PLANNING IMPLICATIONS OF UNCONTROLLED DEVELOPMENTS IN HURUMA NGEI WARD ESTATE, NAIROBI COUNTY

BY

PETER MWANGI MACHARIA

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Department of Urban and Regional Planning

University of Nairobi

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DECLARATION

This planning research project is my original work and has not been presented for a degree in any other university

Signed ........................................ Date ........................................

Macharia Peter Mwangi
(Candidate)

This planning research project has been submitted for examination with my approval as the university supervisor

Signed ........................................ Date ........................................

Charles Dadu Karisa
(Supervisor)
DEDICATION

To my late grandma, Mrs Wangechi Wanjan`gi who wanted to see me attain higher education and get good credentials, this project I dedicate.
ACKNOWLEDGEMENTS

First and foremost, to God be the glory for the strength to do the report plus the drive to complete it within scheduled time.

Sincere gratitude to my supervisor Mr. Charles Karisa for the guidance, patience and support from the preliminary stages of building a logical flow to the final completion of this research project. He really drove me to be able to produce this document to the quality it is.

To the other lecturers Dr. Opiyo and Mr. Maleche, thank you for your input in this project.

To the University of Nairobi, particularly the Department of Urban and Regional Planning for the opportunity to be part of this great institution of higher learning.

To Macharia’s family (Dad, Mum, Ngeshi and Ibo), thank you for putting up with me even when my work used up family time. Thank you for the support and encouragement too.

To my friends and the Class of 2016 (Jubilee Planners), you have been good colleagues. All the best as we go to the world out there. Special appreciation to Ms Bella. Thank you for the constant reminders and encouragements.

And finally, to the Nairobi City County, Department of City Planning and GIS office, Ngei Ward administrator Mr Allan Isaboke, Faith Muthoke and other residents of Huruma Ngei. Thank you for your contribution.
ABSTRACT

Rapid urbanization in developing countries has led to uncontrolled developments in urban areas in such countries. In Kenya, urban areas and cities have overtime witnessed high population due to the preference by the population to live in cities. This has led to straining of existing infrastructure and poor provision of services. Ngei ward in Huruma Estate is a residential estate in Nairobi County. It is located 3-4 kilometres from the city centre. The estate is one of the places that has witnessed population growth due to its proximity to town and affordability of life.

The study objectives include finding out the causes, manifestations and effects of uncontrolled developments in the estate. Both primary and secondary data collection was done. Secondary data was done through review of existing literature regarding the topic and the study area. This was done by looking at various publications, policies, Acts and other legal documents. Primary data was gathered through questionnaires, photographs and key informant schedules. A total of 57 questionnaires were administered to the residents of Huruma Ngei Ward Estate. The units of observation include plot coverages, plot heights, plot ratios, materials for construction, setbacks.

The study revealed failure to observe set regulations for example building setbacks and plot heights, infestation of human settlements along River Gitathuru, buildings with poor housing conditions that are not spacious and well aerated. The estate also struggles with mushrooming of informal settlements. In addition, the existing infrastructure is in a poor condition due to lack of maintenance and being overstretched.

The study recommends protection of a riparian reserve, eradication of the informal settlements, and refurbishment of existing buildings. Replacement of existing low houses and informal settlements with new buildings with affordable and decent bedsitter and one bedroom housing units will increase housing stock in the estate.
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LIST OF ACRONYMS

CBO’s – Community Based Organizations

EIA: Environmental Impact Assessment

EMCA: Environmental Management and Coordination Act

GIS: Geographic Information System

GOK – Government of Kenya

IEBC – Independent Electoral and Boundary Commission

KBS – Kenya Bureau of Statistics

KPLC: Kenya Power and Lighting Company

NCC: Nairobi City County

NCWSC: Nairobi City Water and Sewerage Company

SPSS: Statistical Packages for Social Sciences
CHAPTER ONE: INTRODUCTION

1.1. Overview

Urbanization at the global level is a relatively recent phenomenon. At the end of the 19th Century the extent of world urbanization was limited with only less than 3 per cent of world`s population living in towns and cities. With the current urbanization pattern, it is estimated that by 2025, almost 60 percent of the population will be residing in towns and cities. African continent has the fastest urbanizing countries in the world. (UN-HABITAT, 2012).

Closer home, 40% of Kenya`s population resides in urban areas which translates to more than 10 million people. Due to the rapid population growth in these urban areas caused by the preference to live, work and study in these cities, there has been increased demand for room and space for different uses. This demand has led to uncontrolled developments within the cities.

Nairobi is considered to be among the successful international cities and gateway to East Africa. However, the reality is far from this. The housing sector in the city is worst hit by these uncontrolled developments. The housing conditions remain poor and some of the worst in the world. Most of the households occupy single rooms which are not adequate for the occupants. The rents are high despite poor quality. There is poor service delivery and inadequate infrastructure. The demand for infrastructure surpasses the supply leading to frequent breakdown of the system. Developers, who are well to do in the society, do not live in these estates and pay little concern to the mess they leave behind. They are out to cash in the demand for housing and to amass wealth. Huruma Ngei Ward Estate is one of the residential areas affected by these type of uncontrolled and uncoordinated developments.

1.2. Problem statement

Uncontrolled developments in the case of Huruma Ngei Ward Estate refers to physical developments that come up in an unregulated manner. The structures violate the very regulations that they ought to follow.

Buildings in the area are built past permissible heights. There are buildings that go as high as 8 floors. These buildings lack lifts which is one of the requirement for a building that has been build past five floors. There is construction of structures along wayleaves. There are buildings constructed across drainage channels. This hampers proper flow of waste water creating
stagnation of water and stench. There are structures along the riparian reserve. This is risky to the lives of those living near the riverbed as they risk being carried away by floods. Several buildings have collapsed in Huruma as a result of uncontrolled development. One of the buildings was built next to the riparian reserve and led to loss of lives. The Constitution of Kenya provides for the right to clean environment and decent housing to all the people. Developments do not observe setbacks and building lines. This inconveniences pedestrians who are forced to walk on the road leading to conflicts with vehicles. Most buildings have canopies that go beyond the building line. There are informal commercial activities along the road reserves. This minimizes pedestrian footpath and pedestrians are forced to walk along the roads. The practice also obstructs road users from seeing other road users. Houses are put up for occupation even before completion. At times it happens before the buildings have been serviced by electricity, sewerage and water. The buildings lack firefighting appliances and are not better suited to ease movement of physically challenged persons. This is against the city’s building code.

Uncontrolled development has led to straining of resources and infrastructure in Huruma Ngei Ward Estate. The existing infrastructure breaks down frequently for example the clogged drainage channels and burst sewers. Community facilities lack for example playgrounds and recreation grounds.

1.3. Research purpose

The purpose of this study is to find out the causes and effects of the uncontrolled developments in Huruma Ngei Ward Estate and propose suitable and appropriate measures to improve the situation and to mitigate such developments in future in the area or in other areas facing similar type of development.

1.4. Research objectives

1. To examine the status of development prevailing in Huruma Ngei Ward Estate with respect to planning provisions and development control.
2. To examine the drivers of the current development character in Huruma Ngei Ward Estate.
3. To find out the challenges of uncontrolled development in Huruma Ngei ward Estate.
4. To propose planning interventions for mitigations of the effects of uncontrolled developments in Huruma Ngei area and similarly affected areas.
1.5. Research questions

1. What is the status of development prevailing in Huruma Ngei Ward Estate with respect to planning provisions and development control?
2. What are the drivers of the current development character in Huruma Ngei Ward Estate?
3. What are the challenges of uncontrolled development in Huruma Ngei ward Estate?
4. What are the planning interventions for mitigations of the effects of uncontrolled developments in Huruma Ngei area and similarly affected areas?

1.6. Geographical area of the study

Huruma Ngei Ward is part of the wider Huruma Sub-county within Nairobi County. It is a high density residential estate. It borders Huruma Jonsaga to the east, Moi Airbase to the south, Mathare to the north and Mabatini to the west. The area can be easily accessed from Juja Road.

1.7. Justification

The study gears towards reviewing the existing situation in Huruma Ngei and consequently making proposals on appropriate strategies for the implementation of programs that will incorporate proper, suitable and sustainable developments in residential estates.

There is need to ensure there is adequate access to services and infrastructure to the people residing in the estate. This is currently impossible with the current state in which Huruma Ngei Ward Estate is. Services like water ought to be provided for adequately. The infrastructure should be adequate to handle the population. Therefore the study is geared towards coming up with a viable framework for provision of resources and services in the study area.

Uncontrolled developments are closely linked to among other problems, insecurity and poor accessibility. Huruma Ngei can be used as a model to demonstrate how the challenges can be solved in areas facing similar challenges within the city.

1.8. Scope of study

The focus of this study was examination of causes, manifestations and effects of uncontrolled developments in Huruma Ngei Ward Estate. Study also looked at the implications of this type of development to the residents, facilities, infrastructure and its neighbourhood.

The study was done within the administrative boundary of Huruma Ngei Ward Estate. Data collection was done to examine the availability and condition of infrastructure in the
neighbourhood, community facilities, buildings and construction methods applied during construction. While studying buildings, number of rooms, availability and condition of sanitary facilities, connection to services like power, water and sewer line was also studied.

1.9. Research Methodology

The study applied a case study research method. This is because the research was conducted within its real life context. The study related the causes of uncontrolled developments to their implications on residential estates like Huruma Ngei Ward Estate and how this type of development manifests itself.

1.9.1. Approach used to undertake the study

The study was conducted from a mixed approach. This involved incorporating both qualitative and quantitative approach. A qualitative study is used when dealing with data in form of statements and words rather than numbers. (Mugenda & Mugenda, 2003) Whereas quantitative data is used to produce quantifiable and numerical data. Qualitative data was used to obtain and give explanations on the status of development, effects and drivers of this type of development trend. Quantitative study was applied when getting numerical facts on figures for example income, number of members per household etc.

Literature review and field survey were used to obtain the data on the study. Written consents were obtained to assist in data collection to inform the respondents that the study is an official process and that the information obtained will only be used for purely academic purposes. There are respondents who are unwilling to respond to research in absence of such consents.

1.9.2. Unit of analysis

A unit of analysis is the major entity being analysed in a study. It defines the “what or who” that is being studied. The units of analysis in this study were Neighbourhood, buildings and structures both permanent and temporary.

1.9.3. Unit of observation

The units of observation are the variables in the units of analysis. They are the objects about which information is collected. The units of observation studied in this research included nature of buildings, age, income, sampled households, and streets, open or public spaces. Others include residents in the estate and activities they undertake.
1.9.4. Data needs

Data needs for this study include housing typologies, building characteristics (number of floors, plot coverage, plot ratios, availability and state of sanitary facilities), state and availability of infrastructure, community facilities, and open spaces among others. The other set of data needs include the drivers, challenges and effects of uncontrolled development in Huruma Ngei Ward Estate. Finally, the possible planning interventions that can be applied to solve and mitigate the uncontrolled type of development in Huruma Ngei and similarly affected area were sought.

