



**UNIVERSITY OF NAIROBI**  
**SCHOOL OF THE BUILT ENVIRONMENT**  
**DEPARTMENT OF ARCHITECTURE AND BUILDING SCIENCE**

***URBAN MANAGEMENT CHALLENGES FACING EMERGING TOWNS IN KENYA: A  
CASE STUDY OF KISERIAN MARKET CENTER IN KAJIADO COUNTY***

**BY**  
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**STUDENT REG.NO W50/P/8286/2004**

***THIS DISSERTATION IS SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS OF A DEGREE IN MASTERS OF URBAN MANAGEMENT AT THE  
UNIVERSITY OF NAIROBI***

**2011**





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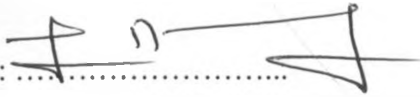
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**2011**

## DECLARATION

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

Signed:  .....

Date: 23<sup>RD</sup> Nov. 2011 .....

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This Dissertation has been submitted for examination with our approval as the university supervisors.

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Date: 23.11.2011 .....

Dr. L. Shihemebsa (Supervisor)

Department of Architecture and Building Science

## **DEDICATION**

To my family and all those households of the Kiserian Market Centre who are living below the poverty line.

## ACKNOWLEDGEMENT

I am highly indebted to the following personalities and institutions for contributing to the project described in this report. I wish to sincerely appreciate the material and moral support of the entire staff of the department of Architecture and Building Science of the University of Nairobi particularly, the chairperson, Arch. E.O. Abonyo, members of teaching staff; Mr. M.O. Oyugi and Mr. O. Kakumu for their constructive criticism that provided a benchmark on which this study was built. In the same breath, I extend my special gratitude to my able supervisors; Dr. A. Omenya and Dr. L. Shihemebtsa whose valuable input throughout the gestation of the project enabled me to accomplish this work. I also sincerely thank the County Council of Olkejuado, members of the business community and all the institutions that took part in this study for providing the necessary literature that informed the study at its conceptualization stage. Special thanks to Messrs; Peter Kamau, Joseph Thiong'o, Isaac Muhia, Samuel Kariuki, Peter Waweru, John Luchetu, George Kagiri, Joseph Muruku, Harun Omari, and Mrs Jacinta Githinji and Mrs Nancy Kamau for participating in a fruitful Focus Group Discussion that gave the study enormous insight. My gratitude also goes to NGOs, CBOs, opinion leaders and all other stakeholders who made remarkable contributions towards the successful completion of this survey. It is also noted with appreciation the co-operation of all the local residents and households visited during the research period for their role in making this study a success. I would also like to sincerely relay my special gratitude to members of 2004 to 08 classes for their co-operation and continued support in making this research initiative a success. To my very able lead research assistant; Mr. F. Omondi, and other research assistants Messrs; M. Okapesi and G. Kapuliaka, your sincere contributions were crucial in meeting the objectives of this study and giving it its successful shape. Thank you very much. Finally this work would not have been successful without the moral and financial support of my wife Eunice and daughters Gladys, Millicent and Magdalene. The family's prayers and well wishes during this study cannot go unappreciated. Equally appreciated is Ms Mungai Director, East Gate Apartments Ltd for the conducive environment of work and indeed the moral support thereof which went along way in the required personal motivation in actualizing this assignment. Above all, I thank the almighty God for the gift of life, protection and sober mind during the entire life of this project.

## ABSTRACT

*Kiserian Market Center is one of the rapidly growing urban centers in Kajiado County. The challenge is that although the area has grown beyond the status of a rural market; having surpassed the 2,000 population threshold, its management is still under a county council which sits hundreds of kilometres away in Kajiado Town. This is worsened further by lack of an institutional, legal and policy framework to support the Kiserian spatial growth form from rural to an urban growth nucleus.*

*In order to effectively address the urban management issues in Kiserian Market Center, this study was designed purposefully to: evaluate the nature and context of existing legislative and institutional policy framework applicable in the urban management of Kiserian; explore the urban management challenges facing Kiserian Market Centre and some of the possible opportunities accruable from the identified urban management challenges & the new constitutional dispensation in Kenya. Ultimately, the study proposed intervention measures that would transform the town into a more viable, live-able, functional and sustainable urban area in the region. To achieve the purpose of the study, both primary and secondary data were collected through an interactive and evaluative field survey; using FGDs, household, institutional and business questionnaires, oral interview schedules, observation guides, photography, as well as critical and systematic review of literature.*

*Results from the study indicated that the urban management process in the study area is riddled with a number of challenges with far reaching environmental, infrastructural, legislative, governance, economic, social and cultural implications. However, there exist several opportunities in the area of study that would give rise to a more viable, live-able, functional and sustainable Kiserian Market Center if exploited in an effective and sustainable manner. The study recommends among other things, the adoption of an integrated and participatory urban management approach that is people centred. It also recommends the entire re-look of the spatial planning framework of the area of study with its associated governance and "would be" administrative consequences being mitigated and tailored towards the formation of a spatial functional whole. The recommendations are categorized as short-term and long-term. These recommendations can also be replicated in other urban centres with similar characteristics.*

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## ABBREVIATIONS

<b>ATM</b>	Automated Teller Machine
<b>CBO</b>	Community Based Organization
<b>COL</b>	Commissioner of Lands
<b>EA</b>	Enumeration Area
<b>ESA</b>	External Support Agency
<b>FBO</b>	Faith Based Organization
<b>FGD</b>	Focus Group Discussion
<b>GoK</b>	Government of Kenya
<b>HSS</b>	Human Settlement Strategy
<b>ICLEI</b>	International Council on Local Environmental Initiatives
<b>IPA</b>	Interim Planning Authority
<b>IWMI</b>	International Water Management Institute
<b>LA</b>	Local Authority
<b>LCB</b>	Land Control Board
<b>MDG</b>	Millennium Development Goal
<b>NGO</b>	Non Governmental Organization
<b>PPA</b>	Physical Planning Act
<b>SWOT</b>	Strengths, Weaknesses, Opportunities and Threats
<b>UMP</b>	Urban Management Programme
<b>UN</b>	United Nations
<b>UNCED</b>	United Nations Conference on Environment and Development
<b>UNCHS</b>	United Nations Centre for Human Settlements
<b>UNESCO</b>	United Nations Educational, Scientific, and Cultural Organization
<b>USAID</b>	United States Agency o International Development
<b>WB</b>	Word Bank
<b>WCED</b>	World Commission on Environment and Development
<b>EIA</b>	Environmental Impact Assessment
<b>HDE</b>	High Developed Economies
<b>HDI</b>	Human Development Index

## OPERATIONAL DEFINITION OF TERMS AND CONCEPTS

Many of the terms and concepts that form the basis of this study have multiple meanings. Therefore, it is imperative for the purpose of this report that the meanings of these terms and concepts be clarified.

- **Age:** Is the number of years a respondent had lived in the study area as at last birthday (GoK, 2009).
- **Area:** Is the extent of a surface enclosed within the boundaries of the study area, expressed in square kilometres. This excludes area covered by water (GoK, 2009).
- **Capacity:** A combination of knowledge, skills and aptitudes that residents/ organizations in the study area possess regarding urban management. It is the quality of 'doing or acting' as a function in the urban management process as per prescribed terms of reference or benchmarks (Kirui, 2003).
- **County:** A largely rural jurisdictional area under a local authority (Kirui, 2003).
- **Council:** A domestically constituted institution composed of people's representatives (councillors) and technical officers operating as a government of a sub-national area and whose autonomy is enshrined in a supreme national law (the constitution) (Kirui, 2003).
- **County Council:** A local authority whose area of jurisdiction is largely rural (Kirui, 2003)
- **Density:** Refers to the number of persons per square kilometres, obtained by dividing the enumerated persons in a given area by the size of the area (GoK, 2009).
- **Emerging Towns:** These are development nodes undergoing some form of both physical and socio-economic transformation/evolution in respect to infrastructure development, increased access and range of public/private services, concentration of institutions among others; subsequently giving rise to population explosion and over-exploitation of natural resources.

- **Urban Context:** This is the character and setting of Kiserian Market Centre within which projected development sits. It is its natural as well as human history; the forms of settlements, buildings and spaces; its ecology and archaeology, its location and the routes that pass through it. Context also includes urban residents living in or near the study area and also relates to how communities are organized so that they become participants in the development of the urban area. Context defines a place's distinctiveness and subsequent marketability.
- **Urban Structure:** This refers to the pattern or arrangements of development blocks, streets, buildings, open space and landscape which make-up urban areas. It is the interrelationship between all these elements, rather than their particular characteristics that bond together to make a place. A well structured urban form promotes integration, functional efficiency, environmental harmony, a sense of place and commercial viability; Urban design Compendium, Llewellyn-Davies.
- **Integration:** This is the connection and overlap of an urban form with surrounding areas.
- **Functional Efficiency:** The working together of the various elements of a built environment symbiotically as part of an efficient working whole.
- **Environmental Harmony:** This is an attribute of a built form that implies that it is energy efficient and ecologically sensitive.
- **A sense of Place:** This is an attribute that gives a built environment a recognisable distinctiveness as well as strengthening the local identity.
- **Urban Viability:** This is an aspect of a built environment making business sense to an investor in respect to return on investment, as well as serving the wider interest of the Public, Local Authority, Environment and the Visitor.
- **Urban Flexibility:** This is the ability of the urban development and management strategies to adapt to plan or self invoking change dynamics in the use, lifestyle and demography of an ever evolving society. This attribute grants an urban form the requisite resilience against competition from upcoming alternatives.



- **Urban Vibrancy/Liveability:** This is the ability of an urban form to permeate rays of enjoy ability, convenience and emotional stimulation to as wide a spectrum of service users as would visit it, irrespective of their diversity, level and choice preferences. The development mix, building forms & rhythm, tenure and inherent population densities are key catalysts to this attribute.
- **Urban permeability:** This is the attribute of an urban form which creates an ease of access and efficient physical and visual integration with the neighbourhood in terms of pedestrian, cyclist and vehicular public and private) connections to desired points of service.
- **Enumeration Area (EA):** Is a designated area with an average of about 100 households, but may vary from 50 to 149 households depending on the population density, terrain, and/or vastness of the area concerned. An EA may be a village, group of villages or part of a village, and is so delineated to be conveniently to be covered by an enumerator (GoK, 2009).
- **Functional:** The ability of an urban centre to operate efficiently, effectively and objectively (GoK, 2009).
- **Household Head:** This is the most responsible/respected member of the household who makes key decisions in the household on a day to day basis and whose authority is honoured by all members of the household (GoK, 2009)
- **Household:** Comprises person(s) or group of persons generally bound by ties or kinship and who live together under a single roof or within a single compound and who share a community of life in that they are answerable to the same head and share a common source of food (Kirui, 2003).
- **Local Authority:** A local government/organization in a country charged with the responsibility of providing public service in a particular area or city (Macmillan English Dictionary).

- **Poverty Reduction:** A deliberate process of targeted interventionist policies, programmes and projects aimed at reversing the trends of all forms deprivations (Kirui, 2003).
- **Poverty:** The inability to attain a minimal standard of living measured in terms of basic consumption needs such as food, clothing and shelter or the lack of income to satisfy them (Kirui, 2003).
- **Respondent:** Is the head of household or any other knowledgeable or responsible member of the household (GoK, 2009).
- **Sex:** Refers to condition or character of being male or female (GoK, 2009).
- **Stakeholder:** Are persons are persons, groups or institutions with interests in a project or programme. Primary stakeholders are those ultimately affected, either positively; beneficiaries or negatively affected for example, those involuntarily resettled. Secondary stakeholders are the intermediaries in the aid delivery process. This definition of stakeholders includes both winners and losers, and those involved or excluded from decision-making processes. A stakeholder is a person who can affect the outcome or success of a project and or is affected by its outcome or success. Key stakeholders are those who can significantly influence, or are important to the success of the project. For the purpose of this study, the definition by McElroy & Mills (2000) has been adopted, where a project stakeholder is a person or group of people who have a vested interest in the success of a project and the environment within which the project operates.
- **Urban Area:** Is a geographical area constituting a city or a town (Wikipedia)
- **Urban Management:** Is a function of governance and existing institutional frameworks in order to realize social, political, economic and environmental concerns (GoK, 2006).
- **Urban:** Is an area with an increased density of human-created structures in comparison to the areas surrounding it and has a population of 2, 000 and above. In this definition, urban areas include cities, municipalities, town, councils and urban councils (GoK, 2009).

## CHAPTER ONE: INTRODUCTION

### Background

Urbanization is the most dominant phenomenon in all developing countries. Studies show that urbanization and the economic development status of a country are inextricably linked (Laquian, 1995.). However, urbanization tends to accentuate a number of problems, such as inadequate housing and urban services (water, sanitation, transport and so on), spiraling land prices and construction costs, proliferation of slums, pollution and deterioration of the urban environment. Poor urban management is deemed to be worse than none and that behooves the need to acknowledge and appreciate that effective management processes need to differentiate between 'day to day' and 'strategic' goals of an urban form. Whereas day to day needs are to do with the cleanliness, accessibility, and facilities within the town, and the way in which it is promoted and marketed; in contrast, 'strategic' activities are those that would promote the long-term success of an urban area, such as attracting the right mix of retailers and discerning the necessary investments for proactive maintenance and refurbishment; all of which enriches the image and serviceability of the built environment. All these are parameters which would normally determine the viability, vibrancy, livability and eventual sustainability of an urban form. A formally defined and connected management process which involves all stakeholders is therefore, the only satisfactory way to deliver future urban management (Ayeni, 1997, p. 142).

By current official designation by the Local Authorities' standards, Kiserian is a rural market center located at the intersection of three main roads namely: Nairobi-Magadi, Ngong-Kiserian, and Isinya-Kiserian on the leeward side of Ngong hills. Like other towns peripheral to the capital city of Nairobi such as Kitengela and Ongatarongai, it acts as a dormitory town for the workforce and sometimes for visitors from the capital city. This has been catalyzed by its close proximity to the industrial and commercial Capital-Nairobi and the efficient transport system that link the town to the Nairobi and other satellite towns. Kiserian is approximately 26km from Nairobi Central Business District. Subsequently, there has been a high rate of settlement which has been influenced further by the availability of affordable land and lack of stringent development control measures where residents advantage of the lack of an effective development control mechanism to infringe on reserved lands. This scenario has seen the population of the study area grow from a mere 6000 in 1989 to a current staggering 55,000 people according to the 2009

population and socio-economic census. By the standards of the draft Local Government Bill 2009, this population surpasses the 2000 threshold for a market town and even goes beyond the 50,000 threshold for an urban centre. The emerging change is multifaceted and bears economic, cultural, demographic, environmental, technological and to some extent political dimensions. This phenomenon has not been matched with the provision of requisite essential services and livelihood support system. Consequently, existing resources have been overstretched and remain inadequate. On the one hand, the population is disfranchised and dissatisfied with the services offered by the Local Authority while the Local Authority itself remains overwhelmed and altogether ineffective in the management of the town, not even optimizing on her revenue potential. This has ultimately jeopardized the vitality, functionality and sustainability of Kiserian Market Centre and her environs. The consequence is the rise of a number of urban problems and management challenges that characterize a disfranchised and depressed neighborhood. (Allen, 2001, p. 34).

The lack of a strategic plan and legal framework to govern an area which has significantly evolved as an urban center has meant surrendering to uncontrolled urbanization with glaring consequences of a deprived neighborhood. To reverse the aforementioned state of degeneration and dysfunction, the research attempts to explore various remedial and renaissance strategies for improving the management of the town through a critical situation analysis and appropriate benchmarking.

## **1.2 Statement of the Problem**

In Kenya, urban areas are managed under the Local Government Act Cap 265 with the spatial planning aspect being managed under the jurisdiction and guidance of the physical planning Act Cap 286. These two Acts are in-turn expected to act in consonance with a host of other statutes. Subsequently, the segmented nature of the legislative framework for managing urban areas has given rise to the current Urban Management challenges in the country. Similarly, the efforts to integrate the various stakes and interpretations towards a productive and functional whole have proved elusive particularly due to conflict of interests between Political, Environmental, Socio-economic and physical development concerns.

Kiserian Market Center is one of the rapidly growing peripheral fringes of Kajiado County becoming for upgrading into an urban center. The challenge is that as an urban area, the management of Kiserian is still under a county council whose management sits hundreds of kilometres away in Kajiado Town. The management disconnect is epitomized by lack of an institutional, legal and policy framework to support the Kiserian spatial form which has long transformed from a rural growth node to an urban growth nucleus. The unprecedented urban sprawl from that growth nucleus has not made things any better. The official spatial form of Kiserian centre is less than 25% of the actual urbanized Kiserian. There is subsequently no known official boarder of where exactly the urban Kiserian reaches and where the rural part starts.

Figure 3.2 herein outlines the desired spatial plan of the urban Kiserian as at 1984. By then, the Kiserian market town encompassed the area marked by blue on figure 4.2. The region to the south of Magadi road where most social amenities are proposed were and continue to be private land as the part development plan in reference was never gazetted to validate the envisaged plan and the development witnessed on photo 6.2 is on private property still held under free hold tenure as divulged by most residents who participated in the focused group discussions. Twenty four years after the first attempt of spatial planning of Kiserian, the dream of organising the land use in this area still remains elusive as another proposal prepared in August 2007 remains equally ungazetted. The consequences of this procrastination are ruthless environmental degradation and natural resource exhaustion with far reaching socio-economic and ecological consequences. Further evidence of this neglect is the illegitimate attempts by the council to control development in areas not yet alienated as urban, whereas many residents are putting up commercial developments on parcels of land without conforming to the requisite change of user processes.

The effect of this urban development mix-up coupled by the County council's lack of capacity to manage an urban area has compounded the urban management challenges facing this centre. Obviously, all the aforementioned efforts of spatial planning have now been caught up by the current constitutional dispensation, which is having a radical look at the way urban areas are managed in Kenya. Subsequently, there is great hope and opportunity in this new constitutional.

### **1.3 Objectives of the Study**

To direct the study and provide answers to the research questions, the study was mounted to realize the following specific objectives:

- 1) To evaluate the nature and context of existing legislative and institutional policy framework applicable in the urban management of Kiserian Market Centre.
- 2) To explore the urban management challenges facing Kiserian Market Centre.
- 3) To explore some of the opportunities embedded in the urban management challenges and the new constitutional dispensation for Kiserian market Centre.

### **1.4 Research Questions**

To guide the study in maintaining focus and remaining within the research framework, the study answered the following specific questions:

1. What is the nature of the existing legislative and institutional framework policy in the urban management of Kiserian Market Centre?
2. What is the urban management challenges facing Kiserian Market Centre?
3. What are some of the urban management opportunities available for Kiserian Market Centre in the light of the prevailing challenges and the new constitutional dispensation?

### **1.5 Purpose of the Study**

The study was designed purposefully to assess the urban management challenges facing emerging towns in Kenya. While taking Kiserian Market Centre as a case study, the study attempted to evaluate the nature and context of existing legislative and institutional policy framework applicable in the urban management of Kiserian Market Centre; explored the urban management challenges facing Kiserian Market Centre and explored some of the possible opportunities in the urban management challenges and the new constitutional dispensation for Kiserian Market Centre. The ultimate purpose of the study was to explore the possibility of converting the numerous urban management challenges facing Kiserian market centre into opportunities that would give rise to a more viable, live-able, functional and sustainable urban form, through a critical situational and comparative analysis/studies.

## 1.6 Significance of the Study

The findings of this piece of research work are expected to contribute significantly to the management of Kiserian Market Center and other urban centers with similar characteristics. The findings would contribute to the development of an information system that could be helpful in the management of the interface between the provisions of the new and old constitutional dispensation on matters of urban management. The research has highlighted on means and avenues of optimizing the council resource base, through employment of efficient and cost effective service delivery strategies. The study findings thus contribute significantly to the design and development of strategies to enhance service delivery in Kiserian. The study has also highlighted the best practices on integrated urban management as a means of achieving functional and sustainable urban forms'. This is a major contribution to the County of Kajiado, which could use the results of this study in informing the design of an urban management strategy for the town. The study also attempts to encourage the use/upholding of appropriate policies and tools for land, infrastructure, municipal finance and the urban environment management as stimulators of economic growth, social development, poverty alleviation, urban order and live-ability (UMP – UN habitat, 2003).

## 1.7 Scope and Limits of the Study

Due to limited resources, time constraints and the level of study, the research was confined to Kiserian Market Centre and was limited to assessing the urban management challenges facing emerging towns in Kenya with Kiserian Market Centre as a case study. The variables that the study aimed at covering were legislative and institutional framework applicable in the day-to-day urban management of Kiserian Market Centre, the challenges facing urban management of Kiserian and the possible opportunities embedded in both the **No table of figures entries found**. Challenges and the new constitutional dispensational as a vehicle for delivering a vibrant, viable, functional and sustainable Kiserian market Centre.

## 1.8 Research Constraints

The study faced a number of constraints both at the design and execution stages. Firstly, the subject of urban management is still evolving especially in many developing countries such as Kenya. This therefore presented a case of paucity of data making the concept somewhat controversial and fluid. This made the perception of the study elusive in the earlier stages of its

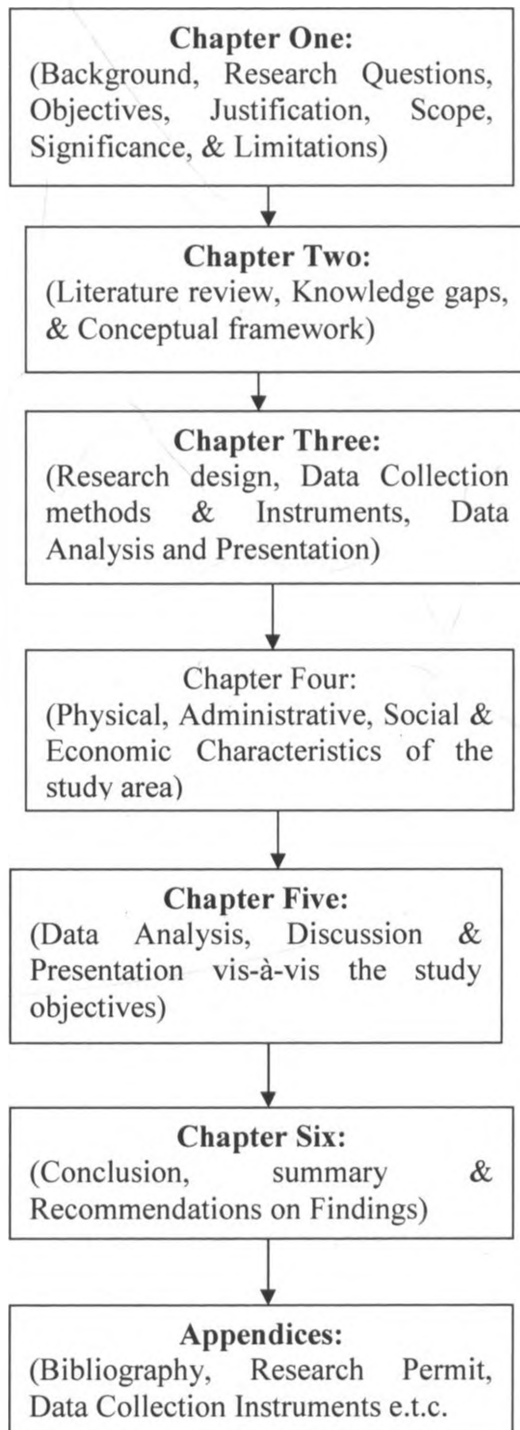
conceptualization. This was overcome by wider review of literature and elaborates consultations with the supervisors and other scholars. Secondly, the study faced logistical problems. This was because of the complex and fragile nature of the area of study coupled by the high emotions and suspicion among the residents and the Local Authority of the area of study. There were recent stakeholder meetings on spatial planning of the area of study where talks of compulsory acquisition of land to accommodate social amenities were discussed. This hyped the suspicion of the residents and any collation of data was received with suspicion. This made the effort of gathering accurate data difficult. Careful administration of questionnaires and the employment of other appropriate data collection instruments such as focus group discussions at the specific area of study assisted in overcoming the problem of fear of the unknown. At the Local Authority level however, we had to do with indirect discussions and private reconstruction of the information thereof. This was heralded by the ongoing talks on devolution and the misplaced beliefs and public speculation on dissolution of the current structures of LAs. Any enquiry on revenue was also treated with lots of suspicion and it appeared as if they perceived the exercise as an audit thus claiming not to have the authority to divulge information. Last but not least, the study was constrained by inadequate time and funding. This necessitated the scaling down of the budget and employment of Rapid Appraisal techniques used for the collection of the data.

### **1.9: Organization of the study**

The focus of the study is to assess urban management challenges facing emerging towns in Kenya, while taking Kiserian Market Center in Kajiado County as a case study. As elaborated in figure 1.1, chapter one, which is the introductory chapter, provides the background to the research problem, from which research questions, objectives, justifications, scope, significance, and limitations are derived. Chapter two presents a comprehensive review of literature, which provides the platform for the identification of gaps, and designing of a conceptual framework, which provides a window through which the study is viewed. Chapter three on the other hand presents the methodology and design adopted by the study in realizing its set objectives. In chapter four, the area of study is intensively and extensively captured, with various aspects of its physical, social, administrative, and economic characteristics showcased. Chapter five is an analysis, discussion and presentation of the collected data, with a specific emphasis on the link between the collected data and the study objectives. Chapter six concludes and summarizes the findings of the study, and makes both long-term and short-term recommendations for the



enhancement of sustainable urban management, both in the study area as well as other emerging towns with similar urban management characteristics. Finally, the study is also structured to include the bibliography sections and appendices that contain other items relevant to the study.



*Figure 1.1: Organizational Structure for the Study*

*Source: Researcher, 2011*

## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Introduction

The increasing need for urban management looms as one of the most significant development issues for many countries in the twenty-first century. According to a report by UNESCO (2004) on "Experiences and Challenges in Urban Management Issues," over half of the population of most Pacific island countries for instance, will be living in urban areas by 2025, with about half of this population being found in the metropolitan regions.

Kenya, like many other developing countries in Africa, is experiencing rapid urbanization growth. Many cities and towns have grown in population size and expanded to form huge metropolitan regions through the effects of the urban sprawl phenomenon. Metropolitan regions do present huge development and management challenges as well as opportunities. The rapid urbanization also generates a lot of urban management problems and challenges in the context economic, social and environmental facets. Nairobi is one such metropolitan region in Kenya. Questions subsequently linger on what potential opportunities, problems and challenges face this new emerging metropolitan region as well as the search for the way forward in terms of possible short, medium and long-term solutions. (UN HABITAT, 2008).

Urban management is concerned with the policies, plans, programs and practices that seek to ensure that population growth is matched by access to basic infrastructure, shelter and employment. While such access will depend as much if not more, on private initiatives and enterprise, these are critically affected by public sector policies and functions that only government can perform. This section attempts to review literature related to urban management and attempts to project the voids the study aims at filling. It focuses on major themes such as classification of urban areas, available urban management theories.

### 2.2 Classification of Urban Areas

There is no universally agreed criterion for classifying cities and urban areas globally. However, the classification of urban areas is dependent on individual countries. Most countries rely on local circumstances and historical dictates but in Kenya, the dominant criteria being influenced by political consideration with economic parameter taking an insignificant weight. In the United Kingdom for instance, classification of urban areas is based on a five-throng system. Under the

system, five types of urban centres emerge. They include Market towns, Industrial towns, Suburban centres, Metropolitan cities, and Resorts & Historic towns (Carmona et al., 2004, p.112). However, Davey (1996, p.57) observes that this classification gives only a partial picture of the type of centre, and the terms are often miss-applied. Available data on the classification of urban areas reveal that the easiest way to classify urban centres would be in terms of population sizes. However, this approach may not be applicable in other countries with clustered towns and overlapping catchment areas such as Britain (Ayeni, 1997, p.49). Due to this limitation, two more factors for classification have been identified in addition to population size. They include Location and History. These three factors have formed the basis through which the five types of urban centres identified above have been derived.

### **2.2.1 An Industrial Town**

An industrial town is often located close to other towns or a Metropolitan City, which often may overshadow it. The towns normally grow rapidly to respond to the needs of the industry. The population of such towns normally range between 25,000 and 200,000, though it may be smaller in cases of mining communities. The proximity of other towns has been observed to limit the extent of additional catchment population of industrial towns.

