacements and may be costly. A collaborative approach would be used to mitigate likely adverse effects especially during the implementation of infrastructure. The first phase would therefore involve preliminary activities similar to those of situations 1 and 2 but with emphasis on data required for engineering designs, relocations, and infrastructure construction, operation, and maintenance as well as ways of bolstering livelihoods. This would

be followed by relocations, compensations where applicable, construction, and maintenance while adhering to the tenure provisions. Regarding livelihoods, the study found that tenure is essential but not adequate to support livelihoods and therefore the need to directly support livelihood interventions. In this scenario, T-I-L nexus upgrading approach, both infrastructure and livelihoods upgrading would be undertaken concurrently since the study showed that the two are intricately linked. The study showed that tenure security is a foundation upon which infrastructure is built. Similarly, Meeks, (2016) argued that it is a facilitator to accessing public utilities.

**Situation 4: Existing infrastructure, no tenure & limited livelihoods.** In a settlement where infrastructure has been upgraded, has limited livelihoods but no tenure security, the T-I-L nexus approach would proceed with regularizing tenure, strengthening livelihoods, and scaling up infrastructure. Based on study findings, tenure is necessary for securing property rights, guarding against evictions, and for gaining confidence to invest in better housing. The first phase would therefore necessitate preliminary activities similar to those in the first scenario but with an emphasis on data required for tenure regularization. Subsequently, planning, surveying, and issuance of ownership documents would be undertaken. Concurrently livelihood upgrading interventions, to strengthen people's capabilities, activities, and strategies to make a living would be undertaken.

**Situation 5: Existing tenure & infrastructure but limited livelihoods.** In a settlement where tenure is regularized and infrastructure is provided but livelihoods are limited, as was the situation in the case study settlements, the T-I-L nexus approach would intervene in livelihood improvements. The study found that although beneficial, the interventions of tenure and infrastructure addressed the physical aspects but not the softer human or the person's needs. This was demonstrated by the finding of no sufficient evidence to directly link both tenure and infrastructure to people empowerment in areas of education, employment, and skills. The interventions were therefore not found to be adequate to lift dwellers out of poverty. The T-I-L nexus approach would therefore focus on empowering the person by upgrading their capabilities, (education, skills, and health), access to assets (housing unit, land, property) livelihood activities (economic activities, employment, and incomes). This would capacitate the dwellers to make meaning and living out of tenure and infrastructure upgrade. Procedurally, therefore, the upgrade

would commence with the preliminary activities such as those in those described in situation 1 but with a focus on data for livelihoods upgrading but in the context of existing tenure security and infrastructure but with data on completion of tenure and upscaling infrastructure to reach the whole settlement. The implementation phase would focus on upgrading livelihoods but also upscaling tenure and infrastructure where there are gaps as was found in the case study settlements.

### **8.5.1. Institutional framework for implementation of T-I-L nexus approach to upgrading**

Institutions are critical in implementation; they can make or break upgrading efforts. Addressing the ‘nexus’ in tenure security, infrastructure and livelihoods improvement is about various institutions that ought to transform from sectoral to collaborative approaches to achieve more economically, socially and environmentally integrative and sustainable upgrading outcomes. The T-I-L nexus approach advocates for a synergistic and integrated approach in provisioning contrary to the prevalent sectoral approach. The study findings showed that the sector approach used in the case study settlements led to duplications, conflicts, costly relocations, delays, complexity, and bureaucratic procedures all of which constrained the upgrading efforts and limited the impact.

To remedy this and based on the study finding that T-I-L interventions are intricately linked, the study recommends a collaborative institutional implementation framework, as elaborated in chapter six, that brings together the critical actors in a framework that allows coproduction, coordination, and sustainability. This would entail the key actors namely the community, the state, the CSOs, and the private sector as well as the international community. The community, being the wearer who knows where the shoe pinches, is proposed to be the lead actor, mobilizing its members to identify their needs, propose solutions, and work in concert with the government, CSOs, private sector, and international institutions in resource mobilization and upgrading implementation. Li and Alakshendra, (2019) similarly argued for a community-based approach in upgrading as a sustainable strategy since it strengthens dwellers self-governance and collective voice in pressing for services in the settlements.

The state, on the other hand, would be the foundation upon which the community and the supporting institutions would draw regarding policy, legal framework, regulations, resources, and coordination while the CSOs would play a pivotal role in working with communities in building capacities, sharpening needs, strategies and championing their interests while the private sector and the international community would support the government in providing resources including funding. Similarly, Nzau and Trillo (2020), Mangira, et al., (2020, 2019) argue for multisector institutions that involve local National and County governments, Non-Governmental and Civil Society Organizations as well as private entities in the upgrading processes.

This institutional framework would bring together sectors dealing with tenure, infrastructure, and livelihoods and must have a multisector and multi-professional implementation crew at national and local levels including the community level. These institutions would be aligned in a way that they become responsive to connectivity and an integrated approach to development.

### **8.5.2. Short and Long term measures on T-I-L Nexus upgrading framework**

Short term measures towards achieving this T-I-L nexus upgrading approach would begin with high-level institutional dialogues and consultations amongst the institutions charged with tenure, infrastructure and livelihoods improvements. The conversations would be centred on the indivisibility of sectors, the interconnectedness and interdependence and the need therefore to identify and adopt linked up implementation approach for optimal use of resources. Agreements reached in such consultations would thereafter be progressed into integrated policy directions that could be achieved in the long run. Secondly, the T-I-L nexus approach would require building bridges across disciplines and professionals engaged in these sectors. As shown in the study, professional exclusivity, their omissions and commissions have been both a boon and a barrier in cross-coordination efforts in upgrading. Rasul, (2016) argued that current systems conform professionals and expertise to traditional silo approaches. However, T-I-L approach shows that they are intricately linked and would benefit from cross-sectoral synergy and minimization of tradeoffs in upgrading. Thirdly, developing administrative nexus frameworks for institutional collaborations that bring together the T-I-L institutions both at policy and technical

level. This will be for identifying and integrating work plans, budgets, procurements and implementation of ongoing and planned upgrading activities.

Long term measures, on the other hand, would entail policy, legal and regulatory reform as pointed out in section 8.4.1. The objective is to review provisions that create and indoctrinate fragmented and siloed sectors, agencies, departments, sector funding mechanisms to enshrine linked up approaches and coordination in the areas of tenure, infrastructure and livelihoods upgrading in informal settlements. According to Liu et al., (2018), rigidity in sectoral policy frameworks, entrenched planning and implementation procedures, as well as power and control, are major barriers to integration and coordination

## **8.6. Meeting the SDGs and the New Urban Agenda**

The findings of this study have brought out the critical role of upgrading in improving lives and living conditions of informal settlements. Upgrading slums is one of the targets of the Sustainable Development Goals (SDGs), aimed at making cities and human settlements inclusive, safe, resilient and sustainable through integrated approaches (UN, 2016). Further, the study has pointed out the crucial role of tenure security, infrastructure and livelihoods particularly the linkages in these interventions and therefore the need for linked up integrated approaches as advocated by the SDGs and the New Urban Agenda. The New Urban Agenda (NUA) seeks to actualise upgrading of slums by laying a framework for upgrading through infrastructure, spatial planning, the security of tenure and by adopting and implementing integrated, policies and strategies that incorporate the social, economic, cultural and political dimensions (UN, 2017). Related to this, is the study's finding that livelihoods are a neglected component in upgrading and the need, therefore, to focus more on people-oriented interventions that strengthen livelihoods beyond physical upgrades. For these to succeed, however, there is a need to align institutions to respond to the need for connectivity and integration for sustainable development.