1.9.5. Data collection techniques

1.9.5.1. Secondary data

Secondary data used consisted of existing information collected by others and that which is available from secondary sources. Such data was obtained through review of existing literature relevant to the topic and the study area. Secondary data was helped greatly to understand the topic and the study area. It showed what has been done before and to what scope the previous studies had been done. Examples of the secondary sources of data used include Government publications, earlier research, journals, reliable internet sources, census, and statistical data from KNBS. Secondary sources provided information on location, population, size, and administrative boundaries among other information that may be difficult to collect from the field first hand.

1.9.5.2. Primary data

i. Questionnaires

Questionnaires with both open ended and close ended questions were administered to households. The questionnaires were used to collect information on personal details and household characteristics about respondents, their occupation, their opinion concerning the nature of development and what they think can be solutions to the challenges they will mention.

ii. Interviews

Interviews were conducted with several key informants. Ngei ward administrator provided information on the current population in the area, regulations enforced in building of structures in Huruma Ngei ward, the developers’ response to these regulations, challenges and difficulties in enforcing regulations and challenges that result from the uncontrolled development in Huruma Ngei ward Estate.
An official from the Nairobi City County department of city planning which is the approving authority provided information on the plot coverage, plot ratios, setbacks among other regulations, types of land uses allowed, number of floors permitted and some of the challenges the council is aware and whether there are any projects they intend to undertake in the area.

Property owners were given interview schedules to collect data on their opinion on some of the regulations and guidelines they are supposed to follow, whether they enforce them and any information that may be of help to the subject. Professionals in the built environment provided information on challenges in execution of their work for example how they juggle conflicting interests from the owners and the authorities

iii. Photography

Photography is another data collection technique that was applied to capture phenomena at the site for example housing typologies in the area, condition of infrastructure and availability of facilities. Photos assist to capture what is happening on the ground in real time and without doubt proved to be important in this study.

iv. Direct observation and note taking

Direct observation is applied where a researcher uses naked eyes to see and observe what is happening at the site. The researcher then makes a mental note of the phenomena. However, it is advisable to jot down whatever you observe as a good research does not rely on memory to describe what was observed at the field. This is a technique that was applied in the study.

v. Global positioning system

Global Positioning system (GPS) gadgets will be used to take coordinates of objects and landmark structures present in the area. Information on coordinates of the area was collected using the gadgets. The points collected using GPS gadgets will assist in analyzing and mapping out the area using the ArcGIS software.

vi. Physical Measurement

This entailed measuring of linear distances for example width of roads, plot setbacks, width of staircases, distance of buildings from roads etc. These measurements taken from the ground helped during comparison with what ought to exist.

vii. Data checklists
Data checklists were used to check the availability, reliability, viability of resources in the area for example materials used in construction, availability of features in buildings e.g. lifts, parking spaces, fireman’s staircase, availability of supporting infrastructure e.g. roads, drainage, power, sewer line, availability of facilities in the neighbourhood e.g. health centres, schools, street lighting, open spaces, social halls and police station. In addition, data checklists were used to note whether buildings under construction have approval numbers from the NCC, whether contractors are registered and whether they are registered members of any professional bodies.

1.9.6. Sampling techniques

Different sampling techniques were used to determine the number of respondents to be chosen as respondents. Huruma Ngei Ward Estate had an estimated population of 36,248 during the 2009 census. The population is estimated to be 43,282 currently at the time of conducting the study. It may prove difficult to collect data from all these residents hence the need to sample a few people to represent the whole population.

The estate is divided into five locations namely Madoya, Kibichoi, Sokoni, Gitathuru and Ngei 2B. There are around 570 sub divided plots in the whole ward. After profiling the estate, ten percent of buildings in each location will be sampled. This is necessitated by the need to have a sizeable number but also a manageable number for research. Systematic sampling will be applied when choosing which buildings to sample. This means the \( n^{th} \) building will be sampled. For example in Madoya, a skip pattern of 8 plots was applied. The 9\(^{th} \) plot was sampled. One household was selected randomly in each of the building sampled. An adult member in that household was sampled randomly and on availability for the interview. This is so as to create equal chances to all people while at the same time protecting validity of answers hence the need to engage adults only.

Table 1: A table showing number of plots to be sampled per location

<table>
<thead>
<tr>
<th>Area</th>
<th>Approximate Number of plots</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Type of sampling</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>Household</td>
<td>Systematic</td>
<td></td>
</tr>
<tr>
<td>Professionals in the field</td>
<td>Snowball sampling</td>
<td></td>
</tr>
<tr>
<td>Property owners</td>
<td>Availability</td>
<td></td>
</tr>
<tr>
<td>Ngei ward administrator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approving authority</td>
<td>Referral and availability</td>
<td></td>
</tr>
</tbody>
</table>

1.9.7. Limitations of the study

There were unresponsive respondents who start answering the questionnaire but abort midway. This leads to inability to get as many responses as possible plus wastage of time and resources. This is because the questionnaire cannot be filled by any other respondent.

There were difficulties to get plot numbers to the sampled plots. Most plots do not have inscribed on the face or gate surface of the buildings. Plot numbers was necessary to give credibility to the study and the responses got.

The area is already largely built and only few plots are under construction. As at the filing of this report, only two buildings in the entire Ngei Ward were under construction. This hampered the ability to get professionals working in the area. Even in the construction sites, getting property owners is a daunting task. In some sites, it was difficult to access foremen or persons in charge.
Taking photographs remains highly restricted. This makes reporting on what is happening on the ground difficult.

Inadequate finances limit the scope of the study. With adequate finances, it would be easy to conduct a wholesome study on the whole study area and give proper concentration to these phenomenon.

1.10. Definition of key terms

Authorities – Authorities involved in development control i.e. Nairobi City County, National Construction Authority or any other relevant government body.

Developers – Anyone who puts up a development either as the owner or hired by the owner to supervise on his behalf.

Development – Temporary and permanent structures housing human activities

Infill densification - increasing densities of a residential estate through construction of high-rise buildings so as to add housing stock

Low house – A house typology of a shelter built with no upper floors

Property owners – Anyone who owns a parcel of land or a building already built for purposes of renting or his own consumption.

Recreation facilities – facilities with small service areas such as playing field, local parks or social halls and clubs

Residential cum commercial – buildings housing both residential activities and commercial activities

Riparian reserve – Land on each side of water course

Stakeholders – Persons who have a demonstrable interest in the plan preparation process and its implementation.

Uncontrolled – Happening in an uncoordinated manner without following set guidelines
<table>
<thead>
<tr>
<th>RESEARCH QUESTION</th>
<th>RESEARCH OBJECTIVE</th>
<th>TYPE OF DATA REQUIRED</th>
<th>METHODS OF DATA COLLECTION</th>
<th>SOURCE OF DATA</th>
<th>METHODS OF ANALYSIS</th>
<th>METHODS OF PRESENTATION</th>
<th>EXPECTED OUTPUTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the nature of development prevailing in Huruma Ngei ward Estate?</td>
<td>To find out the nature of development prevailing in Huruma Ngei ward Estate</td>
<td>➢ Nature of developments in the area  ➢ House typologies in the area  ➢ Land use patterns  ➢ Infrastructure provision  ➢ Compliance to development regulations</td>
<td>➢ Photographs, ➢ Direct observation  ➢ Interviews  ➢ Secondary sources  ➢ Key informants</td>
<td>Field survey  ➢ Online sources  ➢ Nairobi city county offices – department of planning  ➢ Ministry of lands, housing and urban development</td>
<td>➢ MS excel  ➢ ArcGIS (spatial analysis)  ➢ SPSS  ➢ frequencies</td>
<td>➢ Diagrams  ➢ Photographs  ➢ Tables  ➢ Written reports</td>
<td>➢ Analysed photographs showing development character in the area,  ➢ Existing layout of the estate  ➢ Map showing different land uses in the area.  ➢ Narratives</td>
</tr>
<tr>
<td>2. What are the drivers of the current development character of Huruma Ngei ward Estate?</td>
<td>To examine the drivers of the current development character of Huruma Ngei ward Estate</td>
<td>➢ Enforcement of building approvals  ➢ Social factors  ➢ Political factors  ➢ Economic factors  ➢ Geographic factors  ➢ Cultural factors</td>
<td>➢ Key informants  ➢ Questionnaires  ➢ Interviews  ➢ Questionnaires</td>
<td>Field surveys  ➢ Secondary sources  ➢ Key informants</td>
<td>➢ MS excel  ➢ SPSS  ➢ Frequencies</td>
<td>➢ Pie charts  ➢ Tables  ➢ Narratives</td>
<td>➢ Report on the factors that contribute to these uncontrolled developments.</td>
</tr>
</tbody>
</table>
3. What are the implications of uncontrolled development in Huruma Ngei ward Estate?

To find out the challenges of uncontrolled development in Huruma Ngei ward Estate

- Infrastructure and Service provision
- Effect this type of development on:
  - (i). Security in the area.
  - (ii). Quality of life
  - (iii). Infrastructure
  - (iv). Recreational facilities
  - (v). Neighbouring areas

- Interviews
- Questionnaires
- Observations
- Photographing

- Direct observation
- Field surveys
- Secondary sources
- Key informants

- SPSS
- Ms excel
- Narratives

- Pie charts
- Photographs showing the results of uncontrolled development on resources and structures in Huruma Ngei ward Estate

4. What are the planning interventions that can solve the uncontrolled developments in Huruma Ngei ward Estate?

To propose planning interventions for mitigation of the effects of uncontrolled developments in Huruma Ngei area and similarly affected areas

- Possible solutions
- Possible alternatives

- Key informant interviews

- Interviews
- Key interview schedule

- AutoCAD
- ArcGIS

- Tables
- Reports on the challenges of uncontrolled development in the area

Source: Author, 2016
CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

Chapter 5 of the Physical Planning Handbooks, man has a responsibility to keep environment clean and beautiful. This responsibility has been neglected if the recent uncontrolled developments are anything to go by. The environment is violated as developments come up with no specific form.

This chapter will review existing key publications, government policies and legal document relevant to this study. Literature review provides the existing knowledge concerned to that field and therefore acts a knowledge minefield. The chapter will take a keen look at sustainable cities, development control, parties involved in development control and some of the legal instruments (policies, Acts and institutions) that will be relevant to the study.

2.2. Sustainable urban areas

A “sustainable city” is designed so as to enable all its citizens to meet their own needs and to enhance their well-being without damaging the natural world or endangering the living conditions of other people, now and in the future. (Girardet, 1996)

However, more often than not, cities are seen as problematic-congested, polluting, with poor housing, collapsing infrastructure, crime and poverty. Yet it is cities that drive economies and it is within them that innovation occurs and an increasing part of global output is produced. The design concepts of sustainable urban forms are compactness, Sustainable Transport, Density, Mixed Land Uses, Diversity, Passive Solar Design, and Greening. (Katuma, 2013). A different school of thought provides five criteria plus two “meta-criteria” as components that make a good city. The five criteria include vitality, sense, fit, control and access to services and activities. The Meta-criteria include efficiency and justice. (Lynch, 1981)

2.3. Development control concept

Development control is the power of the State to regulate the way land is used in both rural and urban areas to promote the public interest (National Land Policy, 2007). Urban areas and cities Act is the basis for development control in Kenya. Development control can also be defined as the process of managing or regulating the carrying out of any works on land or making of any material change in the use of any structures, and ensuring compliance with physical development plans. (Physical Planning Bill - Draft, 2014). The objectives of development
according to the bill include ensuring order in physical development and ensuring optimal land use. Development control also seeks to ensure proper implementation of approved physical development plans and conserving the environment. The bill further provides for public participation during the development control process.