### **2.2.2 Suburban Center**

A suburban centre is normally located on a major route out of the city and has to cope with substantial amounts of through-traffic. Normally a suburban centre has a good public transport access to the city centre, which in most cases is the reason for its development (*Ibid*). As a centre serving a city, it has substantial amounts of housing (dormitory destination) rather than workspace immediately adjacent to the core retail area. Falk (1993, p.107) observes that the catchment population of a suburban centre overlaps others and ranges from extremely poor to very wealthy.

### **2.2.3 Resorts and Historic Towns**

Resorts and Historic towns tend to have attractions that depend on tourists. As result, they face a number of common problems and opportunities. According to Ayeni (1997, p.35), the main draw in a Historic Town is heritage, on the back of which may have developed other attractions that drew people to the town. Historical towns have a minimum population size of 20,000 with the

services offered in the centre providing in most cases for a national and in some an international catchment.

#### **2.2.4 Metropolitan Cities**

Metropolitan Cities are often few in numbers but possess great impact due to their dominance over other regions. They have a tendency to grow rapidly and are only exceeded by what have been termed as World Cities, such as London. Metropolitan Cities provide a wide range of functions for large populations. Due to their lone dependent on access to labour markets, Laquian (1995, p.167) notes that Metropolitan Cities have the best road and rail links both regionally and nationally. The city centre buildings are large in scale and the city centre may have a series of distinct quarters playing different roles. Their distinct population ranges between 250,000 and 1,000,000. The centres provide a far larger catchment area in the surrounding regions.

#### **2.2.5 Market Town:**

According to Jenks & Burgess (2000, p.117), a market town is relatively remote from other urban areas and traditionally serves the needs of a substantial rural community. The character and functions of a Market Town reflect a development over centuries rather than a specified period. Its buildings are largely domestic in scale and its central street pattern tends to remain the same over years. The town is typically small, with some having a population ranging between 10,000 and 50,000 and in some cases 75,000. A report by UN-HABITAT (1996, p. 121) observes that a Market Town also serves a rural hinterland that may double or triple the population of those potentially dependent on the town. According to Hillier Parker Shopping Center Classification, market towns can be classified using two-band classification model. When this model is applied, two distinct types of market towns emerge namely; small market towns and medium/large market towns. This classification criterion provides a useful benchmark for assessing the size and performance of market towns.

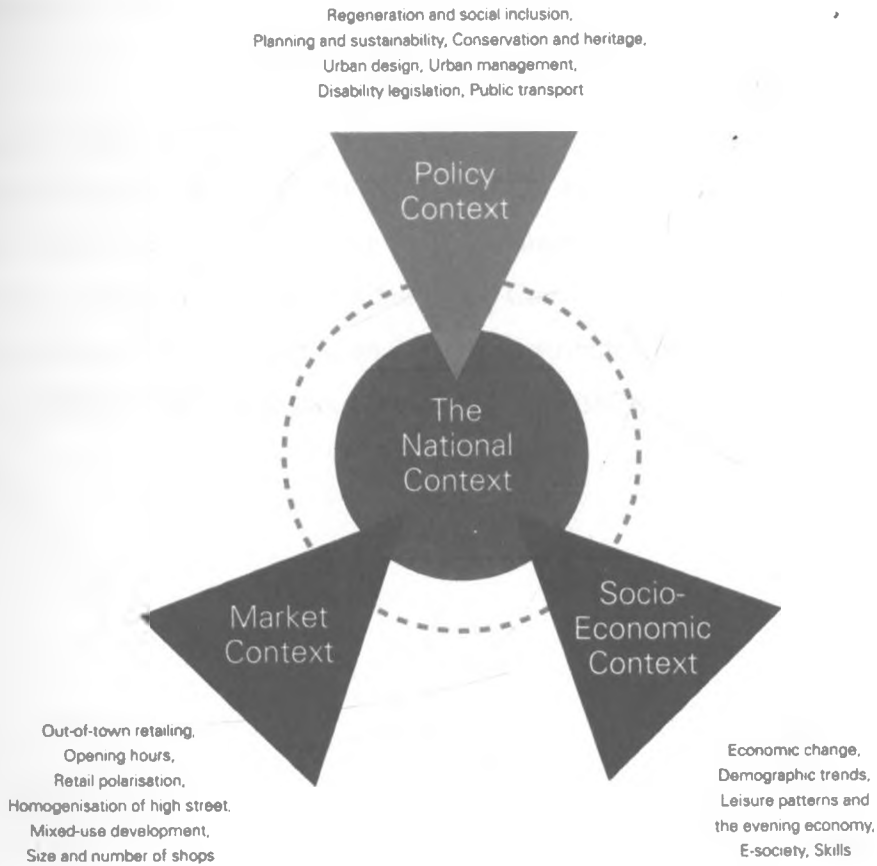
In Kenya, there are a total of 175 Local Authorities. As provided for under the Local Government Act Cap 265 Laws of Kenya, the Local Authorities fall in four categories namely: City of Nairobi, Municipalities, Towns and County Councils, which are largely rural in nature. For a long time, the role and functions of the local authorities within their areas of jurisdictions have been guided by the Cap 265 Laws of Kenya. Under this Act, the Local Authorities have had to play the role of providing basic services such as markets, parks, gardens, sanitary inspection

and refuse disposal. They have also been charged with the responsibility of providing public burial grounds and crematoria fire services and brigade, public transport and social welfare services. Other functions have been to provide basic environmental services, water supply, basic planning and development control efforts. Other services required by the public are meant to be provided by the central government through the line ministries and other lead agencies and the existing provincial administration system (GoK, 2011, p.47). Under the new constitutional dispensation, and more specifically the proposed county structure; the units of county governments is clearly defined

### **2.3 Functionality and Sustainability of urban areas.**

As stated by the British Council of Shopping Centers (BCSC), the factors affecting the performance of towns and smaller cities can be understood in terms of the overarching national context and their individual local context. The national context comprises the policy context; the socio-economic context and the market context, all of which have a symbiotic role towards the wholesome and healthy performance of any urban form as outlined by figure 2.1.

Figure 2



Source: BCSC; The Smaller Towns Report pp 6

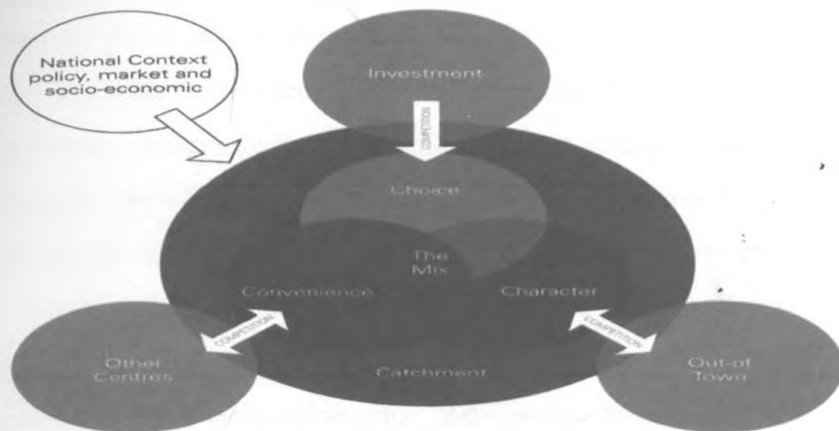
**Figure 2.1: Factors Affecting Performance of Urban Centers**

Key broad policy areas such as environmental sustainability, place connectivity (in terms of vehicular, pedestrian, cyclist and others), utilities connectivity, the type of development mix and the land use planning thereof all help to shape the prospects of smaller centers. The socio-economic context would typify long-term trends and change processes affecting the way town centers are used and the nature and intensity of consumer evolution. The ability to respond

appropriately to these set of new demands and preferences would have a major bearing on the viability and eventual vibrancy of an urban growth nucleus. This may call for identity differentiation as a mechanism to mitigate external (global and regional) competition. On the other hand, market context would entail changes in the retail industry and the impact of the evolution in the way people shop; an aspect that has seen thriving of out-of-town shopping centers, concentration of retail investment in large centers and the loss of individual high street identities; all of which have a roll-over effect on smaller retail centers (Carmona et al., 2004, p.57).

On the other hand, local context comprises of five parameters or variables which equally determine the health, vibrancy/live-ability, viability and eventual sustainability of town centers the world over. The BCSC refers to these parameters as the five C,s and comprises of the Competition, Catchment, Character, Choice and Convenience; the relationship to all of which is give rise to the required urban mix, an integrated attribute that defines not only the health of an urban centre but also her future survival. These relationships are expressed in figure 2.2.





Source : BCSC; The Smaller Towns Report pp 14

**Figure 2.2: The Five Cs of an Urban Center**  
 Source: BCSC: The Smaller Towns Report

Competition in the above case refers to a center's ability to attract both customers and investors amidst external and neighborhood (such as out-of town shopping centers) internal business aggressions. Since competition will never go away, it is incumbent upon town centre managers to lay competitiveness strategies. Catchment on the other hand refers to the economic position and social condition of the geographical extends from where the urban area draws her customers and investors. A well-endowed catchment is likely to interpret into a healthier centre as long as other variables are in consonance with the stakeholders' tastes and preferences. Character relates to the physical environment of the town centre and its image or perception by users and investors. A sense of ownership brought about by stakeholder participation is critical in this respect. The Choice on the other hand is the range and quality of the retail offer and the mix of uses available within the centre, particularly in terms of leisure facilities. The more they are the higher the footfall (critical mass) required for a centers' viability. Finally, Convenience refers to

the ease with which town center users access (in either motorized or pedestrian mode) the respective service points and the availability of adequate & safe parking (Carmona et al. 2004).

## **2.6: Urban Management Theories**

Urbanization is the most dominant phenomenon in all developing countries. Studies show that urbanization and the economic development status of a country are inextricably linked (Falk, 1993). However, urbanization tends to accentuate a number of problems, such as inadequate housing and urban services (water, sanitation, transport and so on), spiraling land prices and construction costs, proliferation of slums, pollution and deterioration of the urban environment. Urban professionals can make significant improvement to the urban environment by adopting an integrated management approach, in order to resolve the conflicting interests of multiple-stakeholders and achieve equity, while keeping in view urban dynamics and uncertainties. This section presents some of the available urban management theories.

### **2.6.1: Conventional Urban Management Approach**

In urban operations, multiple actors representing various urban organizations and coming from a number of disciplines (urban planning, architecture, engineering, geography, sociology, economics, finance and so on), have to work together at each system level. To solve urban problems efficiently, it is imperative to integrate activities at each system level (Pacione, 2004). In conventional practice, planners attempt to integrate key urban problem dimensions in their plans. Usually, they have little role in other managerial functions (organizing, staffing, leading and controlling). Urban administrators are rarely imparted the intimate knowledge of urban issues, their complexities and interactions and of the modern systems management techniques, tools and information technology, to enable them to take an integrated urban management approach. Similarly, each discipline working in the urban sector tends to look at the urban problems only from its own angle. As a result, an integrated management approach is rather difficult in practice

### **2.6.2: Integrated Urban Management Approach**

Theory defines management as the process of designing and maintaining an environment in which individuals, working together in groups, efficiently accomplish selected aims (Carmona, 2004). In all sectors of society, people form groups to accomplish aims that they could not achieve as individuals, which is equally applicable in the urban sector where individuals have to

work together in departments or on projects, while urban organizations must also integrate their activities. This is a much more difficult task than managing a business, and requires a separate body of knowledge. Just as management knowledge is generally organized around the five essential managerial functions planning, organizing, staffing, leading and controlling – this is equally applicable in urban management. The systems approach is an accepted practice in management, enabling managers to see the critical variables and constraints and their interaction with one another at each system level, i.e. manager's organization, department, section and so on (Jenks & Burgess, 2000). Such an approach forces managers to be constantly aware that one single element, phenomenon, or problem should not be treated without regard for its interacting consequences with other elements. By adopting a systems approach, all the five urban management functions can be integrated at various system levels, while linking an urban organization with its environment, and with the urban sector as a whole, to achieve missions and objectives.

The task of urban managers is to transform the external inputs (money, people, skills and so on), into outputs (urban services, profits, satisfaction, integration of the goals of various stakeholders in the urban organization, and so on) in an effective and efficient manner. Since urban operations involve a vast number of interacting elements at each level, a systems approach is equally applicable in urban management for coordination of efforts at each level, so that individual and organizational objectives becomes translated into social attainment in, say, improved urban services and improved quality of life for all. In the above context, the external systems environment and constraints, including the given macro and micro policy constraints, should be accepted as given conditions not amenable to change, while taking decisions at a point of time, until more policies that are effective are evolved (Carmona, 2004). The new policies should evolve based on parallel and continuous processes of policy performance analysis, forming part of the urban management process, establishing linkages with the urban management functions at an appropriate system level and at the appropriate time, using Information Technology (IT). Accordingly, results in the area of concern have to be achieved within the given conditions and using the available resources at each system level, discharging efficiently all the five urban management functions by using various tools and management techniques (Cohen, 1991).

### 2.6.3: Urban Planning Approach

In the context of management, planning involves selecting aims and the actions to achieve them, requiring rational decision-making. Cities are “engines for economic growth” (particularly in the context of a developing country) and, places for people to live and work. Urban planners prepare plans with the aim of making a city a viable and desirable place in which to live and work, while achieving equity and efficiency (Davey, 1996). Urban planning (including land-use planning at “urban spatial unit” level) should be seen as part of the “planning function” of urban management, incorporating the other four urban managerial functions mentioned above.

It is necessary to compare plans with results, and to take corrective actions in order to achieve results, thus making planning and control functions inseparable. There are similar link-ages between the other urban managerial functions. It is desirable that urban planning should accomplish a physical planning structure matching with the economic base structure and the consequent demographic structure. However, urban dynamics, uncertainties and conflicting interests make it difficult to achieve such a match. This is one of the reasons for urban problems such as the proliferation of slums, frequent illegal construction, and land-use change, mostly by informal entrepreneurs creating workplaces and jobs in violation of statutory city master plans and planning regulations. In India for instance, the per capita land resource is one of the lowest in the world and dwindling fast from 1.42 in 1901 to only 0.32 hectare in 2000, but, city-master-plans generally continue to prescribe a density range of about 60–600 persons per hectare, while density in some city-slums is as high as 5000–10,000 persons per hectare, which is iniquitous. In conventional practice, emphasis is placed on periodic demolition of informal industries, workplaces and habitats, resulting in the loss of jobs and shelter for millions of people, and to a huge waste of individual and collective resources in a country that has nearly one third of its population living below the poverty line (Carmona, 2004). It is imperative to modify conventional practice to avoid such urban planning and management failures, adversely affecting the interests of people and creating an urban crisis. The principles of flexibility and navigational change, providing for plan review from time to time, and redrawing them if required, is an accepted planning practice in traditional management to cope with uncertainties. It is also suggested that, because of too numerous pay-off matrices and uncertainties in the urbanization and development process, an incremental planning approach with flexibility should be adopted for guiding the development of cities, providing for constant feedback about the response of the

urban system, and for changing again and again the rules (such as zoning, provision of infrastructure and so on). Continuous planning with flexibility and short range forecasting for land use in selected areas are also suggested to cope with the size and complexity of growth of cities (Allen, 2001). Moreover, there can be large variations in the efficiency indicators of urban built form. These cannot be ignored by citizens, builders, or other stakeholders who would like to maximize productivity. Therefore, it is necessary to convince citizens, using computer aided techniques and IT for transparency, that the planning regulations do not require any change to achieve their above objectives, and thus, minimize their violations. The urban problems mentioned above also highlight the need to apply such approaches in a dynamic city instead of the frequently static master planning approach, discussed below.

The availability of PCs with graphic capability, and the rapid development of IT (including GIS), makes it easier now to apply such “flexibility principles” for timely corrective actions, with transparency and informed participation of multiple-stakeholders. Such an approach will preempt urban problems at the nascent stage before they get out of control. However, this will require a shift in policy, particularly in developing countries subjected to rapid economic and demographic change, from the conventional practice of treating City Master Plans as rigid legal documents, and instead, viewing them as a “live” Development Plan that is responsive to people’s needs, and subject to “navigational change” (including changes of land use and planning regulations if needed, thus avoiding freezing the evolving options for 20 long years, the usual Master Plan period). Substantial urban research is necessary by all concerned, to develop techniques to facilitate application of such management principles in various urban operations, using IT, OR, and computer aided planning and design (Laquian, 1995).

#### **2.6.4: Principle Of Social Responsiveness**

Urban problems have a significant social and environmental dimension, requiring application of the “principle of social responsiveness” in urban management. This means “the ability of a corporation to relate its operations and policies to the social environment in ways that are mutually beneficial to the company and to society”. This is receiving increased attention even in conventional business operations, due to the interdependencies of the many groups in our society. Such interdependencies are more crucial in respect of urban organizations, as urban development is a joint public- private enterprise, where decisions about the use of resources are

made in the market place and by governments (at various levels), in an interactive way. Therefore, there is need for a policy to apply the principle of social responsiveness in the operation of urban organizations, to indicate that they are discharging their social responsibilities. The concept of a social audit, defined as “a commitment to systematic assessment of and reporting on some meaningful, definable domain of the company’s activities that have social impact”, is also applied in traditional management (New Economics Foundation, 1998). Social responsiveness in urban operations implies actions and urban enterprise responses to achieve the social goals in the urban sector, and to solve urban problems. Therefore, to help evaluate social performance of urban organization, the concept of “social audit” should also be applied in their operations.

A policy commitment to the application of the principles of social responsiveness and social auditing in urban operations may discourage additional government regulations and interventions, giving greater freedom and flexibility in decision making, bettering efficiency of urban organizations and achieving organized cooperation between such organizations, thus improving performance of the urban sector as a whole. Urban research is necessary to develop computer-aided techniques, to facilitate application of such principles in various urban operations, and help develop more effective urban policies based on systematic assessment and evaluation (including social cost benefit analysis).

### **2.6.5: Principle of Productivity**

Productivity, defined as an input–output ratio, is the essence of management in any sector, and implies effectiveness and efficiency in individual and organizational performance. Effectiveness is the achievement of objectives, while efficiency is the achievement of ends with the least amount of resources. Although frequently inadequate, huge amounts of resources are committed by urban professionals, to achieve selected aims. Society would expect that urban professionals engaged in transforming the inputs into outputs, ensured efficiency and effectiveness of utilization of resources in their activities. The “principle of productivity” can be applied in different urban operations, including urban development projects, and at different levels of an urban organization. For example, productivity can be improved by increasing outputs (say, the number of built units and the area of saleable built space/plot spaces produced) with the same inputs (say, capital investment, land, materials, labor); decreasing inputs (say, capital investment,

land, materials, and labor) while maintaining the same outputs (say, the number of built units and the area of saleable built space/plot spaces produced), or increasing outputs and decreasing inputs to change the above ratio favorably. Since resources are always inadequate compared to need, a policy commitment to the application of the principle of productivity in various urban operations is imperative if urban problems are to be solved (Oluwasola, 2001). There are many techniques in traditional management to improve productivity, which are equally applicable in urban management – but only if such policy exists.

#### **2.6.6: Urban Management Education and Research**

In spite of limitations of the conventional approaches, urban management is not yet recognized as a distinct discipline supported by a full length and holistic course of education that recognizes the need to produce professional urban managers. As a result, at present no urban professional group is equipped to discharge efficiently all the five urban managerial functions. Consequently, integrated urban management is rarely achieved by conventional practice. A holistic approach is imperative if cities become “engines for economic growth”, operating on the “growth pays its own way philosophy” (Parkinson et al., 1992), instead of the current practice of depending mostly on government budgetary support for urban operations, particularly in developing countries where urbanization is still in the initial stage. No doubt, this is one of the reasons for our deteriorating urban environment and many serious urban problems, inefficiencies and inequities, including proliferation of slums. Such lack of integrated urban management is also one of the factors causing acute urban fiscal crisis, even though attempts are made to apply business management techniques to local government operations, with help of loaned business executives from the private sector, to reduce fiscal stress (URBED, 1990).

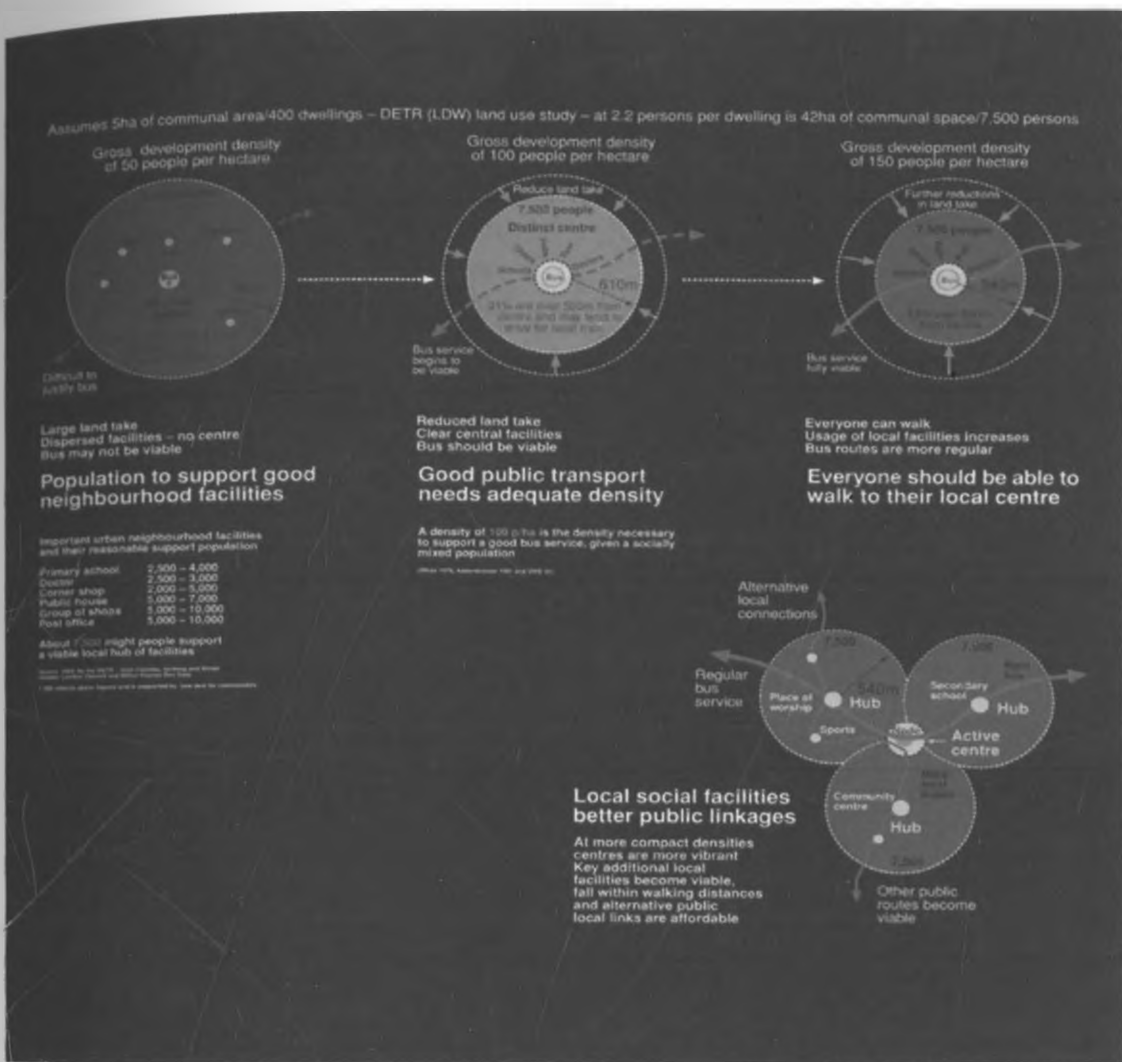
It is desirable that urban management education should be introduced in all developing countries, and simultaneously, urban research should be carried out to develop tools and techniques. Organizations like the World Bank may consider technical assistance to support such research and holistic urban management education, producing professional urban managers, promoting the application of an integrated urban management approach, and, thus, helping to improve efficiency and equity in the urban development process funded by them (Wakely, 2001). This will facilitate the much-needed urban sector reforms in various countries, in consonance with the ongoing economic and financial reforms and globalization of economies, and has attained an added urgency in view of the urban fiscal crisis, particularly in developing countries. It is

suggested that “Urban Management” and “Computer-Aided Planning and Design” should be included as subjects in the educational curriculum of architecture, urban planning and civil engineering, to equip such urban professionals for more effective discharge of their ethical responsibility to achieve efficiency and equity, as they commit huge but scarce resources while carrying out various urban operations. Educational institutions may consider familiarizing students in the use and further research and development of techniques as presented above, inculcating in them a scientific mode of inquiry to the interactions of numerous variables to help achieve efficiency and equity in urban development (Carmona, 20004).

## **2.7 Conceptual Framework**

The study employed two versions of conceptual models to explain the concept of urban management. Figures 2.3 and 2.4 show these models.





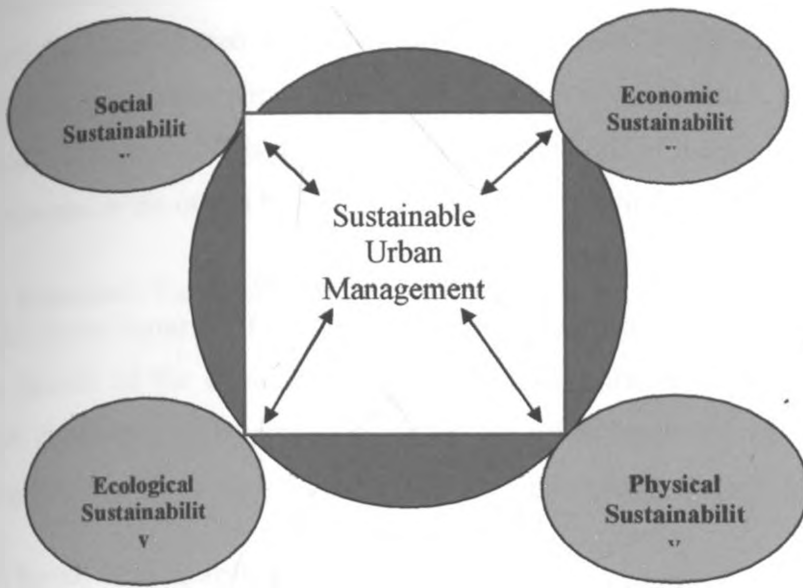
**Figure 2.3 Urban Capacity**

*Source: Towards urban renaissance, 2010*

Traditionally, sustainable development has been framed as the balance between social, environmental and economic goals (WCED, 1987, p.110). However, the problem posed by this model is the manner it offers relatively little understanding of the inherent trade-offs found in the simultaneous pursuit of these goals. In addition, the picture it provides is too abstract to appreciate how sustainable development unfolds at the urban level, and fails to acknowledge the political dimension of the process. By definition, urban centres are not sustainable themselves, as urban dwellers and economic activities inevitably depend on environmental resources and services from outside the built area. The question therefore is what the urban sustainability mean and how can the sustainability of urbanization and urban development be appraised. Answering

these questions therefore require a more encompassing vision of the concept- one that adequately defines the goals and means of the process.

Quite rightly. the environmental, economic and social goals still apply. However, in an increasingly urbanized world, the built environment also needs to be factored in as a central component of sustainability. Furthermore, the search for more sustainable forms of urban management and development also depends on political and institutional processes promoting competition or cooperation between different agents. Thus, to assess whether any given practice, policy or trend is moving towards or against urban sustainability, it is paramount to consider the five dimensions of sustainable urban management outlined in figure 2.4, rather than only environmental, economic and social factors.



**KEY**

- - - - -	Political Sustainability
■	Urban-Regional Carrying Capacity

*Figure 2.4. Conceptual Model*

*Source: Researcher, 2011*

Figure 2.4 is a representation of the relationship between the five dimensions of sustainable urban management. The circle (green region) is a demarcation of the carrying capacity of an urban region, varying from context to context and over time. Thus whilst some urban centres have urban regions with a large carrying capacity, to provide them with basic inputs such as water and to absorb urban wastes, other cities do not. The corners of the square within the circle represent the economic, social, ecological and built environment dimensions. If any of these

dimensions pulls outside the circle, it means that they are making demands over the urban-regional carrying capacity of the city and are therefore moving away from sustainability. The square (with red dotted lines) represents the political dimension or governance arrangements regulating the relationship among these four dimensions through, for instance, public, civic and market mechanisms. This dimension ensures that none of the goals at the four corners are met at the expense of the others but rather that all remain within the boundary of sustainability.