## **8.7. Methodological Reflections**

The study sought to investigate slum upgrading - a strategy that is currently viewed as the best practice in addressing the growing challenge of informal settlements in the urban space, especially in the global south. Its focus was on the nexus of slum upgrading interventions specifically, tenure security, infrastructure and livelihoods improvement in upgrading. Linkages and interrelationships in upgrading interventions are critical for integration, synergy and sustainability. However, there is limited knowledge on these and this study sought to contribute to this knowledge gap and contribute to policy and practice of upgrading. This research was guided by questions on the existing types and approaches of tenure, infrastructure and livelihoods in informal settlements and their interplays in upgrading as well their institutional dynamics that influence and control their interlinkages.

This study used a nexus approach that incorporated networking mapping, a research methodology that would uncover the links in the three elements and thus respond to research questions and objectives of the study. This section provides an understanding of the lens through which the researcher looked at this study, first the epistemological account and reflexivity account.

## **8.8. An epistemological account -how did I get to know?**

This research adopted a mixed-method approach of both the quantitative (positivist) and qualitative (interpretivist) approaches. The philosophical underpinning of this study was, therefore, a realism paradigm that combines the two philosophical positions. The reason for this is that the combination of both approaches provided a better understanding and analysis than either approach could on its own. It has been pointed out that many social scientists combine both since, both can be integrated into a single study so that one complements the other to benefit or contribute to an understanding of the whole (DePoy and Gitlin, 2011, Plano Clark, 2011).

The study used the interpretivist or qualitative approach to explore the experiences of people and their views and how they interpret tenure security, infrastructure and livelihoods interventions, their linkages and institutional dynamics in their informal settlements' context. These were then used in the study to describe and put meaning in the narratives. The positivist quantitative

approach, on the other hand, was used to verify, measure, quantify or find the extent of tenure, infrastructure and livelihoods improvements. The qualitative data was used to inform, explain, and provide further insight into findings generated from the quantitative dataset. These, qualitative and quantitative data sets were therefore integrated within the data analysis.

The study adopted a case study approach based on the type of research questions which were both explanatory ‘how’ and descriptive ‘what’ has been happening? Secondly, because the study had no control over the events of tenure, infrastructure, and livelihoods improvements in the informal settlements and finally because of the contemporary nature of the phenomenon of upgrading, including the interventions of tenure, infrastructure and livelihoods. Further, it allowed a holistic, in-depth investigation of upgrading interventions within their real-life context, since contextual conditions are regarded as highly relevant. For such kind of research *case study* is most appropriate (Yin, 1994, Stake 2006).

Based on these, the study collected data mainly through a household survey, focus group discussions, key informant interviews and observations. These were analysed using both qualitative and quantitative methodologies as described above. Based on the data obtained and analysed, the study validated the research hypothesis that tenure security, infrastructure and livelihoods improvements in upgrading are interlinked.

This study, however, acknowledges that other aspects of upgrading especially regarding the interplays in tenure security, infrastructure and livelihood dynamics including their institutional dynamics might have been overlooked in the process since the researcher, determined what was to be explored. Areas of limitations relate to the formulation of the research objectives and questions which were broad. These should have been narrowed down for example infrastructure included roads, walkways, stormwater drains, lighting, water, and sanitation while livelihoods encompassed capabilities (skills, education, health), assets, (housing unit, land, property) and livelihood activities (employment and incomes). These could be narrowed to allow more focus and in-depth examination. A further limitation was that the study did not use a very large sample size due to cost and time. Larger sample size would allow the use of various statistical analyses that could have been triangulated with the Chi-Square statistic.

## **8.9. A personal reflexivity account**

A personal reflection in chapter one gave the researchers' experience and professional background. It has been argued that knowledge obtained from research is imbued with the researcher's biography- that 'no research is free of the biases, assumptions, and personality of the researcher and we cannot separate self from those activities in which we are intimately involved (Sword, 1999). In chapter 3, section 3.12 I described my work experience and training that provide an understanding of my background and thus the lens through which this could have contributed to this study. Professionally, I am a trained urban and regional planner with work experience in planning. My current work assignment is in the upgrading of informal settlements, initially under Kenya Slum Upgrading Programme (KENSUP) and currently under Kenya Informal Settlement Improvement Project (KISIP) both being government projects aimed at improving living conditions in informal settlements in Kenya.

I must admit that the idea of undertaking this PhD study was borne out of this professional and work experiences that intrigued me into wanting to understand the linkages in upgrading interventions. This influenced my choice of the research topic and selected case study settings, where I would have an opportunity to investigate the linkages to inform policy and practice of upgrading for the realization of greater impact and sustainability in upgrading.

However, this research strived to adhere to "good practice" at all times. To manage any bias, this study used knowledge, skills and experiences of the research participants to present their ideas and insights to build the case for tenure-infrastructure-livelihoods nexus rather than using my ideas. I, therefore, captured, accurately conveyed their experience and reported first-hand qualitative and quantitative data and avoided a condescending attitude and projecting my own experience but made the best use of the opportunity for the participants to influence the research data and thus the result. I, however, used my experience as a planner dealing with upgrading and background skills to analyse information obtained from the research participants.



## **8.10. Areas for further research**

This study has focused on the interlinkages of tenure, infrastructure and livelihoods in upgrading. For more comprehensive understanding, further research should be undertaken on other interventions in upgrading to establish the nexus that exists to aid in understanding and navigating the implementation of the indivisible agenda of economic, social and environmental dimensions of sustainable development. Further in-depth research can be undertaken on the legal and policy framework governing tenure security, infrastructure and livelihoods to explore the variances and opportunities for integration of other interventions in slum upgrading.

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# Appendix 1: Household Questionnaire

## PART 1: GENERAL INFORMATION

1. Date (day/month/year/*Mwezi, siku, mwaka*) -----
2. Enumerator's name/*Jina la mwenye kuhesabu* -----
3. Name of settlement/*Jina la kijiji*-----
4. Name of village/*Jina la eneokatikakijij*-----
5. Land Reference (LR)- from survey maps (where applicable)/*Tumia nambari kutoka kwa ramani* \_\_\_\_
6. Gender of the respondent  Male  Female
7. Who is the respondent?
  1.  Household head
  2.  Spouse of Head
  3.  Child of Head over 18 years
  4.  Relative of the household over 18 years

## PART 2: TENURE SECURITY

### Type (categories) of tenure security

8. Do you have security of tenure in this settlement? *Je kuna umiliki ya shamba ama nyumba kwa hii kijiji?*  
Yes/Ndio  2. No/La
9. If yes, what are the types of tenure security in this settlement/ *Je, ni anina gani ya umiliki ya shamba ama nyumba katika hii kijiji*
  1.  Freehold title : *Cheti cha umiliki*
  2.  Lease hold title; *Cheti cha umiliki cha kukodesha*
  3.  Temporary Occupation License/*Cheti cha kukaa kwamuda;*
  4.  Allotment letter ; *Barua ya kupewa ploti kutoka serikali*
  5.  Share certificate; *Cheti cha ushiriki*
  6.  Other, specify/ *Nyingine, eleza* \_\_\_\_\_