From the definitions above, we can deduce that development control is a tool that is put in place to check on individual excesses where the property owners may take advantage in its absence and violate public interest. Application of development control can halt or prevent construction of a structure if the public is against it if found to violate public interest. All developers of any physical developments are required to seek permission with the local authorities. (Physical Planning Act Cap 286, 1996). This is so as to prevent conflict of land uses, to promote sustainability and to achieve better land management. (Kenya National Housing Survey, 2014). Development Control ensures that all properties are developed and used according to the Master Plan land use zoning, gross plot ratio, building height controls, and other development control guidelines (Barker, 2006). Where developments violate this regulation, development control will be upheld and intensified to avoid illegal developments and construction. (National Housing Policy, 2004)

Zoning is one of techniques of development control. It involves separation of conflicting land uses and segregation of complementary land uses. In planning there are 10 land use zones namely; residential, educational, recreational, industrial, commercial, public utility, public purpose, transportation, health, agricultural and non-urban land uses. (Physical Planning Handbook, 2007) Zoning regulations for instance separates industries from residential areas.

2.4. Uncontrolled development

Uncontrolled development is the form of development where regulations put place to check on development are ignored or violated altogether. Uncontrolled developments are as a result of ignorance of approved building plans and construction of structures in absence of plans. Manifestations of uncontrolled development include urban sprawl, poor accessibility and bad roads, poor drainage, over densification, poor waste management in urban areas, poor sewage disposal, pollution, conflicting land uses among others that make urban areas unsustainable. Uncontrolled development results in constrained water supply, haphazard parking of vehicles on the roads, poor aesthetics, insecurity and decreased property value in urban areas (Njani, 2013). He also attributes uncontrolled developments to high cost of land, developer’s perception, ignorance of developers and corruption in regulating institutions. Other causes
include inaccurate policies guiding urban developments and he costly and time consuming process of plan approval. The Nairobi County council has laxed in conducting inspections and enforcing regulations.

Likely causes of uncontrolled development in urban areas in Kenya are Corruption and collusion among officials and property owners, ignorance by property developers, poor planning lack of development regulation and minimal checks and inspections by officials who have been vested the mandate to check on physical developments. (Mwathane, 2016). Uncontrolled developments in urban areas may also be attributed to capacity constraints. Capacity in terms of finances and professionals employed by local authority to inspect developments. Inadequate staff brings about a scenario whereby the upcoming developments are too many to be manned by a small number. The professionals end up being overwhelmed and hence cannot carry out the checks efficiently.

Poor land use planning and management practices including lack of a comprehensive up to date plan and development control guidelines leading to poor availability of land for urban and other land uses and land conflicts can also be blamed for the uncontrolled developments. The large number of illegally and poorly constructed structures are consequences of a weak development control system that causes major challenges in allocating land and various land use. (Nairobi Metro 2030, 2008)

2.5. Role of government in development control

The government has a major role in development control as it is supposed to regulate the uses of the land. The government is deemed the primary owner of all land in Kenya and sublets it to individuals. The government has control over all land in Kenya especially where public interest is at stake. The government can intervene when the interests of the public are not being observed and take action against a party violating it. The government ensures that the private land is subject to development control regulations. (National Land Policy, 2007). This means that the government can prohibit land owners from carrying out certain activities in their lands despite owning the pieces of land.

2.6. Role of citizens in development control

The citizens have a role to play in the development control process as they are the ones to be affected directly by these developments. The community/public under the Constitution has a lot of say in matters development. This is because the public is usually the first beneficiary or
victim in any project of huge magnitude. The interests of the public should be given priority where the individual interest may prevail. The constitution in article 69, mandates government to encourage public participation in matters of the environment management, protection and conservation. In article 184 (b), it gives the national legislation the mandate to provide for participation by residents in governance of urban areas and cities. The community has a role to play in matters development and their voice should be taken seriously. A community with a voice is a community with order. The public should not keep quiet when they see wrong things happen. Members of community should be encouraged to participate in such matters so as to play the role they have in the community.

2.7. Neighbourhood concept

Neighbourhoods can be defined as sub-divisions of locations such as cities, villages and towns. In its purest definition, a neighbourhood is the vicinity in which people live. These sections have some particular physical or social characteristics that distinguish them from the rest of an area, be it a city or a town. (Duncan & Raundebusch, 1999). In other words, a neighbourhood is the immediate planning context or unit in which people live. Majority of the population is within walking distance of its centre where the needs of daily life are available. The centre of the neighbourhood provides facilities for transit stops, works places, retail, community events and leisure activities. Due to incremental development there is mixture of large and small houses, shops, restaurants, offices etc. civic buildings e.g. schools, worship areas, clubs are located in centre where open spaces, playgrounds and parks are provided. (Elizabeth, Duany, & Zyberk, 2000).

The neighbourhoods are bounded by roads. The physical planning handbook, 2007 defines a neighbourhood as a comprehensive planning unit with a socio economic identity sharing common facilities e.g. schools, recreational, shopping centre. Neighbourhoods may include several estates. An estate is characterized by common housing design, common services, common entry and exit, uniformity in plot size and design not forgetting a well-defined development period. (Physical Planning Handbook, 2007)

2.8. Impact of demographic pressures on housing and development character

Urban areas in Kenya are experiencing rapid population growth. This can be attributed to increased fertility rates and rural urban migration. This has created pressure on the housing sector. (Kenya National Housing Survey, 2014). Kenya’s population was 28.7 million according to the 1999 census, 38.6 million in 2009 census and is projected to be 50 million by
year 2030 and of which 50 per cent is likely to be urban population. Huruma estate is in Nairobi County, an urban area that has not been spared by the rapid population growth. Nairobi is deemed to be full of opportunities hence why it continues to attract new dwellers and retain old ones.

2.9. Role of infrastructure in human settlement development

These facilities and services enhance lives and improve hygiene. Infrastructure like roads improve movement of people and goods and also improves accessibility. Infrastructure is one of the foundations fronted to deliver Kenya to vision 2030. This shows that for a country to be able to develop, its infrastructure should be of good quality and its provision should be adequate. Infrastructure complements other related sectors. Lack of a trunk infrastructure is a serious constraint to the housing development. The local authorities have not adequately fulfilled their responsibility for provision and management. (National Housing Policy, 2004)

In article 56 of the Constitution 2010, the government has a duty to ensure that people have reasonable access to water, health and any other relevant infrastructure. The government should therefore make reasonable steps to try and ensure that all citizens get access to these facilities. In article 185, the county assemblies receives plans, approves and makes policies about infrastructure development in their respective counties. The assembly also approves the plans and policies concerning management and development of the same infrastructure. This shows that both the national government and county government have a duty in provision of infrastructure and services like water and sewerage.

2.10. Effects of uncontrolled development

2.10.1. Effect on Health

Poorly managed waste may cause respiratory problems in residents from the stench that emanate from poorly managed waste both liquid and solid. Communicable diseases for example cholera are examples of diseases that are common in areas with such development. A properly developed area will have good waste management systems and therefore the issue of poor waste disposal mechanisms will not arise. Fumes from vehicles on the roads and industrial activities located near residential estates may cause respiratory and breathing challenges to residents.

2.10.2. Effect on Safety

Uncontrolled developments are characterized by poor or no regard of safety standards. Materials used for construction may not meet the standards for safety. Construction workers
ought to use safety garments to protect them from site sustained injuries and deaths. Emergency escape routes should be provided for use in the event of fire or other related disasters. Most of the uncontrolled developments do not have such facilities like a fireman’s lift, fire extinguishers and other equipment. Uncontrolled developments have many effects that affect people health wise. Poor workmanship during construction can lead to accidents to both workers in the construction site and occupants of the premises later on. In the recent past, several buildings within the city have collapsed probably due to poor workmanship or substandard materials. Lives have been lost and injuries sustained in the course of such accidents.

2.10.3. Effect on Security

Dark alleys, poor streetlights and derelict structures for example derelict structures and buildings encourage criminal activities e.g. muggings, robbery and robbery. Dark narrow alleys encourage crime because of a reduced number of persons using it. Derelict structures provide hiding spaces for criminals and where criminal activities are planned. (Opiyo, 2013) Unregulated land use transformation serves to weaken the wider community cohesion and heighten spatial segregation of residents.

2.10.4. Effect on Socio-economic activities

Well-developed neighbourhoods foster casual social and personal interactions with neighbours. Uncontrolled developments create barriers and tends to replace public spaces with privates spaces (Njani, 2013). Uncontrolled developments deny urban areas identity and a good history. (Kunstler, 2013). Uncontrolled development renders facilities and services inaccessible. This degrades the quality of life in urban areas. People should interact with their environments freely and in a sustainable manner.

2.10.5. Effect on environment

Uncontrolled development leads to degradation of environment. This happens when solid and liquid wastes are dumped along rivers and roads. This results to poor storm water drainage due to clogged drainage channels built at the edges of the roads (Alumasa, 2009). Untreated waste when disposed into rivers kill the living organisms present in the water and may affect those using the river downstream. Fragile ecosystems for example riparian reserves should be protected as a way of conserving the environment (Environmental Management and Coordination Act, 1999).
2.10.6. Effect on infrastructure

Uncontrolled development poses a challenge to the infrastructure development of an area. Some structures are set up along road reserves thereby minimizing the width that was initially set for the roads. This makes construction of infrastructure like roads expensive since there will a sizeable chunk of monies put aside for demolition of structures, relocation of the people living there and in other cases compensation. The high population in urban areas leads to failures of these infrastructure where they are not adequate for the population present.

2.11. Policy framework

2.11.1. National Land Policy, 2009

The land policy recognizes land as a key resource for the Kenyan people and as the basis of livelihoods. Kenya being an agricultural country, land is the foundation of economic development. The document provides a framework for managing the land sustainably, efficiently and in an equitable manner so as to ensure continued livelihood security, peace and development. The land policy further seeks to provide citizens with opportunities to access land and to benefit from the use and occupation. The policy seeks to promote transparent dispute resolution mechanisms in land related conflicts and to create a transparent and cost effective administration of land not forgetting doing away with gender discrimination to matters pertaining to land matters.

2.11.2. Housing Policy, 2004

The housing policy was prepared by the Ministry of Lands in 2004. The policy recognizes challenges in the housing sector and attributes them to minimal and sporadic investments in housing sector and high level of poverty. The policy proposes provision of adequate shelter and to enable the poor access housing and basic services and infrastructure. The document encourages integrated participatory approaches to slum upgrading and how to develop decent shelters from low cost building materials.