### **2.7.1 Economic Sustainability**

Relates to the capacity of a practice to put local/regional resources to productive use for the long-term benefit of the community, without damaging or depleting the natural resource base on which it depends and without increasing an urban centre's ecological footprint. This implies taking into consideration the full impact of the production cycle (Elliott, 2005, p. 35).

### **2.7.2 Social Sustainability**

Refers to the fairness, inclusiveness and cultural adequacy of an intervention to promote equal rights over the natural, physical and economic capital that support the livelihoods of the local communities, with particular emphasis on the poor and traditionally marginalized groups. Cultural adequacy means the extent to which a practice respects cultural heritage and cultural diversity (Camp, 2001, p. 29).

Pertains to the impact of urban production and consumption on the integrity and health of the urban-region and the entire global carrying capacity. This calls for the long-term consideration between the state, dynamics of environmental resources and services, and the demands exerted over them (Allen et al, 2001, p. 92).

### **2.7.4 Physical Sustainability**

Concerns the capacity of an intervention to enhance the serviceability and functionality of buildings and urban infrastructures for all city dwellers, without damaging or disrupting the urban regional environment. It also includes a concern for the efficiency of the built environment in supporting the local economy. It also permeates the need to balance between the green and brown agenda in addressing the need of not only the physical functional aspiration of urban activities but also the need of balancing the ecological/built environment axis (Camp, 2001, p. 29).

### **2.7.5 Political Sustainability**

Is concerned with the quality of governance systems guiding the relationship and actions of different actors among the previous four dimensions. It implies the democratization and participation of all stake and stakeholders in all areas of the decision-making process (Camp, 2001, p. 29).

## CHAPTER THREE: URBAN MANAGEMENT ELEMENTS IN THE AREA OF STUDY

### 3.1 Introduction

This chapter presents the urban management elements in the area of study. It covers such areas as the historical development and functional role of the study area. The chapter also highlights the physical set up, the ecological set up, the socio-economic set up and the demographic profile of the area of study in relation to the quest to enhance sustainable urban management.

### 3.2 Historical Development and Functional Role of Kiserian Market Centre

The historical perspective of the study area is important in that it helps the research to understand the original purpose and intent of the town and whether this intention is being realized or not. The history of the town is encapsulated in Kiserian Zoning Plan (2007-2012). From the literature, 'Kiseria' is a Maasai word meaning a peaceful area or a secured place (Kiserian Zoning Plan Report, 2007-2012). In 1930, Kiserian was a large forested area occupied by wild animals. Its rivers were full of fresh waters flowing from the neighboring Ngong Hills. The water was mainly consumed by people and animals. Today, the water is polluted and over utilized. As a result, it can no longer be consumed by both human beings and animals. According to the plan, the history of Kiserian Town dates back to 1942 during the colonial period. It all started with the clearance of the forest during the Second World War. A shop was then constructed in the cleared forest. An open-air market was later established to serve as a place where people could meet to buy and/or sell milk and maize. The area was then fenced off and the County Council started collecting revenue from those doing business in the market. Mud houses were constructed to cater for the needs of the traders and thereafter, the then D.O in charge of Ngong Division started forcing residents to construct stone houses.

The town started before the area was demarcated and after demarcation, the council bought more land from individuals to provide more room for the expansion of the town. It also bought an extra 15-acre piece of land for sewage treatment and disposal works but the land was later converted to other land uses (*Ibid*). In the 1970s, there were only three public primary schools: Matasia, Olosia and Arap Moi in the entire Kiserian Location. The population of pupils in the three schools was very low. However, the pupil population in the three schools has since increased leading to the emergence of several private schools to supplement the provision of educational services in the area (*Ibid*). In terms of secondary schools, the area has a total of three

secondary schools with only one of the schools being a public one. Before the road serving the town was tarmacked, there used to be only one vehicle making just a trip from the town to Nairobi every day. Many residents were therefore forced to walk to Ngong to buy goods. In 1982, the road was tarmacked and many people started getting attracted to the area. They bought land in the area and this marked the beginning of an influx of people from neighboring highly populated areas. Apart from the influence of the tarmacked road, other pull factors that have led to the growth of Kiserian Market centre include; its proximity to Nairobi, availability of affordable land compared to Nairobi, availability of electricity and water, availability of ready market for meat, congestion in Nairobi, favorable environment and the ease of conversion of land from agricultural uses to urban uses (*Ibid*).

In terms of functionality, the town is the main commercial, transport and administrative hub in the entire Kiserian Location. According to information obtained from County Council of Olkejuado (2010), the town is classified as a market centre. As a market centre, it is expected to serve a catchment population of 15, 000 people. However, the centre is currently serving a catchment population of about 40,774 people. The town is therefore considered a rural town according to human settlement standards.

### **3.3 The Physical Set Up**

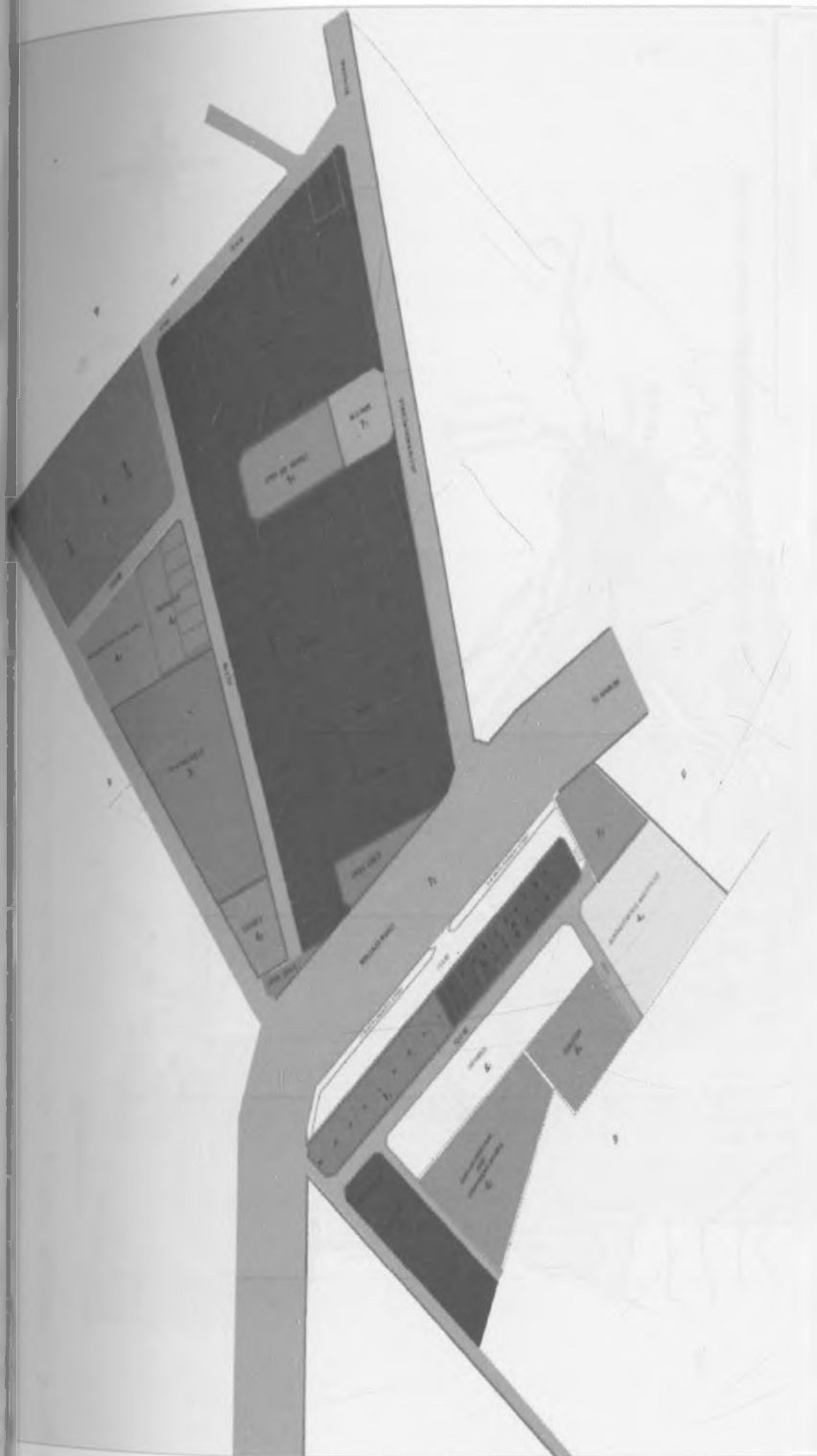
This sub section covers location and extent, topography and drainage, geology and soils and the climate of the study area in relation to natural potential to promote sustainable urban management.

#### **3.3.1 Location and Extent**

The area of study is Kiserian Market Centre, one of the urban centers forming the larger Kajiado County. It is one of the nine locations that form the larger Ngong Division (Kajiado District Development Plan, 2008-2012). It is located in the Northern end of the district, covers three sub-locations namely Upper Matasia, Olteyani and Lemelepo as shown in figure 3.1.







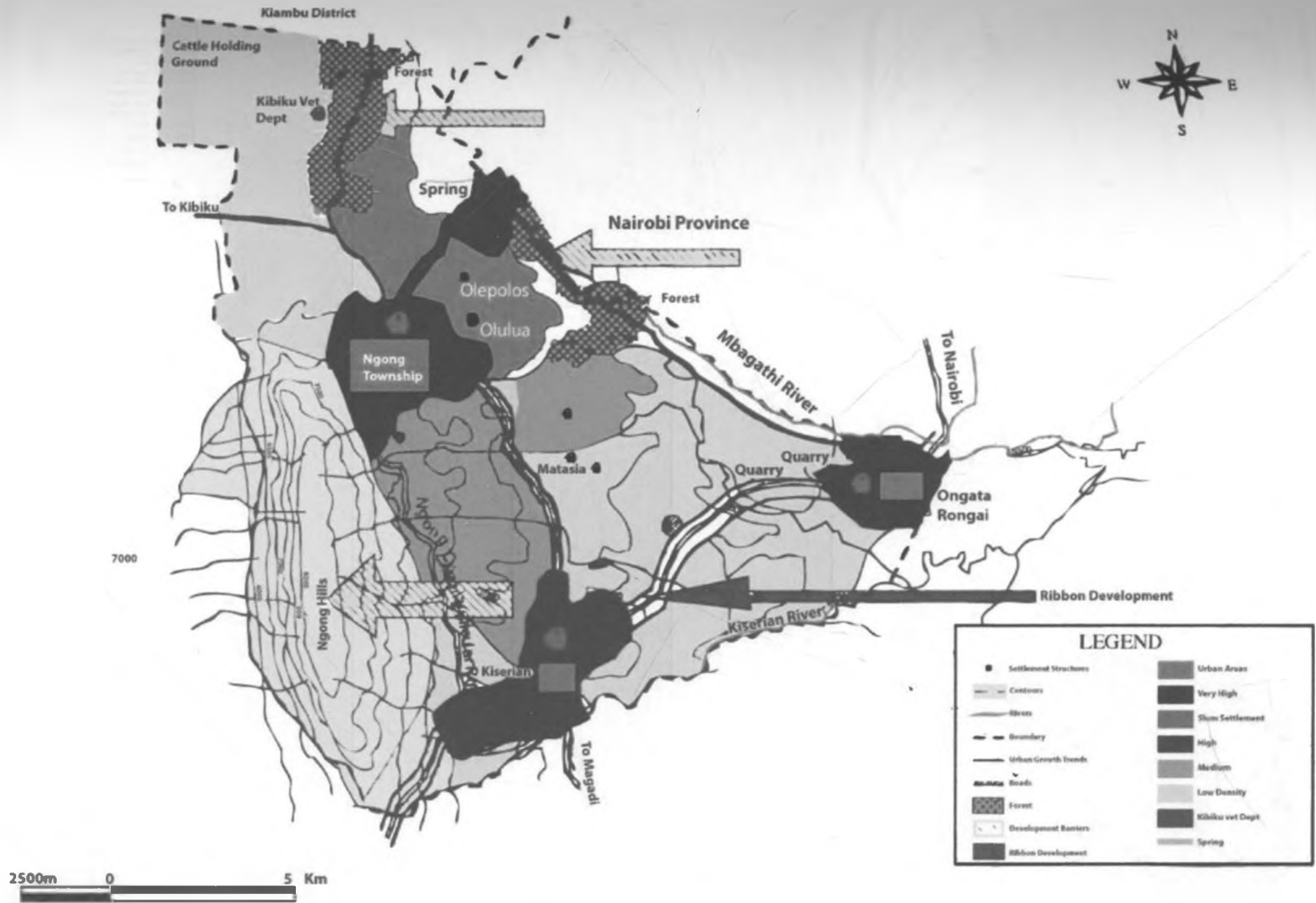
- 0 - RESIDENTIAL
  - 0 MEDIUM DENSITY RESIDENTIAL
- 1 - RESIDENTIAL
  - 1 LIGHT INDUSTRIES (WORKSHOPS)
  - 1 MARKET, HOBBY SHOPS & LIVESTOCK AUCTION YARD
- 2 - EDUCATIONAL
- 3 - RECREATIONAL
  - 3 PLAYING FIELD
- 4 - PUBLIC PURPOSES
  - 4 POST OFFICE
  - 4 ELEMENTARY SCHOOL AND SOCIAL HALL
  - 4 DISPENSARY
  - 4 CHURCH
  - 4 ADMINISTRATION AND POLICE
- 5 - COMMERCIAL
  - 5 COMMERCIAL
  - 5 OPEN AIR MARKET
  - 5 COMMERCIAL CLUB RESIDENTIAL
- 6 PUBLIC UTILITIES
  - 6 CEMETERY
  - 6 REFUSE DISPOSAL AND TREATMENT WORKS
- 7 - TRANSPORTATION
  - 7 Bus Stops
  - 7 MARKET BAZAAR ROAD
  - 7 PETROL SERVICE STATION
- 8 - DEFERRED
  - 8 TO BE DETERMINED
- 9 - AGRICULTURAL

**NOTE:**  
The approval of this plan is only accorded to forest and/or Government land and it does not affect the legal rights of private land owners.

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DEPARTMENTS OF PHYSICAL PLANNING							
<b>KISERIAN</b>							
DEVELOPMENT PLAN							
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**Figure 3.2: Area of Study in terms of Various Land uses**  
**Source: Kajiado District Planning Office, 2010**

Figure 4.3: Settlement Patterns in the Study Area and Immediate Neighbourhood



Source: Simiyu Lucy MA Planning, University of Nairobi, 2002



The market Center is bordered by Ongata Rongai Town to the northeast and Ngong Town to the north. The town is about 30 kilometers southwest of the capital city, Nairobi and lies along Nairobi-Magadi road. It covers a total surface area of approximately 30 square kilometers and lies between longitudes 36° 5' and 37° 5' east and between latitude 1° 0' and 3° 0' south. (*Ibid*). The proximity of the town to Nairobi and other towns such as Ngong and Ongata Rongai makes it a dormitory town, hence the need for an effective urban management culture to enhance its functionality and sustainability.

### **3.3.2 Topography and Drainage**

The topographical features of a place help in laying the necessary infrastructure. It also provides information on the potential mineral resources available in the place. According to Kajiado District Development Plan (2008-2012, p.15), Kajiado District-where the area of study falls can be classified into four distinct topographical regions; the Rift Valley, Athi Kapiti plains, Central Broken Ground and the Amboseli plains. Kiserian Market Centre lies in the Athi Kapiti plains consisting mainly of undulating relief. Ngong Hills is a common physical feature in the area and serves as a catchment area for the Athi River whose tributaries are Mbagathi and Kiserian rivers. These rivers are critical sources of water for livestock and domestic consumption in the town. They also provide water for irrigating the farmlands adjacent to the town.

### **3.3.3 Geology and Soils**

Information on the soil characteristics of the study area is important in promoting sustainable management of the study area as it determines the success of urban agriculture and construction activities in the area. The rocks found around Ngong Hills where Kiserian dam site is situated are highly fractured with numerous grid faults that run in the North-South orientation. They are mainly tertiary and quaternary volcanic rocks formed as a result of volcanic eruption associated with the formation of the Great Rift Valley between the epoch of Miocene and mid Pliocene. The main tertiary volcanic rocks found in this area are trachytes, phonolites, agglomerates, basins and tuff while those common in the quaternary formation include tuffs, pumice, pyroclastic, trachytes, phonolites and ashes (Kajiado District Development Plan, 2008-2012). Kiserian town is characterized by black cotton soil that becomes muddy during rainy seasons. The geological formation that characterizes the town gives rise to minerals of economic importance such as gypsum, limestone, soda ash, salt, and quartz (*Ibid*).

### **3.3.4 Climate**

The climatic condition of a place determines the design of infrastructure such as buildings. It also indicates the suitability of a place with regard to agricultural activities. Temperatures in the larger Kajiado District vary with altitude and seasons. The temperatures range from a mean maximum of about 34°C around Lake Magadi to mean minimum of 22° C on the slopes of Ngong Hills where Kiserian town is located. The coolest period falls between the months of July and August while the hottest months lie between November and April throughout the District (Kajiado District Development Plan, 2008-2012).

### **3.3.5 Rainfall**

The rainfall pattern in the area of study is bimodal, with long rains occurring between the months of March and May and short rains occurring between the months of October and December (Kajiado District Development Plan, 2008-2012). The annual rainfall in Kajiado District is strongly influenced by altitude. An analysis of data for the two seasons indicates that most areas in the district received about 50% of the annual rainfall during the March-May period and 30% during the October-December period. The suitable topography of the area makes it receive a relatively high rainfall (above 800mm per year) and a relatively low evaporation potential of between 1800-2000mm per year (*Ibid*). The rainfall pattern in the district is important in designing a sustainable urban management programme. Moreover, these amounts of rainfall not only sustain the flow regime of the numerous rivers and streams that ensure water for domestic and other uses but also support rain-fed urban agriculture in the town. The two roles are critical for sustainable urban management.

## **3.4 The Ecological Set Up**

This sub-section gives an overview of the ecological set up of the study area, covers vegetation and agro-ecological zones, and links it to prudent urban management.

### **3.4.1 Agro-Climatic Zones (ACZ)**

Agro-Climatic Zones influence economic activities in the study area. About 55% of the total area of Kajiado District within which the area of study lies is under Agro-Ecological Zone-V, 37% under Agro-Ecological Zone-VI and 8% under Agro-Ecological Zone-II-IV (Kajiado District Development Plan, 2008-2012). This makes the area of study one of the Arid and Semi-Arid Lands (ASAL) areas in Kenya.

### **3.4.2 Vegetation**

The vegetation found in the study area is that associated with Arid and Semi-arid lands of Kenya.

## **3.5 The Socio-Economic Set Up**

This sub-section covers the socio-economic pillars of the study area. It ranges from agriculture, industry, trade and commerce, tourism, transport and communication, water and sanitation, health and education as well as housing.

### **3.5.1 Agriculture**

Agriculture plays an important role in the economic well-being of the study area. Agricultural activities are carried out mainly in the small farm sector spread throughout the study area. Food crops are grown and livestock kept in a mixed farming environment by small holders. Food crops grown across the study area include maize, kales, onions, banana and beans. The town is a net supplier of meat to the capital city of Nairobi and other adjacent towns like Ngong, Ongata Rongai and Kitengela (Kiserian Zoning Plan, 2007-2012).

### **3.5.2 Industry**

Industrial development within the study area is mainly livestock-based. Kiserian Market Centre is popularly considered a livestock market and home to some of the biggest slaughterhouses in the country that serve major towns and cities in the country. Nairobi City and its environs depend on the town for her daily meat supply.

### **3.5.3 Trade and Commerce**

Kiserian Market Centre is one of the economic hubs within the larger Kajiado District. The major commercial and trade activities include *jua kali* (artisanship), retail, wholesale, catering, distribution, commercial rental housing and marketing of livestock and livestock products. Others are kiosks, hardware, bars, private schools, chemists and clinics, carpentry and tailoring among others (Kiserian Zoning Plan, 2008-2012). These investments in the small enterprise sector are major contributors to the creation of a functional and sustainable Kiserian town centre.

### **3.5.4 Tourism**

The area of study is commercially potential for ecotourism, cultural tourism for local consumption and export purposes. There is a predominant practice of the resident of the greater Nairobi region retreating to the study area for leisure and Nyama choma endeavors particularly over the weekends. The locals have not also been left behind as Sundays are generally characterized by families taking lunch-outs in nyama choma destinations. There is a great

potential of eco-tourism in this area, which can further enhance the LA's and populace revenue/economic base.

### **3.5.5 Transport and Communication**

Transport and communication determines the scale, nature and form of towns and cities. Its efficiency contributes largely to the level of productivity, economic growth and the standards of living through promotion of synergy and expansion of the market base by making it possible for the expansive neighborhood to tap into local products and services. Communication in the study area is characterized by landlines, mobile phones, and bureaus as well as internet services. The main transport route to Kiserian town is the Nairobi-Magadi road; the Isinya-Kiserian road and Ngong – Kiserian road all of which act as arteries of goods and services in and out of the study area. The mode of transport in the area of study is both by public and private motorized and non-motorized means. Public transport is characterized by matatus, buses, taxis, bicycles and motorcycles (Kiserian Zoning Plan, 2007-2012).

### **3.5.6 Water and Sanitation**

The area of study has inadequate surface water resources for livestock, human consumption and irrigation and depends mainly on groundwater sources. The occurrence of groundwater is influenced by climatic and topographic factors as well as original parent rock (*Ibid*). The other sources of water in the area are sub-surface sources like water pans, dams and shallow wells. Up the Ngong Hill, people use the water from twelve (12) springs, which are famous with the residents as they date from time immemorial as reliable sources of water to both the market center and the households. Rainwater is also a source of water in the area, which is harvested through communal and household based reservoirs. According to a zoning plan for Kiserian (2007-2012), the area of study has two main public boreholes and numerous private boreholes that supplement the water supply. The water supply in the town is a gazetted scheme managed by National Water Conservation and Pipeline Corporation and serves Kiserian Township and its environs.

In terms of sanitation, the town has no conventional sewerage system. Human waste treatment and disposal is onsite and the use of septic tanks and pit latrines are common phenomena in the town. In some residential and commercial areas within the township, wastewater flows down to the Kiserian River aided by the sloping terrain that characterizes the area (*Ibid*).

### **3.5.7 Health and Education**

The area of study has no government health facilities. The nearest health facility is located in the neighboring Ongata Rongai (health center); 15KM away or Ngong Town (Sub-District Hospital), 12 KM away. Within the area of study are also two mission hospitals and numerous private health clinics (Kiserian Zoning Plan, 2007-2012).

Education is vital for any meaningful social and economic development to take place. It means overcoming poverty, increasing employability and subsequent income, improving health and nutrition, reducing family sizes as well as raising people's self-confidence and enriching the quality of their lives (Camp, 2001). The area of study falls within Ongata Rongai Education Zone and has only 3 public primary schools and 10 private ones. There are also a total of three secondary schools within the area of study with two of these secondary schools being private schools. There are no tertiary institutions other than four vocational ones offering post-secondary training services in the area (Kiserian Zoning Plan, 2007-2012).

### **3.5.8 Housing**

The human settlement in Kiserian like in many other up-coming settlements in Kenya is characterized by poor environmental and economic conditions, high urban population growth rate and a myriad of urban housing problems. Other factors responsible for the housing problems in the study area are; inadequate infrastructure to support housing development, low purchasing power of the urban households, poor management or lack of appropriate housing policies (Kiserian Zoning Plan, 2007-2012) and lack of alternative and affordable construction materials. The housing in the study area is characterized by different housing typologies such as maissionettes, bungalows, row housing, flats and informal housing stock. However, the housing in the study area can be described as unplanned with most of the units being haphazardly distributed across the town (*Ibid*).

### **3.6 The Demographic Profile**

Population size and distribution helps in estimating the demand for services in education, health, employment, recreation, water and sanitation, power supply, commerce, administration, and the general planning and management of an area. The current population growth rate in the area of study has had far-reaching implications on its future social and economic development. According to Kajiado District Development Plan (2008-2012), the population growth rate for the



district was estimated at 4.51 per cent presently and the population of Kiserian Town is currently estimated to stand at 40,774 persons with an infant mortality rate and fertility rate of 45/100 and 6.3 per woman respectively. The Male: Female ratio is 103:100 (Ibid). The population of the study area has been increasing over the years as shown in table 3.1.

*Table 3.1: Population Growth in the Area of Study.*

<b>Sub-Location</b>	<b>1999</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Upper Matasia	6873	8231	8610	9008	9423	9857	10538	11024	11521	12039	12582
Olteyani	9646	11553	12086	12643	13891	14532	15546	15546	16246	16979	17745
Lemelepo	7929	9496	9934	10392	10871	11372	11897	12446	13007	13594	14151
<b>TOTAL</b>	<b>24448</b>	<b>29280</b>	<b>30630</b>	<b>32043</b>	<b>34185</b>	<b>35761</b>	<b>37981</b>	<b>39016</b>	<b>40774</b>	<b>42612</b>	<b>44478</b>

*Source: District Statistics Officer, Kajiado, 2007*

## CHAPTER FOUR: RESEARCH DESIGN AND METHODS

### 4.1 Introduction

A research design, states Claire *et al* (1962) is the arrangement of conditions for collecting and analyzing data in a manner that aims at combining relevance to reach purpose with economy of procedure. Decisions regarding what, where, when, how many and by what means a problem is solved constitute research methodology. According to Bogdan and Tailor (1975), the term methodology in social sciences refers to the process, principles and procedures by which we approach problems and seek answers. The study was designed to assess the urban management challenges facing urban centres in the larger Kajiado County with Kiserian Town as a case study. In so doing, it sought to among others; assess the existing legislative and institutional policy framework for urban management in the study area, explored challenges facing the management of the town and available opportunities embedded in the urban management challenges thereof. The ultimate purpose of this research was to explore the possibility of converting the numerous urban management challenges facing Kiserian market centre into opportunities that would give rise into a more viable, live-able, functional and sustainable urban form through a critical situational and comparative study analysis.

### 4.2 Research Design

The study was both a qualitative and quantitative (a descriptive) research that sought to assess the existing legislative and institutional policy frameworks for urban management in the study area as well as exploring the urban management challenges facing the area of study. Through the insight from the comparative study, the research also sought explore on the available opportunities for the sustainable urban management of the town. The type of design adopted for this particular study was a case study. A case study is considered an in depth study of a particular situation rather than a sweeping statistical survey (Mugenda & Mugenda, 2003). It is a method used to narrow down a very broad field of research into one easily researchable topic. While it does not answer a question completely, it gives some indications and allows further elaboration and possible creation of a hypothesis on a subject (Hansen et al., 1973). The case study research design is also useful for testing whether scientific theories and models actually work in the real world (Miller & Krumbein, 1954). It is argued that a case study provides more realistic responses than a purely statistical survey (*Ibid*). The advantage of the case study research design is that you

can focus on specific and interesting cases. This may be an attempt to test a theory with a typical case or it can be a specific topic that is of interest. For instance, it is interesting to evaluate the challenges facing Kiserian as one of the emerging towns within the greater Kajiado County and explore the possibility of converting those challenges into opportunities that would give rise into a more viable, live-able, functional and sustainable urban form through an in-depth case study.

As noted by Hansen et al. (1973), case studies are also flexible and may lead to the introduction of new ideas. While a pure scientist is trying to prove or disapprove a hypothesis, a case study might introduce new and unexpected results during its course, and lead to research taking new directions, which could be more meaningful in the research area (*Ibid*). However, Mugenda and Mugenda (2003) argue that a case study is such a narrow field that its results cannot be extrapolated to fit an entire question and that they show only one narrow example. The duos add that case studies are also limited in the extent to which one can generalize them to fit an entire population or ecosystem.