### Nature (inherent characteristics) of tenure security

10. What is the nature of tenure security in this settlement? */Je Umiliki ni ya aina gani kwa hii kijiji?*
  1.  Legal (titles, letter of allotment)/*Umilikaji ni ya kisheria*
  2.  De facto (by this I mean, you are protected by both administrative or legal measures against forced evictions) *Umilikaji ni yenye inaweza kuzuia*
  3.  Perceived (by this I mean your tenure security is not formally recognised by the state but recognised by the community) *umilikaji haitambuliwi na serikali lakini inatembulia na wanakijiji*
  4.  Other(specify)
11. Do you own this land and structure, rent it, or is there a different arrangement? */Je, wewe ni mwenye kumiliki shamba na nyumba hii, mpangaji wa nyumba ama kuna mpagili totofauti?*
  1.  Own both land and structure/ *Mwenye shamba na nyumba* (Proceed to B)
  2.  Own the structure but not the land/*Mwenye nyumba lakini shamba si yangu* GO TO SectionB
  3.  Own the land but not the structure/*Mwenye shamba lakini nyumba si yangu*

4.  Rent paying tenant/*Mpangaji anayelipa kodi* (proceed to A)
5.  Occupant not paying rent/*Naishi lakini silipi kodi*

**A: TENANTS**

12. When did you move into the settlement?/*Je uliamia hii kijiji lini ?Why did you move to this settlement?/Kwa nini*

- 0-1 year \_\_\_\_\_ Why? \_\_\_\_\_
- 1.1-5 years \_\_\_\_\_ Why? \_\_\_\_\_
- 5.1-10years \_\_\_\_\_ Why? \_\_\_\_\_
- More than 10 years \_\_\_\_\_ Why? \_\_\_\_\_

13. Where does your landlord live? /*Je mwenye kumiliki nyumba au shamba anaishi wapi?*

1.  In the same plot
2.  Not in the same plot but in the same settlement
3.  Outside the settlement

14. Does he own the plot, structure or both?/*Je anamiliki shamba, nyumba ,yote mbili ama anakodisha*

1.  Own both plot and structure/ *Mwenye shamba na nyumba*
2.  Own the structure but not the land/*Mwenye nyumba lakini shamba si yangu*
3.  Own the land but not the structure/*Mwenye shamba lakini nyumba si yangu*
4.  Rent paying tenant/*Mpangaji anayelipa kodi*

15. Do you have a written agreement with the structure owner?

Yes/Ndio  2. No/La

16. How much rent were/are you paying for your housing unit/structure per month? / *Unalipa kodi ya pesa ngapi kwa mwezi? Ksh per month*

Amount per month	2 Years ago,	Current	Increased or decreased?	Reason
>1000				
1001-3000				
3001-5000				
5001-10,000				
10,0001-15,0000				
15,001-20,0000				
<20,0000				

17. Do you feel secure or you can be evicted?/*Je waskia uko salama ama waweza kuhamiswa kwa lazima? 1. Yes/Ndio  2. No/La*

18. Are new people moving into this settlement?

1. Yes/Ndio ; Why/*sababu gani?*-----  2. No/La; Why/*sababu gani?*-----

19. Are people moving out of this settlement?

1. Yes/Ndio ; Why/*sababu gani?*-----  2. No/La; Why/*sababu gani?*-----

20. If yes, to where?/*Kama ndio, wapi?*-----

**SECTION B (only for land owners and structure owners)**

21. What type of ownership document do you have for the land?/*Unacheti cha aina ipi ya umiliki wa shamba?* And when did you get it? /*je hi umiliki ulipata lini?*

1.  None/Hakuna
2.  Freehold title : Cheti cha umiliki *when/lini?-----*
3.  Lease hold title;Cheti cha umiliki cha kukodesha *when/lini?-----*
4.  Temporary Occupation License/Cheti cha kukaa kwamuda; *when/lini?-----*
5.  Allotment letter ; Barua ya kupewa ploti kutoka serikali *when/lini?-----*
6.  Share certificate; *when/lini?-----*
7.  Other, specify/ Nyingine, eleza \_\_\_\_\_

22. Who issued you with the ownership documents?

1.  National Government
2.  County Government
3.  Municipal Council
4.  Structure owner/ Landlord
5.  Other, specify/Nyingine, eleza \_\_\_\_\_

**Approach to (or way of dealing with) Tenure security provision**

23. What process/approach was used to give ownership? *Ulipata umilikaji kwa njia gani?*

1.  Community sensitization, planning, survey followed by issuance of ownership documents
2.  Planning, survey followed by issuance of ownership documents
3.  Survey followed by Planning followed by ownership documents
4.  survey followed by ownership documents
5.  Ownership documents only
6.  Other (specify)

24. How were these processes done?*Je silifanywa kwa njia gani*

1.  Simultaneously
2.  Individually
3.  Other (specify)

25. Please name institutions that played a role in tenure security and the role they played

Institution	Role
Ministry of Lands	
County Government	
Municipal Council	
NGO	
Development partners	
Faith Based organizations	
Community organization (specify)	
Other (specify)	

26. Was there any collaboration between the institutions undertaking the work?/Je kulikua na ushirikiano kati ya watendaji?

- Yes/Ndio       2. No/La

27. Did the community participate actively in these processes? Je wakaaji wali husiswa ?

Yes/Ndio , why?/kwa nini? \_\_\_\_\_  2. No/La \_\_\_\_\_ why?/kwa nini?

28. How long did it take to get your ownership documents? What are the reasons?

0-5 years -----Why?-----

6-10 years-----Why?-----

10-20 years-----Why?-----

21years and above -----Why?-----

29. What rights do you have on the land and structure? (TICK ALL THAT APPLY)/

- 1. Sell/Kuuza
- 2. Lease/Rent/Kukodisha
- 3. Take loan/mkopo
- 4. Inheritance/Urithi
- 5. Other/Nyingine

30. Were there other improvements in the settlement that were done before, during or after provision of tenure security?  1. Yes/Ndio  2. No/La

If yes, specify/ gani? \_\_\_\_\_

31. Do you feel you have secure tenure, that is , that you will not be evicted? / Je unahisi kama una usalama wa umiliki kamili ama unaweza kutolewa kwa nguvu?  1. Yes/Ndio  2. No/La

32. Has the ownership of structure or land benefitted you?/Je, umiliki wa ploti ama nyumba imekusaidia?  
 1. Yes/Ndio  2. No/La

33. If yes, in what way? (TICK ALL THAT APPLY)/Kama ndio, kwa njia gani?

- 1.  Shelter/nyumba
- 2.  Money from Rent/pesa kutoka kukodisha
- 3.  Money from loan/pesa ya mkopo
- 4.  Access services /kupata miundo msingi
- 5.  Others /Specify \_\_\_\_\_

34. What challenges were experienced in the provision of security of tenure?

### PART 3: INFRASTRUCTURE SERVICES

#### Type (categories) of infrastructure

35. What type of infrastructure do you have in the settlement?/Je miundo misingi aina gani iko kwa kijiji

- 1.  Roads
- 2.  Storm water drainage
- 3.  Walkways
- 4.  Water
- 5.  Sewerage
- 6.  Ablution blocks
- 7.  Lighting
- 8.  Electricity
- 9.  Garbage disposal system
- 10.  Other/Nyingine

36. Tick infrastructure improvements in your settlement and when they were upgraded./Weka alama kwa ya miundo misingi kwa kijiji yako and wakati iliboreshwa

Type	Tick/select	Year upgraded
Roads		
Storm water drainage		
Walkways		
Water		
Sewerage		
Ablution blocks		
Lighting		
Electricity		
Garbage disposal		

### Nature (inherent characteristics) of Infrastructure

37. What is the nature or characteristics of the infrastructure?

#### Water

1.  Piped water from private individual connection inside house
2.  Piped water from shared compound tap
3.  Piped water from water kiosk, commercial standpipe,
4.  Private borehole in own compound
5.  Shared borehole in own compound
6.  Borehole water from other residents/neighbours
7.  Mobile water vendors and water tankers
8.  Natural sources (e.g. lake, river, spring, rain water)
9.  Other, specify

#### Sanitation

1.  Private toilet and bathroom in the house
2.  Shared pit latrine and bathroom outside the house but within compound
3.  public facility/ Ablution block
4.  Connected to sewer
5.  Other (specify) \_\_\_\_\_

#### Only for those households with toilet in the house or compound

1. Formal connection to Public sewer
2. Informal connection to Public sewer
3. Pit latrine
4. Septic tank/or soak pit
5. Other, Specify \_\_\_\_\_ (e.g. to water drain, to river etc.)