2.11.3. National Urban Development Policy Draft

This is a policy document prepared by the government to guide the planning of cities and towns. The government believes that creating well planned, vibrant and efficient urban areas will result in sustainable urbanization trend in Kenya. (The standard on November 19th 2011, urban Policy will help drive development).
The policy aims to strengthen development planning, urban management and provision of social and physical infrastructure in urban areas. Rapid urbanization has been identified as one of the challenges faced in urban areas in Kenya. The policy seeks to address this among seeking ways on how to allocate resources and services for example water supply, solid waste management, transport, health, power in urban areas with the hope that it will result to sustainable urban areas conducive to human settlement.

2.11.4. Sustainable Development Goals, 2015

Sustainable Goals replace the Millennium Development Goals which have been in existence since 2000. Both are development strategies for countries under the United Nations banner and apply to all such countries regardless of level of development. First goal is to end poverty in all its forms and to build resilient infrastructure. Other goals include achieving safe and sustainable cities.

2.12. Legal framework


The Constitution in chapter 4, article 43 (b) protects the right of every individual to adequate housing and to reasonable standards of living. The constitution is a major proponent of sustainable use of resources for use by the current and the future generations and the preservation of environment.

Uncontrolled developments in Huruma Ngei ward Estate lower the standards of life for the population residing in the area. The housing sector in Kenya has been unable to achieve adequate and decent housing for all and the conservation of environment.

2.12.2. Physical Planning Act, 1996

This is an Act of Parliament to provide for the preparation and implementation of physical development plans and for connected purposes. In part IV, the Act gives the county governments in this case the County Government of Nairobi the power to control the development within their areas of jurisdiction. The county government should approve plans and ensure proper execution of those approved plans. Part V of the Act is more about control of physical developments. It entails building construction control and development control the case of change of users, extension of lease and subdivision. The Act further guides on features of buildings like canopies, building lines, setbacks, plot coverage, their properties and the
requirements for their establishment. The Physical Planning Act provides for public participation in matters pertaining to physical development.

**2.12.3. Environment Management and Coordination Act, 1999**

This is an Act of Parliament that provides for the establishment of an appropriate legal and institutional framework for the management of the environment. The Act provides for protection of environment and right to clean and sustainable environment. This is done through ensuring strict adherence to environment conservation by developers. The EMCA provides for the establishment of National Environmental Management Authority to have jurisdiction over matters pertaining to land and environment.

**2.12.4. Urban Areas and Cities Act, 2011**

This is an Act of Parliament that gives effect to Article 184 of Constitution that provides for the classification, governance and management of urban areas and cities. The Act provides for the criteria for establishment of urban areas and provides for principles of their governance. The Act lays emphasis on integrated plans calling for broader participation of stakeholders. It also requires city or urban area integrated development plan to be aligned to the development plans and strategies of the county governments.

**2.12.5. County Government Act, 2012**

This is an Act of Parliament that effects Chapter 11 of the Constitution that provides for the county governments’ powers, functions and responsibilities to deliver services and to guide planning in the devolved system. Part XI of the Act provides for the establishment of a county planning unit which will be responsible for coordinating and ensuring integrated development planning and ensuring linkages between county plans and the national planning framework. It should always encourage participation of citizens in the planning process and establish a GIS based database system. The Act further provides for the preparation of county integrated development plans, county sectoral plans, county spatial plans and cities and urban areas plans as provided for under the Urban Areas and Cities Act.

**2.12.6. Planning and Building Regulations, 2009 (Draft)**

The document was prepared by the ministry of housing so as to create order in the built environment. It contains requirements and standards that should be met before, during and after construction. In section B, it details the national, regional and local planning, siting and space
within and around buildings and also the requirements for people with disabilities whose facilities should be provided for in all developments.


This is an Act of parliament that created the National Land Commission, a body that is vested with the mandate of managing the public land on behalf of the national and county government, recommending the national land policy to the government, conducting research on land related activities and proper use of resources among other mandates.

2.12.8. The Housing Bill, 2011

This is an ACT of Parliament that once approved and adopted will provide for the effective coordination, facilitation, and monitoring of the housing and human settlement sector. The Act will also establish the Kenya Housing Authority and the National Social Housing and Infrastructure Fund for the provision of housing and amenities. Among the objectives of the bill include facilitating adequate housing, mobilizing resources for the provision of housing and monitor human settlements.

2.13. Building regulations and standards

These Regulations guide on good planning and building practice. The overall aim is to encourage optimal use of resources, enhancing safety, health and convenience and improving compliance to these regulations.

Huruma Ngei is classified into zone 7 by the approving authority, Nairobi City County, Department of City Planning. Developments in this zone should have a ground coverage of 50 and a plot ratio of 75. The housing typology should be high density residential flats.

Some of the regulations to be applied include seeking of development permission before undertaking construction works. When there is intention to add extension to buildings, they should be approved. Application for approval should be done where there are repairs set to be conducted that affect the structural loading or a repair of any part of the structural system drawings should be submitted for approval. During application for approval the following plans should be submitted; a location plan, drainage installation drawing, a firefighting installation drawing and particulars of any building to demolished and the intended method of demolition. In the case of temporary structures, permission to develop should not be granted before assessing the intended use, the area where it is to be erected and the suitability of materials to be used in construction. Persons undertaking such works should be qualified and registered.
The minimum qualification of any building control officer appointed under these regulations should be an ordinary diploma plus four further years in the construction industry. Professionals set to supervise or undertake the works should be specified in the approval document.

Precautions should be taken during all stages of construction or any building to ensure that the structural system is not damaged or distorted during the course or erection of such building. All workmanship in the erection of any building shall be in accordance with sound planning and building practice. Any person appointed by the owner to be in control of such building shall ensure that where such equipment or installation is designed to be kept operating during the times of normal occupancy of the building it is kept operating in a safe and satisfactory manner. On completion of any building works, the person for whom the building works were carried out shall apply to the approving authority for: a full Occupation Certificate, a Sectional Completion Certificate and a Temporary Occupation permit.

Any building being set up should maintain the general appearance of street, public place or square. This means that structures to a building for example latrines and other sanitary facilities should be situated within the plot and not without. No plot should obstruct the view of persons using any streets used by vehicles or at any bend, corner or junction thereby causing dangers to the users. An open area should be left on each plot for the purposes of servicing and means of access. Open spaces should not be reduced and should be not less than 35m2 and not less than 4.5m. An open space of 6m measured at right angles should be left in front of the building to the street. Every plot should be provided with at least one access to the road and a secondary means of access. A distance of not less than 10m should be provided for as frontage abutting to the street. Where the width of a road is less than 6m, the building should be more than 3m away from the centre line. For detached or semi-detached buildings a service lane of 3m should be provided for. Canopies should have a clear space of not less than 5.5m beneath every part. To enhance usability, all roads should have safe cyclist lanes and designated parking spaces. Buildings to be planned for use by persons with disability for example ramps, lifts, and dropped kerbs. However, broken glasses is not permitted on any building so as to enhance security by ensuring no trespass.


2.14.1 Ministry of Lands, Housing and Urban Development

This is the part of national government that is in charge of managing land in Kenya. It has the mandate of making policies, setting standards, national planning, regulation, coordination,
inspection, monitoring and evaluation in matters relating to lands, housing and urban development.

2.14.2. Nairobi City County, Department of City Planning

This is the department of Nairobi City County that deals with among others rating and valuation, property management, forward planning, development control, urban design, land survey, enforcement, rental housing development and management.

2.14.3. National Land Commission

This is the body created by the National Land Commission Act of 2012. Some of the mandates of the commission are to manage public land on behalf of the national and county governments, to recommend a national land policy to the national government and advise the national government on a comprehensive programme for the registration of title in Kenya. The commission should encourage traditional dispute resolution mechanisms in land conflicts and to assess the tax on land and immovable property. The commission has insight responsibilities on land use planning throughout the country.

2.14.4. National Construction Authority

This is the body concerned with quality assurance, expansion and improvement in the construction industry in Kenya. This is the regulatory body in the construction industry. It is supposed to inspect construction sites and vet construction workers.

2.14.5. Kenya Urban Roads Authority

This is the body vested with the mandate of construction and management of public roads. It is involved in the tendering of construction works set to be done on urban roads under its watch. It is the supervisory body when works are being undertaken on these roads. The body manages the infrastructure that complements the same roads for example street lights and streets.

2.14.6. Nairobi Water Sewerage Company

This is the body that is concerned with provision of water and liquid waste management within Nairobi City County. It manages and provides channels of water and sewerage disposal. It bill residents of Nairobi for these services it provides.


This is the body that is mandated to connect households to the national grid and ensure provision of electricity energy for lighting, cooking and other uses to households. Some industries run on
electricity and the company provides electricity in such cases. The company charges a stipend for the service. However, there has been public outcry about rising costs.

2.15. Case studies

2.15.1. Case study 1: Kensington estate, Derby Street 1999 (Kath Hulse, 2004)

The estate is found in the inner cities areas of Melbourne in England. The housing stock in the area had deteriorated in form and structure. When the Bracks government got in power in 1999, it set out to improve the houses and improve the quality of life in the city, Kensington being one of them. Redevelopment was proposed as a way to achieve the desired results. The redevelopment would be the first of a kind of private public partnerships to deliver a mixture of private and public houses. During redevelopment, residents were relocated off the estate to allow demolition and reconstruction. Over 400 families were relocated.

Figure 1: A photograph showing part of Kensington Estate after redevelopment

Source: Google images

Interventions undertaken

An inventory was taken and found the following results. The estate had 86 bedsitter units, 56-1 bedroom units, 256-2 bedroom units and finally 296-3 bedroom housing units. After redevelopment, bedsitters were reduced to 76, 2 bedroom units to 184 and 3 bedroom units to 260. The redevelopment increased 1 bedroom units to 61. This was as a result of conversion of
bedsitters to one bedroom units for older people. Service provision was enhanced to the residents. The estate model has been replicated in many parts of England due to the successes achieved with the project undertaking. The project also offered employment opportunities to the people from the estate and the larger England.

**Similarities between Kensington Derby Street and Huruma Ngei ward estate**

1. Majority of households living in Kensington estate had low incomes. Huruma Ngei estate also houses people who earn low incomes.
2. A significant portion (44%) of residents in Kensington had lived in the estate for at least 5 years. This study also found that majority of residents in Huruma Ngei estate have also resided in Ngei for almost a similar period.
4. Residents in Kensington loved the estate due to its proximity to town. Similarly, residents in Huruma Ngei love the residential area due to its closeness to the city. In twenty minutes in both cases one is likely to be in city centre.
5. Residents are from diverse cultural backgrounds in both estates.
6. The residents loved Kensington estate due to its conducive environment. The study in Huruma Ngei revealed the residents love the area due to its conducive life.
7. Life was cheap in the Kensington estate. Residents in Huruma Ngei also consider life in the area as cheap and affordable and has contributed to them being residents there.
8. Insecurity was rife in Kensington. The situation is no different from the situation in Huruma Ngei ward estate.
9. Both estates are high density residential estates.
10. Residents in both estates dislike the state of buildings.