In view of both arguments for a case study, it was considered the most appropriate for this study for various reasons. Firstly, it is because the field of study, which is urban management, is too broad and dynamic and therefore the need to narrow down the research through a case study. Secondly, its choice was also an attempt to establish whether the theories on best urban management practices are actually working in reality. The research was also unique as it tried to explore the possibility of converting the numerous urban management challenges facing Kiserian market centre into opportunities that would give rise into a more viable, live-able, functional and sustainable urban form through an in-depth comparative case study. Such issues of urban management as targeted in this study can only be appropriately addressed from a case study but not from a statistical survey.

#### **4.3 Nature and Sources of Data**

Taking Kiserian Market Centre as a case study, the research attempted to evaluate the nature and context of the operational legislative and institutional policy framework for the urban management of Kiserian Market Centre besides assessing the challenges facing the urban management thereof. Eventually, the study also explored the opportunities embedded in the said challenges, ultimately exploring the possibility of converting the urban management challenges thereof into opportunities that would give rise into a more viable, live-able, functional and

sustainable urban form. To attain this goal, two types of data were collected. The primary data from the field gave first hand information about the general outlook of the challenges facing the sustainable management of the town and the available opportunities for its sustainable management. The secondary data on the other hand was gleaned from documented information, which included writings by others about the topic of study as a whole as well as the available literature on the legislative and institutional policy framework of the area. Such data was then passed through the statistical process as recommended by Kothari (1995) to yield to the results herein presented.

#### **4.3.1 Primary Sources of Data**

The primary data was obtained from sampled informants, focus group discussion, field observations and interviews with resource persons in the context of the subject of study.

#### **4.3.2 Secondary Sources of Data**

This involved a systematic identification, allocation and analysis of published and unpublished information about the study area, the subject of study and the concept of urban management in general and with much reference to the existing literature on; legislative and institutional policy framework for urban management and subsequent available derivable opportunities for the town's sustainable management. These included national and local development plans, abstracts, other government documents (like the National Housing Policy bill, relevant Acts of parliament and the Vision 2030), relevant books, published and unpublished reports and reviews of the above sources in journals and magazines.

#### **4.4 Population Description**

The population sampled was finite and was provided by true households according to the 2009 population census (GoK, 2009). The Olkejuado County Council formed a special and critical respondent group hence was part of the universe. Other respondent groups included; sampled households, businesses, local opinion leaders, Governmental and Non-Governmental institutions, FBOs, interest groups, representatives of line organizations working in the neighbourhood, special groups, parastatals, private sector organizations, bilateral and multilateral development partners, professional organizations, academia and political representatives.

#### 4.5 Sampling Methods

In a research undertaking such as this, a number of sampling methods exist. For general purpose in a social science research discourse, Mugenda and Mugenda (2003) observe that Probability and Non-probability sampling methods would be appropriate for such a subject and context of study as ours.

Probability sampling according to the duo, allows for selection of a reasonable number of subjects, objects or cases that represent the target population, thus providing a researcher with an efficient system of capturing, in a small group, the variations or heterogeneity that characterizes the target population. Under this category, Mugenda and Mugenda (2003) identify random sampling as a useful method for obtaining a representative sample, since in this sampling technique, every sample of a given size in the accessible population has an equal chance of being picked. It also allows generalizability to a larger population with a margin of error that is statistically determinable. There are four common methods of random sampling namely: Simple random sampling, Systematic random sampling, Stratified random sampling and Cluster sampling.

- a) *Simple Random Sampling*: This method involves giving a number to every subject or member of the accessible population, placing the numbers in a container and then picking any number at random. The subjects corresponding to the numbers picked are included in the sample. Another strategy involves the use of tables of random numbers that are normally included in statistical books (Mugenda and Mugenda, 2003).
- b) *Systematic Random Sampling*: In Simple Random Sampling, every subject in the population frame is selected for inclusion in the sample. To obtain a truly random sample using the method, the list of all the members in the sampling frame must be randomized. A list arranged in an alphabetical or numerical order is not random. Once the population has been randomized, the researcher then decides on the sampling interval. The commonly used rule in deciding the interval is dividing the total population by the sample size (Mugenda and Mugenda, 2003).
- c) *Stratified Random Sampling*: The goal of this sampling method is to achieve desired representation from various sub-groups in the population. In this sampling method,

subjects are selected such that the existing sub-groups in the population are more or less reproduced in the sample, meaning that the sample will consist of two or more sub-groups. Criterion or variable used for stratification may be sex, income level, size, colour, etc. Once this is done, the next step is to decide on the size of each stratum or sub-group in the sample. The actual method of sampling from each subgroup of the population can then be simple random sampling or systematic random sampling (Piel, 1982). Generally, the stratified random sampling involves the following steps:

- i. Identifying the population.
- ii. Defining the criterion for stratification.
- iii. Listing the population according to the defined strata or sub-groups.
- iv. Determining the required sample size and the appropriate representation in each stratum. This can be proportionate or equal.
- v. Selecting, using random numbers, an appropriate number of subjects for each stratum.

The advantage attendant with this sampling method is that it allows for inclusion, in the sample, of subgroups, which otherwise would be omitted entirely by other sampling methods due to their small numbers in the population (Mugenda and Mugenda, 2003).

d) *Cluster Sampling*: is used when there is no possibility of obtaining a sampling frame because the population is either very large or scattered over a large geographical area. Piel (1982) argues that, this sampling method involves selection of an intact group. All the members of the intact group are then included in the sample and each member becomes a unit of observation. An example where this method could be applicable is when a doctor intends to conduct a malaria study in Kenya. Instead of listing all malaria patients hospitalized in the country, it would be logical that the doctor confines himself/herself to district hospitals. A list of all the district hospitals is compiled and then one or two hospitals picked randomly depending on the sample size required. All the patients hospitalized in the selected hospitals are therefore included in the sample (Mugenda and Mugenda, 20003). From the above example, it is evident that in cluster

sampling, it is the groups or clusters that are randomly selected and not the individuals or cases. The assumption in this sampling method is that clusters are similar in characteristics. Clusters could include schools, towns, and hospitals, large-scale industries e.t.c. cluster sampling involves less time and is convenient. In some cases, cluster sampling is done in two or more stages or cycles. This method is referred to as multi-stage cluster sampling. For instance, Mugenda and Mugenda, 2003) explain that in the event that a researcher wishes to study housing condition in Kenya's rural areas, he may begin by sampling, at random, one county from the 47 counties. From the selected county, he may then sample two constituencies at random by first listing all the constituencies in that county. From each of these constituencies, he may sample one ward at random. From each ward, two villages can be selected randomly giving a total of four villages. All the households from all the sampled villages are then included in the sample. However, the problem associated with this technique is that achieving a reasonable degree of population validity between the selected clusters and the target population is often difficult and this limits generalization (*Ibid*).

Biased sampling or non-probability sampling method on the other hand, is employed when a researcher is not interested in selecting a sample that is representative of the population. It is mostly used in qualitative studies since the focus in such studies is on in-depth information and not making inferences or generalization (Mugenda and Mugenda, 2003). Non-probability sampling includes the following:

- a) *Purposive Sampling*: This is a sampling technique that allows a researcher to use cases that have required information with respect to the objectives of the study. Such cases of subjects are therefore handpicked because they are informative or possess the required characteristics. While opting for this technique, (*Ibid*) advise that one needs to specify the criteria for choosing the particular cases-for example, a certain age range, religious sect or education level. The method is used by some researcher as part of multistage sampling procedure. In such cases, the purposive sampling is applied to get the location of a county, constituency or ward in which the units of observation possess the required characteristics (Piel, 1982).

- b) *Snowball Sampling* is where initial subjects with desired characteristics are identified using purposeful sampling techniques. The few identified subjects name others that they know possess the required characteristics until the researcher gets the number of cases required. This method is useful in cases where the population possessing the characteristics under the study is not well known and there is a need to find the subjects (*Ibid*).
- c) *Quota Sampling* technique is similar to stratified random sampling and the objective is to include various groups or quotas of the population in the study based on some criteria. For example, in the event that a researcher intends to include a certain religion or social class in the sample, he may decide to pick quotas of each. The researcher purposively selects objects to fit the quotas identified. The selection of actual participants is not random since subjects are picked as they fit into identified quotas (Mugenda and Mugenda, 2003).
- d) *Convenient Sampling or Accidental Sampling*: This sampling technique involves selecting cases or units of observation as they become available to the researcher. It is also referred to as “*volunteer sampling*” or “*accidental sampling*” (*Ibid*). For example, a radio programme may ask a few questions to radio listeners and tell them to take the answers to a specified place. Such a sample could be referred to as convenient and biased because only those people who possess radio sets- and listen to them- will answer. Even among those, many will ignore the questions. Another example of the use of this method is where a researcher selects anyone who is convenient e.g. a neighbor. According to Piel (1982), the main feature of this method is that subjects are easily and conveniently available, and are also accessible. Researchers who use this method have little or no basis to argue that it is representative.

Based on the analysis outlined above, purposive, multi-stage and simple random sampling methods were found to be most appropriate for our kind of research as they offered the advantages outlined herein: The sampling units representing the smallest entity that provided responses were the households. These were considered the lowest identifiable social institutions within which activities take place. Households are ideally units of production, consumption and reproduction. The choosing of this sampling unit was predicated on the premise that urban



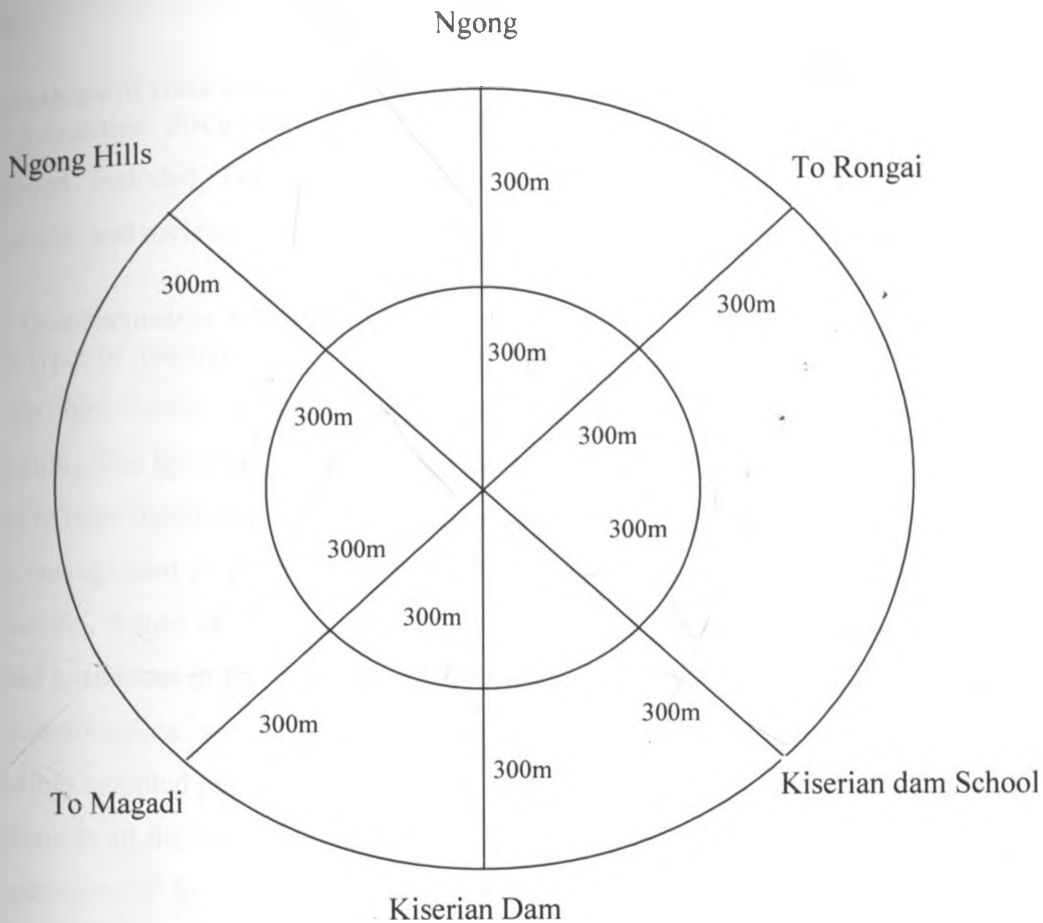
management challenges and its attendant consequences are experienced and/or felt most at the household level. A sample of 60 households was taken from a universe of 14,780 true urban households (GoK, 2009). Such samples were considered convenient depending on the available finances and time resources available. The village (an Enumeration Area as per the 2009 population census) was the smallest unit used in sampling. Several sampling techniques were employed by the study. This ensured a truly representative sample and adequate coverage of the area. Due to the nature of the area of study and the objective of the study, the following sampling methods were considered appropriate:

#### **4.5.1 Purposive sampling**

Purposive sampling was used to select the Council officials, businesses persons, and opinion leaders, relevant governmental and non-governmental institutions directly or indirectly operating in the area of study to obtain respective information in light of the subject of study. The criteria employed in identifying the above respondent oscillated around their mandates, roles and activities vis-à-vis urban management efforts in the study area.

#### **4.5.2 Multi-stage sampling**

Multi-stage sampling was employed to obtain the 60 respondents from the 14,780 households. Each stage involved balloting of all the equally legible populations. This ensured a fair and representative sample. Multi-stage sampling refers to the successive sampling from an original universe to achieve the desired limited universe from which to choose actual respondents (Piel, 1982).



*Figure 4.1: A Sampling Model (from the business centre outwardly towards indicated landmarks within the limit of distances indicated)*

*Source: Field Survey, 2011*

A total of six transects were identified from the market centre as shown in figure 4.1. A total of 10 households were then sampled along each transect line to obtain a total of 60 households. Within the stretch of 300 metres along each transect, a total of 5 households were successfully sampled.

#### **4.5.3 Simple random sampling**

From a total of 14,780 households in the study area, a total of 60 households were chosen randomly to respond to the household questionnaires. The household questionnaires were administered to the randomly selected households in the study area. This helped to reduce

chances of biasness. The random sampling method was deemed appropriate due to the unplanned nature of the study area.

#### **4.6 Methods of Data Collection**

This subsection discusses the methods/instruments used to gather field data. The methods employed included Focus Group Discussion (FGD), questionnaires administration, oral interviews, and reviews of documented literature, photography and guided observation.

##### **4.6.1 Questionnaires Administration**

Three types of questionnaires were used for purposes of this study. They included questionnaires for the households; business community and both governmental and non-governmental institutions. The household questionnaires were used to capture the views of the households with regard to their social and economic status as well as the information about the challenges facing urban management in the area. A total of 60 household questionnaires were used to collect such information. A total of 25 questionnaire attuned to the business community were administered to selected businesses in the study area to obtain their perceptions on the topic of study. A total of ten questionnaires were also administered to both governmental and non-governmental institutions sampled purposively to get their views and dimensions on the concerns of the study. Questions in all the questionnaires were both closed-ended and open-ended. The questionnaires were administered by the researcher together with the research assistants.

Participatory application of data collection was used under the banner of Focus Group Discussion (FGD) to capture the feelings and aspirations of various stakeholders on the purpose of this study. Plate 4.2 shows a Focus Group Discussion in progress. Stinson (2000) observed that FGD is done over a relatively shorter period of time (a few days to a few weeks) and while collecting data in this manner, emphasis ought to be put on learning directly from local inhabitants. For instance, Chitere et al (1991) used FGD lasting four weeks in establishing the status of development services and living conditions in Kabras and Mwingi divisions and provided a basis for choice of intervention strategies in the areas. This methodology was used to collect views from a total of 15 stakeholders from different social and economic backgrounds concerning their views and aspirations on the topic of study in general, challenges facing the urban management in the area of study, available opportunities for the sustainable management of the town and their perceptions on an effective town specific remedial measure for the

management of the town. The FGDs sessions culminated into an all-inclusive plenary session for the stakeholders. The discussions were chaired and moderated by the researcher assisted by the research assistants and local leaders.

#### **4.6.3 Oral Interview Schedule**

Oral interview schedule was used to obtain information from the County Council of Olkejuado, which is the local authority in charge of the urban management in the study area. As a service provider and regulator, the Council provided vital information that contributed immensely to the realization of the research objectives. The Council officials whose lines of duty correlated with the objectives of this study were therefore interviewed in the context of the purpose of the study. Kerlinger, (1973) observes that interviews are advantageous because of face-to-face interpersonal intersection.

#### **4.6.4 Review of Documented Information**

Review of documented information also formed part of the data gathering methods employed in this study. The documents reviewed included Acts of parliament and relevant policy documents, relevant writings by various authorities on the study topic, published and unpublished reports, household surveys among others. Such documented information helped in realizing the objectives of the study.

#### **4.6.5 Photography**

Still photographs were also used to capture manifestations of the general conditions of the study area, the urban management challenges and various attributes of the data collection process. Such conditions included socio-economic activities in the study area, environmental conditions of the area, physical infrastructure and the general topographical features of the study area.

### **4.7 Data Analysis and Presentation**

The data collected was analyzed and presented using descriptive statistics and other quantitative methods recommended in a research of this nature.

#### **4.7.1 Descriptive Statistics**

These included averages, percentages, and rankings. Averages and percentages were used to analyze per capita income levels, levels of education attained, skills, sexes, main economic activities in the study area, awareness level vis-a-vis the urban management process, the

effectiveness of the existing legislative and institutional policy framework for urban management among others. The results were presented using tables, graphs, pie charts and photographs.

#### **4.8: Units of Analysis and Analytical Framework**

The e units of analysis used in the study included households, individuals, institutions, and businesses. The main research objective was to assess the urban management challenges facing Kiserian Market Center. A number of specific objectives were used as shown in the table 4.1.

#### **4.9 Pilot Study**

Pre-testing of the instruments designed for purposes of collecting data was carried out prior to the actual field survey to determine the validity and reliability of the instruments. The research instruments were pre-tested to a selected sample with similar characteristics to the actual sample that would be used in the study. Coolian (1994) noted that pilot trials entail trying out proto-type of a study of questionnaires on a sample in order to discover snags or errors on a design, or develop workable and effective measuring instruments. In so doing, Mugenda & Mugenda (2003) caution that subjects in the actual sample should not be used in the pre-test as such attempts may increase chances of biasness.

#### **4.10 Reliability**

Information obtained through analysis of the pre-tested instruments was compared with documented reports and substantial deviations corrected so as to ensure reliability of these instruments.

*Table 4.1: Analytical Framework*

<i>Research Objective</i>	<i>Questions for Analysis</i>	<i>Type of Data</i>	<i>Techniques for Analysis and Presentation</i>	<i>Expected output</i>
<p>1) To evaluate the nature and context of existing legislative and institutional policy framework applicable in the urban management of Kiserian Market Centre.</p>	<ul style="list-style-type: none"> <li>• What are the supporting legislations and institutions for urban management in the Kiserian?</li> <li>• Are the legislations &amp; institutions sectoral or integrated?</li> <li>• Can they operate in isolation of each other?</li> <li>• Are there conflicts of interests among the legislations &amp; institutions?</li> </ul>	<ul style="list-style-type: none"> <li>• Number of institutions involved in urban management</li> <li>• Zoning Principles</li> <li>• Sub-division Guidelines</li> <li>• Review of various Acts of Parliament (e.g. Local Government Act, Physical Planning Act, Town Planning Act, e.t.c.)</li> <li>• The Constitution of Kenya</li> </ul>	<ul style="list-style-type: none"> <li>• Logical situational analysis against case studies and best practice with descriptive presentations.</li> </ul>	<ul style="list-style-type: none"> <li>• Profiling of sectoral Legislative and Institutional policies in use for Urban Management in the area of study</li> <li>• Identification of Urban management stakeholders in the area of study.</li> <li>• assess the effectiveness of the urban management policies and institutional structures in use</li> </ul>

<i>Research Objective</i>	<i>Questions for Analysis</i>	<i>Type of Data</i>	<i>Techniques for Analysis and Presentation</i>	<i>Expected output</i>
				<p>in the area of study inter alia the realities on the ground.</p> <ul style="list-style-type: none"> <li>• Recommendation on harmonization of any conflicting urban management policies and institutional structures within the area of study.</li> <li>• Proposal for best practice methods for implementing the recommendations herein.</li> </ul>
2) To explore the urban management	<ul style="list-style-type: none"> <li>• What is the nature of the urban</li> </ul>	<ul style="list-style-type: none"> <li>• Data on:               <ol style="list-style-type: none"> <li>i) Income &amp;</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• Logical comparison</li> </ul>	<ul style="list-style-type: none"> <li>• Identification of the urban</li> </ul>

<i>Research Objective</i>	<i>Questions for Analysis</i>	<i>Type of Data</i>	<i>Techniques for Analysis and Presentation</i>	<i>Expected output</i>
challenges facing Kiserian Market Centre.	<p>management challenges experienced in Kiserian Market Center by the different stakeholders?</p> <ul style="list-style-type: none"> <li>• What are the urban management strategies being used to address the challenges?</li> <li>• What is the level of service production and provision in Kiserian?</li> <li>• Are there ambiguities and conflicts in the urban management processes in use at</li> </ul>	<p>education levels</p> <p>ii) Expenditure</p> <p>iii) Levels &amp; diversity of professional skills</p> <p>iv) Economic activities &amp; population trends</p> <ul style="list-style-type: none"> <li>• Status and adequacy of existing infrastructure and services provided in Kiserian</li> <li>• Data on accessibility to services by residents</li> </ul>	<p>and contrasting between practice, policy and best urban management practices</p> <ul style="list-style-type: none"> <li>• Photographs</li> <li>• Percentage</li> <li>• Maps</li> <li>• Tabulation</li> <li>• charts</li> <li>• graphs</li> </ul>	<p>management challenges facing the area of study and prescription of mitigation measures thereof in the light of best urban management practices.</p>



<i>Research Objective</i>	<i>Questions for Analysis</i>	<i>Type of Data</i>	<i>Techniques for Analysis and Presentation</i>	<i>Expected output</i>
	<p>Kiserian?</p> <ul style="list-style-type: none"> <li>• Do those involved in the urban management process have the requisite information, will &amp; ability to execute their rights and obligations?</li> <li>• What is the nature and level(s) of public participation in the urban management process in Kiserian?</li> <li>• What is the public perception on service production &amp; provision?</li> </ul>	<ul style="list-style-type: none"> <li>• Data on public utilities, land uses, environmental planning &amp; housing typologies</li> <li>• Review of various legislations &amp; policy guidelines</li> <li>• Draft land-use plan for the study area</li> <li>• Densities, zoning principles &amp; implementing authorities on urban management in the area of study</li> <li>• The implication of the new constitutional dispensation on the current urban</li> </ul>		

<i>Research Objective</i>	<i>Questions for Analysis</i>	
	<ul style="list-style-type: none"><li data-bbox="612 189 912 539">• How effective are the legislations &amp; institutions applicable to the urban management process in Kiserian?</li><li data-bbox="612 565 905 753">• How are the urban management legislations enforced?</li><li data-bbox="612 779 921 1182">• What is the level of public awareness on the existing legislations &amp; institutions relevant to urban management in Kiserian?</li></ul>	

<i>Type of Data</i>	<i>Techniques for Analysis and Presentation</i>	<i>Expected output</i>
management practices and policies on the area of study.		

<i>Research Objective</i>	<i>Questions for Analysis</i>	<i>Type of Data</i>	<i>Techniques for Analysis and Presentation</i>	<i>Expected output</i>
3) To explore some of the opportunities embedded in the urban management challenges and the new constitutional dispensation for Kiserian market Centre.	<ul style="list-style-type: none"> <li>• What are some of the opportunities available for urban management of Kiserian?</li> <li>• Have the opportunities been exploited?</li> <li>• What are the opportunities available in the country's new constitutional dispensation?</li> </ul>	<ul style="list-style-type: none"> <li>• The new constitution of Kenya</li> <li>• Data on availability of resources like land, Ngong Hills &amp; related resources, infrastructure, growing population &amp; geographical characteristics of the study area.</li> </ul>	<ul style="list-style-type: none"> <li>• Logical analysis against best practices</li> <li>• Situational analysis against land-use planning policies</li> <li>• Photographs</li> <li>• Descriptive</li> <li>• Literature review on past trends through comparative studies</li> </ul>	<ul style="list-style-type: none"> <li>• Highlighting the identified opportunities</li> <li>• Recommendations on harnessing and maximizing strategies on the said opportunities.</li> <li>• Recommendations on a sustainable framework of managing the envisioned area of study.</li> </ul>

Source: Researcher, 201

## CHAPTER FIVE: FINDINGS OF THE STUDY

### 5.1 Introduction

This chapter presents the empirical findings of the study in a more objective and distant manner. The main research question for this study was to assess the urban management challenges facing emerging urban centres. While taking Kiserian Market Center as a case study, several sub-questions were formulated to help achieve the objectives of the study. The answers to these questions were sources from various literatures including both primary and secondary data. Such data was clustered and dissected further into fine groups. The outcome of this grouping was an analytical framework shown below.

### 5.2 Demographic, Economic and Social Profiles of the Study Area

This sub chapter presents the household sizes, ages and sex ratio of members of the resident community. It also focuses on education levels, professional trainings, and employment and income levels of the households in the study area.

#### 5.2.1 Household Size, Age and Sex Ratio

The study established that about 64 percent of those residing in the study area are immigrants, who moved into the area in search for affordable urban housing services and employment in the past fifteen years. In terms of age, majority of the residents, 25 percent are aged between 20-29 years and only three percent aged 60 years and above as shown in table 5.1.

*Table 5.1: Age Groups in the Study area.*

Age Groups	0-9	10-19	20-29	30-39	40-49	50-59	60 and above	TOTAL
Percentage (%)	23	16	25	18	9	6	3	100

*Source: Field Survey, 2011*

#### 5.2.2 Education Levels of Households

Table 5.2 shows the levels of education in the study area as established by the study.

**Table 5.2: Education Level, Household Size and Sex Ratio in the Study Area**

Status of Education	No Education	Nursery	Primary	Secondary	College	University	Don't Know	TOTAL
Percentage (%)	7.1	4.5	32.3	34.2	18.7	3.2	0.0	100
Household size	5 Members per Household							
Sex Ratio	9 MALES: 8 FEMALES							

Source: Field Survey, 2011

Subsequently, the area lacks numerous of all-important amenities and services and there is evident run-down of some of the existing public infrastructure such as schools. It was for example noted that the chairperson of the board of directors for Kiserian Primary school; a school with over 2000 pupils has an education level of below primary school. This is the position entrusted with the vision, mission and performance strategies for the school. Although sad, it was subsequently not surprising to learn that the school's transitional rate was hardly 15% and the trend was not promising. Ultimately, such shortcomings have substantial impact on the performance, health and wealth of a neighbourhood such as Kiserian.

### 5.2.3 Average Incomes and Expenditures

The average household income per month in the study area stands at Ksh 25, 571 with majority of the households earning monthly incomes of between Ksh 15,001 to 20,000 at any given period as shown in table 5.3. Table 5.3 presents the findings on income levels of households in the study area.

*Table 5.3: Household Income per Month and per Day*

<i>Income Range per Annum (Ksh)</i>	<i>Percentage (%)</i>	<i>Income Range per Day (Ksh)</i>	<i>Living below a dollar/day</i>
Less than 10,000	20.4	Less than 27.78	<b>66.6%</b>
10,000-15,000	9.2	27.79-41.67	
15,001-20,000	29.6	41.68-55.55	
20,001-25,000	7.4	55.56-69.44	
25,001-30,000	11.1	69.45-83.33	
30,001-35,000	5.6	83.34-97.22	
35,001-40,000	5.6	97.23-111.11	
Over 40,000	11.1	Over 111.11	
<b>TOTAL</b>	<b>100</b>		

*Source: Field Survey, 2011*

*Table 5.4: Household Expenditures in the Study Area*

<i>Nature of Expenditure</i>	<i>Percentage (%) Per Month</i>
Education	24.0
Health	5.7
Food	28.0
Fuel	13.4
Rent	19.0
Transport	6.7
Water	0.3
Entertainment	2.7
Waste Management	0.2
<b>TOTAL</b>	<b>100</b>

*Source: Field Survey, 2011*

### 5.2.4 Professional Training and Employment Levels

In terms of professionalism, the study found out that there are many people living in the study area with different professional trainings ranging from driving to engineering. The Council staff members on the ground (who was visiting) was found to come all the way from Kajiado and the locals felt left out of employment opportunities.