## Electricity

1.  Street light only
2.  High mast light only
3.  Formal Connection to the housing unit
4.  Informal connection to housing unit
5.  Other (specify)

## Roads

1.  Earth road
2.  Gravel/Murram
3.  Tarmacked
4.  Other (specify)

## Storm water drains

1.  Open paved drains
2.  Closed paved drains
3.  Open earth drains
4.  No drains
5.  Other (specify)

38. Have you benefitted from the infrastructure?  1. Yes/Ndio  2. No/La Why/sababu? -----

If yes, in what way?

Type	Benefit	Disadvantage
Roads		
Storm water drainage		
Walkways		
Water		
Sewerage		
Ablution blocks		
Lighting		
Electricity		
Garbage disposal		

## Approach to (or way of dealing with) infrastructure provision

39. Which institution provided the infrastructure?/Ni kampuni gani alileta haya mabarabara,maji, stima

Type	Institution (National, County)	Name of institution
Roads		
Storm water drainage		
Walkways		
Water		
Sewerage		
Ablution blocks		
Lighting		
Electricity		
Garbage disposal		

40. How was it provided?

- Simultaneously  
 Individually/different times  
 Other/specify \_\_\_\_\_

41. Were there other improvements in the settlement that were done before, during or after provision of infrastructure?  1. Yes/Ndio  2. No/La

42. If yes, specify/ gani? \_\_\_\_\_ and how did this assist?

43. What challenges were experienced in the provision of infrastructure?

#### PART 4: LIVELIHOODS

##### Type (categories) of Livelihoods

##### Activities (Type)

44. What are the main livelihood activities of households / *Shuguli ya kuendesha maisha ya wanavijiji ni ipi?*

Type of livelihood activity	Children (Below 18 years): Nos.		Adults (18 years & above): Nos.	
	Male	Female	Male	Female
Employment				
a) Formal employment				
b) Informal Employment				
c) Self Employed				
Business				
a) Business/commercial trade				
b) Manufacturing/Industry				
Farming				
a) Agriculture				
b) Livestock				
Unemployed				
Student				
Others (specify)				

##### Activities (Nature)

Nature of livelihood activity	Children (Below 18 years): Nos.		Adults (18 years & above): Nos.	
	Male	Female	Male	Female
Formal Employment				
• Public sector				
• Private sector				
• Other (specify)				
Informal Employment				
• jua kali				
• casual				
• other (specify)				
Business/commercial trade				



<ul style="list-style-type: none"> <li>• Street food vendor(ready-made food)</li> <li>• Hotel/restaurant</li> <li>• Grocery shop and Food stall (vegetables, fruits, etc.)</li> <li>• Retail or wholesale shop</li> <li>• Butchery</li> <li>• Selling of clothes or household items</li> <li>• Cleaning and washing services</li> <li>• Hairdressers and barber shops</li> <li>• Transport Services (renting out or operating matatus, hand carts for cargo, taxis, boda-boda/bicycle taxi, trucks, buses etc.)</li> <li>• Other (specify)</li> </ul> <p>Manufacturing/Industry</p> <ul style="list-style-type: none"> <li>• Posho Mill</li> <li>• Carpentry</li> <li>• Other (specify)</li> </ul> <p>Farming/Livestock</p> <ul style="list-style-type: none"> <li>• Sheep/goats</li> <li>• Chicken</li> <li>• Pigs</li> <li>• Rabbits</li> <li>• Other (specify)</li> </ul> <p>Farming/Agriculture</p> <ul style="list-style-type: none"> <li>• Vegetables</li> <li>• Maize</li> <li>• Beans</li> <li>• Other</li> </ul>				
---	--	--	--	--

45. What was the total household cash income during the last one month? / Kwa mwezi uliopita, mapato yote ya familia ilikuwa pesa ngapi kwa jumla?

- |   |  |
|---|--|
| <input type="checkbox"/> Less than/ Chiniya 3,000 | <input type="checkbox"/> 22,501-30,000 |
| <input type="checkbox"/> 3,001-6,000              | <input type="checkbox"/> 30,001-37,500 |
| <input type="checkbox"/> 6,001-9,000              | <input type="checkbox"/> 37,501-45,000 |
| <input type="checkbox"/> 9,001-13,000             | <input type="checkbox"/> 45,001-60,000 |
| <input type="checkbox"/> 13,001-18,000            | <input type="checkbox"/> 60,001-75,000 |
| <input type="checkbox"/> 18,001-22,500            | <input type="checkbox"/> Above 75,000  |

46. What is the location of your MAIN business? /Biashara yako ku iko wapi?

- 1. The home/household
- 2. Along the road within the settlement
- 3. At the client's location (home, office, factory, etc)
- 4. Mobile vendors
- 5. Designated market space within the settlement
- 6. Outside the settlement
- 7. Other (specify)

47. What challenges have you experienced in these livelihood activities and what suggestions do you have to improve the situation?\_\_\_\_\_

**Capabilities(skills, education, health)**

**Skills (Type and Nature)**

48. Are there Household members with skills/*Je kuna jamii wenye ujuzi wa kazi*

1. Yes/Ndio       2. No/La

49. If yes , what skills/ *Kama ndio, ujuzi gani*

*Basic Skills*

- Carpentry  
 Iron monger  
 Cooking food  
 Tailoring  
 Masonry  
 Other (specify) \_\_\_\_\_

*Professional Skills*

- Surveyor  
 Teacher/Lecturer  
 IT  
 Lawyer  
 Medical  
 Engineer  
 Other (specify) \_\_\_\_\_

50. What challenges have you experienced in acquiring skills and what suggestions do you have for improvement? \_\_\_\_\_

51. What challenges have you experienced in acquiring skills and what suggestions do you have for improvement? \_\_\_\_\_

**Education (Type and Nature)**

52. Are there Household members with education?/*Je kuna jamii wenye elimu?Ya aina gani?*

1. Yes/Ndio       2. No/La

Type of Education	Nature of Education (Public or Private)	Children (Below 18 years): Nos.		Adults (18 years & above): Nos.	
		Male	Female	Male	Female
Primary					
Secondary					
Tertiary					
University					
Others (specify)					

53. What challenges have you experienced in acquiring education and what suggestions do you have for improvement? \_\_\_\_\_

### Health (Type and nature)

54. What are the major illnesses in your household or settlement (TICK ALL THAT APPLY) / *Kuna mtu yeyote kwa familia yako ama kwa kiji ambaye ameugua ugonjwa haya (Chagua yote yenye yanatumika)*

- |  |  |
|--|--|
| <input type="checkbox"/> 1. Cholera (Y/N)      | <input type="checkbox"/> 5. Typhoid (Y/N)              |
| <input type="checkbox"/> 2. Diarrhoea (Y/N)    | <input type="checkbox"/> 6. Respiratory problems (Y/N) |
| <input type="checkbox"/> 3. Tuberculosis (Y/N) | <input type="checkbox"/> 7. Other, (specify) _____     |
| <input type="checkbox"/> 4. Malaria (Y/N)      |  |