**Lessons learnt**

1. Assessing estates to which residents relocate to so as to be able to assess the impacts of redevelopment in neighbouring estates. This involves taking inventories before and after redevelopment. This is to be able to observe any negative impacts that may be caused by redevelopment and subsequent relocation.
2. Participation of stakeholders is key so as to come up with something that will be adopted by all stakeholders. In this case, the residents were involved in each process hence their cooperation when they were required to conform for example during relocation.
3. The timelines for redevelopment ought to be clear to avoid uncertainties among residents and other stakeholders.

4. That redevelopment of estates already occupied should happen in stages so as to reduce disruption to people and their activities.

2.15.2. Case study 2: Redevelopment of Earls court, London

Interventions undertaken

Earl’s court is a private estate in London. The estate had deteriorated with dilapidated buildings. The council offered to purchase all leasehold and freehold properties in the estate in order to carry out redevelopment. Residents were given a choice to design houses that they would later wish to own. The council covered all costs for example redirection of mail, disconnections and reconnections of gas, electricity and water.

Property owners would be compensated full market value plus a home loss compensation of 10% the value of the home. The results ranged from 1 to two bedroom units and would be let to tenants depending on size of household and genders in the household. For the physically challenged, the council was willing to make adaptation to make the home as good for their use as possible.

The council identified site for relocation and devised ways on how to move the tenants. However, no services were disrupted during redevelopment.

Lessons learnt during and after the redevelopment

1. That private estates can also be redeveloped with proper paperwork and management without unnecessary litigation cases arising. This model can be emulated during redevelopment in Huruma Ngei Ward Estate.

2. Public participation before, during and after is an important aspect during redevelopment. The views of the members of the public should be taken into account and considered.

3. That redevelopment does not always have to result to disruptions of services and relocation of residents.
Figure 2: Part of the Earls court estate after redevelopment.

Source: Google images

### Uncontrolled development
- **Haphazard developments**
- **Property owner fault (ignorance, cost, greed)**
- **High population**
- **Poor structural soundness of buildings**
- **Laxity by Nairobi City County In controlling developments**

### Consequences of uncontrolled development
1. Poor infrastructural facilities
2. Putting up of informal structures
3. Collapsing of buildings
4. Clogged drainage channels
5. Poorly maintained roads

### Feasible planning interventions
1. Carrying out routine checks on buildings
2. Employment of qualified and ethical staff to conduct the checks
3. Application of the building code
4. Improve existing infrastructural facilities
5. Total redevelopment of affected areas
6. Community participation

### Controlled development
- **Adequate infrastructure e.g. efficient drainage system**
- **Clean and sustainable environment**
- **Adherence to set building regulations**
- **Decent and adequate housing stock**

*Source: Author*
CHAPTER 3: BACKGROUND OF THE STUDY AREA

3.1. History development of Nairobi

Nairobi is the capital and the largest city of Kenya. It was founded in 1899. The name “Nairobi” comes from the Maasai phrase ‘Enkare Nyrobi’ which translates to a place of “cool waters”. Initially Nairobi was a brackish African swamp occupied by Maasai and the Kikuyu people who were pastoralists and agriculturalists respectively. A railway line was to be built from Mombasa to Kisumu on the edge of Lake Victoria. The essence of the line was to open up East Africa and make it accessible for trade and to encourage colonial settlements. The original inhabitants, the Maasais, were forcibly evicted. The railway complex would eventually expand to become the largest city of Kenya. Nairobi also doubled up as a depot for the Uganda railway in 1899 that linked Mombasa to Uganda. Nairobi was at a central position between Mombasa and Kampala. The network of rivers within Nairobi could supply Nairobi with water and its elevation made it cool enough for residential purposes for the thousands of laborers with Indian origin who had come to Kenya to seek employment on the railway line plus the British settlers. It has become the railways headquarters due to its location. Due to these factors and its proximity, it replaced Machakos as the capital city.

The city and its surrounding area form Nairobi County, one of the 47 counties in Kenya. The county is under the leadership of governor is Evans Kidero. The city had an estimated population of 3.36 million as at 2011 and lies on an area of 694.9 square kilometres. It has an elevation of 1661 metres above sea level. Overtime, Nairobi has earned the name “the city in the sun”. The city is famous for having the Nairobi National Park, the world’s only game reserve found within a major city.

3.2. Location of Nairobi

Nairobi is both a city and a county in Kenya. It is found within the greater Nairobi Metropolitan made up of three other counties namely Kiambu, Kajiado and Machakos. It is located within the coordinates 1°09′S 36°39′E and 1°27′S 37°06′E.

3.3. History of Huruma Ngei ward.

Huruma Ngei ward is a residential estate located in the northeast of Nairobi County, the capital city of Kenya. The ward is in Mathare constituency. The piece of land on which the estate sits on was initially owned by a small group of people who later subdivided it into small parcels of
land and sold it to private owners who developed all kinds of structures ranging from buildings to low house some of which stand to date. Others have been demolished to pave way for modern buildings and to cash in on the ever increasing demand for housing. Most land parcels do not have land title or documents showing ownership.

Administratively, it was initially divided into Ngei 1 and 2. It was then part of the larger Huruma ward. Overtime, Huruma Ngei has become a ward on its own with its own political leaders. The estate which is said to be 30 years old is divided into five locations: Kibichoii, Ngei 2B, Sokoni, Gitathuru and Madoya. Some of the popular landmarks in the area are the Redeemed Gospel Church Huruma, Mathare North road, Gitathuru River, Mbuthia bar and Metameta bar.

3.4. Location of Huruma Ngei ward

Initially it was located in Starehe constituency but after new boundaries were gazetted by Independent Electoral Boundary Commission in 2012, it is now in Mathare constituency that is made up of five other constituencies namely Hospital, Mlango Kubwa, Mabatini, Huruma and Kiamaiiko. Ngei ward is the smallest of the six by area. It borders Mathare North ward to the north, Huruma ward to the east, Mabatini to the west, Utalii ward to the northwest and finally Juja road and Huruma flats to the south. The area is bounded by Mathare north road to the west, Juja road to the south, Gitathuru River to the north, Kibichoii road to the east. Huruma Ngei is found within the eastings 36°51’50.76"E and 36°52’8.99"E and between northings 1°15’44.74"S and 1°15’25.66"S.

It is served by public service vehicles route 46 plying Juja road. The area can also be accessed from Thika road through Mathare North road.
3.5. Physiography

3.5.1. Topography

The area is characterized by relatively smooth terrain sloping northwards towards River Gitathuru. Redeemed church which is at the highest point has an altitude of 1625 metres compared to Gitathuru location which is at the lowest point with an altitude of 1609 metres above sea level.

3.5.2. Climate

Ngei ward experiences a climate similar to the rest of Nairobi. The climate in Nairobi is described as tropical climate. The area experiences long rains as from March to June while the short rains occur from October to December. The mean annual rainfall ranges between 600mm and 1100mm per annum. The temperatures record a minimum of 14\(^\circ\)C and maximum of 24\(^\circ\)C. The mean annual relative humidity values average from 60% to 80%.

December to March mark the warmest season in the area. June to July marks the coldest period characterized by chilly mornings, evenings and dull daytime.

3.5.3. Drainage

Ngei ward naturally slopes towards Gitathuru River which forms the main drainage channel in the area. All liquid waste is directed to this river. There are also open drain channels along the roadsides.

3.5.4. Natural resources

Gitathuru River which marks the boundary between Mathare constituency and Ruaraka constituency is highly polluted. This is due to directing all liquid waste and open drain channels to it. It has human settlements along its channel. The river is known to burst its banks during rainy season and this leaves hundreds displaced when the heavens open.
3.5.5. Soil characteristics

The area is mainly covered by clay soils. These black cotton soils can go up to a depth of 3 metres. This type of soil is characterized by high water retention capacity which leads to poor drainage. The soils also become sticky when waterlogged. This makes movement impossible. During the dry weather, the soils dry up leaving behind deep cracks.

3.5.6. Vegetation

The area is barely covered with vegetation due to the intense developments taking place. However, vegetation exists along the river on the northern side.

Plate 2: Vegetation along the river

Source: Field survey 2016
3.6. Community profile

3.6.1. Population

Ngei ward is a high density residential estate. The area had a population of 36,248 persons as at 2009 during the national census exercise. Currently, the population is estimated to stand at more than 43,000 persons. The percentage of female is 55% to 45% that of male.

3.6.2. Social political

Although there are no government offices within the ward, the offices are located within neighbouring wards a walking distance from the ward. The ward representative is the only leader who has an office within the ward. There is also no police station within the ward.

3.6.3. Economic

The area is made up of middle to low income earner although majority is made up of low income. This can be judged by the type of houses most live. Most residents live in single rooms whereas others live in informal settlements. The lack of provision of features like car parks in buildings also shows that the landlord have a target market mainly those who do not have luxury objects like vehicles.

3.7. Infrastructure and services

3.7.1. Water

Ngei ward is connected to the water by the Nairobi City Water and sewerage Company. There are also water vendors who retail the commodity to residents in times of water shortage. However, the vendors have been blamed for the frequent water shortages in the area.

3.7.2. Sewerage

The area is connected to sewer line that is managed by Nairobi City Water and Sewerage Company.

3.7.3. Power and Energy supply

The area is connected to the national power grid by the Kenya power and lighting company. All permanent structures have power. Illegal connections of power define the situation in the informal settlements in the area. Some are said to tap electricity from the streetlights.

3.7.4. Roads

The area is bounded by 9 metre roads all through. Mathare North road to the west, Juja road and Huruma service road to the road and Kibicho road to the east. The other major road is Mbuthia road which acts as the boundary that separates Kibicho from Ngei 2B and Sokoni.
Daniel Komboni road or better known to the residents as Metameta road runs parallel to Juja road.

*Map 2: Map showing road network in Huruma Ngei*

All above mentioned roads are tarmacked the last to be tarmacked being Daniel Komboni road which was done by former area MP Bishop Margaret Wanjiru. These major roads are served by access roads that make up minor roads and which are made of earth.

### 3.7.5. Solid waste collection

Garbage in the area is collected by private companies. There are currently two companies that collect the garbage. There is the Mafisi Sacco Youth Group which revised their charges to 100 shillings up from 50 shillings and collects after three days. The other is Street Light Youth Group which also revised its charges to 150 up from 100 shillings and collects the waste three days a week.

*Source: Author, 2016*
3.8. Neighbourhood characteristics

3.8.1. Housing typologies and settlement patterns

The prevalent house typology is flats. There are also low houses and one bungalow. There are informal settlements. Materials used for construction include bricks, tiles, and terrazzo and iron sheets. The buildings are made of bricks. However, there are low houses that are made of bricks while there are low houses built of timber and iron sheets.

3.8.2. Educational facilities

Though the ward lacks public education facilities, there are several private kindergarten and primary schools in the ward. El Shadai Educational centre, Furaha Preparatory Academy, Sancare, Nelson preparatory and Interfam Junior Academy just to mention a few.