*Table 5.5: Professional Training*

Professional Training	Percentage (%)
Tailoring	11
Driving	11
Craftsman	02
Teaching	23
Welding	02
Secretarial	02
Nursing	02
Coaching Games	02
Hairdressing	02
Social Work	02
Mechanical (artisan level)	11
Security guard	02
Business Management	05
Computer Engineering	02
Accounting	07
Masonry	02
Community Development	02
Marketing	05
Technician	02
Architecture	02
Engineering	05
<b>TOTAL</b>	<b>100</b>

*Source: Field Survey, 2011*



Casual (informal sector) jobs such as the provision of security, construction and gardening constitute the highest percentage of employment base to the male residents of the study area. Subsequently, the area has become an imperative source of informal workforce to the middle and high-income neighbourhoods.

### **5.3: Policy, Legislative and Institutional Frameworks for Urban Management in Kiserian**

The study found out that the management of Kiserian Market Center, just like other urban centers and cities in Kenya has not been under any policy. The management of the 175 Local Governments in Kenya has completely relied on the Local Government Act Cap 265 of the Laws of Kenya. Currently, the legislations that apply to the management of the town include the Local Government Act Cap 265 with the spatial planning aspect under the jurisdiction of Olkejuado County council being guided by the physical planning Act Cap 286. These two Acts are in-turn operationalised in consonance with a host of other statutes such as Government Lands, Trust Land Act, Land Control Act, Environmental and Management Coordination Act, The Forest Act, Water Act, Agricultural Act, Town Planning Act, Land Planning Act and Survey Act. The current legislative policy framework applicable to the management of the town is characterized by sectoral statutes.

### **5.4: Challenges Facing Management of Urban Areas**

The study established that urban population of Kiserian Market Center is growing faster than its economy, infrastructure and services can support. In addition, the local authority in-charge of its management possesses limited resources and capacities to solve the complex and massive problems in the area. This was exhibited by the degraded physical environment, poor housing and overcrowding, low incomes and unemployment, high rates of crime and deteriorated physical infrastructure. The challenges facing the management of the study area can therefore be summarized as urban poverty, rapid urban growth, environmental degradation, urban sprawl, inadequate resources, poor urban governance and inefficient urban transport system, urban crime and insecurity. The challenges are discussed in details in the subsequent chapter.

Just as other urban areas discussed in available case studies, the urban management challenges in the study are similar in a number of ways. The selected case studies allow for comparisons with regard to urban management challenges between the area of study and other urban areas across

the world. The case studies also demonstrate how the identified urban management challenge has been addressed in respective identified urban area.

#### **5.4.1: “Dignified Housing” in Maracaibo (Venezuela)**

Like is the case in the area of study, Venezuela has experienced a rapid population growth, particularly in the urban areas. The rate of urbanization in the country has increased tremendously over the years: its urbanization rate jumped from 48% in 1950 to 93% in 2008 (UN HABITAT, 1997). This accelerated growth has fostered the establishment of marginal human settlements. This problem, related to the depletion of urban land and difficulties in accessing official housing systems or private developers, compound a situation already unfavorable for low-income families that live in informal settlements in substandard conditions. By 1998, aqueducts served only 18% of the urban population and 97% suffer deficiencies in water provision. In addition, 50% of the population living in irregular settlements lack sewerage services and only 25% have urban garbage collection services (Davey, 1996, p. 102).

In response to the challenges, the city consultation in Maracaibo has since proposed to develop an action plan with a comprehensive programme to fight urban poverty. This programme, accordingly called “Dignified Housing”, seeks to consolidate local power through shared responsibility of actions undertaken by the municipal government and civil society (public, private, non-governmental sectors, communities, universities) to ensure the sustainable development of their habitat. The proposal implies not only developing new perspectives in the field of housing production, but also strengthening community organization and proposing a model of public policy in this area, in favor of the poorest sector of the population (UN HABITAT, 1996). The programme is divided in 3 phases: city consultation, identification of action plan and development of top priority action programme. It is designed to achieve three goals namely: to develop a financing system promoted by the Municipality and aimed at the low-income population, foster a local approach to alleviate poverty, especially among women, and foster agreements between the local government and civil society organizations.

Since its initiation, the programme has made significant improvements in terms of provision of urban services. From this case study, several lessons are drawn with regard to sustainable urban management. The first lesson is that actors or institutions that operate as partners in the urban

management process must make a commitment in terms of the quality of the work to be performed by each stakeholder, responding according to their level of responsibility. Second, consultation and reflection among actors is required in order to jointly decide how to interact with the community. It should have a structured notion of what the internal dynamics of the community are in order to recognize its social and economic potentialities, and thus be able to adjust the process to reality.

#### **5.4.2: Eradicating Urban Poverty and Poor Urban Governance in Colombo (Sri Lanka)**

Urban poverty has for over the years characterized many urban centers particularly in the developing world. The problem has been largely blamed on poor systems of urban governance. Sri Lanka is one of the countries in South Asia, which has experienced rapid urban growth over the years. As a result, the city's infrastructure has failed to satisfy the needs of the urban population. The lack of municipal services in the city can be largely attributed to the low capacity of the Colombo Municipal Council (CMC) in the past. Poor resource mobilization by the Council and centralized administration led to the deterioration of service delivery and hence a poor quality of life in the city. After a change in leadership in 1997, however, the CMC made several attempts towards improving urban management practices within the Council and implemented many innovative approaches of good governance. There was a major shift from a bureaucratic and reactive system of municipal management to managerial and proactive system. The new administration had taken a number of steps to make Colombo Municipal Council a dynamic and progressive local government (Laquian, 1995, p. 35). First, prior to the elections, every effort was made to include several professionals as candidates while allowing for grass root level politicians. Second, all policies set out by the Councilors were based on the needs of the electorate. Arising strategies were therefore needs' driven and nothing was hypothesized but real life situations took pre-eminence.

Third, the old idea that democracy is equated to elections was changed by minimizing wasteful inter-party conflict and political confrontation. Members of the opposition political parties in the Council were elected as Chairmen of 5 of the 15 Statutory Standing Committees. Together they formed the inner cabinet. This was a new concept with 33% of the inner cabinet appointed from the opposition. This inner council was able to draw up a four-year development plan for the city with the participation of all political parties. Fourth, the power and accountability of city

managers was increased (Cohen, 1991, p.44). Empowerment was implemented by delegation. Rather than being controlled administrators, they became empowered managers so that they could exercise their own initiatives in responding to customer needs. This gave them managerial freedom and space to exercise their professional expertise as well as due recognition and responsibility. Above all, the new down granted the redefined urban managers an opportunity for a pluralism of service delivery mechanisms. The Colombo strategy has succeeded in addressing key urban management concerns such as shelter, social development & poverty eradication, environmental management & economic development, urban governance and international corporations & partnership.

In terms of shelter provision, the strategy has enhanced access to basic services such as water supply, solid waste, drainage and primary health were the key services identified for delivery to the poor communities through the District Community Management Forum (DCMF). It has promoted social integration and supported disadvantaged groups, promoted gender equality in human settlements development. Cases of urban pollution have reduced and decentralization as well as strengthening of local authorities in Colombo has also been attributed to the new strategy. It has encouraged and supported participation and civic engagement, ensured transparent, accountable and efficient governance of towns, cities and metropolitan areas.

#### **5.4.3: 2.6.1 Urban Renewal Programmes in Ibadan (Nigeria):**

Ibadan is a city that is growing amorously and characterized by traditional slums and spontaneous slums (Ayeni, 1997, p. 93). It is heavily overcrowded and the environment is largely degraded. In terms of its spatial spread, Ibadan sprawls over a radius of 12-15 km and it is still expanding uncontrollably, due to rapid and uncontrolled urbanization. Most parts of the city, particularly the inner core and south-eastern section, are unplanned and lack basic facilities due to the inability of municipal governments to keep pace with the level of infrastructure needs and the speed of growth. The need to make Ibadan sustainable has resulted in several interventions in recent years, including the renewal or upgrading of some slums in the city and the participation of the city in the Sustainable Cities Programme among others.

Critical environment-development problems affecting Ibadan include inadequate provision and management of environmental infrastructure – poor access to potable water, unstable electricity supply and haphazard physical development that constrains the provision of facilities. The city is

also characterized by poor waste collection and management system: wastes often block drain roads, waterways and the stench from dumpsites cause severe air and water pollution. Flooding due to the invasion of flood plains by through illegal buildings and construction, inadequate storm drains, acute deforestation and poor solid waste management have resulted in perennial floods. As Burgess *et al.* (1997, p. 64) observe, high health risks due to poor water supply, inadequate and unreliable refuse collection services, water pollution, overcrowding, and flooding have also posed a serious challenge to the city of Ibadan.

Since several conventional urban planning and management strategies actually failed in addressing the environmental and physical development problems in Ibadan, new approaches have been explored, such as the Sustainable Cities Programme (SCP). The SCP is a joint initiative of the UN Habitat and UNEP. It was launched in August 1990, as a component of the Urban Management Programme. The SCP is guided by the principle of widespread participation by stakeholder groups in the public, private and community/popular spheres, such that they can have improved abilities and capacities for environmental planning and management (UN-HABITAT/UNEP, 1997, p. 307). The Sustainable Ibadan Project (SIP) is a component of the SCP. Consequently, the City Forum/Consultation adopted the "Ibadan Declaration" focus have been on three priority cross-cutting environmental issues for SIP: waste management, water supply and the Institutionalization of the Environmental Planning and Management (EPM). Ibadan is currently one of the urban centers enjoying the benefits of effective urban management.

### **5.5: Available Opportunities**

The study established that there exist a number of opportunities for the urban management in the town. Such opportunities include the proximity to Nairobi and other urban areas, rich water table and ecological diversity, the Kiserian Dam, Ngong Hills and its associated features, large urban population, abattoirs and the 'nyama choma' identity, diversity of cultures and subsequent talents, proposed Kiserian Local Physical Development Plan, verse land for development in the neighborhood, untapped tourism potential, large pool of experienced/retired professionals settling in the area, upcoming training institutions within the neighborhoods, the Oloolotikosh Airstrip, the greater Metropolitan Plan and associated infrastructure, and the new constitutional dispensation in Kenya

## CHAPTER SIX: DATA ANALYSIS, DISCUSSION AND PRESENTATION

### 6.1 Introduction

This chapter presents the analysis of findings of the study and attempts to answer the research questions posed by the study at the outset. The main research question for this study was to assess the urban management challenges facing emerging urban centres. While taking Kiserian Market Center as a case study, several sub-questions were formulated to help achieve the objectives of the study. The answers to these questions were sources from various literatures including both primary and secondary data. Such data was clustered and dissected further into fine groups. The outcome of this grouping was an analytical framework shown below.

### 6.2 Demographic, Economic and Social Profiles of the Study Area

This sub chapter analyses the household sizes, ages and sex ratio of members of the resident community. It also focuses on education levels, professional trainings, and employment and income levels of the households in the study area.

#### 6.2.1 Household Size, Age and Sex Ratio

About 64 percent of those residing in the study area are immigrants, who moved into the area in search for affordable urban housing services and employment in the past fifteen years. The average household size in the study area is five members per household with 46.5 percent of the population being female and 53.5 percent being male. This gives a sex ratio of 9 males: 8 females. Among the females and males who have attained the employment age, 68 percent of the women are housewives while 72 percent of the men are unemployed. In terms of age, majority of the residents, 25 percent are aged between 20-29 years and only three percent aged 60 years and above as shown in table 6.1.

**Table 6.1: Age Groups in the Study area.**

Age Groups	0-9	10-19	20-29	30-39	40-49	50-59	60 and above	TOTAL
Percentage (%)	23	16	25	18	9	6	3	100

*Source: Field Survey, 2011*

Majority of those living in the study area are therefore the youths; 43% for the ages between 20 and 39 who need employment opportunities to improve their lives and livelihoods. In addition, this group requires programmes that are aimed at laying a platform for self-employment. A total of 39 percent of the population has attained the school-going age, yet the number of public schools located in the area of study is inadequate to serve this population. The few schools found in the study area are therefore too crowded to accommodate more students. This has negatively affected the standards and quality of education in the area.

### **6.2.2 Education Levels of Households**

Table 6.2 and figure 6.1 shows that majority of the residents (about 34.2 percent) in the study area have attained secondary school education. When table 6.2 is looked together with table 6.1, it is noticed that a total of 78.1% of the population has either no education or nursery or primary education as the highest level of education. This population is the majority and constitutes about 63% of the total population of the study area. Only 21.9% of the population has either college or university education. This depicts an uneducated population, which may not participate effectively in the urban management process of the study area. The case of uneducated youthful population in the area is seen as a threat to future skilful leadership in the area. This is even worsened by the absence of adult education programmes, professional role modelling programmes or incubation centres. This is likely to hinder the youths' ability to participate in leadership and political activities as envisioned in the new constitutional dispensation.

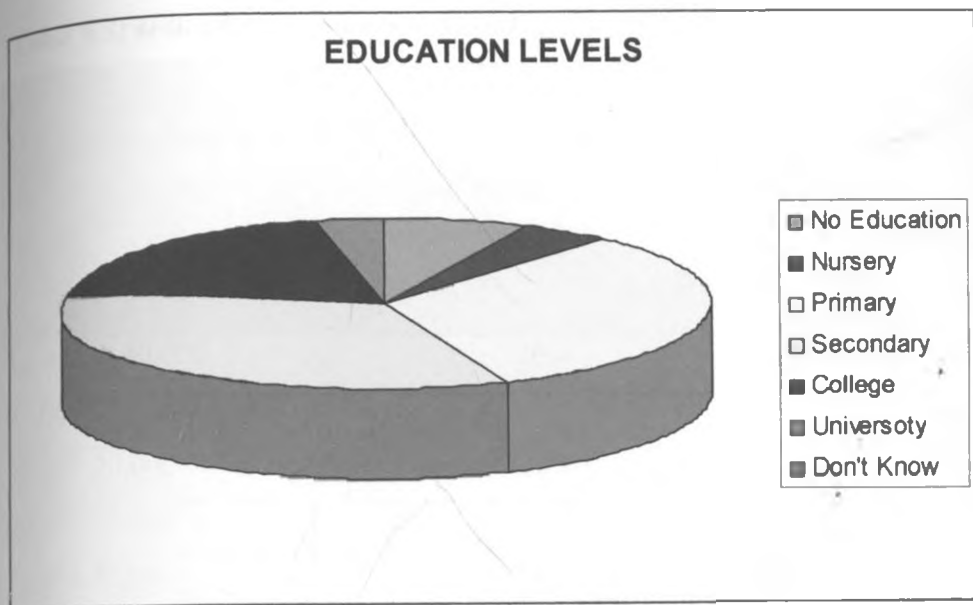
**Table 6.2: Education Level, Household Size and Sex Ratio in the Study Area**

<b>Status of Education</b>	<b>No Education</b>	<b>Nursery</b>	<b>Primary</b>	<b>Secondary</b>	<b>College</b>	<b>University</b>	<b>Don't Know</b>	<b>TOTAL</b>
<b>Percentage (%)</b>	7.1	4.5	32.3	34.2	18.7	3.2	0.0	<b>100</b>
<b>Household size</b>	5 Members per Household							
<b>Sex Ratio</b>	9 MALES: 8 FEMALES							

*Source: Field Survey, 2011*

The various levels of education possessed by the residents therefore indicate their capacity and or inability to participate in the sustainable urban management process at different levels. The supposition is that those with primary school level and below (44%) may have limitations in effective participation in public affairs and since they were found to be the ones attending most public meetings, it is therefore not unexpected that they have not been able to provide an effective check and balance mechanism in the development and management of the urban area of Kiserian. Subsequently, the area lacks numerous of all-important amenities and services and there is evident run-down of some of the existing public infrastructure such as schools. It was for example noted that the chairman of the board of directors for Kiserian Primary school; a school with over 2000 pupils has an education level of below primary school. This is the position entrusted with the vision, mission and performance strategies for the school. Although sad, it was subsequently not surprising to learn that the school's transitional rate was hardly 15% and the trend was not promising. Ultimately, such shortcomings have substantial impact on the performance, health and wealth of a neighbourhood such as Kiserian.





*Figure 6.1: Education Levels in the Study Area*

*Source: Field Survey, 2011*

### 6.2.3 Average Incomes and Expenditures

The average household income per month in the study area stands at Ksh 25, 571 with majority of the households earning monthly incomes of between Ksh 15,001 to 20,000 at any given period as shown in table 6.3. Table 6.3 presents the findings on income levels of households in the study area.

**Table 6.3: Household Income per Month and per Day**

<i>Income Range per Annum (Ksh)</i>	<i>Percentage (%)</i>	<i>Income Range per Day (Ksh)</i>	<i>Living below a dollar/day</i>
Less than 10,000	20.4	Less than 27.78	<b>66.6%</b>
10,000-15,000	9.2	27.79-41.67	
15,001-20,000	29.6	41.68-55.55	
20,001-25,000	7.4	55.56-69.44	
25,001-30,000	11.1	69.45-83.33	
30,001-35,000	5.6	83.34-97.22	
35,001-40,000	5.6	97.23-111.11	
Over 40,000	11.1	Over 111.11	
<b>TOTAL</b>	<b>100</b>		

*Source: Field Survey, 2011*

From the table, it is apparent that about 66.6% of the households live below the one-dollar-a-day World Bank poverty line threshold; a situation classified as ‘extreme poverty’ by international standards. The households therefore supplement their income by relying on the kinship network as a cushion in times of severe deprivation particularly during periods of severe deficits. The greatest average expenditure of households in the study area goes to the purchasing of food. About 28.0% of the total household monthly income is used to feed the household members. This could be attributed to the fact that the agricultural activities in the area are carried out on a small-scale basis hence the limited supply. Most households are therefore forced to buy food to meet their consumption needs. In addition, most of the households in the study area are tenants who mainly buy food for their consumption needs. With a total of 28% of the total income of households whose economies are meant to be agriculture-based, emphasis need to be laid on an evaluation of the sustainability and effectiveness of the farming methods that are being employed in the area and their viability in respect to supporting a meaningful human livelihood. The households are still spending more (24%) on education, which is supposed to be free. However,

the high spending on education could be attributed to the inadequate public schools in the area. Most parents and guardians therefore tend to enrol their children in private schools, which appear to be more expensive compared to their public counterparts.

Only 0.3% and 0.2% is spent on water and waste management respectively. Low expenses on waste management could be as a result of lack of awareness by the population on the implications of poor waste management on human and environmental health. Water and proper management of waste contribute substantially to a population's wellbeing. The low spending on the water and waste management activities could therefore be responsible to the deplorable living conditions that characterize the study area. Other aspects of expenditure examined during this study also included; education, health, fuel, rent, transport, water and entertainment.

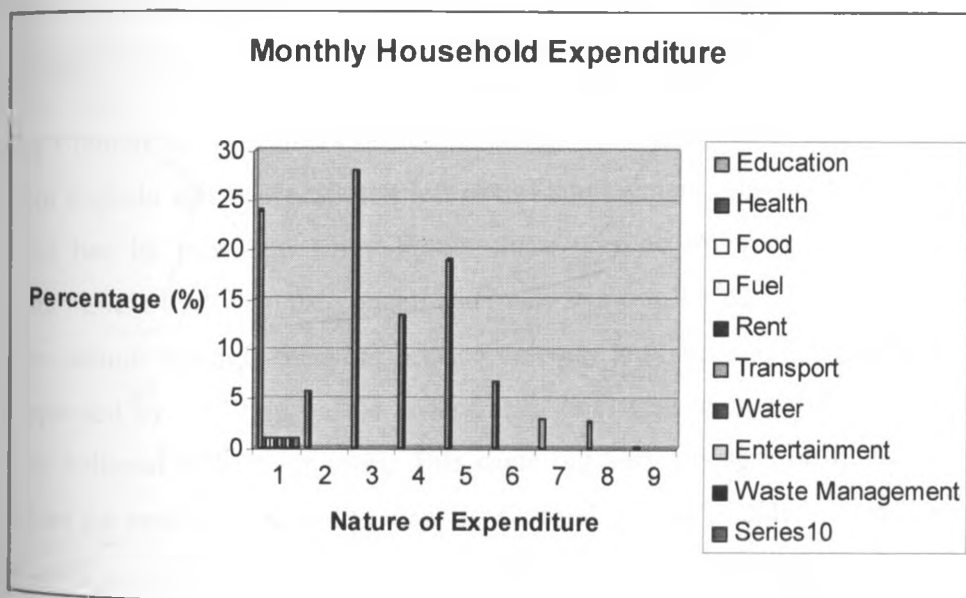
With such a constraint resource base, it is unlikely that contribution towards urban management efforts would be of any priority to the residents of the area of study. Contrary, lack of disposable resource towards health, environmental development/management, education and water act as catalysts to the contrary. It is therefore incumbent upon the Local Authority within whose management jurisdiction the area falls to institute measures and strategies that promote best practices in urban management. Such strategies would include rewards and penalties on promoting or degrading the urban environment by households and other institutions.

The findings outlined above are shown in table 6.4 while figure 6.2 is a graphical presentation of the findings. Saving capacities of a number of households in the study area is weakened by the generally lower income levels vis-à-vis the basic economic and social expenditures. However, in cases where households are able to save, the average amount saved stands at Ksh 7,530 a month.

**Table 6.4: Household Expenditures in the Study Area**

Nature of Expenditure	Percentage (%) Per Month
Education	24.0
Health	5.7
Food	28.0
Fuel	13.4
Rent	19.0
Transport	6.7
Water	0.3
Entertainment	2.7
Waste Management	0.2
<b>TOTAL</b>	<b>100</b>

Source: Field Survey, 2011



**Figure 6.2: Monthly Household Expenditure**

Source: Field Survey, 2011

#### 6.2.4 Professional Training and Employment Levels

In terms of professionalism, there are many people living in the study area with different professional trainings ranging from driving to engineering. However, as presented in table 6.5,

most of these professional trainings (about 61%) are consumptive in nature and do not encourage long-term wealth creation. The area of study therefore has a dire shortage of production-oriented activities, which simulate wealth generation, accumulation and its eventual distribution. The engagement in most activities that are consumptive in nature affects disposable incomes of the households and has a strong relationship to the poverty situation in the study area. As presented in table 6.3, 66.6% of the households live below the poverty line. This could be attributed to the consumptive nature of the economic activities that the households are engaged in.

According to table 6.5 Majority (23 %) of those interviewed are teachers. However, majority of the residents have not had a chance to participate in projects aimed at improving the condition of the town despite possessing skills that could go along way in creating a functional and sustainable town centre. This in essence implies that stakeholder participation in the urban management/development programs (if any) of the area is wanting. This by extension is a basis enough to cast aspersion as to the governance structure of the study area as it is reflective of authoritarianism and exclusivity particularly to the professionals who would have been expected instead to add value to the urban management process.

The Council staff members on the ground (who was visiting) was found to come all the way from Kajiado and the locals felt left out of employment opportunities. Hiring staff who are not local has its pros and cons. Firstly there was no evidence of a sense of belonging and commitment by firstly the council staff was found to be wanting in that they displayed a don't care attitude towards the poor service delivery and secondly, the residents on the other hand responded by rebelling on the ground that they were excluded from the management of what they believed to be their town. This came out very strongly in the focused group discussions where the residents seemed to view the Council staff as outsiders. This could be one reason why there is no indication of partnership/co-operation between the council and the locals, an aspect that has a negative impact on sustainable management of towns.

**Table 6.5: Professional Training**

Professional Training	Percentage (%)
Tailoring	11
Driving	11
Craftsman	02
Teaching	23
Welding	02
Secretarial	02
Nursing	02
Coaching Games	02
Hairdressing	02
Social Work	02
Mechanical (artisan level)	11
Security guard	02
Business Management	05
Computer Engineering	02
Accounting	07
Masonry	02
Community Development	02
Marketing	05
Technician	02
Architecture	02
Engineering	05
<b>TOTAL</b>	<b>100</b>

*Source: Field Survey, 2011*

Casual (informal sector) jobs such as the provision of security, construction and gardening constitute the highest percentage of employment base to the male residents of the study area. Subsequently, the area has become an imperative source of informal workforce to the middle and high-income neighbourhoods.

### **6.3 Legislative and Institutional Policy Framework**

The management of Kiserian Market Center, just like other urban centers and cities in Kenya has not been under any policy. The management of the 175 Local Governments in Kenya has completely relied on the Local Government Act Cap 265 of the Laws of Kenya. Currently, the legislations that apply to the management of the town include the Local Government Act Cap 265 with the spatial planning aspect under the jurisdiction of Olkejuado County council being guided by the physical planning Act Cap 286. These two Acts are in-turn operationalized in consonance with a host of other statutes such as Government Lands, Trust Land Act, Land Control Act, Environmental and Management Coordination Act, The Forest Act, Water Act, Agricultural Act, and Survey Act. The current legislative policy framework applicable to the management of the town is characterized by sectoral statutes. This sectoral nature of the legislative policy framework has given rise to the current Urban Management challenges that the town is faced. Similarly, the efforts to integrate the various stakes and interpretations toward a productive and functional whole have proved elusive particularly due to conflict of interests between Political, Environmental, Socio-economic and physical development concerns.

Under the current legislative and institutional arrangement, the management of Kiserian Market center falls under the jurisdiction of the County Council of Olkejuado. This arrangement poses institutional challenges to the effective management of the town. This is due to the fact that despite Kiserian having attained an urban status, it is under the management of a county council. Worse still, the Council sits miles away from the town and does not have a firm control of the town's day-to-day operational issues due to its lack of a physical office in the town. The Council also lacks the necessary policy framework and workforce to execute the urban management tasks in Kiserian and other urban areas within the larger Kajiado County.

The study findings revealed that the current urban management challenges facing Kiserian Market Centre and other towns and cities in Kenya could be blamed on the existing legislative and institutional policy frameworks. An evaluation of the devolved funds such as Local Authority Transfer Fund (LATF) focuses more on maintaining the status quo on infrastructural, as no expansion has been done for the last over ten years. Lack of adequate technical capacity even to execute the maintenance task has not made things any better. Noticeable however were

efforts by the Ministry of roads and scattered initiatives by the CDF funds particularly on infrastructure under direct supervision by the public.

During the study, it was revealed that even though the Local Government Act Cap 265 allows Local Authorities to enact by-laws for the management of their jurisdictions, the County council of Olkejuado lacks most of the requisite by-laws to enhance the management of the urban centers within its jurisdiction. Some of the legislations used by the council appear to be ineffective and contain penalties that are not commensurate to the offence and thus offer insufficient punitive measures to deter offenders. The few local legislations and policies that exist in the study area for purposes of managing the town are faced with challenges such as ineffectiveness, weak implementation strategies and most notable, public awareness of their rights and obligations.

Although all the main Government departments with a responsibility of one or more strands of the urban management tasks was found to be represented in Kajiado, ironically, there was no structured way of cooperation and each department appeared to carry out their perceived autonomous tasks with least concern of the initiatives by the other. A case in mind is where the District Physical planning office was busy preparing structured plans for the area of study with least consultations with the Council. As a result, they made unfounded claims in one of the public hearings that the original boundaries of the market town stretched beyond some freehold private land. This created a lot of tension and eventually eroded the support the proposals were going to receive from the public. Obviously, this was proof that they never had appropriate brief from the Council who were the custodians of the original plan of Kiserian. Sooner than later, the Council was also on the ground trying to enforce some development control measures in areas outside of their approved jurisdiction whose viability and functionality the Physical development office was trying to assess. Worse still, this duplication of duties does cost the exchequer a double or sometimes more resources without realizing commensurate results.

#### **6.4 Challenges Facing the Urban Management of the Area of Study**

The challenges facing the management of the study area range from service provision to urban development and management policies. Governance and urbanization issues are also perennial challenges, which have affected the quality of life for the residents in the area of study. The study findings established that majority of the residents of the study area consider the provision of basic urban services such as water supply, waste management and market services as poorly



structured and ineffective to satisfy their needs. Table 6.6 shows the perceptions of the residents on the current state of service provision in the town. The tabulation depicts a community with a veil view of the performance by its service providers. It demonstrates how the omission of requisite public participation in service production and provision can lead to erosion of public confidence. The general perception of the public with regard to service production and provision can be described as poor. This could be attributed to a poor urban governance system that is not responsive and accountable to the public.