55. Are there adequate health facilities in the settlement?  1. Yes/Ndio  2. No/La

56. What challenges do you have in regards to health issues and what suggestions do you have for improvement? \_\_\_\_\_

### Assets (housing unit, land, property)

#### Housing Unit (Type and nature)

57. What are the types of housing units in the settlement

Type of Housing unit	TICK	Nature of Housing (no. of rooms)	Tick
Temporary		One room	
Semi- permanent		Two rooms	
Permanent		Three rooms	
Others (specify)		Four rooms	
		Others (specify)	

58. What materials have been used for construction of the house? / Je ni vifaa vipi vya ujenzi vimetumika?

Nature of housing units (materials used)	<b>a</b> External walls	<b>b</b> Roof	<b>c</b> Floor
	<input type="checkbox"/> 1. Stone <input type="checkbox"/> 2. Brick/block <input type="checkbox"/> 3. Mud/wood <input type="checkbox"/> 4. Mud/cement <input type="checkbox"/> 5. Wood only <input type="checkbox"/> 6. Corrugated iron sheet <input type="checkbox"/> 7. Tin <input type="checkbox"/> 8. Other.....	<input type="checkbox"/> 1. Corrugated iron <input type="checkbox"/> 2. Clay tiles <input type="checkbox"/> 3. Concrete <input type="checkbox"/> 4. Asbestos sheet <input type="checkbox"/> 5. Makuti (thatch) <input type="checkbox"/> 6. Grass <input type="checkbox"/> 7. Tin <input type="checkbox"/> 8. Other.....	<input type="checkbox"/> 1. Earth/clay <input type="checkbox"/> 2. Tiled floor <input type="checkbox"/> 3. Cement <input type="checkbox"/> 4. Wood <input type="checkbox"/> 5. Other

59. What challenges do you have in regard to housing and what suggestions do you have for improvement?

**Properties/Assets**

60. What other properties do you own?

- Land
- Housing unit
- Shop
- Car
- TV
- Household items
- Other (specify) \_\_\_\_\_

61. what obstacles do you come across while obtaining assets(e.g land, property) \_\_\_\_\_

**PART 5: INTERPLAY BETWEEN TENURE SECURITY, INFRASTRUCTURE, AND LIVELIHOODS**

**Relative significance**

62. What upgrading projects have been done or are there in the settlement?

1. Tenure security (specify) \_\_\_\_\_
2. Infrastructure (specify) \_\_\_\_\_
3. Improving livelihoods(specify) \_\_\_\_\_
4. Others (specify) \_\_\_\_\_

63. Which of them was done first in the settlement, tenure security (ownership) , infrastructure or livelihoods improvement?

Tenure security  infrastructure  Livelihoods  other, Specify \_\_\_\_\_

64. According to you , which one should have come first to the settlement and why? \_\_\_\_\_

Tenure security  infrastructure  Livelihoods  other, Specify \_\_\_\_\_

65. Is tenure security alone adequate to improve your living?  1. Yes/Ndio  2. No/La

66. If No, what else is required?

improving livelihoods through (prioritize from 1-4):  
1. acquiring assets, (housing unit, land, property) \_\_\_\_\_  
2. improving capabilities (skills, education, health) \_\_\_\_\_  
3. Improving livelihood activities (employment and incomes). \_\_\_\_\_  
4. Other (specify) \_\_\_\_\_

improved infrastructure (prioritize from 1-4)  
1. roads, walkways, \_\_\_\_\_  
2. street and security lighting \_\_\_\_\_  
3. storm water drainage \_\_\_\_\_  
4. water and sanitation systems \_\_\_\_\_  
5. Other (specify) \_\_\_\_\_

Both livelihoods and infrastructure \_\_\_\_\_

Any other (specify) \_\_\_\_\_

67. Is infrastructure alone adequate to improve your living?  1. Yes/Ndio  2. No/La

68. If No, what else is required?

improving livelihoods through (prioritize from 1-4):  
1. acquiring assets, (housing unit, land, property) \_\_\_\_\_  
2. improving capabilities (skills, education, health) \_\_\_\_\_  
3. Improving livelihood activities (employment and incomes). \_\_\_\_\_  
4. Other (specify) \_\_\_\_\_

Improving tenure security (prioritize from 1-6)  
1. Planning the settlement \_\_\_\_\_  
2. Surveying the plots in the settlement \_\_\_\_\_  
3. Providing titles \_\_\_\_\_  
4. Providing letter or document of ownership and not title \_\_\_\_\_  
5. Ensuring there is no eviction only \_\_\_\_\_  
6. Other (specify) \_\_\_\_\_

Both improved livelihoods and tenure security \_\_\_\_\_

Any other (specify) \_\_\_\_\_

69. Is improving livelihoods alone adequate to improve your living?  1. Yes/Ndio  2. No/La

70. If No, what else is required?

- improved infrastructure (prioritize from 1-5)
1. roads, walkways, \_\_\_\_\_
  2. street and security lighting \_\_\_\_\_
  3. storm water drainage \_\_\_\_\_
  4. water and sanitation systems \_\_\_\_\_
  5. Other (specify) \_\_\_\_\_

- Improving tenure security (prioritize from 1-6)
1. Planning the settlement \_\_\_\_\_
  2. Surveying the plots in the settlement \_\_\_\_\_
  3. Providing titles \_\_\_\_\_
  4. Providing letter or document of ownership and not title \_\_\_\_\_
  5. Ensuring there is no eviction only \_\_\_\_\_
  6. Other (specify) \_\_\_\_\_

Both improved infrastructure and tenure security \_\_\_\_\_

Any other (specify) \_\_\_\_\_

### Interactions/Inter-linkages

71. Do you think there are interlinkages between tenure security and infrastructure? *Je kuna usiano kati ya umiliki na miundombinu (kama barabara, maji, stima)*

Yes/Ndio       2. No/La

If yes, in what way? *Kama ndio, kwa njia gani?* \_\_\_\_\_

72. Do you think there are interlinkages between tenure security and livelihoods? *Je kuna usiano kati ya umiliki na uboreshaji ya maisha?*

Yes/Ndio       2. No/La

If yes, in what way? *Kama ndio, kwa njia gani?* \_\_\_\_\_

73. Do you think there are interlinkages between infrastructure and livelihoods? *Je kuna usiano kati ya na miundo miundombinu na uboreshaji ya maisha?*

Yes/Ndio       2. No/La

74. If yes, in what way? *Kama ndio, kwa njia gani?* \_\_\_\_\_

### Effects

75. How has tenure security affected provision of infrastructure? *Je, umiliki umekua na athari gani juu ya utoaji wa miundo mbinu?* \_\_\_\_\_

76. Does lack of ownership document preclude dwellers from getting connected to utility networks? *Je, ukosefu wa hati umiliki kuzuia wakazi kutoka kupata kushikamana na mitandao shirika*  
\_\_\_\_\_
77. How has tenure security affected livelihoods? *Je, kuna athari gani umiliki juu ya umarishaji ya maisha?* \_\_\_\_\_
78. How has infrastructure affected tenure security? *Je, miundo misingi umekua na athari gani juu ya utoaji wa umiliki?* \_\_\_\_\_
79. What are the effects of infrastructure on livelihoods? *Je, kuna athari gani miundo misingi juu ya umarishaji ya maisha?* \_\_\_\_\_
80. Has both tenure and infrastructure provided improved conditions of the settlement? *Je umilikaji wa ardhi ama nyumba na miundombinu umeimarishahali ya kijiji?*  
 1. Yes/Ndio                       2. No/La
81. Has infrastructure directly depended on the completion of the tenure security? *Kwani miundombinu na utoaji wa huduma kuwa moja kwa moja wanategemea kukamilika kwa utoaji wa umiliki ?*
82. Is provision of tenure and infrastructure adequate to remove the constrains of the poor?, *Je utoaji wa umiliki na miundombinu yatosha ili kuondoa vikwazo ya yenye inaleta umaskini ,*  
 1. Yes/Ndio                       2. No/La  
If No, what else is required? \_\_\_\_\_