3.8.3. Health facilities

Lion’s health centre is the only public health facility in the ward. However, there are other health centres though private. They include Mathare north, villa medical centre, Wamu health centre and several chemists.

3.8.4. Commercial activities

The area has a lot of formal and informal commercial activities. Some of the formal commercial activities in the area include Hotels, The area has several supermarkets. Some of the informal activities in the area include shops selling low order goods for example green groceries, both new and second hand clothes, food outlets and retail shops retailing milk, bread, cereals

3.8.5. Existing land uses in the study area

The predominant land use is residential cum commercial buildings. Almost all buildings have a shop(s) at the ground that are for commercial activities. There are a number of commercial activities everywhere in the area that lead to putting up of temporary structures. The other major land use is transport which has a lot of land allocated for the purpose of its provision. There are education facilities in the area though they are owned by the private sector.
3.8.6. Political leadership in Huruma Ngei ward

The area is in Mathare constituency which is represented by Steve Kariuki in the national assembly as the area MP. His mandate is to represent the residents of the constituency in parliament and to take their issues to the house. The ward being in Nairobi County headed by Governor Evans Kidero. For purposes of effectiveness and representation in his office, he is represented by a ward administrator, Mr Allan Isaboke, who was very instrumental in this study. Huruma Ngei is a ward and is represented by Daniel Mutiso as the ward representative. He has an office in the ward plus he also resides within the ward.
CHAPTER FOUR: FINDINGS

4.1. Residents’ characteristics

4.1.1. Characteristic age of respondents

Out of the 47 respondents interviewed, 29% falls within the 36-50 age group, another 31% falls within the 16-25 year age group and the rest 40% falls within the 26-35 year age group. All respondents were within the above mentioned age groups.

It can be concluded that the area is occupied by young people and middle aged people.

4.1.2. Characteristic sex of respondents

Of the respondents interviewed, 58% were of the female gender while the rest 42% comprised of the male respondents.

This may be taken to mean that members of the female gender are more willing to participate in research. Another likely explanation is that majority of breadwinners are male and during the day they outpacing for their families.

4.1.3. Characteristic marital status of residents

Out of all the respondents interviewed, 4% reported to be widowed whereas 36% reported to be single. The rest, 60% reported to be in marriages or in long
term relationships. This can be taken to mean that the area is largely occupied by families.

4.1.4. Educational background of respondents

Only 16% of respondents reported to have attended school up to standard eight. A good percentage, 32% had attained tertiary level of education and the rest, 52% had gone up to secondary level. If this number is taken to represent the entire population, then it can be concluded that a good percentage is literate with basic education.

Source: Field survey, 2016

4.1.5. Average number of family members per household

Only 11% of respondents reported to living alone in their households. They however did not rule out having visitors who spend the night once in a while. A combined 14% of respondents live with other four or five members whereas 22% have 3 members,
24 had 4 members and 29% live 2 members in the house.

**Employment status**

Of those interviewed, 9% reported to be stay at home mums, 11% had no employment mainly students, 16% were employed in the formal sector and 21% in the informal sector. A sizeable number, 43% were self-employed and running their own businesses.

*Source: Field survey, 2016*

**4.1.6. Monthly income for respondents**

Among the respondents who were willing to reveal their monthly incomes, 30% earn in the range between Ksh 20,001 and Ksh50, 000. A combined

*Source: Field survey, 2016*
50% of respondents were earning less than Ksh 15,000.

4.1.7. Respondents place of birth and origin

Upon posing the question to respondents, only 16% were born in Huruma Ngei Estate. They belonged to the younger generation within the 16-25 age group. The rest 84% migrated from other areas. Out of the 84%, only 13% migrated from within the city. A larger percentage, 87% migrated from areas outside Nairobi.


Less than 5% of reported to have moved into the area in a period of less than a year at the time of the study. Those who had lived in the area within a period of 1 and 5 years comprised 29%.
Another 31% had lived in the area between 6 and 10 years whereas 35% had been tenants for more than 10 years.

4.1.9. Reasons for migrating from other areas

Respondents migrated from their initial places for a myriad of reasons; 5% wanted to pursue further education, 11% wanted to experience a change of environment, 8% migrated to look for good locations for their businesses whereas 11% migrated to get married. Another 14% migrated in search of greener pastures whereas 51% migrated in pursuit of jobs and employment.

4.1.10. Reasons for settling in Huruma Ngei

The areas proximity to CBD impresses 10%. The areas conducive environment made 16.7% of respondents decide to settle in the estate. Affordability of life has attracted 23% and another
33% chose to settle in the area due to the proximity to their workplaces. The rest had a relative in the area.

Chart 11: A chart showing reasons for settlement of respondents in Ngei Ward

![Chart 11](image)

Source: Field survey, 2016

4.2. Household characteristics

4.2.1. Average number of rooms

Chart 12: Pie chart showing average number of rooms have in their homes

![Chart 12](image)

Source: Field survey, 2016

More than 2/3 of respondents live in a one roomed house in the study area. Another 20% lives in a double roomed housed while a paltry 10% live in a house with more than two rooms. A single room goes for between 3500 to 4500 Kenyan shillings. To the respondents this is...
4.2.2. Sharing of sanitary facilities

*Chart 13: Pie chart showing number of household respondents share sanitary facilities with*

Only 1/3 of respondents do not share sanitary facilities. The rest shares these facilities with other households. Of those sharing the facilities, only 20% shared among two households. The rest shared these facilities among more than two households.

4.3. Development characteristics and its user challenges

The development in Huruma Ngei is uncontrolled and uncoordinated. This can be judged from the buildings, roads, hygiene and general street outlook. These observations were backed by the ward administrator, Mr Isaboke. He noted that the development in the poor has been poor but NCA was trying to curb the mess by regulating construction through routine inspections and recommendations of materials to be used in the construction. His sentiments were echoed by Judy Gitau, a planner from Department of City Planning, Nairobi City County. She regrets that the institution has been overtaken by events in taming the trend especially in the Eastern part of the city.

Upon posing the question to the respondents, a combined 40% termed development in the estate as poor and unplanned. Another 31% considered it fair. The rest did not like particular aspects of the estate for example 5% of the respondents was irked by expensive houses, another 10% by bad roads while 12% termed it as congested.
The study set out to substantiate the claims and found out the following challenges tenants have to contend with on daily basis.

Source: Field survey, 2016
4.3.1. Challenges facing housing in Huruma Ngei

Small rooms with poor ventilation

More than two thirds of housing units in the area are single rooms. These rooms are not spacious despite the fact that they are occupied by several people. This denies the occupants privacy. The rooms are also poorly ventilated. Bearing in mind that the rooms are occupied by more than one person, this can lead to respiratory challenges. The minimum habitable room area recommended by the Building Code is 7 square metres per head. For a multipurpose room the minimum recommended area is 10.5 square metres. However, with no regular inspections carried out on construction sites, the room size is left at the volition of such property owners. They end up reducing room size so as to come up with as many single rooms. For example one of the rooms viewed could only fit a bed, a small space that acted as a makeshift kitchen and a small pathway to access the room. The said room accommodated three people.
**Frequent power outages**

A good number of respondents complain of frequent power outages in the estate. They note that they can go for days at times before power is restored. Such power outages occur when transformers explode either due to a fault or overloading. The transformers were installed with a small population in mind. The high-rise developments of buildings has increased the number of households sharing transformers that had been provided to serve a small number. Such frequent blackouts lead to heavy losses when electrical appliances short circuit as they will be forced to incur the losses without compensation. Business people also incur losses as on such days, they are forced to close early.

**Water shortage**

Huruma Ngei ward residents have been accustomed to frequent water shortage. The taps run dry for weeks. The existing pipes were laid to serve a small population compared to the current population. The residents are forced to purchase water from water vendors. This leads to unnecessary costs and fatigue since the residents are forced to carry jerrycans of water to their houses. It is a daunting task to carry a 20 litre jerrycan of water up to the seventh floor. The residents are also not assured of clean water as there are times when water is contaminated with...
sewage. This is a health hazard as it can lead to outbreak of waterborne diseases for example cholera.

Lack of adequate open spaces
Most of the buildings in the area do not have open spaces. The buildings end up having many rooms but no open spaces. Such buildings also have narrow corridors and verandas. Staircases are also made narrow so as to leave more space for more rooms. This makes living in such buildings uncomfortable. There are instances where buildings are built on lands that had been planned to be used as a recreation ground.

Non-compliance to plot ratio and ground coverage
Developers in Huruma Ngei do not comply with the set plot ratios and ground coverages. A majority of these buildings have been built beacon to beacon. This denies such buildings open spaces. The recommended ground coverage for buildings in the area is 50. This means that the building should cover half of the piece of land on which it is set. The rest should be dedicated to open spaces, car parks and wayleaves. The recommended plot ratio is 75. This should be used to determine to what height buildings should be build. However, this is ignored and buildings end up being built past permissible heights. Several tall buildings have collapsed in Huruma due to this.

Proliferation of commercial activities in the residential estate
There are too many commercial activities in the residential estate. Residents complain of noise from these commercial activities. Uncoordinated developments have led to scenarios whereby residents cannot enjoy their stay in these houses. A case in point, there are several bars in the estate that play loud music till late night causing residents’ sleepless nights due to these disturbances. The presence of bars has in the estates has also eroded morals in the estate. Under-age locals are introduced to alcohol at an early age. These commercial activities have also led to influx of outsiders into the area. This has led to congestion and rise in crime.

Mushrooming of informal settlements
Informal settlements have mushroomed in the area. These are in form of shanties that are not provided for with amenities like water, electricity and sewerage. This has led to new vices that taint the areas identity. One of the vice is illegal power connections. This is risky to human life since the risk of electrocution is imminent. The other vice is disposal of raw sewerage and waste into River Gitathuru. This has greatly polluted the river. The informal settlements have also led
to rise in insecurity as the shanties are occupied by low income earners who are unemployed and who turn to crime to sustain themselves.

*Construction along the riparian reserve*

There is infestation of human settlement along River Gitathuru riverbanks. This is evidence that construction is uncoordinated as such buildings should not come up within the 30 metres riparian reserve. Construction along such areas is a risky practice due to the risk of being carried away by floods hence the loss of lives and property. There are permanent buildings that have been build next to the river. The foundation of such buildings is eroded by water and such buildings sink leading to loss of lives and property.

*Plate 6: A photo showing a building constructed on a river channel.*

*Source: Field survey, 2016*

*Occupation of incomplete buildings*

A number of buildings have been occupied by tenants before construction is complete. A building should only be occupied once construction has been completed and the approving authority inspected the building and issued an occupation certificate after confirming that the building is safe for human occupation. However, this is left to property owners to decide when the building is due for occupation. Occupation of incomplete buildings is risky since the
building may not be structurally sound and safe for occupation hence it does not rule out injuries or death.