The challenges facing the management of Kiserian Market Centre have economic, political, social/cultural, physical and environmental connotations. These challenges include but not limited to: inadequate banking services, parking spaces, lack of development control, poor waste disposal system, and undefined boundary of the Kiserian, inadequate public utilities and environmental degradation.

*Table 6.6: Perceptions on the State of Service Provision in the Study Area*

<i>Nature of Service</i>	<i>Fair (%)</i>	<i>Good (%)</i>	<i>Very Good (%)</i>	<i>Poor (%)</i>	<i>Very Poor (%)</i>	<i>Worse (%)</i>	<i>TOTAL (%)</i>
Water supply and Sewerage	18.2	9.0	5.5	43.6	18.2	5.5	100
Roads (Public transport)	29.0	36.4	5.5	7.3	21.8	0.0	100
Poverty Alleviation Programmes	29.2	0.0	1.8	32.7	34.5	1.8	100
Solid Waste Management	22.2	11.1	1.9	33.3	18.5	13.0	100
Health Care	11.5	7.4	3.7	35.2	35.4	6.8	100
Education	9.1	25.5	1.8	58.2	3.6	1.8	100
Development Control	20.0	9.3	9.3	33.8	20.4	7.2	100
Planning and Policy Formulation	14.5	5.5	5.5	38.1	30.9	5.5	100
Implementation of Legislations on Urban Management	12.8	14.5	1.8	38.2	21.8	10.9	100
Security	46.2	24.0	1.9	13.0	5.6	9.3	100
Wealth Creation Programme	26.0	14.8	1.9	42.6	11.0	3.7	100
Recreational Facilities	30.9	3.6	7.3	36.4	12.7	9.1	100
Market Services	33.2	13.0	9.3	35.2	9.3	0.0	100
Drainage	16.7	13.0	9.3	24.0	26.0	11.0	100

*Source: Field Survey, 2011*

#### 6.4.1 Inadequate Banking Services

The area of study is one of the main economic hubs found in the larger Kajiado County. It serves as a vibrant market for livestock and fresh agricultural produce and is home to two larger slaughterhouses that serve even the capital city-Nairobi and its environs. Consequently, the study established that, the cash flow in the area of study is relatively high. However, currently there is only one banking institution-Kenya Commercial Bank (KCB) serving the town in its entirety. Other banking services being provided in the town are in the form of Automated Teller Machines (ATMs). This scenario has limited the financial transactions of the town residents especially those in the business sector. Most of the business people therefore have to rely on neighbouring centres for their banking services a trend that proves inconvenient and economic to the business sector in the area of study.

#### 6.4.2 Inadequate and Inefficient Road Network and Parking Spaces

The road networks serving the town are characterized by poor road surfaces, encroachment and blocked feeder roads. In fact, during this survey, 21.8 percent of those interviewed rated the current state of roads within the area of study as very poor. Nonetheless, a number of roads in the area have been reduced to less than 9 metres, a phenomenon that is blamed on the intensive and extensive subdivision of land in the area. A case of encroachment on road reserve established by the study is the current police station, which is located on a road reserve. Other illegal structures have also been erected on road reserves leading to obstruction leading to vehicular-human conflict as shown in photo 6.1.



**Photo 6.1: Vehicular-Human Conflict in the Area of Study**

**Source: Field Survey, 2011**

Lack of a designated parking space in the town has set the town to a collision course with it self. Due to the lack of parking facilities, motorists are left with the option of parking on roadsides

and shop fronts thus inconveniencing pedestrians and buyers. Consequently, this conflict has led to increase in number of road accidents and incidents within the area of study.

#### **6.4.3 Lack of Development Control Culture**

The development control culture in the area of study is not only poor but Adhoc and unsustainable. Suffice to say that the insignificant efforts employed by the Olkejuado County Council towards this purpose is ineffective and inconsistent with the universal principles of creating sustainable urban forms inline with the Millennium Development goals. This poses a major threat to the sustainability, functionality and eventual viability in the management of the town. Cases of uncontrolled subdivision of land and incompatible land uses are common features in the area. Moreover, mushrooming of informal settlements in full glare of the responsible local authority, lack of proper zoning standards occasioned by lack of development control mechanisms has led to poor urban infrastructure and services in the area. Evidence of uncontrolled mixed and informal development within the area of study is a clear indicator that no adequate follow-up is done for the approved building plans by the council. The establishment of land uses in the study area does not take cognisance of the concept of compatibility leading to neighbourhood nuisance. The area of study is therefore a victim of urban informality. The impact of the absence of development control mechanism is greatly felt in the housing sector. The human settlement in Kiserian, like any other up-coming settlement in Kenya is faced with myriads of urban housing problems such as inadequate infrastructure to support housing development and lack of appropriate housing policies. Table 6.7 show the characteristics and some of the housing typologies found in the study area respectively. From the table, it is evident that the housing sector in the study area is faced with serious planning and development control challenges. Since time immemorial, the area of study has suffered from lack of forward planning in that the official Market space is less than 30% of the current built-up area of the "urban" Kiserian. Subsequently, most of the houses in the area of study are constructed on private land. One such building houses Satellite Supermarkets shown in photo 6.2. This problem is attributed to the failure to gazette a local development plan done for the area in 1984, which clearly zoned the area of study into different land uses; see Fig. 3.2 elsewhere in this document.



*Photo 6.2: Satellite Supermarkets LTD; one of the Buildings Constructed on a Private Land*

*Source: Field Survey, 2011*

*Table 6.7: Characteristics of Housing Typologies in the Study Area*

Housing Typology	Building Materials		Level of Housing Infrastructure	Planning Status of Housing
Maisonette	Roof	Iron Sheet/Tiles	<ul style="list-style-type: none"> <li>• Piped Water</li> <li>• Electricity</li> <li>• Septic Tank</li> <li>• Storm Water Drains</li> </ul>	Unplanned
	Wall	Quarry stones/Concrete blocks		
	Floor	Cement and/or Tiles		
Bungalows	Roof	Iron Sheet/Tiles	<ul style="list-style-type: none"> <li>• Piped Water</li> <li>• Electricity</li> <li>• Septic Tank</li> <li>• Storm Water Drains</li> </ul>	Unplanned
	Wall	Quarry stones/Concrete blocks		
	Floor	Cement and/or Tiles		
Row Housing	Roof	Iron Sheet	<ul style="list-style-type: none"> <li>• Commercial Water Points</li> <li>• Pit Latrines</li> <li>• Septic Tank</li> <li>• Electricity in some</li> <li>• No Storm Drains</li> <li>• Unplanned Roads</li> </ul>	Unplanned
	Wall	Quarry stones/Concrete blocks/Timber/Mud		
	Floor	Cement/Earth		
Flats	Roof	Iron Sheet/Tiles	<ul style="list-style-type: none"> <li>• Septic Tanks</li> <li>• Electricity</li> <li>• Piped Water</li> </ul>	Unplanned
	Wall	Quarry Stones/Concrete Blocks		
	Floor	Cement		
Informal/Slums	Roof	Iron Sheet	<ul style="list-style-type: none"> <li>• Minimal Electivity, Pit Latrines, No Storm Drains, Communal Water Points, Unplanned Roads</li> </ul>	Unplanned
	Wall	Iron Sheet/Mud		
	Floor	Cement/Earth		

Source: Field Survey, 2011

#### **6.4.4 Poor Waste Disposal System**

The waste management system in the study area is characterized by lack of a designated site for disposing the municipal waste, lack of a sewerage system, poor sanitation and undeveloped poorly managed drainage system. This has led to municipal solid waste for instance, being dumped in an unprotected private plot within the town. Both solid and liquid waste management approaches in the town can be described as poor. Things are not made any better by the fact that the terrain of the landscape falls towards the Kiserian River where the entire effluent from the built-up area is washed into particularly during the rainy seasons. This has greatly compromised the hygiene and health situation in the neighbourhood as even the horticultural supplies from the affected riverbank is relied upon by both near and distant consumers:

#### **a) Solid Waste Management**

The method of disposing solid waste in the town can be described as open dumping. Currently, the municipal solid waste generated from within the town is dumped on sporadic private lands scattered within the immediate and distant neighbourhood. The Council lagoons in Ngong town are perennially full and a nuisance to the neighbourhood as the disposal site is neither secured nor controlled. There is no proper time schedule even for the sporadic waste collection as there is only one garbage truck serving the entire Kajiado County. During rainy seasons when most roads are impassable, the garbage truck never shows-up. The point where the waste is dumped in the town has also become an environmental and health hazard to the town residents especially the ones living next to the dumpsite as well as the roaming livestock in the town. The dumpsite also poses security threats to the local residents. Nonetheless, the open dumping ground is close to one of the seasonal streams that serve as tributaries to the all-important River Kiserian. This mode of disposal exposes the refuse to surface run off which end up sweeping the toxic wastes in to the nearby water bodies ending up polluting them. The study also established that the solid waste disposal is currently being fenced by the landowner who intends to develop it. This will certainly leave the town with no room to dump the municipal solid waste. The solid waste collection, treatment and disposal therefore remain a major urban management challenge in the area. Photo 6.3 shows solid waste dumped on drainage within the study area.



*Photo 6.3: Solid Waste Dumped on Drainage within the Town*

*Source: Field Survey, 2011*

#### **b) Liquid Waste Management**

Kiserian town has no conventional sewerage system and liquid waste treatment and disposal is done on an on-site basis using pit latrines, cesspools and very rare occasions, septic tanks, soak pits and conservancy tanks. The pit latrines pose the danger of frequent collapse due to poor soil conditions that characterize the town. More often than not, the liquid waste emanating from some residential and commercial buildings flows down into the nearby Kiserian River thus polluting it as shown in photo 6.4.





**Photo 6.4: River Pollution because of Poor Liquid Waste Disposal**

**Source: Field Survey, 2011**

Owing to the fact that the liquid waste in the town originate from the residential, commercial and industrial activities as well as storm water, the ever increasing population and the attendant expansion of the town therefore poses a real challenge to recon with in the event that a functional and sustainable town centre is to be realized. Apart from lack of a designated site for solid waste treatment and disposal and lack of a conventional sewerage system, the waste management in the study area is also constrained by inadequate capacity and technological expertise among council's officials charged with the responsibility of waste management in the town. Weak enforcement mechanisms as well as inadequate personnel to oversee the enforcements also jeopardize the waste management efforts in the town.

#### **6.4.5 Undefined Kiserian Town Boundary**

The boundary of the study area is not clearly defined. This is due to the rapid urban sprawl that currently characterizes the area of study. The two plans that have since been proposed for the town have never been implemented. One of the plans is shown in Fig.3.2. in addition, this undefined scenario has instigated the sprawl of commercial activities to residential and agricultural lands in the area. The unclear boundary of the town has brought to the fore competition between adjacent jurisdictions, namely between the City Council of Nairobi and the County Council of

Olkejuado. The competition compromises the provision of basic urban services in the study area. It has also led to cases of segregation in terms of provision of services by the relevant local authority. The study established that the County Council of Olkejuado restricts its provision of services to only parts of the town that it considers falling within its official jurisdiction yet it visits areas outside that jurisdiction for revenue collection. The public on the other hand appear to be carrying out developments in areas whose characters are not in keeping with the developments designate. While confronted by the Council, they argue that the Council has no jurisdiction over such land. The arising conflict over rights and obligations by either side of the stakeholder has greatly eroded the requisite development partnership and synergy between the Council and the residents within her of area of current and prospective mandate. The scenario has therefore not helped in gearing-up the prospect of Kiserian.

#### **6.4.6 Poor Management of Slaughter Houses**

Photo 6.5 shows one of the two slaughterhouses found in the area of study. Although the slaughterhouses are considered major sources of employment and economic activities for the local population, they pose a major urban management challenge in the area. Due to poor management, waste and foul smell emanating from the slaughterhouses has led to the pollution of adjacent streams, air and the general town environment. The location of the slaughterhouses is also a challenge to the surrounding neighborhoods that have to live with the foul smell and unfriendly noise associated with the slaughterhouses especially on market days. Normally the wastewater that comes from the slaughterhouses is directed and contained in two open pits, which are poorly designed and ineffectively operated. The slaughterhouses are located at a higher ground than the nearby river hence most of the waste is forced into the river by the surface run-off during rainy season.

There has also been very little policy regulation on this major activity and limited government participation (other than perceived unjustifiable revenue collection) has left the activities thereof to the law of the jungle. The two slaughterhouses are rivals by themselves and to guarantee sustainability, government intervention and regulatory mechanisms need to be injected to enhance the arising productivity and protect the environment from the effects thereof. The arising solid waste has also contributed towards the solid waste management challenges facing the area of study.



*Photo 6.5: One of the Two-Slaughter Houses in the Area of Study .*

*Source: Field Survey, 2011*

#### **6.4.7 Inadequate and/or Lack of Public Utilities/Purposes**

Inadequacy or lack of land for public utilities/purposes such as public schools, hospitals, stadium, cemetery, playground, community/social hall, recreational sites, parking spaces, public toilets, 'juakali' shades and market spaces is a major challenge facing the management of the town. The future of the Small Micro Enterprise in the area of study is therefore doomed unless something drastic in terms of deliberate spatial planning and zoning is instituted to create the necessary economic mix and synergy that guarantees a viable, vibrant, functional and sustainable urban form.

##### **a) Education**

Education is vital for any meaningful social and economic development to take place. It is a means of overcoming poverty, increasing income, improving nutrition and health, reducing family sizes as well as raising people's self-confidence and enriching their quality of lives. The education sector in the study area is faced with challenges of inadequate teaching and learning facilities. With about 39 percent of its total population having attained the recommended school-going age, the area has only three and two public primary and secondary schools respectively. The distribution of public and private education facilities in the study area is presented in table 6.8.

**Table 6.8: Education Facilities in the Area**

Type of Facility	Percentage (%)	Number	Total
Public Nursery School	6.2	2	12
Private Nursery School	31.3	10	
Public Primary School	9.4	3	13
Private Primary School	31.3	10	
Public Secondary School	3.1	1	3
Private Secondary School	6.2	2	
University	0.0	0	0
Tertiary Institutions	12.5	4	4
<b>TOATAL</b>	<b>100</b>		

*Source: Kajiado District Education Office, 2010*

Apart from the inadequacy of these facilities, the other challenge that faces the area of study is the distance of the said social facilities in reference to households. The students and pupils have to walk for long distances (beyond the prescribed by the design manual as shown in appendix one) to access the all-important facilities. Generally, the location of the available public utilities in the area of study is not in tandem with the set planning standards as presented in appendix one of this report. This is therefore one of the challenges affecting access to services in the study area. The rate of un-employment for those perceived to be educated (secondary schools and few cases of tertiary institutions) has not helped in demystifying the notion of educational indifference among the school going children, many of whom are tempted to join the meat related business culture of the market town which is not sustainable.

#### **b) Health**

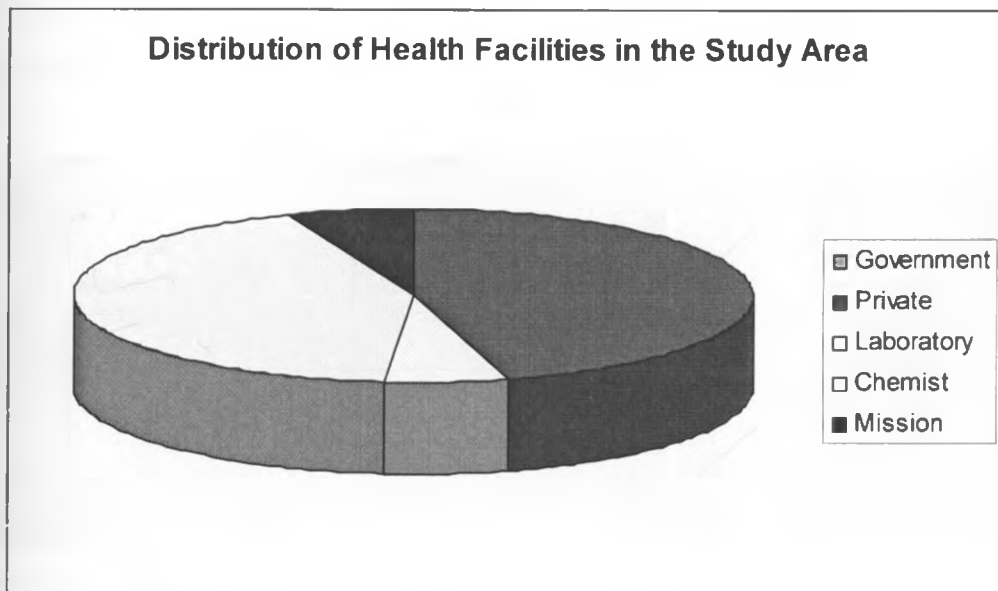
In terms of health facilities, the study area has no government health facility. The nearest government health facilities are to be found in Ongata Rongai Town (Health Centre) or Ngong Town (Sub-District Hospital). The residents therefore have to travel to these towns to access health services. However, the area has a total of two mission hospitals (St. Mary's Mission Hospital and Olooseos) and numerous private health units such as; Nasaroni Medical Clinic, St. Anns Medical Clinic, Acacia Medical Clinic, Olooltepes Medical Clinic, Fadhili Health

Services, Kiserian Medical Clinic, Enkitok Joy Nursing Home, Kitt Medical Clinic and St. Joseph Medical Clinic. For the purposes of medical check-ups, the area has two private laboratories namely; Kiserian and Jamii Outreach Laboratories although very ill equipped. The distribution of health facilities in the area can therefore be presented as shown in table 6.9 and figure 6.3 herein.

**Table 6.9: Distribution of Health Facilities in the Study Area**

Type of Health Facility	Number	Percentage (%)
Government	0	0.0
Private	15	45.5
Laboratory	2	6.1
Chemist	14	42.3
Mission	2	6.1
<b>TOTAL</b>	<b>33</b>	<b>100</b>

Source: Kiserian Zoning Plan, (2007-2012)



**Figure 6.3: Distribution of Health Facilities in Study Area**

Source: Field Survey, 2011

**c) Community/Social Hall:**

The town lacks a community hall where social activities can be conducted. Most youths in the town are in possession of a lot of money accrued from the labour they offer at the local abattoirs. Since there is no social hall where these youths can socialize, they resort to the local pubs to refresh themselves after a hard day's work. This phenomenon has led to increase in cases of drug abuse and anti-social behaviors (such as prostitution and use of hard drugs) by the idle youths who tend to be in possession of large sums of idle money. The town also lacks a designated space for hosting public functions/events and recreational activities such as public gatherings, sporting activities, religious functions and business/trade shows. This has limited the range of socio/cultural engagements leaving the youths idle and susceptible to social ills like drug abuse and other misdemeanors.

**d) Open-Air Market Space:**

As shown in photo 6.6, the current designated space for the open-air market is inadequate and not in tandem with the rising number of people in the town. This has seen most traders spill over to the adjacent roads within the township. This has led to a crisis among the traders, road users and the residents of the town. The market itself has substandard and inadequate facilities (stalls, pit latrines etc) and has limited space that does not cater for all the spatial needs of the traders. A notable case is where a trader is restricted to two crates of tomatoes since she cannot secure enough space for her stock.



**1. Makeshift Cloths' stalls.      2. Improvised wooden decking.      3. Dilapidated pit latrines.**

**Photo 6.6: Kiserian Market and its Dilapidated Structures inside the market**

**Source: Field Survey, 2011**

The study established that there is only one public pit latrine located in the market and meant to serve the entire town. This is inadequate to sufficiently cater for all the ablution needs of the town. Furthermore, the toilets are in a deplorable condition due to poor management and maintenance strategies. The town residents are therefore of the view that more public toilets be built and kept in a serviceable state such that people pay for services rendered by the facilities and the proceeds be used for their maintenance. The problem of space is further witnessed in the town's lack of loading and off-loading zones, taxis' parking, bonda boda and bicycles parking among others; all of which scramble for space within the limited public spaces.

**e) 'Juakali' Shades:**

There is no zone designated for the informal sector. The study established that the town lacks a permanent space set aside for 'Juakali' shades. The artisans operate on borrowed spaces and under no shade as shown in photo 6.7. They have therefore to operate at the whims of those who lease working spaces to them including shifting whenever the lesser demands. The challenge is that this scenario has made the cost of doing business in the informal sector very high owing to high charges and inconveniences.



**Photo 6.7: A Juakali Artisan at Work**

**Source: Field Survey, 2011**

#### 6.4.8 Environmental Destruction and Degradation

The challenge of environmental degradation in the study area is characterized by encroachment into riparian and road reserves by human activities, encroachment into Ngong Hills/Forest water catchment area by human settlements, pollution of water bodies and roads by storm water and raw sewage and indiscriminate quarrying that has led to land dereliction. As shown in plate 5.8, the quarry sites pose great dangers to human life, livestock and wildlife since more often than not, they are left open. The study established during the focus group discussion that cases of environmental pollution in the area are because of weak enforcement mechanisms on the existing environmental, water and public health laws. The case is aggravated by poor enforcement of planning and environmental standards as alluded to in the Physical Planning Act (Cap 286) Laws of Kenya and Environmental Management and Coordination Act (EMCA) No 8 of 1999 respectively. During this study, it was evident that the pronouncements of the water and waste management regulations formulated by NEMA in accordance with the provisions of EMCA have not been adhered to. This largely has contributed to rampant cases of environmental pollution in the area as shown in photo 6.8.



*Photo 6.8: Riparian Encroachment and Illegal Quarrying Sites left open in the Study Area*

*Source: Field Survey, 2011*

#### 6.4.9 Poor Urban Governance

Urban governance is one of the dimensions of sustainable urban management and plays a critical role of coordinating other dimensions of urban management and provides a platform for decision-making processes that affect the urban management process. However, the urban



governance in the study area is characterized by several challenges including; ineffective revenue collection and accounting systems, corruption, unemployment, limited leadership capabilities (read leaders' level of education), limited public participation in the affairs of the town (from the expressions in the focused group discussions, many of them are disillusioned of the importance of their participation due to past experiences), lack of accountability structures and general apathy among the local residents; social exclusion, inadequate work force, ineffective institutional arrangement, poor management strategies, weak and ineffective policies and programmes that are not in keeping with the realities on the ground, poor service delivery audit strategies, low awareness levels on existing urban management laws and policies and competing jurisdictions among others.

#### **6.4.10 Spatial Conflict within the Business Operational Area**

The study established that Kiserian Market Center is a town in conflict with itself. Due to lack of prudent spatial planning, parking and public places are either absent or altogether insignificant. The area is synonymous with business/pedestrian/vehicular/animals/cyclists and related spatial conflict, which has grown from bad to, worse as urbanization, continues at an unprecedented rate. During the study, it was noticed that the conflict intensifies during market days and during the evening rush hours when the Nairobi & environs' working class converge with local and visiting activities. Photo 6.9 shows the nature and levels of spatial conflict experienced in the area of study,



*Photo 6.9: A Conflict of Space between Motorists, Traders, Cyclists, Carts and Pedestrians*

*Source: Field Survey, 2011*

### **6.5 Available Opportunities for the sustainable Management of the Town**

Despite the myriad of urban management challenges the town is grappling with, the town is also endowed with a number of opportunities that if sustainably exploited, could enhance the viability, functionality and sustainability of the town. The opportunities identified by this study include inter alia:

#### **6.5.1 Proximity to Nairobi and other Potential Markets**

The town is located 26 kilometres from the capital city Nairobi and Jomo Kenyatta International Airport (JKIA). The accessibility of the town is also boosted by the Nairobi-Magadi Road (Class C58) and the Isinya-Ngong Road (Class D523). Kiserian Market centre is actually the convergence of neighbouring markets and adjoining human settlement areas such as Ngong, Kajiado, Kitengela and Ongata Rongai by the virtue of infrastructural linkages other socio-economic advantages. Its proximity to Nairobi, JKIA and other potential markets therefore opens it up to the ready market for fresh agricultural produce grown in the area of study. This is therefore an opportunity to promote the urban agriculture practiced in the area of study, which is currently undertaken at a small-scale level, but an increased demand could trigger large-scale production. This can be escalated through formation of marketing cooperatives, which may not

only help in marketing the local agricultural products and services but also act as vehicles for promoting the use of post-harvest technology and processing of agricultural products locally. This will further stimulate the creation of employment locally and reduce the cost of production/processing. Alternatively, existing institutions such Oololaiser and Lemelepo Farmers cooperatives Societies could be enhanced (in terms of governance and capacity) to accommodate a wider spectrum of stakeholders/operations thus making the institutions more viable and vibrant. The proximity of the town is also an opportunity to boost trade and commerce in the town as members of the business community can source their goods easily from Nairobi. This is therefore an opportunity that can go along way in contributing towards enhancing the functionality and sustainability of the area of study by improving its economic and social base. Suffice to say that a significant percentage of middle and high income earners from Nairobi and environs have recently settled within the area of study. The area has also become a very common settlement fringe for retirees from the aforementioned social orientation, most of who are turning to commercial agriculture. Harnessing their already existing endeavours can only increase the economic sustainability of the area of study.

#### **6.5.2 Ngong Hills and Related Resources**

The Ngong Hills, which borders the Kiserian market town, is the main water tower in the region and a source of major rivers/streams within the neighborhood. The hills present an opportunity for boosting the town's water supply as well as modifying the climatic conditions of the area (through the convectional effects of weather) which is classified as an ASAL. This can arguably improve the agricultural potential of the area thus boosting food security in the study area. The hills also provide fascinating sites that can act as tourist attraction sites. The scenarios therefore are opportunities for eco-tourism activities in the area and potential promoters of social, cultural, economic and environmental life of the area of study. Other related resources to the Ngong Hills include physical features such as the 12 water springs running down the Ngong hills. These are considered potential sources of water and tourist attraction sites by their very nature of scenic beauty. The water springs present an opportunity to boost the town's water supply as well as enhancing the development of the tourism sector in the area. Wind energy can also be generated around the hill. This potential is exemplified by the already existing scheme by KenGen to generate power using windmills as shown in photo 6.10. Under devolved government structure, this can be deliberately enhanced to supplement the local energy requirement.



**Photo 6.10: Ngong Hills and the Windmills used to generate Wind Energy**

**Source: Field Survey, 2011**

### **6.5.3 Upcoming Kiserian Dam**

The Kiserian dam is currently under construction and is already a source of income to many locals either directly or indirectly. Upon completion, the dam will improve the water supply status of the study area and the expansive neighbourhood besides promoting tourism/recreational activities and some sporting activities such as boat racing amongst others. The dam is also expected to accommodate some reasonable growth of fish, which could generate a controlled income to the adjacent neighbourhood. The dam is therefore an opportunity to reduce the high levels of unemployment among the youth in the town and has the potential to reduce the water problem that has characterized the area of study for many years. The community downstream could also benefit from the spillage water (through the regulated spillway) as reliable and predictable flow of water could promote scheduled agricultural production which in-turn enhances the livelihood of the local resident. Photo 6.12 indicates the on-going construction work at the Dam site.

It is also expected that the government will create serviceable road infrastructure around the dam through upgrading or introducing appropriate road network linkages to enhance and expand the use of the dam by both locals and visitors. This in turn is expected to promote and enhance means of communication and societal integration thereby linking local products and services to the requisite markets. Such improved infrastructure is also expected to create a need and demand for rental housing in this area as available infrastructure enhances mobility even to distant working/trading residents. The infrastructure is also expected to open up the area of study thus

increasing the properties value and subsequent revenues. The net effect is that the population is expected to rise steadily thereby expanding the market for local products and services. The dam is therefore a viable opportunity that if well planned and managed can lead to the development of a destination as the one shown in photo 6.11.



*Photo 6.11: An Example of a Neighbourhood Created through a Dam related Opportunities*

*Source: UN-HABITAT, 2006*

Suffice to say that one of the environmental Management Programs expected for the area is a community health centre to mitigate the health challenges associated with water bodies. This is therefore an opportunity for the area to have a first ever public health facility expected to be put up by the dam custodian (Tanathi Water Services Board) as a fulfilment of the Environmental Impact Assessment Report performed for the project.