## CHALLENGES

83. When tenure security was undertaken, was land/space set aside for infrastructure in this settlement? *Kuna shamba imetengewa ya miondo musingi?*  
 Yes/Ndio                       2. No/La
84. If yes , were they available for use for the intended purpose ?  Yes/Ndio                       2. No/La
85. If yes, were the spaces encroached on?  Yes/Ndio                       2. No/La
86. If yes, by who and how did this affect provision of infrastructure?
87. What challenges were experienced in the provision of tenure security? *Ni changamoto gani kulionekana katika utoaji wa usalama wa umiliki ?* \_\_\_\_\_
88. Did issues of tenure security hinder or delay upgrading project? *Je masuala ya umiliki ulizuia au kuchelewa kwa mradi wa kuboresha kijiji ?* \_\_\_\_\_

## Coordination of tenure, Infrastructure and Livelihoods investments

89. Do you think there was coordination in provision of tenure and infrastructure? *Je kulikua na ratibu wakati wa utoaji wa umiliki na miundo mbinu?*

1. Yes/Ndio  2. No/La

90. If yes, specify/*kama ndio, kwa njia gani?*

91. If no, what effect did it have?/*Kama la, ilileta athari gani?*

92. Did coordination or lack of it affect your livelihoods? *Je ratibu ama kutokua na ratibu ili adhiri maisha yako?*

1. Yes/Ndio  2. No/La

### Priorities

93. What should government and other institutions prioritize? And why? \_\_\_\_\_

Tenure security/*Umiliki*

Infrastructure/*Miundo msingi*

Livelihoods improvement (employment,income,health, education,skills, assets)/*mbinu ya uboreshaji ya maisha?*

All the above

94. In terms of priorities for development, what would be your priority? *Ni gani, Katika swala lavipaumbele kwa ajili ya maendeleo, utateuwa*

Tenure security/*Umiliki*

Infrastructure/*Miundo msingi*

Livelihoods improvement (employment,income,health, education,skills, assets)/*mbinu ya uboreshaji ya maisha?*

### Measures to effectively integrate tenure security, infrastructure and livelihoods

95. Do you think tenure security, infrastructure and livelihoods improvement should be integrated? *Je unafikiri umiliki ,miundombinu na uboreshaji ya maisha inaweza unganishwa?*

1. Yes/Ndio  2. No/La

96. What measures can be put in place to improve integration of tenure security, infrastructure and livelihoods in upgrading? *Je ni hatua gani inaweza kuwekwa ili kuboresha ushirikiano wa umiliki, miundombinu na uboreshaji ya maisha?*

## PART 5: INSTITUTIONAL DYNAMICS OF TENURE, INFRASTRUCTURE AND LIVELIHOODS

97. Which institutions have been upgrading informal settlement? */Je ni nani anaimarisha kijiji?* And what are their roles/*je kazi yao ni gani?*



	<b>Institution</b>	<b>Role in upgrading (tenure security, Infrastructure, livelihoods)</b>
1.	National Government	
2.	County Government	
3.	Community Organizations	
4.	Non-governmental organizations	
5.	Civil society and communities.	
6.	Development Partners	
7.	Other (specify)	

98. Which institutions have mandate to undertake the following ?

	<b>Function</b>	<b>Institution with mandate</b>	<b>Institution that provided</b>
1.	Infrastructure		
	a) <i>Roads, drainage ,footpaths</i>		
	b) <i>Water</i>		
	c) <i>Electricity</i>		
2.	d) <i>Sanitation (sewer, public toilets)</i>		
	Tenure security		
	a) <i>Planning</i>		
	b) <i>Surveying</i>		
3.	c) <i>Titling</i>		
	Livelihoods		
	a) <i>Employment</i>		
	b) <i>Housing</i>		
	c) <i>Health</i>		
	d) <i>Education</i>		

99. Are there linkages, conflicts, duplications or partnerships, among them? *Je, kuna uhusiano , migogoro, kurudia au ushirikiano, miongoni mwao?*

	Institution	Linkages		conflicts		duplications		partnerships	
		yes	no	yes	no	yes	no	yes	no
1.	National Government								
2.	County Government								
3.	Community Organizations								
4.	Non-governmental organizations								
5.	Civil society and communities.								
6.	Development Partners								
7.	Other (specify)								

100. Which institution has more power and control over the others and why? *ipi taasisi ina nguvu zaidi na udhibiti wa wengine na kwa nini?*

	Institution	More power and control		Why?	
		More	Less	More	Less
1.	National Government				
2.	County Government				
3.	Community Organizations				
4.	Non-governmental organizations				
5.	Civil society and communities.				
6.	Development Partners				
7.	Other (specify)				

101. How do these institutions contribute to success or failure of upgrading efforts?/ *Jinsi gani taasisi hizi huchangia mafanikio au kushindwa kwa juhudi kuwaendelezwa ?*

<b>Institution</b>	<b>Contribution to Success</b>	<b>Contribution to failure</b>
National Government		
County Government		
Local Community		
Non-governmental organizations		
Civil society and communities.		
International Community		
Other (specify)		

102. In your opinion which level of government should implement upgrading of settlements and why?  
*Kwa maoni yako ambayo ngazi ya serikali inapaswa kutekeleza kuwaendeleza ya makazi na kwa nini?*

<b>Institution</b>	<b>Tick</b>
National Government	
County Government	
Local Community	
Non-governmental organizations	
Civil society and communities.	
International Community	
All of them	
Other (specify)	

103. what measures can be put in place to increase interaction and effectiveness of institutions ? *ni hatua gani inaweza kuwekwa katika nafasi ya kuongeza mwingiliano na ufanisi wa taasisi ?*

<b>Institution</b>	<b>Measures to increase effectiveness</b>
National Government	
County Government	
Local Community	
Non-governmental organizations	
Civil society and communities.	
International Community	
Other (specify)	

## Appendix 2: Checklist for Focused Group Discussions

Settlement Details		
Name of Settlement		
Villages		
Participants' Contact Details		
Village/zone	NAME	CONTACTS
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

### BACKGROUND INFORMATION

History of the settlement

- Date or period the settlement was established and the reasons
- History about the settlement

### UPGRADING DEVELOPMENT PROJECTS IN THE SETTLEMENT

- List upgrading projects that have taken place in the settlement ever since establishment of the settlement and by whom.
- List any development projects that are planned for the settlement (*and the implementing body*)
- What has been the impact of the development projects that have been undertaken? What benefits?
- How was it done? What was the approach?
- What have been the problems or issues facing any development projects?

### TENURE SECURITY (Land, Housing, renting and ownership)

#### Types

- List types of tenure security in the settlement e.g. freehold, leasehold or other forms (name them) and the institution(s) that provided.
- Year/Date of initial issue of title deeds or allotment letters or any ownership documents
- Owners vs. renters – which group is more?
- Have the respective types provided security?
- Perceived threat of eviction

#### Nature

- List the nature of tenure security in the settlement e.g. is it legal (titling) or de facto( administrative protection from evictions) or perceived ( not legally recognised by state but by community)

### **Approaches**

- Name the approaches to tenure security in the settlements e.g. are they individually done, provided by the State etc
- What are the processes?
- How was it done?
- What were the challenges? E.g. disputes, gentrification (people moving out of settlement)
- How can it be done better?