Direct access to roads

There are buildings that have direct access to roads. For example the photograph below shows a staircase that has directly leads to the road. This is a safety hazard for users who may not be in a position to see oncoming vehicles hence leading to accidents that may lead to injuries and in worst cases, death hence the need for control and coordination by authorities.

Plate 7: A photo showing a staircase directly leading to a road

![Diagram showing buildings, staircases, kiosk, road and pedestrians.]

Source: Field survey, 2016

4.3.2. Challenges of uncontrolled development on Infrastructure

Clogged drainage channels result to poor drainage.

The drainage system in Huruma Ngei Ward estate is largely not functional. This is due to clogged drainage channels. These channels are full of rubbish and with no one to collect the rubbish, water becomes stagnant. When such stagnant water lies idle, it forms breeding sites to mosquitoes and gives out stench that is distracting to resident. During rains, the whole area is rendered impassable due to this problem. The water finds its way into tenant’s houses leading to destruction. The photograph below shows clogged drainage channels full of waste. The channel is made of earth. The surface becomes spongy and prevents flow of waste. Such
channels should be made of impermeable surface to prevent absorption of water that leaves such filth behind.

*Plate 8: A photograph showing several clogged drainage channels.*

*Burst sewers*

Burst sewers is another challenge facing the area. The estate experiences frequent sewerage bursts. In such instances, the waste finds its way onto the roads and at times into households. This leads to unsightly scenes and filth all over. This can be attributed to an old and worn out system that needs to be replaced and maintained frequently.

*Poor roads*

Roads enhance mobility and improve human interactions with other users. Roads also foster growth and economic development. However, the current roads in Huruma do not achieve such goals as they are riddled with potholes and rough surface. This hampers smooth movement on these roads. Such potholes collect water during rainy seasons and become nightmare to road users who get stuck. Pedestrians also sustain injuries when they fall into these potholes. Presence of potholes points to poor maintenance and nil repairs.

The roads also lack functional streetlights. This can be attributed to poor maintenance and vandalism. Lack of streetlights has led to increase in insecurity at night. Streetlights enhance security of an area since it discourages criminal activities. Proper planning provides streetlights that improve security in an area.
Informal commercial activities along the road

There are informal commercial activities along the road reserve. Traders line up along the pedestrian footpaths to sell their wares. This forces pedestrians to walk on the road reserve for vehicles. This leads to conflicts and slows down traffic. In other cases, pedestrians end up being injured when hit by oncoming vehicles.

4.3.3. Challenges of uncontrolled development on Community facilities

Inadequate provision of these facilities.

Huruma Ngei has only one public facility, Lions Health Centre. This is an outpatient health facility. Due to the limited service it offers, most residents are forced to seek health services elsewhere. The ward has no public school. There are a several private schools in the ward. These schools do not have necessary facilities like playground. Pupils are forced to play by the roadside. Not all families can afford private schools hence there is need to provide public schools.

4.3.4. Challenges of uncontrolled development on provision of services

Poor waste collection

Poor waste management is evident in the estate. This is evidence by littered streets and roofs, clogged drainage channels and poor hygiene in the area. Proper waste management reflects coordination. This is lacking in the estate despite there being several private companies that collect the waste. These companies collect household waste from residents who have subscribed to their waste. Residents pay between Ksh 100 to 300 monthly for purposes of waste collection. To some residents, these charges are too high for waste collection as the waste “does not add value to our lives”. The private companies do not collect waste on the streets and there is no authority currently undertaking the task hence the messy streets.

Insecurity

The area experiences insecurity. This can be attributed to lack of functional streetlights and rise of unemployment in the area. There are dark alleys that are not well lit and provide favorable conditions of bad vices like muggings.

4.4. Drivers of uncontrolled development in Huruma Ngei

Malpractices at the Nairobi city county

Malicious officials from the Nairobi City County can be blamed for the uncontrolled development in Huruma Ngei. Some collude with property owners and allow them to build
structures that have not been approved. Such officials are bribed into silence. The developers then build anyhow since they have “security”.

**Large population and Demand for housing**

Huruma Ngei was not planned to house the population it has currently. The estate has densities of 1200 per hectare. The population is estimated to be around 45,000. This population exerts pressure and stress on the infrastructure whose capacity has not been increased to handle to increasing population. The high population creates a high demand for services like water. The old and narrow pipes cannot meet the demands. The population also overloads the transformers leading to explosions hence the frequent power outages.

**Poor workmanship and use of substandard materials**

Malicious workers working in the construction industry use substandard materials during construction. On speaking to one foreman, he admitted to working with and under other foremen who could not interpret plans yet were in charge of those development. He also intimated the rising use of substandard materials. This happens when malicious foremen source for these materials which are usually cheap but the owner does not happen to inspect the materials being used and will only want to see a finished building.

**Ignorance on the part of developers and property owners, Landlords and property developers**

There are developers who do not know where to start and depend on their own understanding and from other developers. This can be blamed on little information out in the public domain of what should be done in the event one has intentions to develop on a piece of land.

**Poor relationship between the NCC and developers**

There is a poor relationship between the developers and the authorities whereby the developers have a feeling that the authorities are out to harass and extort them of their monies. The authorities on the other hand perceives developers to be out to commit some wrong. This has made developers dodge the authorities for fear of exposing themselves to the perceived harassment and extortion.

**High approval fees**

Developers skip the approval process since it’s lengthy and expensive. They then proceed to construct without approvals.¹ There are fees to be paid and this discourages developers. For

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¹ Change of user 81,000.

Occupation certificate 30,000.
example change of user, advertisements on local dailies, environment impacts assessments and approval fees. Other charges include architectural plans charged at 0.01% of project cost and occupation certificate upon completion of the building.

Poor land administration system
Lack of titles can be blamed for uncontrolled developers. This is because one cannot submit plans for approval without proper land ownership documents like title deeds. Such developers who do not have title deeds choose to develop without approval. The construction is done hurriedly so that it can be complete before the authorities get wind of the development. The result is a building that did not observe set regulations.

It is also impossible to obtain loans without title deeds. A developer who may want to build a building will be forced to use the little monies he has. This may also lead to use of materials that are not recommended so that the construction can fit within the budget. Such a building likely to be completed hurriedly so that it can start returning on the investments used. This may lead to eventual collapse of building as has been the case in Huruma.

4.5. Challenges faced by different offices during implementation of their mandate

4.5.1. Office of Ngei ward administrator
The office of the ward administrator faces hostility from people constructing for example masons. Often times they leave the site with injuries. This frustrates their executions of their mandates. They are forced to stay away and ask for reinforcement which most of the times is not forthcoming. Inadequate facilitation and equipment to enforce regulations is another challenge the office faces in its day to day work. The manpower to enforce is not adequate and they end up not being effective and efficient as they would love. The office does not conduct enough checks and inspections as it should or as the ward administrator would love. Mr Isaboke notes that for a habit to stop the inspections should be conducted on regular basis so as to discourage the defaulters.

4.5.5. Nairobi City County
Speaking on behalf of the planning department, Mrs Judy Gitau says bureaucracy is a challenge facing the office. In the event that the department has an idea they consider to be brilliant and which they see would help the building industry, it takes a lot of time before the idea gets the nod as it has to undergo various stages and pass through different offices. By the time the idea gets the nod, it is too late and has been overtaken by events. Resistance to change on the part
of developers is a challenge the council faces. Developers want to keep doing what they have been doing. They think that new laws and regulations are out to harass them and exploit them. The council is understaffed with a manpower 30 planners handling planning works for the whole of Nairobi. This makes enforcement and control to be a difficult task. “The law defeats us”. The law does not help authorities in their mandates. In cases where the authority publishes orders to stop the construction or recommends demolition, the property owners rush to court to seek injunctions stopping the council actions.

Mrs Gitau would love to see the institutions dealing with connected projects merged or work closely together. She admits she is not aware what other institutions for example Kenya power or NCWSC are doing in the area and what projects they are undertaking. She says it becomes difficult to vacate people who have settled somewhere informally but have facilities like power, sewerage and water.

4.6. Proposed planning interventions
The area residents wish to see improved security situation in the area. This will make them feel safe at their homes and on the streets. A good number proposes proper coordination of the built environment. This includes improving the type of housing in the area and making such houses affordable. This will lead to buildings that respond to the needs of the tenant and are comfortable to live in. There are residents who feel that access to clean water will improve their lives in the
area as this has a source of problems for them. Lastly, general hygiene of the area to be improved and sanitation.

*Chart 14: A pie chart showing sectors respondents want to be improved*

*Source: Field survey, 2016*
CHAPTER FIVE: SUMMARY AND RECOMMENDATIONS

5.1. Summary of research findings

*Poor construction habits*

This include use of substandard materials to construct. Building beacon to beacon and not providing open spaces in buildings.

*Encroachment on the riparian reserve and along wayleaves*

The study found rampant encroachment on wayleaves. There were both temporary and permanent shelters along the riparian reserve. Slums have mushroomed in the ward next to the riparian reserve. The shanties are not appealing to the eyes and are aesthetically unappealing. There are also some buildings that have been built across drainage channels. Traders have also invaded onto the pedestrian footpaths and sell their commodities from these footpaths.

*Inadequate and poorly maintained infrastructure.*

The study also revealed underlying challenges in the existing infrastructure system in the estate. This is evidenced by poor roads and poor drainage system. The roads are full of potholes. There are also no functional streetlights.

*Inadequate access to services*

Water accessibility is a challenge in the ward. This is due to old and worn out pipes that are too narrow and leak water occasionally leading to deficit in this precious commodity. Garbage collection is also a challenge. Streets are littered with waste and rubbish that goes on to block drainage channels.

*Lack of public community facilities*

The ward has no public school, a social hall or recreation despite it having large population to warrant provision of these facilities. The ward has only one public dispensary. Most residents are forced to seek these services far.

*Non-compliance to set guidelines*

Most developers do not comply to set guidelines when constructing their buildings. The buildings do not adequate open spaces. In addition, guidelines on plot coverages, plot ratios, setbacks are not adhered to.

5.2. Emerging issues

There are many land owners in the ward who do not have title deed to their land parcels. This point to a flawed land administration system in Kenya.
There are a lot of commercial activities in the residential estate. This shows there is a need to incorporate commercial activities in residential estates. As such there is need to integrate these two land uses so as to come up with a system that works in harmony.

The area has a sloping topography. This combined with the presence of a river should be used to improve the drainage of the area. The drainage channels can be directed to the river. However, care should be taken to prevent disposal of raw sewerage into the river.

5.3. Planning implications

1. There is need to review the land administration system in Kenya. The study has exposed inadequacies of the system.
2. Policies pertaining to construction need to be reviewed and to be enforced strictly.
3. There is also need for proper enforcement of the set guidelines. This can be achieved through increasing capacity of institutions that undertake development control.
4. Public participation is an important principle that should be taken seriously since it is the public that ends up suffering when mistakes are committed by developers and different institutions. The public needs to be enlightened on these policies since the public is still ignorant in matters to do with construction.
5. The study has also exposed lack of keenness to observe planning ethics. For example corruption is a vice that has created a lot of mess in the built environment when officers who should be implementing guidelines and regulations are bribed into silence.
6. There is need to review developments in the area against a checklist of features and facilities that ought to be included. Regularization of the condemned buildings can be done so as to comply with the set guidelines.