It is also expected that stringent rules are going to be formulated/employed in the management and conservation of the catchment areas and riparian reserves to guarantee the fresh water inflow into the dam. The dam project is therefore an opportunity to administer environmental management programs. It is also a known requirement that for the dam to be viable and hygienic, the area of study and the larger Kiserian fringe will have to receive a sewerage system. During the focused group discussions, it was intimated that there was an understanding during the NEMA public hearing meeting held at Kiserian before the final approval of the dam that the sewerage system was to be completed before the dam project, the understanding on which the community approved the construction of the dam. The government through Tanathi Water Services board is subsequently not expected to trash this requirement, as it will be tantamount to negating one of the irrevocable conditions under which the project was approved. Previous court

cases between the market town business community and the Local authority had ruled in this favour and hence the inadmissibility of this requirement. The dam project is therefore an opportunity for the residents to have an operational sewerage system.



*Photo 6.12: The Proposed Kiserian Dam and its attendant Water Treatment Plant*

*Source: Field Survey, 2011*

#### **6.5.4 Abattoirs and the 'Nyama Choma' Identity**

There is a gradual change in family lifestyle in the study area. During the survey, it was established that most parents prefer taking their families out after church on Sundays to enjoy the meat delicacies available in the area. This change in life style depicts the future prospects that await the meat industry in the area. The "Nyama Choma" identity that characterizes the town also provides a perfect platform for social integration as lovers of nyama choma from different parts of the country gather in the town to enjoy the meat. The two abattoirs established in the town are considered opportunities for employment creation and also as sources of raw materials for several would be industries such as; Hides & skins and meat. Hides and skins have their market all the way in Thika while the surplus meat sometimes goes to waste at the Bama Market in Nairobi. The abattoirs also have the potential for commercial biogas and fertilizer production, which could find easy and cost effective market as close proximity to the residential area of the study area vitiates for less infrastructure investment for the gas reticulation system. Such programs could be promoted through a joint venture program with the government or other agencies where the government plays a peripheral actor role. The biogas initiative has the potential of conserving the environment while at the same time boosting the town's green energy supply. Photo 6.13 shows a biogas generating plant and a "nyama choma" joint in the area of

study. Due to the impact that the abattoirs have on the environment and the local economy, the public interest embedded in this spill-over effect offers a resounding opportunity for a government intervention in promoting best practices as well as moderating the negative effect of private activities on the greater public. This could be achieved through the invocation of Public/Private Partnership programs or "the polluter pays for it all" program.

The meat fame associated with the town has a potential for establishing factories in the area to aid the processing of meat and its by-products. In light of the new constitutional dispensation, this will boost the economy of the town and that of the larger Kajiado County as well as the country's. Such initiatives could be made more possible by the availability of under-utilized public and or private spaces within the market town, which can be planned to accommodate more activities in the spirit and principle of "Best and Optimal" use of urban land. By and large, the cow-sheds/animals' holding ground could be relocated to the ten acres (4.050 HA) public land ( L.R No.KJD/OLCHORO ONYORE/7570, located two kilometers away from Kiserian market next to Naro Moru primary school along Kiserian Isinya road, leaving the remaining space for a compact meat and related products' cottage industry. The space thus being created can be used for the accommodation of missing social amenities within the study area such as public and local county offices, a social hall/Library, indoor games among others. The success of such a move would have multiple effects including resolving the waste management paradox which has haunted the Market centre for decades and continues to worsen at a rate proportionate to the urbanization.

It is worth pointing out that, from the inventory of the businesses within Kiserian market center, there are more butcheries/choma zones in the town than all the other activities combined. This is a pointer as to the potential of the sector within the area of study.



*Photo 6.13: A Nyama Choma Joint and Biogas Generation Site in the Study Area*

*Source: Field Survey, 2011*

### **6.5.5 Strategic Infrastructure Location of the Town**

The town is located at a junction served by two major road networks; the Nairobi-Magadi Road (Class C58) and the Namanga-Ngong Road (Class D523). These two important road networks coupled with the town's strategic location in the region, is an opportunity for Kiserian to emerge as both a transport and commercial hub in the region. The market has served as the social and economic interaction point for the major urban areas of Kajiado from time immemorial. The town has lived true to the original objective of a place for exchange of goods and services.

### **6.5.6 Rich Water Table and Ecological Diversity**

From a ministry of water "water demand and supply" analysis report of 2008 (Kajiado district development plan), the town rests on a water table that has the potential of providing ground water on a sustainable basis. This provides an opportunity to solve the water problem that continues to threaten the functionality and sustainability of the town. It is also an opportunity to promote irrigated agriculture in the study area and in-turn improves food security in the town. The town's rich ecological diversity characterized by a variety of flora and fauna as well as an undulating landscapes that provide fascinating sites that stand to promote tourism business in the area. The rich ecological diversity that characterizes the area of study offers an important opportunity to enhance the development of the area's tourism sector, which can promote the creation of employment opportunities to the local community at various levels.

### **6.5.7 Large Catchment of Cheap Local Labour and Skills**

There is readily available cheap labour in the town especially among the unemployed youths. This labour can be harnessed to promote local production in various spheres of urban



management and development to create a functional and sustainable town centre. The study also established that majority of the residents possess various professional skills and or business acumen. This is an opportunity for the council to improve the quality of its service provision to residents, while at the same time creating a sense of ownership and belonging among the town residents.

#### **6.5.8 Diversity of Cultures and Subsequent Talents**

Kiserian market Centre is a cosmopolitan town comprising residents from different ethnic and cultural backgrounds. The diverse nature of the town's population has given the town a rich mix of talents that if tapped could enhance the cultural growth of the town. The outstanding Maasai culture presents an opportunity to open up the area to tourism activities while blending it with the other progressive cultures, practices and talents within the area of study would inject a growth impetus.

#### **6.5.9 Proposed Kiserian Local Physical Development Plan**

The proposed local physical development plan is an opportunity for land regularization and overcoming the challenge of urban informality that characterizes the study area. It has the potential for optimizing space, improving the physical condition of the area, sewer system thus ensuring the town's efficient and safe water reticulation, enhancing development control, and promoting environmental conservation. The proposed structure plan zones the area into different land uses taking cognizance of the compatibility of such land uses. To overcome the challenge of encroachment into riparian and road reserves and eminent pollution of adjacent rivers, the plan proposes a 15 meter riparian reserve for all the rivers serving the area of study. The plan also serves as a remedy to the problem of poor housing in the area by proposing adequate housing development standards for very high density, high density, medium density and low density residential areas. In so doing, it proposes different housing typologies for different residential sub-zones, relative building materials, plot ratios, building line set backs, parking spaces, methods of solid and liquid waste disposal as well as population density per hectare.

Among the proposed zones are; commercial, agricultural, open public areas, public/social utility, recreational, educational, industrial, residential and transport. However, the development of the plan took a more technocratic approach. Even though this study acknowledges that there was initial public participation, the preparation team failed to invite the public to interrogate the draft

plan. Concerted public participation therefore need to be encouraged before, during and after the development of the such plan so as to incorporate the divergent views of all the stakeholders and to nurture a sense of ownership and belonging by the public.

One of the major opportunity however that the proposed plan fails to identify is use of storied structures to enable the accommodation of missing social amenities. If the area currently occupied by the open market were to be built in several levels, it will be possible to accommodate all market-oriented activities as below proposed by this research:

**Basement should accommodate:**

- Plants rooms
- Basement parking
- Storage facilities

**Ground floor to accommodate:**

- All bulky farm produce
- Sanitation facilities
- Lifts, ramps, hoists and stairwells.
- Management office
- Refuse chute

**First floor to accommodate:**

- Refrigerated food and liquid products
- Chemists, pharmacies and agro vets
- Electronics and Telecommunication

- House-hold goods

**Second floor should accommodate:**

- Light Hardware and electrical items
- Furniture
- Farm tools & equipment

**Third Floor should accommodate**

- Clothing
- Beauty shops and services
- Art crafts and artifacts

**Fourth floor should accommodate:**

- Community medical centre

**Fifth floor should accommodate:**

- Food courts
- Public terrace
- County offices

With such a compact design, it will be possible to accommodate all the micro-enterprise activities that are scattered all over the town creating un-necessary spatial conflicts. This will leave all the external spaces both as landscaped areas as well as as parking and open places. From an urban management perspective, managing commercial activities within defined boundaries will be very easy for the Council as optimal revenue collection is guaranteed besides managing waste generated cost effectively. The storey development also creates space for social amenities, which are missing in the study area, and largely creates a convenient, all-inclusive

shopping and recreational destination. A well-planned Kiserian would therefore lead to the development of support structures such as the one shown in photo 6.14.



*Photo 6.14: Example of Marketing Structures for Fruit Vendors.*  
*Source: UN-HABITAT, 2006*

**6.5.10 Verse Land for Development in the Neighborhood**

The town borders verse pieces of land that could provide space for the development of public/social amenities. Buoyed by the area's rich agricultural base, such pieces of land could also be turned into farmlands through irrigation to boost the town's food supply and strengthen its economic base. Such land could also be used to promote industrial activities, conservation initiatives as well as sporting activities in the area.

**6.5.11 Spiraling Population**

The rapidly increasing population of the town is an opportunity in that it provides a ready market for the fresh produce and other items produced within the area. This promotes economic growth and sustainable management of the town. The population also boosts the town's labour force and promotes viable ventures that require critical mass such as shopping malls, schools and other learning institutions.

#### **6.5.12 Untapped Tourism Potential**

A rich mix of biodiversity, cultures and scenic beauty whose potential remain untapped characterizes the town. The area is home to the famous 12 water springs of Ngong Hills, the fascinating sites characterized colonial houses, streams, undulating landscapes and the rich Maasai culture. In this diversity lies enormous tourism potential that if tapped can boost the town's economic base by providing employment to the locals while at the same time improving the living conditions of the local populace as well as enhancing the infrastructural development of the area. It is also an opportunity to open up the area to the international community through foreign tourism. The completion of the ongoing Kiserian Dam will be a major catalyst to this sector as recreational and hotel industry is expected to mushroom around this feature. It is however paramount that the County controls the standards and type of development that will be permitted here so as to ensure that the arising development is in tandem with the new dawn of the areas' planning and economic aspirations.

#### **6.5.13 Large Pool of Experienced/Retired Professionals Settling In the Area**

Kiserian area is increasingly becoming a place where professional upon retiring, retreat to construct their homes. The diverse professional backgrounds and the wealth of experience possessed by the retirees could be tapped by the urban authorities to boost the effective management of the town. Given their purchasing power, this social cluster of the populace presents a special market for certain goods and hence can boost the town's economic base. Nonetheless, they can also enrich a number of development initiatives in the area through inclusive leadership.

#### **6.5.14 Upcoming Training Institutions within the Neighborhood**

Several training institutions are coming up in the area. Institutions such as Inorero University provide a training ground for the different talents that exist in the study area. This has the potential of contributing significantly to the human resource development in the area. Such institutions can design programmes that are in keeping with the local needs, affordable by the locals and flexible. The institution is also likely to increase housing demand while at the same time enlarging the consumption market for local products and services. Oltepesi Airstrip in the area is yet another opportunity to promote tourism activities in the area. The airstrip also presents an oppor

tunity to promote agricultural activities in the area. Residents can now venture into flower farming in the home that their produce can reach the market in time. Photo 6.15 shows one of the control instruments used at the airstrip.



*Photo 6.15 The Control Tower that Serves The JKIA and local Airstrip.  
Source: Field Survey, 2011*

#### **6.5.15: The Oloolotitikosh Airstrip**

This presents an opportunity to promote horticulture and/or floriculture in the area by facilitating efficient and effective means of transporting produce accrued from the farming activities to both local and international markets. The airstrip is also an opportunity to boost the tourism activities in the area by enhancing mobility.

#### **6.5.16: The Greater Metropolitan Plan and Associated Infrastructure**

This has the potential of opening up the town to external market and additional social and economic activities. If the dream of the six proposed Cities under the Metropolitan auspices was to come to fruition, two of the envisaged cities namely: The Transport City and the Tourist City are to be in Kajiado County at Kajiado town and Amboseli National park respectively. The transport phenomenon would in particular be very relevant and strategic to the area of study as more traffic would enhance the flow of goods, Services and even market for the local products due to Kiserian's geographical location advantage. Similarly, the area comes second to Loitoktok in horticultural production and the Guruman escapement horticultural products have their

passage to the airport through Kiserian. Enhanced metropolitan transport linkages therefore spell a bright future to the area of study.

#### **6.5.17 The New Constitutional Dispensation in Kenya**

The new constitution of Kenya acknowledges that urban areas are the engines of economic growth and key to innovation, and that any constitutional dispensation should provide for them. Urban areas in Kenya have operated under the Local Government Act Cap 265 since 1963. One of the problems that have been occasioned by this legislative arrangement has been the classification of urban areas. Under Cap 265, urban areas are categorized into four namely: City Council of Nairobi, Municipalities, towns and County Councils, with the last two being largely rural thus providing minimal basic services, such as public transport, planning and development control among others. Government line ministries and other lead agencies provide other services. Currently, there is no unifying principle criterion for classifying an area in the four categories above. The classification is largely influenced by the politics and to some extent the economic condition of an area. However, this problem is likely to be outdated in the light of the new constitutional order. Under the new constitution, section 184 provides for cities and urban areas. Section 184(1) mandates the National Assembly to provide for cities and urban areas by establishing a criterion for the classification of an area as a city or urban. The National Assembly is also expected to establish the principles of governance and management of cities and urban areas and to provide for public participation in the governance and management of the cities and urban areas. Consequently, the National Assembly has since enacted the Urban Areas and Cities Act of 2011 to help implement the constitutional provision. This provision of the constitution is therefore an opportunity that will greatly help in combating the urban management challenges that have bedeviled cities and urban areas in Kenya over the years.

The provisions of article 184 of the new constitution are therefore steps in the right direction as it makes significant contributions towards the sustainable management of urban areas. However, it is incumbent upon Kenyans to remain vigilant on both the executive and parliament to ensure that the two institutions do not mutilate the politically and socially sacred document.

Recent developments in which the cabinet passed the Urban Areas and Cities Bill (which resonates around article 184 of the constitution) with far reaching amendments is a practice that

should not be allowed to go unchallenged. Of great concern to this research work with regard to the Urban Area and Cities Act is the prescribed qualification for holders of public offices that may directly or indirectly influence the management of urban areas. In light of this, the study singles out the prescribed qualification requirements for members of parliament and county assemblies. It is worth pointing out that laws and policies governing the two levels of government are made at the parliamentary level. It is unlikely that a participant who lacks the requisite intellectual capacity to innovate, conceptualize and hypothesize phenomena and scenarios would add value to critical institutions such as parliament and county assemblies.

It is indeed defeatist to require a senator or a governor to hold a bachelor degree while leaving one who is responsible for the formulation of a governor's operational policy framework to be of form four level of education. In this case, the former is left with no choice but to succumb to the dictates of an inferior legislative patronage to the detriment of Kenyans, thus defeating the very spirit of holistic societal transformation Kenyans have fought for along period. It is the position of this study that leaving the leadership of this great nation (that is aspiring to be a middle-level economy in less than 20 years to come) to the mercy of open ended populism, devoid of the requisite task-driven competency requirement is not only akin to committing a leadership suicide but also a national fraud by the political elite.

To make sense of the numerous opportunities presented by the new constitutional dispensation, the role of intellectual prowess cannot be under-played. Each of the 47 counties will be competing against each other both locally, globally against better thought-through, and well synthesized best practices. It shall not be business as usual, but those who will have the intellectual capacity to work smarter shall inevitably stick-out above others. It shall not be adequate to work hard but rather smarter and to do so, no magic can be hoped to prevail against intellectual prowess.

Subsequently, it is the humble submission of this research work that all the levels of leadership such as governor, his/her deputy, senator, speakers of both parliament and county assemblies and members of the national assembly (MP) should hold a minimum qualification of a bachelor degree or its equivalent. This will enable such public officers to effectively discharge their prescribed duties in a globally competitive environment. The county representatives should have



a minimum qualification of a valid diploma to be able to not only formulate effective county by-laws and policies but also to offer the all-important checks and balances to the graduate governor and his/her support team. From the 2009 National housing and Population Census, no county in the entire republic of Kenya registered a shortage of the above-recommended level of human capital capacities. To assume otherwise therefore is to skew an office's requirements with a view to favoring individuals at the expense of an all-important national development agenda.

## CHAPTER SEVEN: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

### 7.1 Introduction

This chapter presents a summary of findings; draws conclusions and give recommendations on the way forward with regard to sustainable urban management.

### 7.2 Summary of the Findings

The first objective of the study sought to evaluate the existing legislative and institutional policy framework for urban management in the study area. In this regard, the study revealed that there exist a myriad of policies and legislations that influence urban management in the study area, either directly or indirectly. However, the policies and legislations are faced with challenges such as ineffectiveness, weak implementation strategies and lack of awareness among town residents. The available legislative framework is also sectoral in nature and riddled with conflict of interest. The second objective aimed at exploring the challenges facing urban management in the study area. To this end, the study ascertained that the town is faced with challenges of varying nature and proportions. Such challenges can be summarized as physical, physical, environmental, economic and socio-cultural. In the third objective, focus was on exploration of the available opportunities that lie in the challenges as well as the new constitutional order for the sustainable urban management in the study area.

According to the findings of this study, there area several opportunities in the study area, that if fully and sustainably exploited, could enhance the development of a functional and sustainable town centre. These opportunities include inter alia: the provisions of the new constitution on devolved governments, the proximity of the study area to Nairobi, the Ngong Hills and its twelve water springs, Kiserian dam currently under construction, the two abattoirs, location of the study area, rich water table and ecological biodiversity, availability of local labour and organized groups and the proposed Kiserian Local Physical Development Plan.

### 7.3 Conclusion

From the analysis of the findings, several conclusions can be drawn on the urban management challenges facing Kiserian Market Center, the existing policies and legislative framework applicable to its management, challenges facing the management of the study area, and the urban management opportunities presented in the challenges as well as the new constitutional order.

Arguably, urban management plays a critical role in the realization of a functional and sustainable town centre. In the context of this study, urban management is crucial in enhancing the well-being of the health and life of the study area. In so doing, its success is dependent on a number of variables such as the existing urban management legislations and legislative policy framework, social inclusion, a sound natural environment, an accountable political set up and a vibrant economy. However, the urban management system for the study area is still riddled with a number of challenges that pose enormous threat to its future growth and development. Despite all these challenges, the area of study is endowed with several resources that if sustainably and responsibly exploited, present opportunities for the promotion of sustainable urban management and the ultimate creation of a functional and sustainable market centre.

#### **7.4. Recommendations**

The ultimate purpose of this research was to explore the possibility of converting the numerous urban management challenges facing Kiserian market centre into opportunities that would give rise into a more viable, live-able, functional and sustainable urban form through a critical situational and comparative analysis/study. As a way of demonstrating the realization of this purpose, the study has come up with both short and long-term recommendations.

##### **7.4.1 Short Term Recommendations**

The study recommends the following short-term recommendations:

###### **a) *Urban Development/ Management Policies and Governance:***

- The study established that there is lack of urban development policies in the area of study. This has adversely affected the proper development and management of the area. There is need to review urban development policies in the light of existing urban priorities and strengthen urban management in central and/or local Governments;
- In order to address Millennium Development Goals 1 and 7 (target 11), more accurate information on the dimensions of urban poverty and develop squatter or informal settlement policies should be developed so as to improve the social and environmental conditions of settlements while recognizing the desire of people to live in the area of study;

**b) Building Codes:**

- Most of the buildings in the area have been constructed without adherence to the existing building codes. This is due to the complex nature of the existing building guidelines and regulations. There is therefore need to investigate the possibility of more flexible and appropriate building codes that satisfy the current demands of the building industry in the study area.

**c) Institutional and Legislative Framework:**

- For effective and efficient management of the study area, there is need to review the existing institutional and legal frameworks for urban development and management at local and national levels, including Urban Areas and Cities Act, the Devolved Government Governments Act, Intergovernmental Relations Act and status of environmental impact assessment (EIA), land-use planning, governance, health and building. This will enhance harmony in the currently sectoral urban development and management institutional and legislative framework.
- There is also need to rationalize institutional framework and legislative arrangements, including Urban Areas and Cities Act, the Devolved Government Governments Act, Intergovernmental Relations Act and status of environmental impact, mainstreaming EIA into the planning and urban development and management process within the area of study.
- The existing urban management institutions should also be equipped with the needed resources to perform their mandates to improve service delivery in the area of study.

**d) Vulnerable Groups:**

- The urban management process in the study area has not factored in the need and concerns of the vulnerable groups. This is more pronounced in service delivery. The first step in addressing the plight of the vulnerable groups in the area would be the identification of the most vulnerable groups such as street children, women and the disabled and assess each group's needs for infrastructural provision, rehabilitation, counseling, education, employment and social welfare.

**e) Urban Management Statutes/Legislations:**

- Due to the sectoral nature of the existing urban statutes/legislations, there is need to identify all the sectoral urban management statutes and consolidate for their

harmonization in a “single document” in a manner and language that is easily comprehensible by the implementing agencies and the locals.

- Harmonize the existing sectoral statutes relevant to the urban management in the area into a comprehensive urban management legislation to provide a one-stop shop for the urban management process-taking cognizance of the current urban demands in the study area.
- Involve the public sector in the identification and harmonization of such statutes. This will promote the sense of understanding and invite the requisite good will and support from the public.

#### *f) Urban Sprawl:*

- Urban sprawl is increasing becoming a threat to effective urban management in the area. To address the challenge of urban sprawl there is need to; finalize the formulation of the National Land Policy.
- Prioritize the formulation of urban development and management policy for area in its urban development strategic plan.
- Create a clear link between policies, planning, programming and budgetary allocation in the context of the area of study.
- Link investment plans to existing approved spatial plans. This will enhance harmony between development and space within the area of study; hence avert the challenge of urban sprawl.
- Prepare integrated and strategic urban management plans to promote the effective development of the area of study.

#### *g) Waste Management:*

- To solve the challenge of poor and ineffective waste management in the area of study, there is need to; privatize the solid waste management in the town.
- Initiate community-based solid waste management organizations/groups/units to participate in the door-to-door collection and transportation of solid waste in the area.
- Identify a designated municipal solid waste disposal site and liquid waste treatment site in the town.
- Promote the 3Rs of waste management in the town (i.e. Reduce, Reuse and Recycle).

**h) Environmental Degradation:**

- Environmental degradation in the area is mainly as a result of urban poverty and the sectoral nature of existing policies and legislations regarding environmental management there is therefore need to harmonize the existing pieces of legislations on environmental planning and management into a one-stop comprehensive document.
- Encourage inter-institutional partnership in the management of urban environment within the area of study.

**i) Informal Settlements:**

- To address the challenge of informal settlements in the study area, there is need to enact a comprehensive Housing Act to regulate the housing sector in the town.
- Develop appropriate Building Standards and Procedures by establishing the By-Laws for the housing sector in the area of study. There is also need to establish a Review Board as recommended in the Housing Policy.
- Lobby the Olkejuado County Council to implement Code 95 and sensitize professionals on the revised standards.

**j) Public Amenities:**

- There is need to develop more public amenities to match the population size and needs of the town.
- Improve the conditions of existing amenities in the town to realize their full potential.

**k) New Constitutional Dispensation**

- There is need to conform to the provisions of the new constitutional dispensation regarding effective urban management. This calls for the appreciation and implementation of the statutes/legislations regarding urban management that have emerged from the new constitution al order such as the Urban Areas and Cities Act, among others.

**7.4.2 Long Term Recommendations**

The study recommends the following long-term measures for the enhancement of a more sustainably managed Kiserian Market Center:

a) ***Partnerships in Urban Development and Management:***

- Public-Private partnerships are crucial in the urban management system. Such partnerships are crucial in urban infrastructural development and management, as well as efficient and effective urban service delivery. In view of this, there is need to form new partnerships with governments and civil society in general and community-based organizations in particular to assist urban infrastructural and community development as well as the social well-being within poor urban communities, squatter and other informal settlements within the area of study as well as its peri-urban parts and improve access to essential services;
- Land being a crucial factor in the sustainable management of an urban area, there is need to form working partnerships with landowners within the area of study and encourage the involvement of landowners in urban planning, and seek to exercise more effective controls on land use within the urban and peri-urban boundaries of the area of study;

b) ***Social Inclusion in Urban Development and Management:***

- Social inclusion plays a significant role an integrated approach to urban management. Such inclusions create a sense of understanding, belonging and ownership among urban residents. This enhances compliance that is required for the sustainable management of towns and cities, especially within the realm of revenue collection. In this regard, there is need to improve representation in local urban governance within the study area, particularly of minority interest groups, including youths, people with disabilities and women and seek to improve local management structures and systems to assure more effective consultation with and among community- interest groups;
- Encourage regional agencies, United Nations bodies and multilateral donors to endorse and support local urban development and management agendas within the study area, and develop partnerships to implement such agendas, and ensure that urban management issues regarding the study area are raised and debated in bilateral and regional forums.

c) ***Housing Policy:***

- As seen from the study findings, accessibility and affordability of housing is one of the major urban management challenges that the study area continue to grapple with. This

problem is mainly blamed on the top-bottom approach to decision making regarding urban management in the study area. With regard to this, there is need to involve input from the community using the “bottom-up” approach;

- Participatory approach to need assessment should be encouraged and trainings provided to those tasked with training roles so as to enhance the development of their skills;
- Women contribution is crucial in an urban management system. There is therefore need to involve women in consideration of gender and equality issues regarding urban management in the study area.
- Urban communities are considered crucial starting points for meaningful and effective urban planning exercises. Community leadership is key to an integrated urban planning scheme. In the context of the study area, planning poses one of the urban management challenges to the study area. This is evident in the nature and extent of urban sprawl and uncontrolled development that has become a characteristic of the study area. There is therefore need to establish squatter (community) councils and local planning boards to foster effective and efficient planning within the study area.
- The study established that there exist a number of stakeholders in the management of the Urban Kiserian. However, the roles and responsibilities of the stakeholders are characterized by constant conflicts and overlaps. In order to promote harmony and efficiency vis-à-vis stakeholders’ roles and responsibilities, there is need to clarify the role of all stakeholders (government, civil society, communities, private sector) in the urban management system for the area of study so as to enhance effectiveness in addressing its urban management issues and concerns.
- Housing activities appear to be encroaching into the demarcated riparian reserves within the Center. On this, there is need to device and Enforce a mechanism for harmonizing the Water Act 2002 and EMCA while ensuring that housing development is in tandem with sustainable development principles.
- There is also need to develop strategies and policies to resolve the study area’s major urban management issues of:
  - i) Cross-sector development conflicts and emphasize on adherence to change of user rules and procedures
  - ii) Un-controlled housing development



- iii) Housing finance, grants and subsidies
  - ii) Self-help and site-and-services schemes
  - iii) Integrated urban and rural housing development
  - iv) Land - use planning and standards, as well as urban security
- For the urban housing problem in the area of study to be solved, land would be of the essence. In this regard, there is need to ensure adequate land supply for housing development within the study area.

**d) *Land Tenure and Land Management:***

- Following land tenure and land management related challenges evident during the study, there is need to assess information on land tenure and land management issues that characterize Kiserian Market Center– identify past experiences and past proposals for land reform;
- Establish consultative mechanisms for review of land tenure and management in the area, including conflict-resolution measures for land disputes and other key issues, including land inheritance by women;
- Raise awareness and build consensus with landowners and other key stakeholders within the study area about the need for security of tenure;
- Identify options for landowners to achieve greater recognition and involvement in land management within the study area;
- Involve urban landowners in the process of service provision within the study area;
- Increase the role of landowners in the urban planning and development process, including land- use planning in the town;
- Streamline the urban development process, including “fast-tracking” land leases and development proposals prepared within the study area;
- Develop an Integrated Land Information System (ILIS) for the study area (e.g., mapping and land ownership data, availability and accessible). This will help in the provision of a centralized information destination (“one stop” shop) aided by up-to-date technology
- Make land markets in the study area efficient and affordable, including an adequate supply of land for all market segments
- Encourage land registration and titling of customary lands within the study area where appropriate, as this will improve accessibility to land among area residents.