## **INFRASTRUCTURE**

### **Type**

- List types of existing infrastructure in the settlement e.g. Roads, footpaths, drainage, electricity, high mast lighting, water, sanitation (sewer/ablution blocks) or other forms (name them) and the institution(s) that provided.
- Year/Date of infrastructure provision

### **Nature**

- List the nature of infrastructure in the settlement. By nature, I mean the inherent characteristics e.g. if it water – the nature would be piped, borehole, etc
- What was the status of the infrastructure before upgrading projects?

### **Approaches**

- Name the approaches to infrastructure provision in the settlements e.g. are they individually done, provided by the State etc. Which institution provided?
- What were the processes? E.g. Which way -Plan, service, occupy or occupy, service, plan.
- What were the challenges? E.g. disputes, gentrification (people moving out of settlement)
- How can it be done better?

### **Type, nature and approach to specific infrastructure**

#### **Water supply**

- List the Primary source(s) of drinking water in the settlement (e.g. household connection, shared tap in compound, kiosk, tanker, other)
- Who is your water service provider, that is, the agency or company that is responsible for the water supply (e.g. public water company, Master operator, private company, Self-help system)
- Number of water kiosks in the settlement
- Price of water at a kiosk (for 20 litre jerrycan)
- Does the price fluctuate at different times of the year? By how much?
- Quality of water
- Do they treat the water? If yes, how?
- Reliability of water (available every day? All day? Good pressure?)
- How much time do they spend every day to secure water (e.g. walk to kiosk, wait at kiosk, fill up containers and walk home for those who purchase from kiosk)?
- What was the approach to water provision
- State any linkage between water supply , tenure security , other infrastructure and livelihoods
- List any other problems with water supply

### Sanitation

- List the types and nature of sanitation in the settlement
- Is there a formal sewerage network in the settlement?
- Is there an informal sewerage network in the settlement?
- Main mode of excreta disposal (e.g. household toilet, private latrine, shared latrine in compound, public toilet, other)
- Where do most young children go to the toilet?
- Are there any pay toilets in the settlement?
- If yes, what is the price per use?
- Do the facilities also have bath rooms? What is the cost per use?
- Main type of bathing facilities in the settlement
- What was the approach to sewer and sanitation provision?
- State any linkage between sanitation ,tenure security , other infrastructure and livelihoods
- List any other problems with access to sanitation facilities

### Drainage

- List the type of drainages in the settlement.
- Where do households pour their 'grey water' (e.g. dirty water from cooking, laundry, bathing, etc.)?
- What was the approach to sewer and sanitation provision?
- Do the current drains overflow when it rains?
- Do flood waters enter the home when it rains? Is this a serious problem?
- Who maintains the drains in the settlement?
- State any linkage between drainage ,tenure security , other infrastructure and livelihoods
- List any other problems with drainage in the settlement

### Roads

- List the type and nature of roads in the settlement.
- What was the approach used in provision of roads?
- State any linkage between roads and walkways ,tenure security , other infrastructure and livelihoods
- Ask if they are satisfied with the state of the roads – why or why not?

### Electricity

- List the type and nature of electricity provision in the settlement
- Do they have electricity in their homes?
- If yes, is it working most of the time? Some of the time? Almost never?
- Do the schools in the settlement have electricity?
- Which year was the settlement connected to power?
- What was the approach used in installing electricity in the settlement?
- Are there illegal power connections in the settlement? Many or few?
- Are there any high mast lighting in the settlement and are they beneficial?
- List any other problems with the power supply
- State any linkage between electricity ,tenure security , other infrastructure and livelihoods

### Street lighting

- Is there any street lighting in the neighbourhood?
- If yes, is it working most of the time? Some of the time? Never?
- If not working, why?
- If there is street lighting – does it help improve the security situation?

## **LIVELIHOODS**

### **Type**

#### **1) Livelihood activities (employment and incomes).**

- List types of livelihood activities in the settlement e.g. employed, business or other forms (name them). How do people make a living?
- General welfare , employment and incomes of dwellers in the settlement
- Year/Date of project activities
- Do they provide adequate livelihoods?
- 

#### **2) Capabilities (skills, education, health)**

- List types of capabilities that dwellers possess e.g. skills ( name them); education (indicate the levels) and health ( general ailments and health of dwellers, list of health facilities)
- General skills, education and health of dwellers in the settlement
- General wellbeing (health) of residents

#### **3) Assets (housing unit, land, property)**

- List types of assets that dwellers possess e.g., houses, land and other property
- General status on community ownership of assets

### **Nature**

#### **• Livelihood activities (employment and incomes).**

- What are the inherent characteristics of employment (e.g. casual , full time, part time, formal ,informal ) and incomes (daily, weekly, monthly, seasonal )?

#### **• Assets (housing unit, land, property)**

- What are the general inherent characteristics of housing unit ( walls, floors, roofing) land ( plot size, terrain, flooding) and property (TVs, household items, )

#### **• Capabilities (skills, education, health)**

- What are the characteristics of capabilities? Skills ( nature of skills); education ( nature of education, primary, secondary, college, university ); health ( how would you rate general health of dwellers, life expectancy, feelings of well-being, physical appearance/strength, access to health facilities
- What are the challenges in regards to livelihoods?
- State any linkage between tenure security , infrastructure and livelihoods

### **Approaches**

#### **1) Livelihood activities (employment and incomes).**

- Name the approaches to livelihood activities in the settlements e.g. are there any government or other agencies projects that provide employment and incomes; are there social safety nets projects that support livelihoods?
- How was it done?
- What are the challenges?

- How can it be done better?

## 2) Capabilities (skills, education, health)

- Name the approaches to livelihood capabilities in the settlements e.g. are there any government or other agencies projects that provide skills, education or health services; are there social safety nets projects that support livelihoods?
- How was it done?
- What are the challenges?
- How can it be done better?

## 3) Assets (housing unit, land, property)

- Name the approaches to livelihood assets in the settlements e.g. are there any government or other agencies projects that provide or support housing units, acquisition of land or other property that support livelihoods?
- How was it done?
- What are the challenges?
- How can it be done better?

### **Interplay of tenure, infrastructure and livelihoods**

- List and explain ways in which tenure contributes to livelihoods. What are the challenges and solutions?
- List ways and explain ways in which infrastructure contributes to livelihoods. What are the challenges and solutions?
- List and explain ways in which tenure and infrastructure are interlinked. What are the challenges and solutions?
- List effects of tenure on infrastructure;
- List effects of infrastructure on tenure ;
- List effects of tenure and infrastructure on livelihoods

### **Institutional Dynamics of tenure, infrastructure and livelihoods**

- List Institutions that deal with upgrading of informal settlements and their roles
- What is the capacity and efficiency of institutions responsible for developing and managing infrastructure, providing tenure security, facilitating live hoods
- Which institutions control and determine provision of infrastructure, tenure security and livelihoods (capabilities, assets, employment, and incomes)?
- How do these institutions relate?
- What are the dynamics within and between these institutions? (e.g. road construction and water reticulation, land ownership processing and infrastructure)
- How governance and institutions function
- what are the institutional conflicts, such as unclear roles
- What constrains and opportunities are presented by various institutions to upgrading
- What power structures exist amongst these institutions
- What measures are required to improve institutions to meet objectives of tenure security, infrastructure and livelihoods
- recommendations for improvement in design and implementation of upgrading projects
- What are the dynamics within institutions e.g.