5.4. Recommendations

1. Reclamation of a riparian reserve along River Gitathuru
   A considerable distance should be left between the river and the buildings to act as a buffer. The buffer in this case will act as a barrier to prevent the adverse effects that result from river from reaching the human settlements. Areas near rivers are prone to flooding which may lead to displacement of people. Human settlements along a riverbank lead to pollution of riverbanks. Creation of a riparian reserve will help in conservation of the river while helping in protection of human life.

2. Infill densification
   This can be achieved through demolition of existing temporary shelters and construction of new high rise buildings with decent housing units. The low houses should also be demolished to
pave way for new buildings that will enhance densification. The new housing units should be spacious and will observe the regulations set for example plot coverage, plot ratios, setbacks and heights.

3. **Upgrade existing infrastructure**
This involves upgrading of the current infrastructure in the estate. This involves works on the poor roads, drainage channels, sewerage system, power supply system and water supply system. Informal commercial activities within the road reserve should be done away with. Where absent, pedestrian footpaths should be created. This will promote non-motorized transport in the estate. Drainage channels should be dug where absent and cleared of waste where the channels are clogged with waste. Inclusion of solar powered streetlights to light the streets will enhance security at night. Existing sewerage channels should be replaced to replace the worn out system that is also not enough to cater for the population. Dredging of broader water pipes will enhance accessibility to potable water in the estate.

4. **Improve general street hygiene**
Improvement of hygiene can be achieved through installation of waste receptacle in the estate. The waste bins should be placed at strategic points where residents can access and make use of them. This will reduce littering on the streets and in buildings.

5. **Land administration system**
An efficient land administration system will make it easier to acquire land titles. With land titles, property owners can easily access financial support to build decent shelters as they can use the titles as collaterals. The titles will also encourage property owners to seek for development approval as they have security of investment as opposed to the current situation where the property owners choose to invest little monies into their developments in case the authorities get wind of the developments and bring them down. The result of this is poor buildings.

6. **Provision of community facilities**
The estate has enough population to warrant a nursery school, a public primary school and a secondary school. Currently, the estate has no public education facility. The only public facility in the ward is Lions Health Centre. The estate requires a social hall, a playground and a recreational place.
5.5. **Conclusion**
The research set out to study uncontrolled developments, their causes, manifestations and effects. This was achieved by studying the nature of developments in Huruma Ngei Ward. The study found serious underlying issues some of them institutional based.

5.6. **Areas of further study**
   
i. Impacts of private land on development control. There are so many factors at play when it comes to development control on private land.
   
ii. Redevelopment process and polices on land that is privately owned.
   
iii. Impacts of riparian reserve on development vis a vis development on the riparian reserve.
Bibliography


33. UNHABITAT (2012), Korogocho streetscapes, Nairobi.
PART A: RESPONDENTS DETAILS

Name of the respondent……………………………………………………………………

Phone number…………………… Plot number ………………………………………

Date of interview………………………… name of area ……………………………

1. Age
7-15 [ ]  16-25 [ ]  26-35 [ ]  36-50 [ ]  51-70 [ ]  above 71 [ ]

2. Sex: male [ ]  female [ ]

3. Marital status: married [ ]  single [ ]  divorced [ ]  widower/widowed [ ]

4. How many members in reside in the family 1 [ ]  2 [ ]  3-5 [ ]  6-10 [ ]

5. Educational background
Primary [ ]  secondary [ ]  tertiary [ ]  none [ ]

6. What is your occupation? ……………………………………………………………

7. Income bracket
Less than 5000 [ ]
5001-10,000 [ ]
10,001-15,000 [ ]
15,001-20,000 [ ]
20,001-50,000 [ ]
50001-100,000 [ ]
Above 100,000 [ ]

PART B:

8. Were you born in Huruma Ngei estate? Yes [ ]  No [ ]

9. If no, where did you migrate from………………………………………………………?

10. How long have you lived in Huruma Ngei estate? ……………………………

11. Reasons for migrating from (above)………………………………………………
........................................................................................................................................
PART C: TYPE OF HOUSE

13. Total number of rooms in the house

14. Land status
   - private [ ]
   - public [ ]
   - community [ ]

15. Condition of building
   - permanent [ ]
   - semi-permanent [ ]

16. Building typology:
   - flats [ ]
   - bungalow [ ]
   - maisonette [ ]
   - low [ ]

If flats, number of floors …………

17. Building material
   - timber [ ]
   - iron sheets [ ]
   - concrete [ ]
   - other [ ]

18. Type of development
   - Residential [ ]
   - commercial [ ]
   - industrial [ ]
   - institution [ ]
   - others [ ] specify …………………

19. Year of construction ………………

PART D: SERVICES AND INFRASTRUCTURE

20. Solid waste disposal
   - County government [ ]
   - private company [ ]
   - burning [ ]
   - incinerator [ ]
   - on site disposal [ ]
   - other [ ] specify ………………

21. Liquid waste
   - sewer line [ ]
   - septic tank [ ]
   - open drain [ ]

22. Type of power connection
   - KPLC [ ]
   - solar [ ]
   - none [ ]

23. Source of water
   - NAWASCO [ ]
   - borehole [ ]
   - river [ ]
   - rain water [ ]

24. Size and name of the road/street ……………………………………………………………

25. What is the level of provision and condition of the following services?
   - Waste collection and disposal …
     - very good [ ]
     - good [ ]
     - fair [ ]
     - poor [ ]
   - Roads …………………
     - very good [ ]
     - good [ ]
     - fair [ ]
     - poor [ ]
   - Sewer lines ………………
     - very good [ ]
     - good [ ]
     - fair [ ]
     - poor [ ]
   - Water supply ………………
     - very good [ ]
     - good [ ]
     - fair [ ]
     - poor [ ]

26. Do you share sanitary facilities (toilets) with other households? Yes [ ]

PART E

What is your opinion on the nature of development in Huruma Ngei Estate? ............................
...........................................................................................................................................

Are there any challenges you face thanks to the nature of development in this area? ...........
...........................................................................................................................................
...........................................................................................................................................

In your opinion, what contributes to this type of development? .................................
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What would you like to see changed about the area? ..........................................................
...........................................................................................................................................

The end… Thank you.

<table>
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<tr>
<th>Categories</th>
<th>Availability</th>
<th>Functional</th>
<th>Physical condition</th>
<th>General comment</th>
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UNIVERSITY OF NAIROBI
DEPARTMENT OF URBAN AND REGIONAL PLANNING

PROJECT TITLE: PLANNING IMPLICATIONS OF UNCONTROLLED DEVELOPMENT IN HURUMA NGEI, NAIROBI

QUESTIONNAIRE FOR PROPERTY OWNERS

1. Name……………………………… Plot number …………………………………
2. Plot size ……………………………………………
3. What is the type of development you are undertaking? …………………………………
4. Is this your first development? Yes [ ] No [ ]
5. If no, are the others still located in Huruma Ngei Estate? Yes [ ] No [ ]
6. Did you engage professionals before and during construction?
7. If yes, for what particular services? ……………………………………………
8. If not, why? …………………………………………………………………………
9. Where do you source your masons and technicians from? …………………………..
10. Are there any qualifications you look for? …………………………………………
11. Plan approval number ……………………………………………………………………
12. If not, what are the reasons for not seeking approval………………………………
13. What is your opinion about the development of houses and buildings in the area?
   ……………………………………………………………………………………………
14. What features do most tenants prefer in their houses ………………………………
15. What would you like to see improved in the building industry? ……………………

16. Would you rent a house unit for occupation before you fully complete the building?

17. Special features you intend to install in this building…………………………

THE END... THANK YOU
UNIVERSITY OF NAIROBI
DEPARTMENT OF URBAN AND REGIONAL PLANNING
PROJECT TITLE: PLANNING IMPLICATIONS OF UNCONTROLLED DEVELOPMENT IN HURUMA NGEI, NAIROBI

QUESTIONNAIRE FOR PROFESSIONALS IN THE BUILT ENVIRONMENT

Name……………………………………………………………………………………………………

Age ……………………………………………………………………………………………………

Area of specialty …………………………………………………………………………………

Experience (years)………………………………………………………………………………

Where did you learn the skills? Training [ ] learnt on the job [ ]

Are you registered by any authority (NCA, ERB) in Kenya? Yes [ ] no [ ]

If no, why? ………………………………………………………………………………………

Can you read and interpret a building plan without assistance?

Do you insist on a plan without commencing building works in a construction site?

Have you undertaken any design projects in Huruma Ngei estate before? // Are you familiar with the state of affairs in Huruma Ngei estate?

What is your Opinion about housing development in Huruma Ngei…………………………

What do most property owners ask for or want in their developments ……………………

What are the main challenges the housing sector faces in the area…………………………
In your opinion, what are the possible solutions to these problems? ………………………………

……………………………………………………………………………………………………………………………

The end … Thank you

UNIVERSITY OF NAIROBI
DEPARTMENT OF URBAN AND REGIONAL PLANNING
PROJECT TITLE: PLANNING IMPLICATIONS OF UNCONTROLLED DEVELOPMENT IN HURUMA NGEI, NAIROBI

QUESTIONNAIRE FOR NGEI WARD ADMINISTRATOR

1. What is the history of Ngei? How did Ngei come to be?
2. What is your opinion on the prevailing development in the area?
3. What are the Likely causes of development in the area
4. What are the building typologies allowed in the area?
5. What are some of the building regulations guiding development in the area?
6. What is the plot coverage and ground coverage allowed in the area?
7. What is the recommended number of floors allowed in the area?
8. There are buildings that are 8 levels high. Is this allowed in the area?
9. Most of these buildings do not have lifts. What is your response to that?
10. What are some of the facilities that this neighbourhood should have? Are they provided for? (social halls, playground in the area)
11. Drainage, poor sewerage management and poor hygiene are some of the ills in the area. What measures are in place to rectify this?
12. A good number of residents complain of bad roads. Are there plans to rectify them?
13. Are there measures to improve insecurity in the area? (Idle youths have been cited as the likely cause)
14. Most of the buildings built in the area do not have approvals. What are the reasons that many developers shun the approval process?
15. What are some of the challenges that this office faces in the implementation of the building regulations?
16. Are there measures in place to remedy the problems mentioned? What are some of them?
17. What are some of the penalties or fines meted out to defaulters who fail to abide to the regulations?
18. Any major infrastructural developments the Nairobi county Council has plans to put up in the area

UNIVERSITY OF NAIROBI
DEPARTMENT OF URBAN AND REGIONAL PLANNING
PROJECT TITLE: PLANNING IMPLICATIONS OF UNCONTROLLED DEVELOPMENT IN HURUMA NGEI, NAIROBI
QUESTIONNAIRE FOR NGEI WARD REPRESENTATIVE

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2. What is your opinion on the prevailing development in the area?
3. What are the Likely causes of development in the area
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**Data checklist for neighbourhood**

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