*e) Housing Markets:*

- The housing market in the study area is characterized by limited supply. This is evidenced in the mushrooming of slums and other housing structures that grossly violates the building standards. So as to eliminate the problem of shortage and variety in housing supply, there is need to recognize the range of housing suppliers in the study area (including the private sector, NGOs, middle income persons, public rental agencies, squatters, welfare agencies, government housing schemes, landowners) and facilitate their provision to meet the growing demand in the area.
- Review and rationalize institutional frameworks and arrangements regarding the housing market in the study area.

*f) Provision of Infrastructure:*

- Poor infrastructure was found to be a common phenomenon in the area during the study. This presents a major challenge to the efficient and effective service delivery in the study area. The poor state of infrastructure in the area also affects the living conditions and the general well being of urban residents. Infrastructural needs of the area of study therefore need to be prioritize (e.g., replacement, operations and maintenance, future expansion plans)
- Coordination among planning agencies and service providers in the study area also need to be promoted.
- The local urban administration and other relevant stakeholders in the town's urban management system need to undertake assessment of infrastructure needs at varying levels.
- There is also need to develop flexible and consistent planning and design standards to enhance harmony vis-à-vis the urban infrastructure- mainly in the housing sector- within the study area.
- The issue of cost is of concern in any urban management process. In a sustainable urban management framework, there is need to minimize costs while ensuring that maximum benefits are derived from the respective costs. It is in this context that this study recommends that a comprehensive and effective cost recovery mechanism be developed and effected within the urban management process within the study area.

- There is also need for the evaluation of policy directions for financing (e.g., cost recovery, “user pays”, affordability, tariff structures, and timing) in the urban management process in the study area.
- Finance plays a significant role in the urban management process within an urban environment. Finance sourcing for carrying out operations and maintenance, capital works is therefore necessary for the effective urban management in
- Ensure accessibility and availability to all support services (health, schools, recreation, shopping centers, market, parking, public toilets, garbage collection, functional sewer system etc.).the study area.

***g) Integration of environmental and disaster management into urban planning and management:***

- Spatial planning in the area of study is a major concern in the event that a sustainable urban management is to be realized. In this regard, an integrated spatial urban plan for the area in the form of a Local/Part development plan needs to be developed– such a plan should be characterized by a set of objectives and preferred approaches.
- There is also need to assess urban environmental issues in the study area, including, environmental degradation, disaster management risk, water body hazards and key sources of pollution.
- Partner agencies, community and private sector partners within the area of study need to be identified and agreements on partnership mechanisms made.
- There is also need for the identification of issues and detailed actions via consultations and coordination including “bottom-up” approach
- Awareness on urban management issues among urban residents is crucial in enhancing an effective urban management. In view of this, there is need to raise awareness at all levels within the study area.

***h) Public Health:***

- Following the inadequacy and inaccessibility of health facilities in the study area, there is need to ensure availability of and accessibility to public hospitals within set guidelines as indicated in appendix A herein.

- To help reduce the frequencies of visits to such health facilities in the study area, there is need to adopt a public awareness campaign for nutritional mitigation approach to preventable ailments affecting the community.
- Public health and impacts of development – including communicable diseases, HIV/AIDS, increasing air and noise pollution and environmental degradation in the study area should also be monitored.

***j) Good Urban Governance:***

- Urban governance was sited during the Focus Group Discussions as one of the challenges facing the urban management study area. most concerned with meaner decision regarding the management of the tow were made. In view of this concern, there is need to use Citizens “Rights and Obligations” awareness approach methodology as a way of ensuring individual responsibility and accountability to Public leadership.
- As noted in the statement of the problem of this study, Kiserian being an area that has acquired an urban status is still under the management of a county council that sits miles away in Kajiado town. This has had a negative impact on the urban governance aspects of the area of study. To help solve this problem and enhance effective urban governance in the area, there is need to improve urban representation, including setting up of urban management structures as well as adequate representation of women and the minorities in the decision-making process.
- There is also need to set stringent qualification requirements for chairs and membership to various departmental committees of the Kajiado County, which would trickle down to competent localized leadership.
- It was noted during the study that most residents in the area of study are not aware of the existing urban management policies and programs. There is therefore need to ensure public awareness and participation in the formulation, monitoring and evaluation of urban management policies and programs such as LASDAP and LATF.
- There is also need to seek greater recognition and application of the principles of good governance, including consultation and participation with community groups by all officials, politicians and institutions within the area of study.

- There is need to develop an understanding of the roles and responsibilities of all parties in urban management through the application of participatory urban management principles.
- The process of electing council official appears to have a bearing g on the quality of urban governance in general and the area of study in particular. To ensure quality in council leadership and urban governance, there is need to develop some mechanisms, criteria and ethics for election of political leaders including accountability channels.
- Suggest establishment of an appropriate management structure for the area of study in reference to best urban management practices.
- Service delivery is a major challenge in the study area. Most residents indicated dissatisfaction with the current state of service provision in the study area. In order to improve the service provision in the study area, there is need to suggest the Development of an efficient service delivery mechanism for the area of study.

#### ***j) Urban Poverty:***

- Urban poverty was identified as one of the challenges facing the sustainable management of the urban Kiserian. Urban poverty affects the ability of the residents to comply with the principles of urban management such as tax compliance. There is therefore need to undertake awareness-creation and education about urban poverty needs issues, concerns and measures to improve the quality of life of the urban poor in the study area.
- Improve the effectiveness of welfare and housing assistance for the needy households in the study area. This will help reduce the high poverty levels among the urban households.
- Improve the gathering of baseline information on the condition of the urban poor in the study area. This provides a database for planning and developing strategies to address the urban poverty situation in the study area.
- Inadequacy of land is considered as one of the factors responsible for the urban poverty in the study area. To help solve the problem of urban poverty, there is need to develop strategies to deal with improving poverty levels, such as access to services and security of land tenure within the study area.
- There is also need to define and understand the dimensions of urban poverty (hardship)

**k) Employment:**

- So as to improve the problem of unemployment in the area of study, there is need to support initiatives, mechanisms and guidelines to develop the informal economy, including opportunities for employment, access to credit, micro financing, access to space (to sell and produce goods), promotion of cottage industries, development of linkages to the formal sector, including the role of the private sector, civil society and local government.
- Develop microfinance schemes and targeted projects in formal and informal sectors within the area of study. This will provide employment opportunities and boost Small and Medium Enterprises (SMEs) in the area of study.
- Support the initiatives of NGOs and community-based organizations to provide training and the creation of trust funds and seed monies in the area.
- Revise the education system to adapt its curriculum to market demands and the need to provide living skills among the youths in the area of study.
- Improve the sensitivity of land planning to the needs of the business sector in the area, to promote their growth and development. This eventually results to increased employment opportunities.
- There is need to create an environment that allows women and other vulnerable groups to engage in gainful activities. This has the potential of reducing the levels of unemployment in the area. Most women cannot participate in gainful employment since they have to take the responsibility of caring for their children back at home. In this regard, there is a need to create social support mechanisms to encourage “productive labour” inputs, especially for women (e.g., child-care centers)

**l) Vulnerable Groups:**

- There is an urgent need to empower vulnerable groups in the area of study with skills and training, including adult and vocational training to improve their skills and employability.
- Support and develop initiatives to strengthen support networks and communities, especially in traditional settlements in the study area.
- Families are the smallest units within the area of study through which sustainable urban management are carried out. Focus should therefore be on strengthening the

effectiveness and key role of the family and household units within the area of study. This would lead to meaningful social development within the area of study.

**m) Personal Security:**

- Security is considered as one of the major challenges the area is faced with. This affects the economic growth and development of the area, which eventually contributes to underdevelopment, and high rates of unemployment. There is therefore need to initiate and support “community policing” and neighborhood watch programmes within the area of study.
- There is also need to empower and strengthen recognized community and traditional social support systems to support urban “security” issues – work with and within the community structures.
- There is need to create a sense of understanding among the community members with regard to urban security by demystifying the question of safety and security in the area of study away from being purely a policing matter.
- Develop move towards a crime prevention culture that is broad based- rooted on addressing the root causes of insecurity.

**n) Urban Sprawl:**

- Urban sprawl in the study area is increasing at an increasing rate. The urban sprawl in the area affects its smooth urban management as it interferes with the town’s boundaries and effective service delivery. There is therefore need to develop a planning culture and attitude among the town residents.
- Facilitate integrated regional planning to address rural-urban balance while incorporating stakeholder participation and involvement during the development of such regional plans.
- Build urban management capacities through training and motivation as this will enhance understanding and develop a sense of ownership among the area residents.
- Enhance access to planning information and technology among the urban residents. This would increase the levels of compliance to planning standards and requirements among the residents in the area of study.

#### **g) Waste Management:**

- The management of both solid and liquid in the area appear to be poor and ineffective. As was the case during the study, the poor solid waste management in the area has led to cases of pollution within the study area. In this regard, there is need to develop an integrated waste management system that take cognizance of the 3Rs (Reuse, Recycle and Reduce).
- Initiate programmes attuned to neighbourhood garbage collection and treatment systems, cleaning rivers, dams and open drains within the town.
- Awareness creation on best waste management practices at household, community and council's levels within the study area would also play an important role in promoting sustainable waste management in the area of study. .
- Initiate motivational programmes to address the concerns of all the actors in the waste management stream (i.e. generators, service providers and regulators). This should also include building of partnerships for the management of waste in the area of study.

#### **h) Environmental Degradation:**

- Environmental degradation in the area is rampant. This is exhibited in different forms such as encroachment into riparian reserves, land dereliction among others. There is therefore need to initiate a participatory environmental management programme in the study area.
- Enforce existing legislations, policies and standards on environmental management.
- Encourage research initiatives on best approaches of environmental management systems in the study area, such as environmental audits and environmental impact assessments.

#### **i) Informal Settlements:**

- The mushrooming of informal settlements poses a major challenge to sustainable management in the study area. This affects service delivery within the study area. To eradicate the problem there is need to embrace the culture of Participatory Urban Planning and Management.
- Invest in research and development in order to reduce cost of housing while maintaining quality, affordability and accessibility of housing in the area.



#### *j) Public Amenities:*

- For effective and meaningful urban management to be attained there is need to provide public amenities for the urban residents. The study established the lack of such amenities in the study area. There is therefore need to encourage Public-Private partnership in development, improvement and maintenance of public amenities.
- Increase budgetary allocations on the development, improvement and management of public amenities in the study area.
- Involve the local community in the development and management of the public amenities as this would enhance the sense of ownership and goodwill needed for the management of urban utilities.

#### **7.5 Areas for Further Study**

Further researchers should investigate the following pertinent areas:

- **Impact of urban poverty on urban management:** From the study findings, it is evident that a number of urban management challenges facing the study are either directly or indirectly linked to urban poverty. There is therefore a need for future studies in the context of urban management to explore the impacts of urban poverty on urban management.
- **Stakeholders and their specific roles in urban management:** A number of stakeholders exist within the realm of effective urban management. Among the recommendations made by this study is that there is need to involve all the relevant stakeholders in the urban management, to enhance participatory urban management. It is therefore imperative that future studies explore the various stakeholders and their specific roles in the urban management system.
- **Disability and slum upgrading:** From the study, it is revealed that the place of the physically challenged has not been established within the urban management system. This is even more pronounced in the slum-upgrading program, whose principle aim is to improve the urban housing conditions. This area should therefore form the basis for future studies.

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## APPENDICES

### Appendix A: Planning Standards

#### *A COMPARISON BETWEEN LOCATION OF PUBLIC FACILITIES IN THE AREA OF STUDY AND RECOMMENDED PLANNING STANDARDS*

Facility	Population Catchment		Max. Walking Distance (m)		Recommended Land Requirement (ha)
	Recommended	Study Area	Recommended	Study Area	
Nursery School	2,500	40,774	2-300	300	0.15-0.25
Church/Mosque	5,000	40,774	4-600	500	0.25-0.50
Primary School	3,500-5,000	40,774	3-600	500	2.0-3.0
Local Shopping Centre	5,000	40,774	4-800	500	0.2-0.50
Playing Field	5,000	40,774	4-600	Not Available	1.0
Secondary School	8-10,000	40,774	1-2km for day school	5 Km	2.0-4.0
Post Office	20,000	40,774	N/A	1,000	0.2-0.40
Community Centre	20,000	40,774	500-1,000	Not Available	0.4
Community Market	20,000	40,774	2,000	1,000	0.4-2.0
Light Industrial Area (Workshop)	20,000-25,000	40,774	N/A	Not Designated	1.0-2.0
Health Centre with Maternity	5-20,000	40,774	0.5-1km	1,000 (Private)	0.25
Hospital	25,000	40,774	0.5-1km	Not Available	4.0-6.0
Police Post	50,000-80,000	40,774	N/A	1,000	0.50-2.50
Branch Library	80,000	40,774	0.5-1km	Not Available	-
Major Shopping Centre	100,000	40,774	0.5-1km	1,000	2.0-3.0
Fire Station	100,000	40,774	N/A	Not Available	0.50
Sport Centre	100,000	40,774	N/A	Not Available	5.0
Bus Station	100,000	40,774	1-2km	1,000	0.80
Administration	100,000	40,774	N/A	8 Km	0.50
Commercial District	100,000	40,774	1-2km	Not Available	4.0-6.0



**UNIVERSITY OF NAIROBI**  
**DEPARTMENT OF ARCHITECTURE AND BUILDING SCIENCE**  
HOUSEHOLD QUESTIONNAIRE

Dear Sir/ Madam,

I am *Francis Parsimei Gitau*, a masters student at the University of Nairobi carrying out a research on the subject of *'The Role of Prudent Urban Management in creating Functional and Sustainable Town Centres: A Case study of Kiserian Market Centre, Kenya'*. As an important stakeholder, you have been selected to participate in the study by answering a few questions. All information, which you offer, will be kept strictly confidential and used for academic purposes only.

NAME OF INTERVIEWER..... QUESTIONNAIRE NUMBER.....  
 DIVISION..... LOCATION..... SUB-LOCATION.....  
 NAME OF HH HEAD.....DATE OF INTERVIEW.....

**Q1. Background Information:**

Please fill in the information required in the tables below.

- a) 1. No Education 2.Nursery 3.Primary 4.Secondary 5.College 6.University 7.Don't Know

HH Member	Relationship to HH Head	Sex: 1.Male 2.Femle	Age (Years)	Birth Place	Period lived in the area	Education Level Attained 1, 2, 3, 4, 5, 6, and 7 (Indicate number as appropriate)	Professional Training	Main Economic Activity



b)

<i>Total hh Income per month ( Kasha)</i>	<i>Tick where appropriate</i>	<b>Household Expenditure per Month</b>	
		<i>Item</i>	<i>Estimated Amount (Kasha)</i>
below 1751		1.Education	
1751-2250		2.Health	
2251-2750		3.Food	
2751-3250		4.Fuel	
3251-3750		5.Rent	
3751-4250		6.Transport	
4251-4750		7.Water	
4751-5000		8.Entertainment	
Above 5000		9. Waste Management	
		10.Others (Specify)	
		<b>TOTAL</b>	

**Q2. Policy and Legislative Framework:**

a) Are you aware of any existing legislative and/or institutional policy framework being employed to enhance the sustainable management of Kiserian Market Centre?

Yes..... No.....

b) If *yes*, how effective is its/their implementation?

.....  
 .....  
 .....

c) How can the implementation be improved to enhance the sustainable management of the town?

.....  
 .....  
 .....

**Q3 County Council and the People:**

a) What do you consider as your obligation to the council towards the sustainable management of the town?

.....  
 .....  
 .....

b) How would rate the level of service provision and production by the council on the following? (Please tick where appropriate).

Key: 1. Fair 2. Good 3. Very Good 4. Poor 5. Very Poor 6. Worst

<i>Nature of Service</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
Water supply and Sewerage						
Roads (Public transport)						
Poverty Alleviation Programme						
Solid Waste Management						
Health Care						
Education						
Development Control						
Planning and Policy Formulation						
Implementation of Legislations on Urban Management						
Security						
Wealth Creation Programme						
Recreational Facilities						
Market Services						
Drainage						
Others (Specify)						

c) What is/are your point(s) of dissatisfaction with the provision and production of the above services?

.....  
 .....  
 .....

d) How can the provision and production of these services be improved in the town?

.....  
 .....  
 .....  
 .....

e) Describe your relationship with the County Council of Olkejuado.

Positive..... Negative.....

f) If positive, how can it be enhanced to promote functionality and sustainability of the town?

.....  
 .....  
 .....

g) If negative, how can it be improved?

.....  
 .....

.....  
.....  
**Q5. Challenges:**

a) What are the political; environmental; economic; and socio-cultural challenges facing the sustainable management of the town?

i) *Political Challenges:*

.....  
.....  
.....  
.....

ii) *Environmental Challenges:*

.....  
.....  
.....  
.....

iii) *Economic Challenges:*

.....  
.....  
.....  
.....

iv) *Socio-Cultural Challenges:*

.....  
.....  
.....  
.....

v) *Other (Specify):*

.....  
.....  
.....  
.....

b) In your opinion, how can these challenges be overcome?

.....  
.....  
.....  
.....

**Q6. Opportunities:**

a) What are the available opportunities for the sustainable management of the town?

.....  
.....  
.....  
.....

b) How can these opportunities be exploited to help in the management of the town and enhance its functionality and sustainability?

.....  
.....

.....  
 .....  
**Q7. Distance to Source of Livelihoods**

Facility (Nearest)	Distance (m) from Home
Nursery School	
Church/Mosque	
Primary School	
Local Shopping Centre	
Playing Field	
Secondary School	
Post Office	
Community Centre	
Community Market	
Light Industrial Area (Workshop)	
Health Centre with Maternity	
Hospital	
Police Post	
Branch Library	
Major Shopping Centre	
Fire Station	
Sport Centre	
Commercial District	
Bus Station	
Administration	

**Q8. Way forward:**

a) In your opinion, what do you think can and should be done in order to promote the sustainable management of the town?

.....  
 .....  
 .....  
 .....  
 .....  
 .....

**THAK YOU FOR YOUR PARTICIPATION**

**Appendix C: Institutional Questionnaires**



**UNIVERSITY OF NAIROBI**  
**DEPARTMENT OF ARCHITECTURE AND BUILDING SCIENCE**  
INSTITUTIONAL QUESTIONNAIRE

<u>NAME OF INTERVIEWER</u>	<u>NAME OF INSTITUTION</u>
<u>NAME OF OFFICER (OPTIONAL)</u>	<u>DESIGNATION</u>

**Dear Sir/ Madam,**

I am *Francis Parsimei Gitau*, a masters student at the University of Nairobi carrying out a research on the subject of *'The Role of Prudent Urban Management in creating Functional and Sustainable Town Centres: A Case study of Kiserian Market Centre, Kenya'*. As an important stakeholder, you have been selected to participate in the study by answering a few questions. All information, which you offer, will be kept strictly confidential and used for academic purposes only.

**NAME OF INTERVIEWER..... QUESTIONNAIRE NUMBER.....**

1. For how long have you been operating in this area?  
 .....

2. What are the roles, mandate and activities undertaken by your organization?  
 a) *Role(s):*  
 .....

b) *Mandate:*  
 .....

*c) Activities:*

.....  
.....  
.....  
.....

3. How do the role(s), mandate and activities contribute to the sustainable urban management of the town?

.....  
.....  
.....  
.....

4. Please describe your organization structure (Provide an organization chart if available).

.....  
.....  
.....  
.....  
.....  
.....

5. What are the challenges facing the execution of the role(s), mandates and activities in (2) above?

.....  
.....  
.....  
.....  
.....

6. Is there any existing legislative and/or institutional policy framework at national or local level that contributes to the management of the town?

Yes.....

No.....

7. If yes, what is the relationship between the framework(s) and the execution of the role(s), mandate and activities of your organization?

.....  
.....  
.....  
.....  
.....

8. In your opinion, what are the challenges facing the sustainable management of the town?

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.....  
.....

9. What efforts are being made by your organization to address the challenges in (8) above?

.....  
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.....

10. Comment on the capacity of the County Council of Olkejuado to enhance sustainable management of the town.

.....  
.....  
.....

11. Drawing from your own practical experience and other lessons learnt from other countries, suggest alternative urban management strategies, practices and concepts which if adopted and adapted in the area could enhance the functionality and sustainability of the town.

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.....

**THANK YOU**

**Appendix D: An Interview Schedule for Business Community**



**UNIVERSITY OF NAIROBI**  
**DEPARTMENT OF ARCHITECTURE AND BUILDING SCIENCE**  
*AN INTERVIEW SCHEDULE FOR THE BUSINESS COMMUNITY*

**Dear Sir/ Madam,**

I am *Francis Parsimei Gitau*, a masters student at the University of Nairobi carrying out a research on the subject of *'The Role of Prudent Urban Management in creating Functional and Sustainable Town Centres: A Case study of Kiserian Market Centre, Kenya'*. As an important stakeholder, you have been selected to participate in the study by answering a few questions. All information, which you offer, will be kept strictly confidential and used for academic purposes only.

**NAME OF INTERVIEWER.....QUESTIONNAIRE NUMBER.....**  
**NAME OF RESPONDENT..... DATE OF INTERVIEW.....**  
**BUSINESS TYPE.....**

1. For how long have you been doing business in the area?  
.....
2. Where do you source your goods from?  
.....
3. How would you describe the behaviour of customers (in terms of purchasing power, consumption patterns and credit worthiness) in the town?  
.....  
.....
4. As a business person in Kiserian, how do you contribute to the sustainable management of the town?  
.....  
.....
5. What are some of the challenges you face, if any, while doing business in the town?
  - a) *Economic Challenges:*  
.....  
.....  
.....  
.....
  - b) *Political Challenges:*



.....  
.....  
.....  
.....

c) *Registration Challenges:*

.....  
.....  
.....  
.....

d) *Social/Cultural Challenges:*

.....  
.....  
.....  
.....

e) *Physical Challenges:*

.....  
.....  
.....  
.....

f) *Environmental Challenges:*

.....  
.....  
.....  
.....

g) *Other (Specify):*

.....  
.....  
.....  
.....

6. How do the Challenges in (5) above affect your contribution to the management of the town?

.....  
.....  
.....  
.....

7. How do you describe your relationship with the council? Good..... Bad.....

8. If good, how can it be utilized to promote functionality and sustainability of the town?

.....  
.....  
.....  
.....

9. If bad, how can it be improved?

.....  
.....  
.....  
.....

10. Are you aware of any existing legislative and/or policy framework(s) being employed to enhance the sustainable management of Kiserian Market Centre? Yes..... No.....

11. If yes, how effective is its/their implementation?

.....  
.....  
.....  
.....

12. How can the implementation be improved to enhance functionality and sustainability of the town?

.....  
.....  
.....  
.....

13. As a business person in the town, what do you consider your obligation to the Council?

.....  
.....  
.....  
.....

14. What are some of the opportunities available in the town that could be used to promote the sustainable management of the town?

.....  
.....  
.....  
.....

15. Comment on the capacity of the County Council of Olkejuado to enhance sustainable management of the town.

.....  
.....  
.....  
.....

16. Drawing from your own practical experience and other lessons learnt from other countries, suggest alternative urban management strategies, practices and concepts which if adopted and adapted in the area could enhance the functionality and sustainability of the town.

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.....

**THANK YOU**

**Appendix E: An Interview Schedule for County Council of Olkejuado**



**UNIVERSITY OF NAIROBI**

**DEPARTMENT OF ARCHITECTURE AND BUILDING SCIENCE**

**AN INTERVIEW SCHEDULED FOR THE COUNTY COUNCIL OF OLKEJUADO**

**Dear Sir/ Madam,**

I am *Francis Parsimei Gitau*, a masters student at the University of Nairobi carrying out a research on the subject of *'The Role of Prudent Urban Management in creating Functional and Sustainable Town Centres: A Case study of Kiserian Market Centre, Kenya'*. As an important stakeholder, you have been selected to participate in the study by answering a few questions. All information, which you offer, will be kept strictly confidential and used for academic purposes only.

**NAME OF INTERVIEWER..... QUESTIONNAIRE NUMBER.....**

**NAME OF RESPONDENT..... DATE OF INTERVIEW.....**

1. What was Kiserian intended to be?
2. Is the intention still the same?
3. If not, what has changed?
4. What has caused the change?
5. Is the change planned or self-inviting?
6. If self-inviting, what control or regulatory mechanism has been put in place by the council to manage the change?
7. What are your plans, aspirations and vision for Kiserian? a) Plans: b) Aspirations: c) Vision:
8. What are the challenges facing the management of Kiserian Market centre?
9. What efforts are being made by the council to address these challenges?
10. What are the potentials for the growth, functionality and sustainability of Kiserian town?
11. What are the limitations of the growth, functionality and sustainability of the town?
12. How is the performance of Kiserian town compared to neighbouring towns such as Ngong, Rongai and Kitengela?
13. What is the percentage revenue generated from property tax in Kiserian Town?
14. Comment on Kiserian's contribution to the urban economy of Kajiado County.
15. What is the actual transition rate of education in Kiserian? Appendix F: Research Budget

Appendix F: Work Plan

**BUDGET**

<i>CORE ACTIVITY</i>	<i>ITEMS</i>	<i>COST</i>
1. Consolidation of literature	Literature search-data storage. 4 GB Flash disk and 10 CDs and digital camera	20,500/=
2. Reconnaissance field visit, instrument development and equipment acquisition.	A) transport- 2 weeks, 4 people= 4*14*400/=	a) 22,400/=
	B) Cost of typing and printing of instruments	b) 10,000/=
3. Primary data collection	10 days * 4 people * 1000/= per day	40,000/=
4. Data entry, processing and analysis and verification	Data entry and processing-1 person*1000/=*7 day Verification-1 person*1000/=*2 day	7,000/= 2,000/=
5. Project thesis drafting and printing	a) 10/= per page*200 pages* 5 copies b) Binding: 3000/=	a) 10,000/= b) 3000/=
6. 10 percent contingency and institutional cost	As need may arise.	11,440/=
<b>TOTAL KSH.</b>		<b><u>125,840=</u></b>

Appendix G: Work Plan

WORK PLAN (2011)

Month and Week	May				June				July				August			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<i>Proposal Development</i>	█	█	█	█												
<i>Field Visit</i>				█												
<i>Presentation of 1<sup>st</sup> Draft Proposal &amp; Communication from Supervisor</i>					█											
<i>Designing &amp; Testing of Data Collection Instruments</i>					█											
<i>Review of 1<sup>st</sup> Draft Proposal</i>						█										
<i>Final Literature Review</i>	█	█	█	█	█	█										
<i>Submission of 2<sup>nd</sup> Draft Proposal</i>							█									
<i>Submission of Final Proposal</i>								█								
<i>Data Collection</i>									█	█						
<i>Data analysis</i>											█	█				
<i>Completion of Draft Report</i>													█	█		
<i>Completion of Final Report</i>															█	█

**Appendix H: Photo Gallery**

**PHOTO GALERY**



1) Biogas Generation Market



2) One of the Housing Typologies



3) Livestock



4) Keekonyokie Slaughter House



5) Solid Waste Dumped in Private Land



6) Inside Kiserian Market



7) Derelicted Land due to Mining in the Area



8) A view of Ngong Hills



9) Kiserian Dam under Construction



10) A Water Tank in the Area



11) Latrines Used in Kiserian Mkt.



12) Stalls inside Kiserian Market    13) Fresh Produce Sold in Kiserian Mkt.    14) Road Network in the Area



15) Road Network in the Area    16) An Overview of the Town    17) Housing Typologies in the Area



18) Examples of Economic Activities in the Area    19) A Nyama Choma Point in the Town



20) Examples of Economic Activities in the Area serves the town



21) A Road Network that

22) Road Network  
Agricultural Activities

23) Illegal Dumping of Solid Waste 24)



25) A Bicycle Repair Workshop  
from Drainages

26) A Road Network

27) Solid Waste



28) Open Sewers in the Town  
Sewer in the Town

29) Kenya Commercial Bank

30) Open





31) A Filling Station



32) A Nyama Choma Point in the Town



33) An Example of Housing Typologies

34) Agricultural Activities in the Area of

Study



35) Ngong Hills & Attendant Resources 36) Windmills



37) An Overview of Ngong Hills



38) Windward Side of Ngong Hills 39) Slum & Settlement Overview



40) Kiserian Dam treatment Plant & Storage Tank



41) An Overview of Ngong Hills