- How do institutions of tenure interact?
- How do institutions of infrastructure interact?
- How do institutions of tenure and infrastructure interact with each other?

**Measures required to strengthen integration of tenure security, infrastructure and livelihoods in slum upgrading?**

- Recommendations
- What are the strengths and weaknesses of existing types, nature and approach to tenure, infrastructure and livelihoods
- What measures can be put in place to improve to maximize impact of slum upgrading?
- What measures can be put in place to strengthen integration of tenure security, infrastructure provision, and livelihoods in slum upgrading?

## **Appendix 3 : Checklist for Key Informants**

### **Type, Nature, and approaches of tenure security, infrastructure, and livelihoods**

- List existing type, nature and approaches of existing tenure systems in informal settlements in Eldoret. What are the challenges?
- List existing type, nature and approaches of existing infrastructure provision in informal settlements in Eldoret. What are the current infrastructure standards and are they appropriate for informal settlements? What are the challenges?
- List existing type, nature and approaches of livelihoods in informal settlements in Eldoret. What are the challenges?
- What is unique in tenure systems, infrastructure and livelihoods in Eldoret?-

### **Institutional dynamics of tenure, infrastructure and livelihoods**

- List/record of institutions of tenure security and their dynamics (roles, linkages, conflicts, duplications, partnerships, power and control )
- List/record of institutions that provide infrastructure (roads, walkways, drainage, lighting and sanitation) and their dynamics (roles, linkages, conflicts, duplications, partnerships, power and control )
- List/record institutions that provide livelihoods ( employments, housing units, land , health education incomes) and their dynamics (roles, linkages, conflicts, duplications, partnerships, power and control )
- List/record Key stakeholders in these processes and their roles
- List/ documents on the regulatory frameworks guiding infrastructure, tenure security and live hoods and what are their effects?
- Policies, Laws, regulations that govern tenure security, infrastructure and livelihoods. Are there any interlinkages
- Institutional Challenges in relation to tenure security, infrastructure and livelihoods

### **The interplay of tenure security, infrastructure, and livelihoods in slum upgrading in Eldoret,**

- List and explain interactions/Inter-linkages of;
  - Tenure and infrastructure
  - Tenure and livelihoods,
  - Infrastructure and livelihoods
- List and explain effects of tenure on infrastructure; effects of infrastructure on tenure ; effects of tenure and infrastructure on livelihoods
- List/Record on Sectoral goals, policies, and Strategies in regard to tenure, infrastructure and livelihoods.
- List/Record and explanation on coordination of tenure, Infrastructure, and Livelihoods investments.

- Do infrastructure and tenure security build on each other or not? Explain
- Is provision of tenure and infrastructure adequate to remove constraints of the poor? Explain.
- Is strengthening capabilities and assets of the poor adequate to remove constraints of the poor? Explain
- Does lack of ownership document preclude dwellers from getting connected to utility networks? Explain
- Did the land for putting infrastructure come easy? /was it easily available?
- Has infrastructure and service provision have directly depended on the completion of the tenure policies
- Politics and power plays-institutions
- Did issues of ownership delay KISIP or other project implementation?
- Did tenure issues result in additional costs being incurred in the implementation of projects?

**Measures required to strengthen integration of tenure security, infrastructure and livelihoods in slum upgrading?**

- Recommendations/Record on best practice
- Record on strengths and weaknesses of existing types, nature and approach to tenure, infrastructure and livelihoods
- What measures can be put in place to improve to maximize impact of slum upgrading?
- What measures can be put in place to strengthen integration of tenure security, infrastructure provision, and livelihoods in slum upgrading?

## **Appendix 4: Checklist for Observations**

### Tenure

- Survey- e.g. boundary beacons
- Planning- Layout of settlement
- Physical Boundaries

### Infrastructure

- Type and nature of infrastructure
- Status/quality of infrastructure
- Usage of infrastructure
- General living conditions and settlement


### Livelihoods

- Businesses
- Economic activities
- Type of houses
- Health facilities
- Educational facilities

### Institutions

- Institutions in the settlement- offices, activities on the ground

# Appendix 5: Sample ownership documents

  
 REPUBLIC OF KENYA  
 THE REGISTERED LAND ACT  
 (Chapter 300)

## Certificate of Lease

TITLE No. ELDORET MUNICIPALITY/  
 LESSOR GOVERNMENT OF KENYA  
 RENT \_\_\_\_\_  
 TERM 99 YEARS FROM \_\_\_\_\_


*This is to certify that*

LIMITED \_\_\_\_\_

is (are) now registered as the proprietor(s) of the leasehold interest above referred to, subject to the agreements and other matters contained in the registered lease, to the entries in the register relating to the lease and to such of the overriding interests set out in section 30 of the Registered Land Act as may for the time being subsist and affect the land comprised in the lease.

GIVEN under my hand and the seal of the  
ELDORET District Registry  
 this 13TH day of \_\_\_\_\_

[Red Seal]

  
 REPUBLIC OF KENYA  
 THE REGISTERED LAND ACT  
 (Chapter 300)

## Title Deed

Title Number \_\_\_\_\_  
 Approximate Area \_\_\_\_\_  
 Registry Map Sheet No. \_\_\_\_\_

*This is to certify that*

\_\_\_\_\_

P.O. BOX \_\_\_\_\_

is (are) now registered as the absolute proprietor(s) of the land comprised in the above-mentioned title, subject to the entries in the register relating to the land and to such of the overriding interests set out in section 30 of the Registered Land Act as may for the time being subsist and affect the land.

GIVEN under my hand and the seal of the  
ELDORET District Land Registry  
 this 25TH day of \_\_\_\_\_

[Red Seal]

Land { \_\_\_\_\_ }

REPUBLIC OF KENYA  
 REGISTERED  
 DEPARTMENT OF LANDS  
 P.O. Box 30089  
 NAIROBI

Ref. No. \_\_\_\_\_  
 Sir(s)/MADAM, ELDORET MUNICIPALITY

### LETTER OF ALLOTMENT

I have the honour to inform you that the Government, on behalf of \_\_\_\_\_ County Council, hereby offers you a grant of the above plot shown edged red on the attached plan No. E.L.D. subject to your formal written acceptance of the following conditions and to the payment of the charges as prescribed hereunder:

AREA: \_\_\_\_\_ hectares (approximately)  
 TERM: 99 years from the \_\_\_\_\_  
 STAND PREMIUM: Sh. \_\_\_\_\_  
 ANNUAL RENT: Sh. 5,600

} Subject to adjustment on survey, but there is no claim for reduction in area on survey.

**GENERAL:** This Letter of Allotment is subject to, and the grant will be made under the provisions of, the Government Lands Act (Cap. 280 of the Revised Edition the Laws of Kenya) and title will be issued under the Registration of Titles Act (Cap. 281) or the Registered Land Act (Cap. 300).  
**SPECIAL CONDITIONS:** See attached.

2. I should be glad to receive your acceptance of the attached conditions together with banker's cheque for the amount as set out below within thirty (30) days of the postmark:

	Sh.
Stand Premium	1,867
Rent from	1,250
Conveyancing Fees	250
Registration Fees	1,240
Rates	2,450
Stamp Duty	2,000
Survey Fees	_____
Road and Road Drains	_____
Others	_____
<b>Receipt No. _____ Less Deposit</b>	<b>TOTAL Sh. _____</b>

[P.O.]